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EDITION : MARCH - 2023

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Shruti Sharma

RANK 5
Utkarsh Dwivedi

RANK 6
Yaksh Chaudhary

RANK 12
Yasharth Shekhar

RANK 13
Priyamvada Mhaddalkar

RANK 14
Abhinav Jain

RANK 15
Challapalle Yaswanthkumarreddy

RANK 16
Anshu Priya

RANK 19
Diksha Joshi

RANK 20
Arpit Chauhan

RANK 21
Dilip Kainikkara

RANK 25
Shruti Rajiakshmi

RANK 29
Bhavishya

RANK 31
Avinash V

RANK 33
Jaspinder Singh

RANK 35
Kartikeya Jaiswal

RANK 37
V Sanjana Simha

RANK 40
Kushal Jain

RANK 44
Anjali Shrotriya

RANK 47
Naman Kumar Singla

RANK 50
Abhijit Ray

Outstanding performance by BYJU'S students in IAS 2020

Congratulations to our toppers

02 Ranks in Top 10 | **18** Ranks in Top 50 | **36** Ranks in Top 100

RANK 02
Jagrati Awasthi

RANK 8
Kartik Jivani

RANK 13
Gaurav Budania

RANK 14
Karishma Nair

RANK 17
Sarthak Agarwal

RANK 25
Vaibhav Rawat

RANK 26
Pulkit Singh

RANK 28
Divya Mishra

RANK 30
Divyanshu Choudhary

RANK 31
Megha Swaroop

RANK 32
Rallapalli Jagat Sai

RANK 35
Aparna Ramesh

RANK 37
Narwade Vinayak

RANK 38
Varuna Agarwal

RANK 41
Aswathy Jiji

RANK 42
Pooja Gupta

RANK 46
Jubin Mohapatra

RANK 50
Abhishek Shukla

Incredible Results

CSE 2019

4 Ranks in top 10	13 Ranks in top 50	22 Ranks in top 100

Rank 3 — Pratibha Verma
Rank 6 — Vishakha Yadav
Rank 8 — Abhishek Saraf
Rank 10 — Sanjita Mohapatra

CSE 2018

11 Ranks in top 50	28 Ranks in top 100	183 Ranks in the final list

Rank 11 — Pujya Priyadarshni
Rank 16 — Dhodmise Trupti Ankush
Rank 21 — Rahul Jain
Rank 24 — Anuraj Jain
Rank 31 — Mainak Ghosh

CSE 2017

5 Ranks in top 50	34 Ranks in top 100	236 Ranks in the final list

Rank 3 — Sachin Gupta
Rank 6 — Koya Sree Harsha
Rank 8 — Anubhav Singh
Rank 9 — Soumya Sharma
Rank 10 — Abhishek Surana

CSE 2016

8 Ranks in top 50	18 Ranks in top 100	215 Ranks in the final list

Rank 2 — Anmol Sher Singh Bedi
Rank 5 — Abhilash Mishra
Rank 12 — Tejaswi Rana
Rank 30 — Prabhash Kumar
Rank 32 — Avdhesh Meena

CSE 2015

5 Ranks in top 50	14 Ranks in top 100	162 Ranks in the final list

Rank 20 — Vipin Garg
Rank 24 — Khumanthem Diana Devi
Rank 25 — Chandra Mohan Garg
Rank 27 — Pulkit Garg
Rank 47 — Anshul Agarwal

CSE 2014

6 Ranks in top 50	12 Ranks in top 100	83 Ranks overall selections

Rank 4 — Vandana Rao
Rank 5 — Suharsha Bhagat
Rank 16 — Ananya Das
Rank 23 — Anil Dhameliya
Rank 28 — Kushaal Yadav
Rank 39 — Vivekanand T.S

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1st Feb to 7th March, 2022	Ancient India + Medieval India + Art & Culture						
8th March to 11th April, 2022	Geography	Geography					
12th April to 16th May, 2022	Economics	Economics	Economics				
17th May to 17th June, 2022	Modern History + Post Independent India	Modern History + Post Independent India	Modern History + Post Independent India	Modern History + Post Independent India			
20th June to 21st July, 2022	Polity	Polity	Polity	Polity	Polity		
22nd July to 26th August, 2022	Ethics + Governance	Ethics + Governance	Geography	Geography	Geography	Geography	
29th August to 30th September, 2022	International Relations + World History	International Relations + World History	International Relations + World History	Economics	Economics	Economics	Economics
3rd October to 7th November, 2022	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Modern History + Post Independent India	Modern History + Post Independent India	Modern History + Post Independent India
9th November to 12th December, 2022	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Polity	Polity
13th December to 13th January, 2023	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Geography
16th January to 16th February, 2023		Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture
17th February to 22nd March, 2023			Focus Prelims	International Relations + World History	International Relations + World History	International Relations + World History	International Relations + World History
23th March to 25th April, 2023			Focus Prelims	Focus Prelims	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management
26th April to 30th May, 2023			Focus Prelims	Focus Prelims	Focus Prelims	Focus Prelims	Internal Security + CSAT
31st May to 11th June, 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023
12th June to 14th July, 2023			Ethics + Governance	Ethics + Governance	Ethics + Governance	Ethics + Governance	Ethics + Governance
17th July to 18th August, 2023						Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper
1st September to 30th September, 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023

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8th March to 11th April, 2022	Modern History + Post Independent India	Modern History + Post Independent India					
12th April to 16th May, 2022	Polity	Polity	Polity				
17th May to 17th June, 2022	Geography	Geography	Geography	Geography			
20th June to 21st July, 2022	International Relations + World History	Economics	Economics	Economics	Economics		
22nd July to 26th August, 2022	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Modern History + Post Independent India	Modern History + Post Independent India	Modern History + Post Independent India	Modern History + Post Independent India	
29th August to 30th September, 2022	Ethics + Governance	Ethics + Governance	Ethics + Governance	Polity	Polity	Polity	Polity
3rd October to 7th November, 2022	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Geography	Geography	Geography
9th November to 12th December, 2022	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Economics
13th December to 13th January, 2023	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Modern History + Post Independent India
16th January to 16th February, 2023		International Relations + World History	International Relations + World History	International Relations + World History	International Relations + World History	International Relations + World History	International Relations + World History
17th February to 22nd March, 2023			Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management
23rd March to 25th April, 2023				Focus Prelims	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT
26th April to 30th May, 2023				Focus Prelims	Focus Prelims	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture
31st May to 11th June, 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023
12th June to 14th July, 2023				Ethics + Governance	Ethics + Governance	Ethics + Governance	Ethics + Governance
17th July to 18th August, 2023							Social Issues & Social Justice + Essay + Compulsory Language Paper
1st September to 30th September, 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023

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February (05, 06, 12, 13, 19, 20, 26 & 27) + March (05, 06 & 12)	Polity				
March (13, 19, 20, 26 & 27) + April (02, 03, 09, 10, 16 & 17)	Economics	Economics			
April (23, 24 & 30) + May (01, 07, 08, 14, 15, 21, 22 & 28)	Modern History + Post Independent	Modern History + Post Independent	Modern History + Post Independent		
May (29) + June (04, 05, 11, 12, 18, 19, 25 & 26) + July (02 & 03)	Geography	Geography	Geography	Geography	
July (10, 16, 17, 23, 24, 30 & 31) + August (06, 07, 13 & 14)	Ancient India + Medieval India + Art & Culture	Polity	Polity	Polity	Polity
August (20, 21, 27 & 28) + September (03, 04, 10, 11, 17, 18 & 24)	International Relations + World History	International Relations + World History	Economics	Economics	Economics
September (25) + October (01, 02, 08, 09, 15, 16, 22, 23, 29 & 30)	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Modern History + Post Independent	Modern History + Post Independent
November (05, 06, 12, 13, 19, 20, 26, 27) + December (03, 04 & 10)	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Geography
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March '23 (05, 11, 12, 18, 19, 25 & 26) + April '23 (01, 02, 08 & 09)	Focus Prelims	Focus Prelims	International Relations + World History	International Relations + World History	International Relations + World History
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May '23 (27 & 28) + June '23 (17, 18, 24 & 25) + July (01, 02, 08, 09 & 15)		Ethics + Governance	Ethics + Governance	Ethics + Governance	Ethics + Governance
31st May to 11th June, 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023
July '23 (16, 22, 23, 29 & 30) + Aug '23 (05, 06, 12, 13, 19 & 20)					Social Issues & Social Justice + Essay + Compulsory Language Paper
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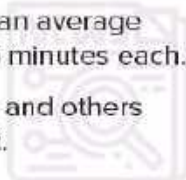
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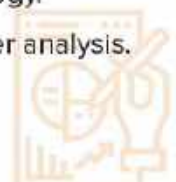**Click Here**

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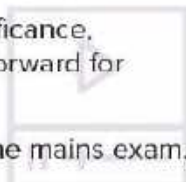
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POLITY

1. Appointment Chief Election Commissioner (CEC) and Election Commissioners

Syllabus: Appointment to various Constitutional posts, powers, functions and responsibilities of various Constitutional Bodies.

Prelims: Procedure for appointment Chief Election Commissioner (CEC) and Election Commissioners

Mains: Issues associated with the appointment of members to various Constitutional Bodies

Context: Supreme Court's judgment on the appointment of the Chief Election Commissioner (CEC) and Election Commissioners (ECs).

Election Commission of India (ECI)
- The Constitution of India has established a permanent and independent body to ensure free and fair elections in the country known as the Election Commission of India (ECI).
- The Constitution entrusts ECI with the power of direction, superintendence, and control of elections to the Parliament, State Legislatures, the office of President of India and the office of Vice-President of India.
  - State Election Commission deals with the elections to the Municipalities and Panchayats in the States.
- Since its inception in 1950 and till October 1989, the ECI was a one-member body with only the Chief Election Commissioner (CEC) as its sole member.
  - In October 1989, the ECI became a multi-member body that consists of a Chief Election Commissioner (CEC) and two Election Commissioners (ECs).
  - Along with the addition of two more members, the voting age in India was also changed from 21 to 18 years.
- The members have a tenure of **six years**, or up to the age of **65 years**, whichever is earlier.
- The members of ECI enjoy the same level of status and receive salary as available to Judges of the Supreme Court of India.
- In case of a difference of opinion amongst the Chief Election Commissioner and/or two other election commissioners, the matter is decided by the Commission by a majority.

Supreme Court's judgment on the appointments
- A Constitution Bench of the Supreme Court in its landmark judgment has held that the Chief Election Commissioner (CEC) and Election Commissioners will be appointed by the President on the advice of a committee that includes:
  - The Prime Minister,
  - The Leader of the Opposition (LoP) in the Lok Sabha, or the leader of the single largest party in Opposition, and
  - The Chief Justice of India (CJI)
- This judgement of the Supreme Court has put an end to the practice of appointing the CEC and ECs on the advice of the Council of Ministers, as is laid down in the Constitution.
  - As per **Article 324 (2) of the Constitution**, the CEC and ECs are to be appointed by the President, with the aid and advice of the Council of Ministers, till Parliament enacts a law fixing the criteria for selection, conditions of service and tenure.
- Further, the judgment has now brought the appointment process of CEC and ECs on par with that of the Central Bureau Of Investigation (CBI) Director.

What was the court's basis to arrive at the verdict
- The court pointed out that despite 75 years since Independence, successive governments have failed to formulate legislation guiding the appointments to the Election Commission thereby leaving a vacuum.
  - Such a vacuum has led to the criminalisation of politics, and an increase in the influence of money power and the role of certain sections of the media who have forgotten their role.
  - This has called for immediate and unpostponable filling up of the vacuum.
- The court while ruling its judgment said that the independence, neutrality and honesty envisaged in the institution of the Election Commission of India (ECI) require efforts to end the government monopoly and exclusive control over such appointments.

Other important observations by the Supreme Court
- Justice Rastogi who was a part of the Bench said there is a need to extend the safeguards available to the CEC under the provisions of **Article 324 (5)** of the Constitution to the ECs too.
  - As per **Article 324 (5)**, the CEC shall not be removed from his office except in a like manner and on the like grounds as a Judge of the Supreme Court.
  - CECs and the Supreme Court judges can only be removed through an order of the President which is **passed by both Houses of Parliament** supported by a **majority of the total membership** of that House and **by a majority of not less than two-thirds of members present and voting.**
    - Further, the grounds of removal are "**proved misbehaviour or incapacity**".
- The court also noted that according to the **Election Commission (Conditions of Service of Election Commissioners and Transaction of Business) Act, 1991**, the CEC and ECs must hold the post for a period of six years. However, the Election Commission has witnessed appointments who have not completed the six-year tenure in recent times.
- Furthermore, the court urged the Parliament to establish a permanent secretariat that draws its expenses **directly from the Consolidated Fund of India** and not the government in order to ensure the independent functioning of the Election Commission.

Associated Concerns:
- Several questions are raised on preserving the independence of ECI through the presence of CJI in the selection panel.
- Moreover, the presence of a CJI in the panel would further give pre-emptive legitimacy to all appointments and impact the judicial scrutiny of any error or infirmity in the process.
- It is argued that there is no clear evidence that the independence of the CBI Director has been preserved or enhanced, who is appointed by a similar selection panel.

Government's stand
- The government has asked the court to exhibit judicial restraint.
- It argued that "in the absence of such a law, the President has the Constitutional power", while the court in its ruling discusses at length its intention to "maintain a delicate balance" on the separation of powers.
- The ruling cites past instances of the court stepping in to fill a gap in the law, including the Vishaka guidelines to curb sexual harassment at the workplace and the interpretation of the process of appointment of judges.

Nut graf: *Recognising that the power to vote is more potent than the most powerful gun and that the Election Commission is the guardian of the citizenry and its Fundamental Rights the Supreme Court has stepped in and has ended the monopoly of the government and the excessive executive control over the appointment to the Election Commission.*

2. Right to be forgotten

Syllabus: Constitution of India — features and significant provisions

Prelims: Right to be forgotten in India

Mains: Supreme Court verdict on the Right to be Forgotten

Context: Recently, a plea has been filed in Delhi High Court to exercise the Right of Being Forgotten.

Demands of Plea:
- The petition contends that the Right to Be Forgotten is compatible with the Right to Privacy, which is a component of Article 21 of the Constitution, which addresses the Right to Life.
- It also states that the petitioner's posts and videos on the internet have caused them psychological pain for his insignificant acts committed erroneously a decade ago, as the recorded videos, photos, and articles of the same are available on various search engines/online platforms.
- It also states that the petitioner's personal mistakes become and remain public knowledge for future generations.
- As a result, the values enshrined in **Article 21** of the Indian Constitution, as well as the emerging jurisprudential concept of the Right to be Forgotten, are extremely relevant in this case.

European Model:
- According to the General Data Protection Regulation (GDPR), the data subject has the right to obtain from the controller, without undue delay, the erasure of personal data relating to him or her.
- Personal data is defined as "any information relating to an identified or identifiable natural person ("data subject")" in Article 2 of the GDPR.
- "Controller" means "the natural or legal person, public authority, agency or any other body which determines the purposes and means of the processing of personal data".
- According to the GDPR website, "undue delay" is defined as a month.

Right to be Forgotten in India:
- Organizations that have sensitive personal data but fail to keep it secure enough to prevent loss or unjust benefit to anyone may be required to compensate the victim, according to **Section 43A of the Information Technology Act of 2000**.
- The **Personal Data Protection Bill** was introduced in the Lok Sabha in 2019 by the Union Ministry of Electronics and Information Technology.
  - Clause 20 of Chapter V of the bill, titled "Rights of Data Principal," refers to the "Right to be Forgotten" as the right to limit or prevent a "data fiduciary" from continuing to disclose personal data. The parliament has yet to pass this bill.
- The **IT Rules, 2021** do not include this right, but they do outline the process for filing complaints with the appointed grievance officer in order to have online material containing personal information about a complainant removed.

Supreme Court verdict on the Right to be Forgotten:
- Following the Supreme Court's decision in **"K.S.Puttaswamy vs. Union of India" (2017)**, the right has been consistently declared to be inherent in an individual's Right to Privacy under Article 21. However, it is not legally recognised in India.
- In the case of **"K.S.Puttaswamy v. Union of India,"** a nine-judge bench noted the European Union Regulation of 2016 that recognised "the right to be forgotten," or the ability of an individual to request the removal of personal data from a system when "he is no longer willing of his personal data to be processed or stored" or when "its no longer necessary, relevant, or is incorrect and serves no legitimate interest".
- In the case of **"Jorawer Singh Mundy vs Union of India" (2021)**, an American citizen petitioned the Delhi High Court to have all publicly available records of a case filed against him under the Narcotics Drugs and Psychotropic Substances Act, 1985, removed.
  - He claimed that, despite the fact that the trial court had cleared him in 2011, a quick Google search revealed the court's ruling in his case, which prevented him from finding work in the United States.
  - Despite his strong academic credentials, he claims that this has hampered his career opportunities. As a result, the court ordered respondents such as 'Indian Kanoon' to remove the same.

Why is 'Right to be Forgotten' Important?
- Because of the vast amount of data published online and the potential for it to be misused or abused by those with malicious intent, the right has become increasingly important in recent years.
- The right protects people's privacy by giving them more control over their data and ensuring that it is not used without their permission or consent.
- It contributes to the overall promotion of digital privacy by encouraging businesses and organisations to take more responsibility for how they handle personal information.
- Individuals who have this right can protect their privacy and avoid potential harm caused by outdated, inaccurate, or irrelevant information that is easily accessible online.

Challenges:
- **Enforcement Issues**
  - There are numerous legal and technical obstacles to enforcing the right to be forgotten.
  - Because there are numerous ways to circumvent such bans, governments around the world have had limited success in banning or removing pornographic websites or torrent sites from the Internet.
  - Furthermore, search engine blocking or delinking of URLs does not guarantee that such information has been blocked or deleted from the Internet.
  - There is also no way to prevent such information from being uploaded again.

- **Right to Privacy vs. Public Interest Information**
  - o   Google has created a mechanism through which an individual can request that a specific search result bearing an individual's name be removed or delinked.
  - o   Google evaluates such requests based on a variety of criteria, including whether the results violate his right to privacy or are of public interest.
  - o   In the case of the former, the individual's right to be forgotten takes precedence over the public's right to information.
  - o   However, if the information is of public interest, the public's right to information takes precedence over privacy rights.
  - o   This squarely places Google in charge of determining the relevance, adequacy, and necessity of data being available online for public access or not.
- **Requests are examined.**
  - o   With the growing recognition of the right to be forgotten, the number of requests for takedown or delinking that search engines receive is only likely to increase, making it extremely difficult and time-consuming to manually scrutinise such requests.
  - o   According to Google's Transparency Report, Google received 565,412 requests for URL removal as of 2016. According to the Report, it has already evaluated 1,717,714 URLs since May of 2014. According to the report, Google removed 56.8% of the URLs from the requests received.
  - o   With a significant increase in the number of requests, search engines may even consider using algorithms to handle such requests rather than manually weighing privacy rights against public interest.
- **Individuals Abusing Their Rights**
  - o   Individuals may abuse this right by artificially altering the content available online, which may result in the delinking of relevant information.
- **There is no turning back for information in the public domain.**
  - o   Information in the public domain is like toothpaste: once it's out of the tube, it's gone, and once it's in the public domain, it's gone forever.

Way Forward:
- The right to be forgotten is a legal right that allows people to have their personal information removed from the internet, which is a public space. However, by exercising this right, one is limiting the public's right to information, which falls under the umbrella of free expression. Simply put, if this right is widely claimed, the search query results will gradually disappear. As a result, both of these rights must be balanced on a case-by-case basis. And, as The Justice Sri Krishna Committee correctly points out, the balancing test should be carried out by adjudicators rather than search engines.
- The law requires search engines to consider requests for the right to be forgotten within a broad framework. This ensures that the state or a company has a limited role in the personal choices of individuals.
- After all, the Internet as a whole is now so powerful that it can shape people's lives and opinions in such a way that a person should not be a prisoner of his or her past. People should be able to move on from their discreditable criminal record.
- "Balancing the right to be forgotten and the right to free expression" must be the approach.

3.   Parliamentary privilege

Syllabus: Parliament —structure, functioning, conduct of business, powers & privileges and issues arising out of these.

Prelims: About Parliamentary privilege

Context: Recently, the Committee of Privileges of the Rajya Sabha started to investigate the alleged breach of privilege by 12 Opposition MPs.

Parliamentary privilege:
- Individual members of Parliament as well as the institution as a whole are granted specific privileges that allow them to carry out their parliamentary duties "efficiently and effectively" and without any restrictions.
- The Constitution's Articles 105 and 194 discuss these rights, privileges, and immunities.
- Parliamentary privilege is described as the "sum of the special rights enjoyed by each House collectively and by Members of each House individually, without which they could not fulfill their functions, and which are in excess of those possessed by other bodies or persons."
- As a result, privilege is in some ways an exception to the general law even if it is a part of the law of the land.
- Members of Parliament are protected by these privileges from civil liability for statements made or actions taken while performing their official duties, but not from criminal culpability.
- Only when a person is a member of the house can they make use of the privileges.
- The privileges are stated to be terminated as soon as the person ceases to be a member.

Sources of Privileges:
Parliament has not made any special law to exhaustively codify all the privileges. They are rather based on five sources:
- Constitutional provisions
- Various laws made by Parliament
- Rules of both the Houses
- Parliamentary conventions
- Judicial interpretations

Collective Privileges:
- The ability to both publish reports, debates, and proceedings and to prohibit others from doing the same.
- Under the freedom of the press, it may publish accurate reports of parliamentary proceedings without the House's consent.
- The press's right to attend a secret House meeting, however, is not protected by this law.
- Steer outsiders away from the gathering and arrange secret meetings to discuss important subjects.
- Establish regulations to control its own operations and business dealings, as well as to decide on such matters.
- Right to receive immediate notice of an individual member's arrest, detention, conviction, imprisonment, and release
- Make inquiries and order someone's presence
- The actions of a House or its committees are not subject to judicial review.
- No one (whether a member or an outsider) can be detained inside the House, and no legal procedure (civil or criminal) can be delivered there without the Presiding officer's approval.

Individual Privileges
- No member may be arrested between the 40 days prior to the start of the session and the 40 days following its completion.
- This privilege is exclusively given in civil cases; it is not given in criminal cases or situations involving preventive custody.
- The freedom of expression is guaranteed to members.
- Any statements made or votes cast in the parliament or its committees are not subject to judicial review.

- The articles of the Constitution as well as the conventions and procedures governing how Parliament conducts itself place restrictions on this freedom.
- Individuals are free to testify in court without providing any proof.

What is a Privileges Committee?
- The Privileges Committee is a parliamentary committee that is represented in both houses of parliament.
- One of the Permanent Committees to Inquiry is this specific one.
- Functions - The Committee of Privileges performs semi-judicial tasks.
- It investigates instances of the House and its members' violating their privileges and makes recommendations for the necessary action.
- The Rajya Sabha committee comprises 10 members, compared to the 15 on the Lok Sabha committee.
- Head - The Speaker of the Lok Sabha presides over the privileges committee and appoints the members in accordance with the relative strengths of the parties.
- The committee in RS is led by the deputy chairman of the Rajya Sabha.
- A member of the House may bring up a question regarding a violation of privilege by a member, the Council, or a Committee thereof with the approval of the Chairman of the RS or Speaker of the LS.
- Criteria of admission - The following requirements must be met in order to have the right to raise a privilege issue.
  - The question shall be restricted to a specific matter of recent occurrence
  - The matter requires the intervention of the Council

> A member may bring a privilege motion if he believes that a minister has violated the privilege of the House or one or more of its members by withholding relevant facts or by providing inaccurate or distorted information. Its goal is to criticise the minister in question.

4.   What is a whip?

Syllabus: Parliament and State legislatures—structure, functioning, conduct of business, powers & privileges and issues arising out of these.

Prelims: About Whip

Mains: Key issues associated with the powers and functions of "whip"

Context: Recently, the Supreme Court has noted that Members of a House are bound by the "whip," and if any MLAs inside a political party that is a part of a ruling coalition indicate they do not wish to go with the alliance, the MLAs will be disqualified.

What is a 'whip' in the House?
- In parliamentary jargon, the term "whip" can refer to both a written directive to party members in the House and a designated party official with the authority to issue such a directive.
- The phrase comes from the traditional British practice of "whipping in" legislators to toe the party line.
- A whip can mandate that party members vote in a certain way or that they must be present in the House for a crucial vote. In India, members of all parties are permitted to use whips.
- The chief whip, who is supported by other whips, is a senior member of the party's House delegation who is designated by the party to issue whips.

How serious are whips issued by parties?
- There are different levels of seriousness with whips. The frequency with which an order is underlined can be used to determine the significance of a whip.
- Typically, a **one-line whip** with one underline alerts party members to a vote and gives them the option to abstain if they choose not to support the party line.
- They are instructed to be present during the vote by a **two-line whip.**
- The strongest whip is a **three-line whip**, which requires members to support the party line on significant occasions like the second reading of a bill or a motion of no confidence.

What can happen if a whip is defied?
- The consequence for ignoring a whip differs depending on the nation. In the UK, an MP who disobeys the whip can be expelled from the party but still retain their House seat as an Independent.
- The party whip's job in the US is to determine how many lawmakers favour and oppose a bill and, to the extent possible, encourage them to vote along party lines.
- In India, defying a **three-line whip might jeopardise** a lawmaker's chances of staying in the House.
  - The only exception to the anti-defection statute is when more than a third of lawmakers vote against a measure, essentially splintering the party, in which case the Speaker/Chairperson is not able to dismiss such a member.
- It is not possible for any group of MLAs to declare that they do not want to support this alliance once a government has been constituted. Any one section of a political party cannot declare that they do not want to participate in this alliance. That will automatically trigger the disqualification clauses.

Functions of Whip:
- The whip is essential to the effective and efficient running of business on the House floor.
- He is tasked with making sure that his party's members show up in big numbers and winning their support for or opposition to a certain cause.
- He maintains order among party representatives in the House.
- He notices the indications of discontent among Parliamentarians and alerts the appropriate party leaders.
- He or she serves as the party's unifying force and is in charge of preserving the internal party structure in the Parliament.

> **Constitutional status of whip:** The office of "whip" is not specified in the Indian Constitution, the House Rules, or a parliamentary statute. It is based on the parliamentary government's customs.
>
> **Non-applicability of Whip:** Whips cannot tell a Member of Parliament (MP) or Member of the Legislative Assembly (MLA) how to vote in particular situations, such as presidential elections.

5. Women's Reservation Bill

Syllabus: Constitution of India —historical underpinnings, evolution, features, amendments, significant provisions and basic structure.

Prelims: Women's Reservation Bill

Mains: The need for reservation for women in politics, its significance, and criticism

Context: The long-delayed Women's Reservation Bill has lately been called for by a political party to be introduced in Parliament.
- On March 9, 2010, the Rajya Sabha approved the Women's Reservation Bill. Yet the bill was never put to a vote in the Lok Sabha. While the bill was still pending in the Lok Sabha, it expired.

What is the Women Representation Bill?
- According to the Women's Reservation Bill, women will be given 33% of the seats in the Lok Sabha and state legislatures.
- Rotational allocation of reserved seats is a provision for several state or union territory constituencies.
- 15 years after the beginning of this Amendment Act, the seat reservations for women will end.

Need for women reservation:
- India is ranked 48th out of 146 countries in the Global Gender Gap Report 2022's Political Empowerment (Percentage of Women in Parliament and Ministerial Seats) component.
  - Despite its ranking, its score of 0.267 is rather poor. Some of the top-scoring nations in this area have significantly better ratings. For instance, Bangladesh is ranked 9th and Iceland is ranked 1st, both with scores of 0.546.
- The right of women to self-determination and self-representation.
- According to various surveys, women who serve as Panchayati Raj representatives have made a commendable contribution to the growth and general well-being of society in villages. Many of them would undoubtedly want to work on a larger scale, but they encounter a number of difficulties due to India's political system.

Arguments Against the Bill:
- Women do not form a homogenous group like, say, a caste. The same justifications for caste-based reservations cannot, therefore, be used for women.
- Some people oppose reserving seats for women, arguing that doing so breaches the Constitution's promise of equality. They contend that if there is a reserve, women won't be competing on merit, which might lower their social status.
- Critics also believe that providing reservations would mean that women would not be competing based on merit which can lower their status in society.
- Also, extending reservations to women would limit the choices for voters.
- A few critics have also argued that extending reservations to women could destroy the "ideal family" as men continue to hold primary power and key positions in politics.

Arguments in Favour of the Bill:
- Political parties are essentially patriarchal, thus affirmative action is required to improve the status of women.
- In Parliament, women are still underrepresented, and reservations will make sure that they organise a powerful lobby to fight for issues that are frequently disregarded.
- In order to solve the high rate of crimes against women, low involvement of women in the labour, poor nutrition levels, and skewed sex ratio, more women must hold positions of decision-making.

What is the Status of Women Representation in Politics in India?

Prior to Independence:
- In India, historically, women have been oppressed and exploited due to patriarchal societal norms and mentalities.
- Beginning of social reforms and participation in the freedom struggle: Women made an impressive contribution to the Indian freedom movement, which started with the swadeshi in Bengal (1905–08), organising political demonstrations, mobilising resources, and holding leadership positions in those movements.

Post Independence:
- All political, social, and economic domains must treat men and women equally, according to the Indian Constitution.
- Only 14.4% of Indian Parliament members are women right now, which is the highest percentage ever. India has a lower ratio of women in the lower House than its neighbours Bangladesh, Nepal, Pakistan, Sri Lanka, and the Inter-Parliamentary Union claims.
- According to the most recent data from the Election Commission of India (ECI) as of October 2021, women make up 10.5% of all parliamentarians.
- With a national average of a pitiful 9%, the situation for women Members of Legislative Assemblies (MLAs) in all state assemblies in India is much worse. Women's representation in Lok Sabha has not even risen 10% in the past 75 years of independence.

How can Women's Representation in Politics be Improved in India
The issue of women's representation in politics in India has been debated for a while, and while some progress has been made, more work remains. Here are some ideas to increase the number of women in Indian politics going forward:
- **Reservation of Seats:** One effective strategy for boosting women's political representation has been the reservation of seats for women in legislative and local bodies. To provide women additional opportunity to participate in decision-making processes, more reservation policies could be put into place.
- **Raising Education and Awareness:** It is crucial to educate women about their rights and the significance of their political engagement. The engagement of women in politics can be increased through educational initiatives and awareness campaigns.
- **Tackling Gender-Based Violence and Harassment:** Major barriers to women's engagement in politics include gender-based violence and harassment. A safer and more encouraging environment for women in politics can be created by addressing these problems through legislative and legal measures.
- **Reforms to the electoral process:** By guaranteeing that more women are elected, reforms like the introduction of preferential voting and proportional representation can help to improve the representation of women in politics.

Nut graf: Although the representation of women in Indian polity has increased in recent years, it is still far lower than in many countries across the world. While simply extending reservation for women might not solve all issues affecting them, it will be a step in the right direction as a higher share of women in politics reportedly has resulted in better social outcomes.

6. Compassionate appointments

Syllabus: Constitution of India — key features and significant provisions

Prelims: Provisions for Compassionate appointments in India

Mains: Various issues associated with Compassionate appointments

Context:
- The relatives of deceased government workers in West Bengal submitted some applications for "compassionate appointments," but the Supreme Court rejected some of them.
- A court panel led by Justices Krishna Murari and BV Nagarathna emphasised that such dependents of a deceased employee do not have a vested right to a compassionate appointment.

What are Compassionate appointments?
- The right to a livelihood is a topic covered in Article 39, which is the foundation for the idea of compassionate appointments. It intends to give work to dependant family members of a government employee who passed away in the line of duty or retires due to illness, leaving the family without a means of support, on compassionate grounds.
- These appointments can only be made for "Category 'C' posts against the direct recruitment quota," under the DoPT's office letter dated January 16, 2023.

Who can apply?

Dependent family members of a government worker who:
(a) Deaths while in Service are eligible for compassionate appointments (including death by suicide)
(b) Retired for medical reasons prior to the age of 55 (or 57 for formerly employed Group "D" Government employees) in accordance with Rule 2 of the CCS (Medical Examination) Rules 1957 or the comparable provision in the Central Civil Service Regulations;
(c) Retired for medical reasons prior to reaching the age of 55 (or 57 for former Group "D" Government employees) in accordance with Rule 38 of the CCS(Pension) Rules, 1972 or the corresponding provision in the Central Civil Service Regulations.

Who can apply?
The measure can also extend to the family members of an Armed Forces employee who:
(a) Dies during service;
(b) Is killed in action; or
(c) Is medically boarded out and is unfit for civil employment.
- Government employees must have been hired on a "regular basis," not a daily wage, a casual, an apprentice, an ad-hoc, a contract, or a foundation for reemployment.
- In the case of an unmarried government employee or a member of the armed forces who was completely dependent on the employee at the time of their death in service or retirement due to medical reasons, the deceased's dependents may only be first-degree relatives, such as their spouse, son or daughter (including adopted ones), brother or sister, or parent.

Who can make such appointments?
- Either the Joint Secretary in charge of administration in the Ministry or Department concerned or the "Head of the Department under the Supplementary Rule 2(10) in the case of attached and subordinate offices." They can also be made by the Secretary of a Ministry or Department in special cases.

Court's verdict:
The existence of a policy issued by the State Government is a necessary requirement for making appointments on a compassionate basis. Moreover, the Court said that even if the policy existed, it would be of no use to consider the applications several years after they were filed.

7. Tussle between the State government and the Governor of Punjab

Syllabus: State legislatures—structure, functioning, conduct of business, powers & privileges and issues arising out of these.

Mains: Issues related to the office of the Governor and the tussle between the Governor and State Government

Context: The recent tussle between the State government and the Governor of Punjab over the budget session has reached the Supreme Court.

Background
- The tussle between the Governor and the Chief Minister of the state started with some information sought by the Governor who then delayed convening the state assembly for the budget session.
- The Governor in his letter to the Chief Minister had said that he was in no hurry to summon the budget session and reminded the Chief Minister about his "derogatory" response to a letter from Raj Bhavan.
- The Punjab government then approached the Supreme Court through a writ petition under Article 32 of the Constitution.
- The Punjab government has sought the Supreme Court to interfere and direct the principal secretary of the Punjab Governor to summon the budget session and has also appealed to the apex court to issue a declaration that the Governor was bound to act on the aid and advice of the council of ministers in this regard.
- **Article 174** of the Constitution has empowered the Governor to summon the House from time to time to meet at such time and place as he thinks fit.
  - However, a Constitution Bench in its judgement in the **Nabam Rebia case (2016)**, ruled that the Governor can summon, prorogue and dissolve the House only on the aid and advice of the Council of Ministers.

Supreme Court's observations
- The Supreme Court while referring to the tussle between the Governor and Chief Minister has said that this issue indicates a need for constitutional discourse.
- The Chief Justice of India who led the Bench noted that the failure of a constitutional authority to fulfil its duty would not be a justification for another to not fulfil his distinct duty under the Constitution.

- The Chief Justice further added that "Political differences in a democratic polity are acceptable and have to be worked out with sobriety. Unless these principles are borne in mind, the effective implementation of constitutional values is liable to be placed in jeopardy".
- The court also held that as per **Article 167** of the Constitution, it is the duty of the Chief Minister to "furnish such information relating to the administration of the affairs of the State and proposals for legislation as the Governor may call for".

Way forward
- Both Governors and the Chief Ministers (state government) must be mindful of the constitutional boundaries.
  - While the administration of the State is entrusted to a democratically elected state government and a Chief Minister, the Governor as a constitutional authority is entrusted with the duty of being a guide and counsel to the state government.
- The Governors of the states must focus more on guiding, cautioning and advising the state government instead of playing the role of commentator, critic and even opposition at times as this does not augur well for constitutional governance.

Nut graf: As instances of tussling between Governors and Chief Ministers are becoming more frequent in various States in recent times, it has become important for the Governors and Chief Ministers to respect their constitutional boundaries and display mature statesmanship in handling their differences.

8. The disqualification conundrum

Syllabus: Parliament —structure, functioning, conduct of business, powers & privileges and issues arising out of these.

Prelims: Provisions for disqualification of members of legislature

Mains: Various issues associated with the provisions for disqualification of members of legislature.

Context: The disqualification of Rahul Gandhi from his membership of the Lok Sabha has brought back discussions as to whether the earlier protection enjoyed by serving legislators from immediate disqualification must be restored.

Rahul Gandhi Defamation Case Background
- Rahul Gandhi had made a remark about the "Modi" surname during the 2019 Lok Sabha elections saying "Why do all thieves, be it Nirav Modi, Lalit Modi or Narendra Modi, have Modi in their names?"
- He was held guilty and sentenced to two years in jail by a Surat court in a 2019 defamation case, over his remarks.
- The conviction triggered the disqualification process for him as a lawmaker.

What was the verdict?
- Chief Judicial Magistrate HH Verma convicted him and sentenced him to two years in prison.
- The judges used Section 500 of the Indian Penal Code (IPC) which prescribes for defamation a simple imprisonment for a "term which may extend to two years, or with fine, or with both."
- The court also allowed his bail on a surety of Rs 15,000 and suspended the sentence for 30 days for further appeal.

Why was Rahul Gandhi disqualified?

There are three disqualification criteria:
- Using Articles 102(1) and 191(1) – The grounds here are holding an office of profit, being of unsound mind or insolvent or not having valid citizenship.
- Using the Tenth Schedule of the Constitution – disqualification of the members on grounds of defection.
- The Representation of The People Act (RPA), 1951 provides for disqualification for conviction in criminal cases.

What does the Representation of The People Act say?
- Section 8(3) of the RPA states: "A person convicted of any offense and sentenced to imprisonment for not less than two years shall be disqualified from the date of such conviction and shall continue to be disqualified for a further period of six years since his release."
- This section has been applied to the current case based on other factors.

How does the disqualification operate?
- The disqualification can be reversed if a higher court allows a stay on the conviction or decides the appeal in favour of the lawmaker.
- In a 2018 case in 'Lok Prahari v Union of India', the Supreme Court ruled that the disqualification "will not operate from the date of the stay of conviction by the appellate court."

Past protection
- **Section 8(4)** of the Representation of the People Act (RPA), 1951, allowed convicted MPs, MLAs and MLCs to continue in their posts, provided they appealed against their conviction/sentence in higher courts within three months of the date of judgment by the trial court.
- However, in 2013, the Supreme Court through its landmark judgment in the **Lily Thomas v/s Union of India** case, struck down Section 8(4) of the RPA, 1951.
- The Section was declared unconstitutional by the apex court on the ground that the Parliament did not have the required legislative competence to enact such legislation.
- According to the Supreme Court, **Article 102** of the Constitution had mandated Parliament to enact a common law prescribing terms and conditions to disqualify an individual for both "being chosen as" as well as "being a member" of Parliament (**Article 191** is the corresponding article for State Assembly and Legislative Council).
  - However, as per **Sub-section (4) of Section 8 of RPA** the mere act of filing an appeal would operate as a stay on disqualification until its disposal.
- The apex court had ruled that by creating one provision for the immediate disqualification of ordinary citizens and another one for deferred disqualification of legislators, Parliament had violated the constitutional mandate.

Way forward
- While the political score setting is always at play in party politics and representative democracies, the underlying currents need to be understood.
- The lawmakers at times do sway and get carried away during election heats and make derogatory remarks against others which should be avoided as far as possible.

Nut graf: The disqualification of Rahul Gandhi from Parliament has raised various legal questions about the loss of membership due to conviction of a crime which is followed by a prison term of two or more years and has also set off a debate on whether a criminal conviction should entail an immediate loss of a serving legislator's membership.

9. The anti-defection law is facing convulsions

Syllabus: GS-2, Parliament and State Legislatures.

Mains: Anti-defection law and associated concerns.

Prelims: Tenth Schedule of Indian Constitution.

Details:
- In order to stop a large number of political defections seen in the 1960s, Parliament after long years of legislative meanderings introduced the anti-defection law (Tenth Schedule of Constitution) in 1985.
- The Supreme Court in its judgment in the Kihoto Hollohan case characterized defection as a "political evil" and upheld the right of Parliament to curb it through a legislative mechanism.
- However, it is argued that the anti-defection law is facing convulsions in Indian legislatures.

Anti Defection Law
- The Tenth Schedule of the Constitution, popularly referred to as the 'Anti-Defection Law' was inserted by the 52nd Amendment (1985) to the Constitution.
- 'Defection' has been defined as, "to abandon a position or association, often to join an opposing group".
- **The law contemplates two kinds of defection:**
  - A member voluntarily giving up membership of the party on whose symbol he got elected
  - Member violating a whip issued by the party to vote in a particular way or to abstain from voting.
- Anti-defection law was introduced to ensure that a party member does not violate the mandate of the party and in case he/she does so, he/she will lose membership of the House. It was meant to curtail the menace of floor-crossing and toppling of elected regimes by engineering defections. Hence it sought for stability of governments.
- The decision on disqualification questions on the ground of defection is referred to the Speaker or the Chairman of the House, and his/her decision is final.
- All proceedings in relation to disqualification under this Schedule are considered to be proceedings in Parliament or the Legislature of a state as is the case.

Grounds for disqualification:
- If an elected member gives up his membership of a political party voluntarily.
- If he votes or abstains from voting in the House, contrary to any direction issued by his political party.
- If any member who is independently elected joins any party.
- If any nominated member joins any political party after the end of 6 months.

Objectives of the Anti-Defection Law:
- The enactment of anti-defection law has a two-point objective:
  - To curb defection by disqualifying the defecting member.
  - To protect political stability.
- It should be noted that Indian democracy is based on a party system where stable parties are a sine qua non of a stable democracy.
- Running a government demands unity of purpose, ideological clarity, and cohesiveness. These are objectives that can come only through organized and ideologically-driven political parties, which were clearly addressed through two main provisions:
  - **SPLIT:** Though ceased to exist now, there was an exemption from disqualification in case of splits in the erstwhile act. It is suggested that the protection of one-third of legislators (who demanded a split from the original party) was a necessary step.
  - **MERGER:** The act protects defecting members from disqualification if there is a merger of the original political party with another party and two-thirds of the legislators agree to it.

Maharashtra Case Study:
- It is argued by the author that many constitutional questions have risen in Maharashtra.
- The first question is about the whip. In Maharashtra, the breakaway group of the Members of the Legislative Assembly (MLAs) chose its own whip (that also issued whips to the MLAs of the original party).
  - But according to explanation (a) to paragraph 2(1)(a), an elected member of a House shall be deemed to belong to the political party by which he was set up as a candidate for election.
  - This implies that the original party should have legally issued the whip.
- It is also argued that SC allowed the Election Commission of India to go ahead and decide the petition under paragraph 15 (symbols order).
  - It should be noted that subordinate legislation (paragraph 15) was given primacy over a constitutional law (Tenth Schedule).
- Moreover, the author suggests that ECI gave a flawed order and made the operation of the Tenth schedule more complicated and irrelevant.

Conclusion:
- It should be noted that anti-defection law was enacted to punish defectors and not to facilitate defection.
- Under the Tenth Schedule, only the original party (and not the legislators) have the power to split or bring about a merger of their party with another. Legislators only have the choice to agree or not agree with the decision.
- A whip can be legally issued only by the original political party which set them up as candidates in the election.

Nut Graf: The anti-defection law was enacted to prevent reckless and uncontrolled defections. However, there are several concerns associated with the way it is practised. The Supreme Court should effectively address these concerns and maintain the essence of the act, which is political stability.

10. Adultery as misconduct and Judicial Musings

Syllabus: Fundamental Rights

Mains: Decriminalisation of Adultery

Context: The Supreme Court clarification on its 2018 judgement striking down Section 497 IPC.

Introduction:
- The Supreme Court on January 31, 2023 clarified that its 2018 judgement which decriminalised adultery does not prevent court martial proceedings initiated against members of the armed forces for adulterous conduct.
- A five-judge constitution bench headed by Justice K.M. Joseph passed the order in an application filed by the Union government.
- The Ministry of Defence had moved the apex court for an exemption to armed forces from 2018 judgement striking down adultery as a crime, saying it may hinder action against officers who indulge in such actions and can cause 'instability' within the services.

Background:
- The Supreme Court of India decriminalised adultery in Joseph Shine versus Union of India, 2018 case.
- It held Section 497 of the Indian Penal Code (on adultery) along with Section 198 of the Criminal Procedure Code to be unconstitutional on the premise that these provisions were violative of Articles 14, 15 and 21 of the Constitution of India.
- A public interest litigation under Article 32 of the Constitution challenged the constitutionality of the offence of adultery under Section 497 of the IPC read with Section 198(2) of the Criminal Procedure Code, 1973.
- **Section 497 IPC criminalised adultery:** it imposed culpability on a man who engages in sexual intercourse with another man's wife.
  - Adultery was punishable with a maximum imprisonment of five years. Women though were exempted from prosecution.
  - Section 497 IPC was inapplicable when a married man engaged in sexual intercourse with an unmarried woman.
- Section 198(2) CrPC specified that only the husband may file a complaint for the offence of adultery.

Application to Armed Forces:
- Aggrieved by the order concerning its implementation in the armed forces, government sought clarification from the Court saying that any promiscuous or adulterous acts should be allowed to be governed by the relevant sections of the Army Act, the Air Force Act and the Navy Act being special legislations by the virtue of Article 33 of the Constitution.
- Under Article 33, Parliament has powers to restrict or abrogate the fundamental rights of certain categories of persons, including members of the armed forces to ensure the proper discharge of their duties and the maintenance of discipline among them.
- The Armed Forces Tribunal recently quashed certain disciplinary proceedings initiated against personnel for inappropriate sexual conduct by citing the Joseph Shine judgement.
- The centre had sought clarification that in a case where the officer is charged with an act of adultery, nothing can stand in the way of the authorities taking action under section 69 of the Army Act, 1950 which punishes members of the armed forces for committing civil offences.
- The court thus clarified that the judgement in Joseph Shine was not concerned with the laws of the Armed Forces and therefore did not stand in their way.

Issues with Article 33:
- Article 33 can potentially violate the fundamental rights of the members of the armed forces, paramilitary forces, and intelligence agencies. If these rights are curtailed in the name of national security, it can lead to abuse of power and infringement of civil liberties.
- The provision of Article 33 gives broad discretion to the government to limit fundamental rights of members of these forces. However, there is little to no oversight to ensure that these powers are not misused or abused.
- Article 33 allows for differential treatment of members of these forces, which can be seen as discriminatory. It can lead to a situation where members of these forces have fewer rights compared to ordinary citizens, which can be a violation of the principle of equality.
- There is no clarity on the scope of application of Article 33. This lack of clarity can lead to confusion and uncertainty about when and how the provision can be applied.

Nut Graf: *The Supreme Court of India recently clarified that its 2018 judgement on decriminalising adultery did not impact members of the Armed Forces in response to a miscellaneous application filed by the Union government in 2020.*

11. Are foreign law firms now allowed in India?

Syllabus: Functioning of the Judiciary

Prelims: About Bar Council of India (BCI)

Mains: Rules for Registration and Regulation of Foreign Lawyers and Foreign Law Firms in India, 2022 and its significance and implications

Context
The Bar Council of India (BCI) has framed Rules to allow foreign law firms and foreign lawyers to open offices in India.

Bar Council of India (BCI)
- The Bar Council of India (BCI) is a statutory body set by the Parliament under the provisions of the Advocates Act, 1961.
- BCI is entrusted with the task of regulating and representing the Indian bar.
- BCI performs the regulatory function by prescribing standards of professional conduct and exercising disciplinary jurisdiction over the bar.
- BCI also plays an important role in setting the standards for legal education and recognition of universities whose degrees in law will serve as a qualification for enrolment as an advocate.

Background

- In March 2018, the Supreme Court allowed foreign law firms and foreign lawyers to visit India for a temporary period for giving legal advice to their clients.
- The apex court had ruled that there was no restriction on foreign law firms or lawyers to visit India and provide legal advice to their clients and had asked the BCI to formulate suitable rules in this regard.
- Five years after the Supreme Court's ruling, BCI has now formulated the "Rules for Registration and Regulation of Foreign Lawyers and Foreign Law Firms in India, 2022".

Rules for Registration and Regulation of Foreign Lawyers and Foreign Law Firms in India, 2022

- As per the provisions of the Advocates Act, advocates registered with the BCI alone are entitled to practise law in India and all others, such as a litigant, can only appear with the permission of the court or authority before whom the proceedings are pending.
- The notification of the new Rules now facilitates foreign lawyers and law firms to practise foreign law, international law, international arbitration, joint ventures, mergers and acquisitions, intellectual property matters, etc. on a reciprocal basis in India.
  - However, foreign lawyers and firms cannot practise Indian law.
- Further, foreign lawyers and law firms will be allowed to register with BCI to practise in India only if they are entitled to practise law in their home countries.
- Such foreign lawyers and firms are only authorised to engage in non-litigation aspects of the legal field and are hence not permitted to appear before any courts, tribunals, or other quasi-judicial authorities.
- With the introduction of new Rules, Indian lawyers working with foreign law firms will now be restricted to engage only in "non-litigious practice."

Implications of the new Rules

- As per the BCI, the move will help to address the concerns regarding the flow of Foreign Direct Investment (FDI) into the country.
- The move is also expected to help make India a hub for international commercial arbitration.
- Further, the legal fraternity in the country is not likely to suffer any disadvantage with the law practice being opened up to foreign lawyers in a restricted and regulated manner.
- The principle of reciprocity in the Rules makes sure that the Rules would benefit both Indian as well as foreign lawyers mutually.
- Experts also believe that allowing foreign law firms to set up their offices in India would be huge for corporate legal practice in the country as competition leads to improvement in legal services.
- The move would allow foreign law firms to hire Indian lawyers which can expand the legal job market and will also bring in various technological advancements such as artificial intelligence (AI) into legal service delivery.
- However, critics believe that the move will result in lawyers deserting the real need in India i.e. defending and fighting for rights and the "corporatisation" of law practice in the country.

Nut graf: Although critics have expressed concerns about the increased competition to Indian lawyers and corporatisation of law practice in India, the new Rules that allow foreign lawyers and law firms to practise in India could potentially change the landscape of the legal fraternity in India and ensure that it is at par with international standards.

12. Hindu Succession Act

Syllabus: Constitution of India — features, amendments and significant provisions

Prelims: About Hindu Succession Act

Context: A Member of Parliament has urged the Central government to include women from the Scheduled Tribes (ST) communities in Hindu Succession Act.

Hindu Succession Act

- The Mitakshara school of Hindu law was codified as the Hindu Succession Act, 1956.
- The Act governs the succession and inheritance of property among Hindus.
- According to Section 2 of the Act, the provisions of the Act apply to anyone who is a Hindu by religion which includes people belonging to the Virashaiva, a Lingayat community, or a follower of the Brahmo, Prarthana, or Arya Samaj.
  - As per Section 2(2) of the Act, the provisions of the Act shall not apply to the members of any Scheduled Tribes as defined under Article 366 of the Constitution unless the Union Government makes a notification in the Official Gazette to direct otherwise.
- The Hindu Succession Act of 1956 however only recognised male members as legal heirs.
- Through the Hindu Succession (Amendment) Act, 2005, women were extended coparcenary rights.
  - The law applied to ancestral property and intestate succession where such successions took place according to the law and not through a will.

13. What does Muslim personal law say on inheritance?

Syllabus: Constitution of India — features, amendments and significant provisions

Prelims: Special Marriage Act and Muslim personal law

Mains: The provisions of inheritance in Muslim personal law

Context

- A Muslim couple from Kerala got their marriage registered under the Special Marriage Act after almost 30 years of having solemnised their marriage as per Islamic principles.
- The couple claims that they have got their marriage registered under the Special Marriage Act, so that their daughters could inherit their property under the Indian Succession Act, 1925.

Special Marriage Act, 1954
- In India, marriages can be registered under various laws such as the Hindu Marriage Act of 1955, the Muslim Marriage Act of 1954, or the Special Marriage Act of 1954.
  - The Special Marriage Act was enacted in 1954 to provide a special form of marriage in certain cases, for the registration of such and certain other marriages and divorces.
- The Special Marriage Act, 1954 has provisions for civil marriage for citizens of India and Indian nationals in foreign countries, irrespective of religion or faith followed by either party.
  - Through the Special Marriage Act, people from different religious backgrounds can come together in the bond of marriage as the Act provides the procedure for both solemnisation and registration of marriage, where either the husband or wife or both are not Hindus, Buddhists, Jains, or Sikhs.
  - As per the Act, the marrying couple must serve a notice with the relevant documents to the Marriage Officer 30 days before the date of the marriage.
    - Any person can raise objections to this marriage, before the expiration of 30 days on the ground that the marriage would contravene one or more of the conditions laid down in the Act.
- **Conditions laid down in the Act:**
  - Both individuals intending to marry must not have a living spouse.
  - Both individuals must not be of unsound mind or suffering from mental disorders to such an extent as to be unfit for marriage and the procreation of children.
  - The male should have attained the age of 21 years and the female the age of 18 years.
  - Both the individuals are not within the degrees of prohibited relationship, provided that a custom governing at least one of the parties permits a marriage between the individuals.

Muslim personal law on inheritance
- According to the Koran, the principles of inheritance are extended both for direct as well as indirect heirs.
  - Further, Verse 7 states that "For men, there is a share in what their parents and close relatives leave, and for women, there is a share in what their parents and close relatives leave — whether it is little or much. These are obligatory shares."
- As per the agreed rules on the division of property, a daughter usually gets 50% of the share of the son.
  - i.e. if a son gets a plot of 100 metres from the father, the daughter inherits a plot of 50 metres.
- As per Islam, a man is responsible to bear the family expenses which include shelter, food, clothing, and medicine along with children's education and taking care of parents.
  - If the husband dies before his wife, the wife would inherit a one-eighth share (12.5%) of the husband's property, if the couple has children.
  - If the couple doesn't have any children, the wife gets one-fourth (25%).
  - Paternal uncles, aunts, etc. also get a share if they are also blood relatives.
- Further, each parent inherits one-sixth (16.66%) if the son passes away before them, and leaves children behind.
- The problem in the case of the Kerala couple is that, since the couple has only daughters, they can inherit only two-thirds (66%) of the father's property.
  - As per their holy book, "If you leave only two or more females, their share is two-thirds of the estate." The rest of the shares are for the mother and other paternal blood relatives.

Various other options available
- **Vasiyat (will):** Using a vasiyat or a will, an individual can declare that upon his death, a particular heir shall inherit some percentage of the property.
  - This option is used usually when one of the children is not financially sound, or needs special support, or has served parents more compared to other children.
- **Virasat (inheritance):** Under virasat, there is the option of hiba, which facilitates the unrestricted transfer of wealth/property to a person during the lifetime of the donor.
  - This is similar to a "gift deed" and unlike the inheritance of property clauses for relatives which comes into the picture only after the death of a person, a gift deed is made during one's lifetime.

Nut graf: A decision by a Muslim couple in Kerala to get their marriage registered under the Special Marriage Act in order to secure the future of their children has put the spotlight on Islamic principles of inheritance.

ECONOMY

1. MIIRA Initiative

Syllabus: Marketing of agricultural produce

Prelims: About Millets and MIIRA Initiative

Mains: Millet production in India and the significance of MIIRA Initiative

Context: MIIRA stands for 'Millet International Initiative for Research and Awareness'.
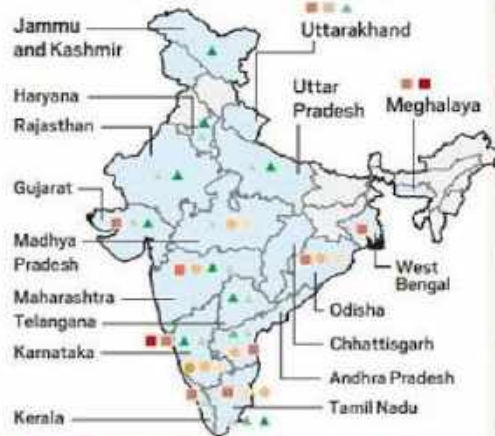- India has introduced a draft to launch a global initiative to encourage the consumption and production of millet.
- The draft of the proposed initiative was placed during the first Agriculture Deputies Meeting under the Agriculture Working Group (AWG) of G20 at Indore in February.

About Millets:
- Millets are a group of cereal grains belonging to the Poaceae family, sometimes referred to as the grass family.
- Millets were among the earliest plants to be domesticated; they have been a traditional food source for hundreds of millions of people in Sub-Saharan Africa and Asia for more than 7,000 years, and they are today grown all over the world.
- The most popular millet variety is pearl millet, an important crop in Africa and India.
- Other significant crop species include finger millet, proso millet, and foxtail millet.
- They are considered ancient grains and are consumed as food for humans, animals, and birds. India is the world's leading producer of millets

INDIA'S MILLETS MAP

Jowar is grown mainly in Maharashtra, Karnataka, Rajasthan, and Tamil Nadu; bajra mainly in Rajasthan, UP, Haryana, Gujarat

Jammu and Kashmir
Haryana
Rajasthan
Gujarat
Madhya Pradesh
Maharashtra
Telangana
Karnataka
Kerala

Uttarakhand
Uttar Pradesh
Meghalaya
West Bengal
Odisha
Chhattisgarh
Andhra Pradesh
Tamil Nadu

Foxtail Millet
Finger Millet
Barnyard Millet
Browntop Millet
Little Millet
Kodo Millet
Pearl Millet
Proso Millet
Sorghum

JOWAR
4.24 mn ha area
4.78 mn tonnes production

BAJRA
7.75 mn ha area
10.86 mn tonnes production
(in 2020-21)

MILLETS GROWN IN
130 countries, traditional food for more than 500 million people

'NUTRI-CEREALS'
Govt has declared millets 'powerhouses of nutrition'.

About MIIRA Initiative:
- **2023:** UN has declared it as the International Year of Millets.
- This proposal was moved by India and supported by 72 countries.
- The International Year will see several events and activities such as conferences, issuing of stamps and coins etc. to raise awareness about millets, improve their production and quality, and attract investments.
- The Centre also plans to make India a global hub for millets.
- MIIRA Initiative is in-line with this agenda.
- According to Agriculture Ministry sources, MIIRA will be aimed at coordinating millet research programmes at the international level.
- MIIRA will aim to connect millet research organisations across the world while also supporting research on these crops.
- This is significant as issues like food security and nutrition are among the key priority areas in the agriculture sector during India's G20 Presidency.
- Besides setting up a web platform to connect researchers and holding international research conferences, the plan is also to raise awareness for promoting the consumption of millet.

Who will fund the MIIRA initiative?
- For MIIRA to take off, India will contribute the "seed money", while each G20 member will later have to contribute to its budget in the form of a membership fee.
- The MIIRA secretariat will be in Delhi and with India being a major producer of millets, this will ensure a flow of investment from the country's industry and research bodies.

2. Pump & Dump Scam

Syllabus: Indian Economy and issues relating to planning and mobilization of resources

Prelims: About Pump & Dumb Scam

Mains: Possible measures to combat Pump & Dumb Scams

Context: Recently the Securities and Exchange Board of India (SEBI) fined Bollywood actor Arshad Warsi, his wife Maria Goretti, and 29 others for running a pump and dump operation on YouTube.
- They have been found to be involved in a "pump and dump" scam leading to unlawful gains.
- According to reports, Warsi profited Rs 29.43 lakh and his wife profited Rs 37.56 lakh from this operation between April 27 and September 30, 2022.
- The violators have further been asked to open an escrow account to deposit the impounded amount within 15 days.

What is a "pump-and-dump" scam?
- Pump and dump is a deceptive scheme in which a person attempts to raise the price of a stock by using false information.
- It is an illegal act by an investor or group of investors wherein they promote their stocks and sell them once the stock price rises as a result of their endorsement.
- They use social media platforms or anonymized messaging apps like Telegram and Discord as favoured platforms.
- The promoters coordinate rumours, misinformation, or create hype in order to artificially increase interest in the security, leading to a surge in its price.
- The claims are false, misleading, exaggerated, and widely disseminated for personal gain.
- With the advent of the internet, this illegal practice has become even more prevalent.

How is the scheme used?

The pump-and-dump scheme consists of three steps:
- First, a person purchases a substantial stake in any stock.
- Following that, he makes exaggerated claims about the company in order to persuade people to "pump" their money into it and buy more.
- Finally, as the stock price rises, he "dumps" it and pockets the profits. However, as a large amount of stock is dumped, its price falls, and other investors lose money.

How are fake claims made?
- Fake information is typically spread through social media platforms or emails in the age of the internet. Unsuspecting small investors are also enticed to invest in small and mid-cap stocks through banner advertisements and social media messages.
- In this case, the false information was spread via YouTube videos on two different channels: The Advisor and Moneywise.
- According to Sebi guidelines, anyone who disseminates this information is referred to as an MMD or a misleading message disseminator.

How does Sebi identify pump-and-dump scams?
- To detect such scams, Sebi employs Data Warehousing and Business Intelligence Systems. It provides "pattern recognition algorithms" for trading monitoring. It then displays information on who may be violating securities laws.
- Sebi then investigates the stock and contacts the company for clarification. If it does not receive a satisfactory response, the regulatory body takes action against the MMD.

3. Inland Waterways

Syllabus: Infrastructure

Prelims: About Inland Waterways and Inland Waterways Authority of India (IWAI)

Mains: Significance of Inland Waterways in transportation and logistics sectors

Context: The Inland Waterways Authority of India (IWAI) is planning to run a fixed schedule sailing between NW1 and NW2.

Ganga Brahmaputra Cargo:
- **Importance:** It is a significant event since it has advanced inland water transportation along two of India's biggest river systems.
  - The inland water transport infrastructure, which the landlocked northeast primarily relied on prior to India's independence in 1947, has been given new life.
- **Pilot Project:** FCI's initial project involved transporting cargo from Patna to Pandu via Bangladesh.
  - Regular service between NW1 and NW2 is anticipated as a result, "heralding a new age of inland water transport" for the northeast.
- **Passage:** It travelled 2,350 kilometres through the Indian cities of Bhagalpur, Manihari, Sahibganj, Farakka, Tribeni, Kolkata, Haldia, and Hemnagar as well as the Bangladeshi cities of Khulna, Narayanganj, Sirajganj, and Chilmari before returning to India via the National Waterway-2 (NW2, river Brahmaputra), passing through Dhubri and Jogighopa.
- **Project duration:** The north-eastern region is planned to have smooth navigation after the seven-year dredging project on these two segments until 2026.
- **Benefits:** The beginning of cargo movement along the Indo-Bangladesh Protocol (IBP) route will give the business community a practical, affordable, and environmentally friendly alternative. The northeast has relied on efficient cargo transportation.
  - It will also aid in the expansion of the tourism sector.
  - Once the IBP routes are open for navigation, the distance between NW1 and NW2 will be cut by almost 1,000 kilometres.

How did it happen between India and Bangladesh?
- **Protocol:** After the Protocol on Inland Water Transit and Commerce between the two nations was signed, the return of cargo transport service through Bangladesh's waterways has been costly.
- **Investment:** Sirajganj-Daikhowa and Ashuganj-Zakiganj in Bangladesh are two stretches of the IBP (Indo-Bangladesh Protocol) channels that India has committed 80% of 305.84 crore to make more navigable.
  - In order to increase the capacity of NW1 for the sustainable transit of vessels weighing up to 2,000 tonnes, the government has launched the Jal Marg Vikas project.

Inland Waterways Authority of India (IWAI):
- It is a self-governing organisation established on October 27, 1986, in accordance with the Inland Waterways Authority of India Act, 1985.
- Waterways that have been designated as NWs under the National Waterways Act of 2016 are developed, maintained, and regulated primarily by IWAI.
- IWAI's headquarters are in Noida, Uttar Pradesh.
- IWAI carries out the policy directives and instructions issued by IWT Wing.

Significance:
- Shipping goods over waterways is considered to be both economical and environmentally benign.
- In India, inland water transportation (IWT) has the potential to relieve some of the strain on the country's overtaxed railways and jam-packed roads.
- Along with moving cargo, the IWT sector also serves a practical purpose in related industries like transportation of vehicles via roll-on-roll-off (Ro-Ro) mode of cross-ferry, and tourism.

Way forward:
- All the states of Northeast India will experience new growth thanks to this historic achievement.
- The landlocked access that has long prevented development in the area will be bypassed by the waterways.
- The region's businesses and residents can travel in an affordable, quick, and convenient manner thanks to the waterways, which also remove this geographical barrier to progress in the area.

4. Hindenburg Report and Short Selling

Syllabus: Indian Economy and issues relating to planning and mobilization of resources

**Prelims:** About Hindenburg Report and Short selling in trade market

Mains: Concerns associated with short selling

Context: The net worth of one of the richest persons in India fell after a report was released by an institute named Hindenburg.
- Adani Enterprises shares and other Adani group stocks have nosedived after the New York-based investor research firm Hindenburg Research accused the conglomerate of stock manipulation and accounting fraud scheme over decades.

What is Hindenburg?
- Hindenburg is an institute specialising in "forensic financial research". In other words, it looks for corruption or fraud in the business world, such as accounting irregularities and bad actors in management.
- Hindenburg, a US-based investment research firm, specialises in activist short-selling.
- Hindenburg Research was founded in 2017 by Nate Anderson, a chartered financial analyst and a chartered alternative investment analyst.

What is short selling?
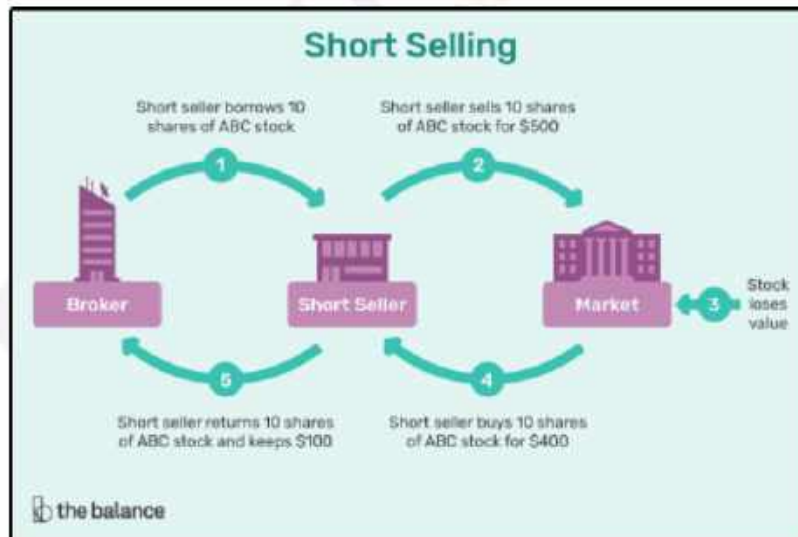
Source: The balance money

- The Securities and Exchange Board of India (Sebi) defines short selling as the sale of a security or share that the seller does not own.
- **Long position** - **"Buy low, sell high"** is the traditional investment strategy in which one buys a stock at a particular price and then sells it when the price is higher, thereby booking a profit. It is called a long position and it is done in the belief that the price of the stock or security will grow in some time.
- **Short selling or shorting** - **It is a trading strategy based on the expectation that the price of the stock will fall.** It is also based on the "buy low, sell high" strategy but the sequence of transactions is reversed in short selling. In this first we sell high and later buy low.
- In short selling, the trader generally **does not own the securities he sells**, but he borrows them.
- In the stock market, traders usually short stocks by selling shares they have borrowed from others through brokerages. When the price of the shares falls to the expected levels, the trader would purchase the shares at the lower price and return them to the owner, booking a profit in the process.
- But if the **price of the shares increase instead of falling, the trader will be forced to buy shares at a higher price to return to the owner resulting in loss.**

What is Hidenberg's allegation against the Adani group?
- Hindenburg Research has alleged that the Adani Group was "engaged in a stock manipulation and accounting fraud". The Adani Group has interests in varied sectors such as ports and logistics, power generation, agribusiness, real estate, defence, solar energy, financial services, natural resources and media.
- The research firm alleges that the Adani group has engaged in □17.8 trillion (US$ 218 billion) brazen stock manipulation and accounting fraud schemes over the course of decades.
- The Hindenburg's report says that the Adani family controlled offshore shell entities in tax havens spanning the Caribbean and Mauritius to the United Arab Emirates, which it claims were used to facilitate corruption, money laundering and taxpayer theft, while syphoning off money from the group's listed companies.

What is the looming concern with the report:
- Adani group has taken a lot of debt from Indian banks. So there is a looming threat around whether the business tycoon would be able to return the debt on time or not.
- There is risk involved in banks lending huge sums of money against shares since when a company is unable to fulfil its debt obligations its share price also often drops.
- LIC has also invested its money in the Adani group business. The investment fell sharply due to the report and there is a fear among the investors regarding the loss of money.
- This would potentially lead to a rise of non-performing assets of the bank in the coming time which would adversely affect its lending capacity.

5. George Soros – Possibility of shorting Indian rupee

Syllabus: Indian Economy and issues relating to planning and mobilization of resources

Prelims: George Soros

Mains: Indian rupee - the limitation and the protection

Context: George Soros, the liberal billionaire, has commented on the recent report on Adani Group by Hindenburg Research and criticised Prime Minister Narendra Modi for not addressing the issue.

Indian rupee: The limitation and the protection
- Unlike the baht (thailand currency) and ringgit(currency of Malaysia), which were forced to unpeg from the dollar (1997), the **Indian rupee is not a fully convertible currency.**
- This means that the rupee can be exchanged until a certain limit; however, beyond that, approval is required for larger sums.
- It has long been argued that the full convertibility of the rupee would improve liquidity in financial markets, increase employment and business opportunities, and provide easy access to capital.
- However, drawbacks include greater volatility, a heavier foreign debt burden, and an impact on trade balance and exports.
- India remains a developing economy with inherent weaknesses such as a current account deficit.
- This puts pressure on the Indian rupee due to lower exports compared to imports, and a fully convertible currency would only exacerbate the pressure.

Who is George Soros?
- George Soros is a billionaire Hungarian-American investor, hedge-fund manager, short-seller and philanthropist.
- He opened his first hedge fund, Double Eagle, in 1969. In 1973, he opened Soros Fund Management, and went on to become one of the most successful investors in the history of the United States.
- He is known as "The Man Who Broke the Bank of England" because of his short sale of $10 billion worth of pounds sterling, which made him a profit of $1 billion during the 1992 Black Wednesday UK currency crisis.

6. SEBI bans people for "Front Running"

Syllabus: Indian Economy and issues relating to planning and mobilization of resources

Prelims: About Front Running

Context: The Securities and Exchange Board of India (SEBI) took action against the former chief dealer of Axis Mutual Fund (MF) and 20 other individuals, barring them from accessing the securities markets.

What is Front Running?

Front Running

1 Gets an order
To buy one million shares of Syndicate company
Broker   Client

2 Places order for same stock for his own account

3 Then places the client's order

4 Due to bulk orders, the broker makes a huge profit

WallStreetMojo

- Front Running is a prohibited trading technique where an individual purchases or sells securities before a significant order is executed to gain an advantage from the resulting price shift.
- This involves the use of undisclosed information by a broker or analyst to obtain securities or engage in futures or options contracts for their own advantage, knowing that when the details are released publicly, the security price will change in an expected manner.
- Front running is also called tailgating.
- Front running amounts to a type of insider trading since it involves non-public knowledge of upcoming trades.

Key details:
- SEBI's surveillance system had generated alerts indicating that several suspected entities had executed trades that were in the nature of Front Running the trades of Axis Mutual Fund (MF) between September 1, 2021, and March 31, 2022.
- These alerts also showed that not only were numerous entities suspected of front-running Axis MF trades, but several trading members of stock exchanges were also suspected of being involved in executing these trades.
- Based on these alerts, SEBI conducted an investigation and found that these suspected entities and trading members worked in close coordination with each other to front-run the trades of Axis MF during the period.
- The investigation revealed that **the leakage of information about the impending orders, which Axis MF was placing through diversified trading members**, was possibly done at the end of a big client.
- It was found that soon after the Axis MF orders were placed, **the individuals connected to Viresh Joshi squared off their earlier trade positions taken on the exchange platform.**
- SEBI said in its interim order, that the investigation showed that these individuals were involved in front-running the trades of Axis MF in close coordination with each other.

7. SWAMIH Fund helped unlock Rs 35K Cr Liquidity

Syllabus: Indian Economy and issues relating to planning and mobilization of resources, growth and development

Prelims: About SWAMIH Fund

Mains: Significance of SWAMIH Fund and the path ahead

Context: The CIO of the SWAMIH Fund recently said that the government-backed SWAMIH) Fund has helped unlock liquidity worth over Rs 35,000 crores by helping completion of stalled housing projects across the country.

SWAMIH Fund
- Due to the Funds crunch, many real estate projects across the country were stalled. The Government of India to help complete over 1,500 stalled housing projects comprising 4.58 lakh housing units, announced a Rs 25,000 crore SWAMIH fund, in November 2019.
- SWAMIH Investment Fund is a government-backed fund that was set up as a Category-II AIF (Alternate Investment Fund) debt fund registered with the Securities And Exchange Board of India – SEBI.
- SWAMIH fund was formed to complete the construction of stalled, RERA-registered affordable and mid-income category housing projects which are stuck due to paucity of funds. Read in detail about the Real Estate Act 2016 on the given link.
- The Sponsor of the Fund is the Secretary, Department of Economic Affairs, Ministry of Finance, on behalf of the Government of India.
- The Investment Manager of the Fund is SBICAP Ventures, a wholly-owned subsidiary of SBI Capital Markets, which in turn is a wholly-owned subsidiary of the State Bank of India.
- As many as 72 projects with 44,115 dwelling units have got funding of Rs 6,995 crore under SWAMIH Fund I and 132 preliminary approvals have been given for 132 projects with 72,457 units with an investment of Rs 11,581 crore. The total cost of these stalled projects stands at Rs 54,520 crore.

Aim of SWAMIH Funds
- The aim of SWAMIH Funds is to provide funding to stalled projects that are net-worth positive, including those projects that have been declared as Non-Performing Assets (NPAs) or are pending proceedings before the National Company Law Tribunal – NCLT under the Insolvency and Bankruptcy Code – IBC.
- SWAMIH investment fund will provide last mile funding to the stressed affordable and middle-income housing projects in the country.

SWAMIH Investment Fund – Associated Benefits
- A large amount of capital locked up in these projects will be released once these homes are constructed and completed.
- It will provide employment to construction workers and will provide impetus to the allied industries such as steel and cement.
- It will significantly improve the economic sentiment in the nation and will also improve portfolios of Banks and NBFCs.

Path ahead
- The Government of India's SWAMIH investment fund has worked its way through the difficult period of the COVID-19 pandemic and completed its first residential project.
  - The Rivali Park residential project, located in suburban Mumbai, was the first housing project in India to have received funding under the SWAMIH Fund and is also the first stalled housing project to have been completed.
- The government, in March 2023, declared that it would increase its total investment in the fund by Rs 50 billion, bringing it close to Rs 155.3 billion. The extra commitment will allow the fund to keep reviewing agreements through December 2024.
- The Rs 15,530-crore fund supported by the finance ministry has so far awarded final permission to 130 projects with sanctions of Rs 125 billion.
- For the next three years, it plans to finish approximately 81,000 homes in 130 projects spanning 30 tier 1 and 2 cities, with 20,557 homes already completed.
- A steady revival in construction, sales cycle and liquidity has helped many banks and financial institutions get debt repayments. A multiplier effect of 2.5 to 3 times at play across all ancillary industries.

8. IFFCO-Coromandel To Produce Nano-DAP

Syllabus: Technology missions to improve agriculture in India

Prelims: Facts about Nano-DAP

Mains: Key uses and benefits of Nano-DAP

Context: The Centre has permitted the commercial release of Nano Di-Ammonia Phosphate (DAP) produced by Indian Farmers Fertiliser Cooperative Limited (IFFCO), a cooperative major, by including it in the Fertilizer Control Order.

Key details:
- The introduction of Nano DAP is expected to reduce the annual subsidy on non-urea fertilizers and provide significant benefits to everyone involved in the value chain.
- Nano DAP will be priced at around Rs 600 for a 500-litre bottle, which is half the subsidized price of a 50-kilogram bag of DAP.

Nano DAP Production and Usage:
- IFFCO is producing Nano DAP in collaboration with Coromandel, a private player.
- Nano DAP is the second product from the nano stable after nano urea, which the government is promoting to reduce subsidies and promote efficient use of plant chemicals.
- After urea, DAP is the second most widely used fertilizer in India. Out of the estimated annual consumption of around 10-12.5 million tonnes, local production is around 4-5 million tonnes, while the rest is imported.

Benefits of Nano DAP:
- The use of Nano DAP is expected to reduce input costs for farmers, increase crop yields, and improve the quality of crops, which will lead to higher prices.
- Using nano urea, which has a Nutrient Use Efficiency (NUE) of over 85%, effectively fulfills the nitrogen (N) requirement of the plant.
- According to the government, the use of Nano Urea (liquid) on all crops can decrease the inappropriate use of chemical fertilizers such as urea by 50%.
- And also Nano urea has led to an eight per cent increase in crop yields when applied through foliar application.

Research on Nano DAP:
- The effectiveness of nano urea has been assessed by the government through research trials with 20 Indian Council of Agriculture Research (ICAR) research institutes and State agricultural universities across 43 locations on 13 crops since 2019-20 under different agro-climatic regions.
- Nano urea was used in more than 11,000 field trials conducted on 94 crops in association with Indian Council of Agriculture Research (ICAR)- Krishi Vigyan Kendras (KVKs).

Nut graf: *Including Nano DAP in the Fertilizer Control Order is a significant accomplishment towards achieving the goal of Atmanirbhar Bharat Abhiyan, as it reduces India's dependence on imported DAP and promotes the use of indigenous technology.*

9. India's Per Capita Income doubles since 2014-15

Syllabus: Indian Economy and issues relating to planning and mobilization of resources, growth and development

Prelims: About Per Capita Income and Nominal national income

Mains: Trends in India's per capita income

Context: As per the National Statistical Office (NSO), India's per capita income in nominal terms, as of March 2023, has doubled to Rs. 172000 in comparison to the year 2014-15.

India's Per Capita Income Doubles

- According to the NSO, the per capita income (net national income) at current prices has increased from Rs. 86647 in 2014-15 to Rs. 172000 in 2022-23, which is an approximate increase of 99%.

- In the same period in real terms (at constant prices), annual per capita income increased by approximately 35% to Rs. 98118.
- During the Covid period, both in real and nominal terms, per capita income dipped. However, it picked up momentum in 2021-22 and 2022-23.
- Based on the World Development Indicator database, for the period from 2014 to 2019, in real terms average growth of India's per capita income was 5.6% per annum.
- **Worrying aspects:**
  - **Uneven income distribution:** Most of this increase has been accrued by the top 10% of the population. This also means that the income of the people at the lower end of the income ladder might not be changing that much.
  - The presence of **high levels of inflation and falling** median wages are causes of concern.

Additional Information:
- **Per Capita Income:** It is an indicator of economic development. It is the income earned by each person in the economy. It is calculated by dividing the country's national income by its population.
  - Per capita income is used to determine the average per-person income for an area and to evaluate the standard of living and quality of life of the population.
- Nominal national income (or national income at current prices) is the national income calculated at current prices and if this is used to calculate per capita income, that will be termed as per capita income in nominal terms. It will have an inflationary impact on its values.
- If the national income is calculated at base year price levels, then it will be termed as real national income (or national income at constant prices) and the corresponding per capita income is known as per capita income in real terms. This figure eliminates the effect of inflation.

10. Is India close to Hindu Rate of Growth?

Syllabus: Indian Economy and issues relating to planning and mobilization of resources, growth and development

Prelims: Hindu Rate of Growth

Context: Responding to the recently released GDP data (March 2023), former RBI governor Raghuram Ranjan mentioned that India is 'dangerously close' to the Hindu rate of growth.

What is the Hindu Rate of Growth?

India's quarterly GDP growth rates: Fading away?

Q1 Q2 Q3 FY17 Q4 Q1 Q2 Q3 FY18 Q4 Q1 Q2 Q3 FY19 Q4 Q1 Q2 Q3 FY20
Q4 Q1 Q2 Q3 FY21 Q4 Q1 Q2 Q3 FY22 Q4 Q1 Q2 Q3 FY23

Values shown: 8.7, 9.7, 8.6, 6.3, 6.1, 5.3, 6.7, 8.0, 7.5, 6.5, 6.2, 5.7, 5.1, 4.3, 3.3, 2.9, -23.4, -5.7, 1.6, 3.4, 21.6, 9.1, 5.2, 4.0, 13.2, 6.3, 4.4

Growth rate (year on year, in %)

Chart: Udit Misra · Source: BIU · Created with Datawrapper

Source: Indian Express

● The National Statistical Office (NSO) released the latest national income estimates (in March 2023) and it shows a sequential slowdown in the quarterly growth which is looking worrisome.

● The **Hindu rate of growth** is a term used to describe the lower rate of economic growth observed in the Indian economy during the 1950s to 1980s and it averaged around 4%. This term was coined by an Indian economist, Raj Krishna in 1978.

● **Reasons for the perceived risk:**
  ○ Subdued private sector investment, high-interest rates and slowing global growth are capable enough to retard our economic growth and take us back to the Hindu rate of growth.
  ○ Though the government has said that it is giving the necessary push to infrastructure investment, the manufacturing thrust is yet to pay dividends.

Observations made:

● Mr. Rajan mentioned that the success of the production-linked incentive (PLI) scheme is to be measured in terms of how many jobs were created and at what price per job.

● Based on statistics provided by the government, only 3% of the predicted jobs were created. And even if this scheme meets the government's full expectations, even then it will create only 0.6 crore jobs.

● He also mentioned that most developed economies of the world are largely service economies and one can be a large economy even without having a large presence in manufacturing.

● India has to work on both manufacturing and services to create the level of jobs that we aim for. Services are not just about unicorns, it also accounts for semi-skilled jobs in tourism, transport, retail, hospitality, etc.

Additional Information:

● **Gross Domestic Product (GDP)** is referred to as the total monetary value of all the final goods and services produced within the geographic boundaries of a country, during a given period (usually a year).

● **Production Linked Incentive (PLI)** scheme is a scheme that aims to give companies incentives on incremental sales from products manufactured in domestic units. The scheme invites foreign companies to set up units in India, however, it also aims to encourage local companies to set up or expand existing manufacturing units and also to generate more employment and cut down the country's reliance on imports from other countries.

11. India has saved $27 bn in schemes using DBT method

Syllabus: Inclusive growth

Prelims: Direct Benefit Transfer (DBT)

Context: The Secretary of the Department of Economic Affairs, announced in March 2023, that India saved $27 billion in various central government schemes through the implementation of Direct Benefit Transfer (DBT).

Details:
- In the 2020-21 fiscal year also, the government is estimated to have saved ₹44,000 crores with help of DBT. This led to total savings crossing 2.2 lakh crores by march 2021.
- There was a maximum gain for the PDS scheme since it deleted crores of duplicate and fake/non-existent ration cards between 2013 to 2020.
- MGNREGA scheme also benefited through the introduction of direct benefit transfer. According to the government, the Rural Development Ministry has been estimated to have saved 10% on wages due to the deletion of fake and ineligible beneficiaries.
- There were savings in LPG subsidy also to the tune of ₹72,000 crores through the deletion of fake and ineligible beneficiaries.

Direct Benefit Transfer (DBT) in India
- The DBT program was launched in selected cities of India on 1 January 2013.
  - The first phase of DBT was launched in 43 districts, covering scholarships and social security pensions initially.
- With effect from December 2014, it expanded across the nation. MGNREGA was also brought under DBT along with 34 other schemes.
- In DBT, benefit or subsidy is directly transferred to citizens living below the poverty line.
- It has been visioned as an aid for simpler/faster flow of information and funds to the beneficiaries and to reduce the fraud in the delivery system.
- The primary aim of this Direct Benefit Transfer program is to bring transparency and terminate pilferage from the distribution of funds sponsored by the Central Government of India.
- The Central Plan Scheme Monitoring System (CPSMS), being implemented by the Office of Controller General of Accounts, acts as the common platform for routing DBT.
  - CPSMS can be used for the preparation of the beneficiary list, digitally signing the same and processing of payments in the bank accounts of the beneficiary using the Aadhaar Payment Bridge.

Nut graf: DBT has brought transparency, accountability and efficiency in the government system of implementation of schemes and has also instilled confidence in citizens in governance. Proactive use of modern technology and information technology has enabled the government to move towards the objective of "Maximum Governance, Minimum Government".

12. Digital Villages Programme launched by RBI

Syllabus: Infrastructure

Prelims: Digital Villages Programme

Mains: Significance of Digital Villages Programme

Context: The Reserve Bank of India (RBI) has launched a programme to adopt 75 villages and convert them into 'digital payment enabled' villages.

Digital Villages Programme
- The programme has been launched as the **'Har Payment Digital'** mission amid the **'Digital Payments Awareness Week (DPAW) 2023'** by the RBI.
- To initiate the 75 Digital Villages programme through the adoption of 75 villages there will also be the involvement of village-level entrepreneurs.
- Under the initiative, **payment system operators (PSOs)** will adopt these villages across the country and conduct two camps in each of these villages with an aim to improve awareness and onboard merchants for digital payments.
- **RBI has taken four major policy initiatives:**
  - Storage of Payment System Data.
  - Rationalization of Merchant Discount Rate.
  - Master Directions on Prepaid Payment Instruments (PPIs).
  - National Electronic Funds Transfer (NEFT) system – Settlement at half-hourly intervals.

Digital India Initiatives
The Government has taken up many initiatives under the Digital India campaign. Discussed below are a few such important initiatives:
- **BHIM:** Bharat Interface for Money is an app that makes payment transactions simple, easy and quick using Unified Payments Interface (UPI).
- **E-Pathshala:** Developed by NCERT, e-Pathshala showcases and disseminates all educational e-resources including textbooks, audio, video, periodicals and a variety of other print and non-print materials through the website and mobile app.
- **E-Hospitals:** It is a Hospital Management Information System (HMIS) which is a one-stop solution for connecting patients, hospitals and doctors through a single digital platform. Till February 2021, as many as 420 e-Hospitals had been established under the Digital India campaign.
- **DigiLockers:** This flagship initiative aims at the 'Digital Empowerment' of the citizen by providing access to authentic digital documents to the citizen's digital document wallet.

13. India asks G-20 to extradite economic offenders fast

Syllabus: Indian Economy and issues relating to planning and mobilization of resources

Prelims: About Fugitive Economic Offenders

Mains: Fugitive Economic Offenders Act, 2018 and other mechanisms to address the issues associated with economic frauds.

Context: India has urged the G-20 nations to employ multilateral action for faster extradition of fugitive economic offenders and recovery of assets.

Details
- In the first anti-corruption working group meeting of G20 members held in Gurugram, India has called upon the member countries to expedite actions to extradite fugitive economic offenders and recover assets both within and outside their countries.
- The Union Minister of State for Personnel who chaired the meeting along with co-chair Italy, said that economic offences have become a key challenge for countries, especially when such offenders flee from the country.
- It is said that stringent mechanisms against such offences and speedy confiscation of the proceeds of crime, both at home and outside will force such offenders to return to their home country.
- Formulating and strengthening policies will ensure effective investigation and speedy trial of offences and would aid banks, financial institutions and tax authorities to recover defaults committed by fugitive economic offenders.
- In this regard, India has passed specialised law named **Fugitive Economic Offenders Act, 2018.**
- The Enforcement Directorate (ED) has recovered assets worth close to $180 billion back to public sector banks that incurred losses of about $272 billion due to such economic frauds committed by high-net-worth individuals.

About Fugitive Economic Offenders Act, 2018:
- The Fugitive Economic Offenders Act was passed by the Lok Sabha and the Rajya Sabha in 2018 and it received presidential assent the same year.
- The key objective behind the enactment of this law was to bring fugitive economic offenders to book.
- According to the Act, the term "fugitive economic offender" is defined as an individual against whom a warrant of arrest in relation to a scheduled offence has been issued by any court in India and who has left the country so as to avoid criminal prosecution; or if such individuals abroad refuse to return to face criminal prosecution.
- In order to declare an individual a 'fugitive economic offender', an application should be filed in a Special Court designated under the **Prevention of Money-Laundering Act, 2002 (PMLA).**
  - The authorities under the PMLA, 2002 will exercise powers given to them under the Fugitive Economic Offenders Act.
  - The Enforcement Directorate (ED) is responsible for investigating offences under the PMLA.
- The Special Court would then issue a notice asking the individual to be present at a prescribed place at least six weeks from the date of notice.
  - If the person presents himself/herself, the proceedings would be dropped.
- When a person is declared a fugitive economic offender, his/her properties may be confiscated and vested in the Central Government, free of encumbrances (rights and claims in the property).

Economic Offences
Economic offences relate to counterfeiting, fraud, money laundering, tax evasion and others. The other laws in the country which handled such offences include:
- Prevention of Money-Laundering Act – prohibits money laundering.
- Benami Properties Transactions Act, 1988 – bans benami transactions.
- Companies Act, 2013 – punishes fraud and unlawful acceptance of deposits.
- Indian Penal Code, 1860 – covers various crimes such as cheating, forgery, counterfeiting, etc.
- Code of Criminal Procedure, 1973

Nut graf: Building consensus among countries with respect to information sharing, strengthening asset-recovery norms and improving law enforcement cooperation will help address the complex challenges posed by fugitive economic offenders and force them to return to their home countries.

14. Understanding waste-to-energy plants

Syllabus: Infrastructure: Energy

Prelims: About waste-to-energy projects

Mains: Challenges associated with the operation of waste-to-energy plants and key recommendations.

Context: The Kerala government has announced the establishment of the State's first waste-to-energy project in Kozhikode.

About waste-to-energy projects
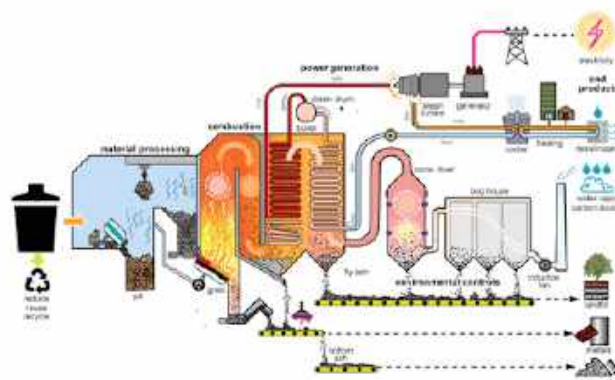
Source: EIA

- There are about 100 waste-to-energy projects in India.
- Waste-to-energy projects generate electricity by making use of non-recyclable dry waste.
- Waste-to-energy projects help improve the State's power generation capacity and also reduce the burden of solid waste management (SWM).
  - Solid waste management (SWM) refers to the process of collecting, transporting, treating, and disposing of solid waste in an environmentally responsible manner.
- Usually, the solid waste in India is 55% to 60% biodegradable and organic in nature which can be converted into organic compost or biogas.
  - Further, about 25% to 30% of the solid waste is non-biodegradable dry waste and close to 15% consists of silt, stones, and drain waste.
  - Out of the non-biodegradable dry waste, only about two to three percent (i.e. hard plastics, metals, and e-waste) is recyclable and the rest consists of low-grade plastic, rags, and cloth that can't be recycled.
- Managing the fraction of such non-recyclable dry waste is a key challenge to the SWM mechanism as these materials could also reduce the efficiency of recycling other dry and wet waste.
- Waste-to-energy projects make use of such non-recyclable portions of waste to generate power.
- In waste-to-energy projects, such wastes are combusted to generate heat, which in turn is used to produce electricity.

Key challenges faced by waste-to-energy projects
- **Low calorific value:** Solid wastes in India have low calorific value mainly due to improper segregation.
  - Calorific value refers to the amount of heat energy released during the complete combustion of a unit mass of fuel.
  - The calorific value of coal is around 8,000 kcal/kg.
  - However, the calorific value of mixed waste in India is around 1,500 kcal/kg and is not feasible for power generation.
  - Mixed wastes consist of biodegradable waste that has high moisture content and hence cannot be used for power generation.
- **High costs of energy production:** The cost of producing power from waste is about ₹7-8/unit, whereas the cost at which the electricity boards of the States buy power from coal, hydroelectric, and solar power plants is around ₹3-4/unit.
- **Other issues:** Other key challenges faced by waste-to-energy plants in India include high expectations, improper assessment and characterisation studies, and neglect of on-ground realities while establishing such plants.

Recommendations
- Segregation of wastes must be carried out ideally at the source, if not at the processing plant in order to ensure that the waste available at the facility has calorific value.
- Other than waste segregation, operating such waste-to-energy plants also depends on various factors such as the municipal collection efficiency, moisture content in the waste and the operational efficiency of biodegradable-waste-processing plants.
- Acknowledging the high cost of power generation associated with such plants, efforts must be undertaken to ensure consensus between the State electricity departments, the municipalities, the plant operator, and the power distribution agencies.
- Furthermore, it is important to conduct extensive field studies and assessments of such projects to plug the existing loopholes.

Nut graf: *Out of about 100 waste-to-energy plants in the country, only a few are operational at present owing to various production and operational challenges. Establishing and managing waste-to-energy plants is a complex process and requires the collaborative efforts of various departments, the municipality, the State as well as the residents.*

15. The price crash of onion and potato in India

Syllabus: Marketing of agricultural produce and issues and related constraints

Mains: The price crash of onion and potato in India – key causes, implications and feasible solutions

Context: Cultivators of onion and potato in States such as Uttar Pradesh, Maharashtra, and Gujarat are at breaking point.

Background
- When the cultivators are hoping to get at least ₹400 to ₹500 per quintal for their yield, their yield is being auctioned at only ₹150 to ₹200 per quintal.
- Apart from the production cost which includes the cost of seeds, labour, insecticides, pesticides, and other expenditure for cultivating onions which amount to ₹800 to ₹1,000, cultivators must also bear the transport charges which would be ₹1,500.
  - However, the highest amount that the traders offer to buy the produce in the wholesale market is only ₹500 per quintal.
- Cultivators of onions and potatoes across the States of Maharashtra, Gujarat and Uttar Pradesh are facing similar challenges which have led to an increase in their debts.

Key reasons for the farmers' troubles
- Dipping prices in the wholesale market
- Adverse weather conditions
- Demonetisation in 2016
- The COVID-19 pandemic induced lockdowns

Case of Gujrat
- Bumper yields of up to 15-20% over last season have resulted in a price crash.
- The increase in the yields has meant that the farmers have lost control over the selling price as it is determined based on demand and supply.
- Further, it is said that farmers have also lost control over the rising costs of labour, pesticides, irrigation and freight charges.
- A few of the farmers have abandoned their harvested crops on farms at the Agricultural Produce Market Committee (APMC) campus at Mahuva in Gujarat which is India's largest onion trading centre for white onions and the second largest for red onions.

Troubles of farmers in Maharashtra
- Maharashtra's Nashik accounts for about 30% of India's onion production.
- Parts of Maharashtra have witnessed adverse weather conditions such as droughts every alternate year since 2015 and excessive rainfall in 2022 which has impacted the cultivation.
- Experts believe that onion is a politically-sensitive crop and political parties in power would try to keep the prices low.
- Recently, an onion cultivator from Borgaon in Solapur district travelled 70 km to the APMC centre at the district headquarters and earned a net profit of ₹2.49 against the sale of 512 kg of onions to a trader.
- Many farmers are feeling the heat of the issue as the average debt now stands at ₹5 lakh.

Challenges faced by potato cultivators in Uttar Pradesh

- Uttar Pradesh is the largest potato-producing State in India. However, a crisis is looming in the State similar to the price crash of potatoes in 2017 soon after demonetisation.
- Potato being a winter crop requires cold conditions for cultivation and the changing weather conditions have affected production significantly.
- The farmers in Uttar Pradesh are facing two issues namely the price drop and the significant reduction of 15% to 20% in yield.
- Because of the low demand, potatoes are being sent into cold storage. However, the State's 1,971 cold storage units have been running to full capacity in recent years.

Way forward

- Farmers must make use of the Operation Greens scheme which facilitates farmers to sell their produce outside the State with the help of a 50% subsidy from the Centre on the cost of transportation.
- Government interventions are required to reduce the production expenditure that includes prices of seeds, fertilizers, and pesticides which have increased by two times in recent years.
- Efforts must be made to increase the exports of onions and potatoes which significantly benefit Indian farmers.
- Farmer associations have been demanding the government to trade potatoes and onions in the Multi Commodity Exchange of India.
- A Farmers' Commission could be established that provides farmers with the right to decide the price of their crops similar to the way industrialists do for their products and also safeguard their interests.

Nut graf: The cultivators of onions and potatoes across States like Uttar Pradesh, Maharashtra, and Gujarat are at breaking point, with produce being sold at prices significantly below the cost of production. This requires the immediate attention of the policymakers and experts as these crops are a ubiquitous part of Indian kitchens and such a crisis could have far-reaching implications.

16. Cereal Inflation

Syllabus: Marketing of agricultural produce and issues and related constraints

Mains: Cereal inflation and its associated issues

Context: The soaring prices of cereals such as wheat and rice are a concern for the Indian economy even though the latest set of inflation data may overstate the extent of the increase, economists said.

Details:

- Inflation in the cereals category hit 16.12% in January compared to 13.79% in December, according to data released on Monday. Alongside cereals, rising prices of protein items like milk, eggs and meat pushed up food and beverages inflation to 6.2% in January from 4.6% a month ago.
- Overall inflation rose to a three-month high of 6.52%, above the central bank's comfort band of 2%-6%, raising the prospects of further interest rate hikes.
- Cereals, with a weight of 9.7% in the overall inflation index, consist of 20 sub-components.
- It is to be noted that food prices dominate the CPI, with food and beverage component accounting for 45.86% weight of CPI. Some of the food items, whose prices are considered for CPI, include cereals, pulses, fruits and vegetables, milk, eggs, meat, fish, etc.

Cereal inflation poses a shocker
(% change, y-o-y)

	WPI	CPI
Aug '22	11.77	9.57
Sep	11.91	11.53
Oct	12.09	12.08
Nov	12.85	12.96
Dec	14	13.79
Jan '23	15.46	16.12

Issues / Concerns:

- Will have a bigger impact on households.
- Contribute to overall inflation and force RBI to hike interest rates.
- It has been broad based.
- Other food components are also showing a rise.

Reforms:

- Open Market Sale by FCI.
- Export restriction.
- Higher production and supply.
- Possibility of imports.

17. Failure of Silicon Valley Bank

Syllabus: Issues relating to planning, mobilization, of resources, growth, development and employment.

Prelims: U.S. Federal Bank Regulations; Bond Portfolios

Mains: Impact of Failure of Silicon Valley Bank on India

Context: Collapse of Silicon Valley Bank

Introduction:
- On March 10,2023, Silicon Valley Bank became the largest bank to fail since the 2008 financial crisis.
  - The California Department of Financial Protection and Innovation shut down Silicon Valley Bank.
- The move put nearly $175 billion in customer deposits under the control of the Federal Deposit Insurance Corp (FDIC).
- The FDIC created a new bank to hold the deposits and other assets of the failed one.

Reasons behind Bank's Failure:
- SVB's downfall can be attributed to a bank run, which is when a large number of depositors withdraw their funds from a bank all at once, typically due to fears of the bank's insolvency.
- In SVB's case, the bank was largely affected by the downturn in technology stocks over the past year as well as the Federal Reserve's aggressive plan to increase interest rates to combat inflation.
- SVB bought billions of dollars worth of bonds over the past couple of years, using customers' deposits. The value of those investments fell because they paid lower interest rates than what a comparable bond would pay if issued in today's higher interest rate environment.
- SVB's customers were largely startups and other tech-centric companies that started becoming more needy for cash over the past year. Venture capital funding was drying up, companies were not able to get additional rounds of funding for unprofitable businesses who then began to withdraw their money.
- To pay those requests, Silicon Valley Bank was forced to sell off some of its investments at a time when their value had declined.
- To fund the redemptions, Silicon Valley Bank on March 08,2023 sold a $21 billion bond portfolio consisting mostly of U.S. Treasuries.
- SVB's decision to sell $2.25 billion in common equity and preferred convertible stock to fill its funding resulted in decline of share price by 60%, as investors believed that the deposit withdrawals may push it to raise even more capital.
- Several SVB clients pulled their money from the bank which spooked investors such as that SVB had lined up for the stock sale, and the capital raising effort collapsed resulting in the failure of the bank.

Effects of Silicon Valley Bank's failure on India:
- SVB has been a major player in the Indian startup ecosystem, providing banking services and funding to many of the country's most successful startups, including Flipkart, Ola, and Zomato.
- The closure has sent shock waves in the Indian startups' sector, which was already facing a funding problem.
- It will also dent the fundraising ability of Indian startups as the US-based bank was a key source of funding for tech startups.
- This could lead to a cash crunch for many companies, which may be forced to cut costs, delay projects, or lay off employees.
- SVB has also been instrumental in helping Indian startups expand into the US market, by providing them with the necessary infrastructure and support to set up operations in Silicon Valley.

18. Too Big to Fail Banks

Syllabus: Issues relating to planning, mobilization, of resources, growth, development and employment.

Prelims: Too Big to Fail Banks

Mains: Insulating Indian Banking system from external crisis

Context: The USA has seen the re-emergence of the banking crisis. Credit Suisse, a European bank, also faced "material weaknesses" in its finances. It has now been bought by UBS.

Too Big to Fail Banks:
- Concept emerged in the USA during the 2008 financial crisis.
- Banks or financial institutions that are considered so crucial to the overall functioning of the economy that their failure could have catastrophic consequences.
- Controversial tag, that's why they are under higher scrutiny to prevent excessive risk-taking behaviour.
- The Financial Stability Board has included some such banks as Global-Systemically Important Banks.
- There are 30 G-SIBs.

Additional scrutiny with respect to G-SIBs:
- Higher Capital Requirement
- Enhanced Risk Management
- Greater Regulatory oversight
- Resolution Planning

Domestic Systemically Important Banks (D-SIBs) in India:
- Declared by RBI.
- Framework for this was finalized in 2014.
- 3 banks have been declared as D-SIBS: SBI, ICICI and HDFC.
- **Additional Scrutiny:**
  - Higher Capital Adequacy Ratio
  - Higher Liquidity Coverage Ratio
  - Higher Risk Weighted Assets Buffer
  - Enhanced Supervision

19. Textile Parks

Syllabus: Issues relating to planning, mobilization, of resources, growth, development and employment.

Mains: Significance of Competitive, sustainable and inclusive textile sector

Context: Seven states to get mega textiles parks.

Introduction:
- Prime Minister Narendra Modi recently announced that 'PM MITRA Mega Textile Parks' will be set up in Tamil Nadu, Telangana, Karnataka, Maharashtra, Gujarat, Madhya Pradesh and Uttar Pradesh.
- The scheme was announced in October 2021, and the parks will be set up by 2026-27.
- The total outlay for the project is ₹4,445 crore, though the initial allocation in the 2023-24 Budget is only ₹200 crore.
- State governments have offered to provide at least 1,000 acres of land for free for the parks and will also facilitate the provision of all utilities such as power and water.

Significance of the scheme:
- 'PM MITRA' textiles parks would provide integrated large-scale and modern industrial infrastructure facilities for the entire value chain of the textile industry.
- The Union government expects the parks to attract investments worth ₹70,000 crores, and generate jobs for 20 lakh people.
- PM MITRA mega textile parks are in line to boost the textiles sector in line with the 5F (Farm to Fibre to Factory to Fashion to Foreign) vision.
- The scheme also supports the government's policy of 'Make in India' and 'Make for the World'.
- These parks could be shining examples of sustainability, with zero liquid discharge, common effluent treatment, use of emission-free renewable energy and adoption of global best practices.
- The cluster-based approach will enhance the quality and competitiveness of products, boost exports and strengthen India's position in global supply chains.

Nut Graf: *PM MITRA Parks represent a unique model where the Centre and State governments will work together to increase investment, promote innovation, create job opportunities and ultimately make India a global hub for textile manufacturing and exports.*

20. Samarth Scheme

Syllabus: Issues relating to planning, mobilization, of resources, growth, development and employment.

Prelims: About Samarth Scheme

Details:
- The Ministry of Textiles has called for applications for implementing partners for its Samarth scheme, which will be on till the end of March 2024.
- The ministry has opened a window for the implementing partners – industries and industrial associations – to register before March 14, 2023.
- Nearly 1.50 lakh persons (86% women) had been trained under the scheme so far and 70% of them were placed in the organised sector.
- The scheme covers the entire textile value chain except for spinning and weaving.

Objectives of the Samarth Scheme
- It will provide National Skills Framework Qualification (NSFQ) compliant skilling programmes to over 10 lakh persons.
- The skilling programmes offered under Samarth Scheme aim to incentivize and supplement the efforts of the Textile industry.
- The scheme aims to create more jobs in the textile and related sectors that will cover the entire value chain of the textile but will exclude spinning and weaving.
- Traditional sectors of handlooms, handicrafts, sericulture and jute will be upgraded through skilling and skill upgradation.
- Through skill upgradation of lakhs of persons, it aims to induce self-employment capabilities among youth and others.
- It aims to promote sustainable livelihood to all sections of society.

Salient Features of Samarth Scheme
- Training of Trainers (ToT) – That will provide enhanced facilitation skills to the master trainers.
- Aadhar Enabled Biometric Attendance System (AEBAS) – That will ensure the credibility of the trainers and the beneficiaries.
- CCTV recording of training programmes – To avoid major conflicts in the functioning of the scheme, training institutes will be fixed with CCTVs.
- Dedicated call centre with helpline number
- Mobile app-based Management Information System (MIS)
- On-line monitoring of training processes

21. RBI has permitted banks from 18 countries to trade in rupee

- The Union government has told the Rajya Sabha that banks from 18 countries have been allowed to open special vostro rupee accounts (SVRAs) for settling payments in Indian rupees by the Reserve Bank of India (RBI).
- SVRAs could be set up by banks of partner countries by approaching authorised dealer (AD) banks in India that may get permission from the RBI after the due procedure.
- The RBI had provided approval to domestic and foreign AD banks in about 60 cases for opening SRVAs of banks from 18 nations which include countries such as Fiji, Germany, Israel, Malaysia, Myanmar, New Zealand, Singapore, Sri Lanka and the U.K.
- The process of SVRAs started in July 2022 through an RBI announcement in the wake of the crisis in commodities on account of western sanctions against Russia's invasion of Ukraine in February 2022.
- Trade in local currencies has been seen as a viable solution to avoid the current wave of wartime international sanctions that are affecting supply chains and global trade flows.
- In recent times, India has also finalised trade agreements with countries such as the UAE and Australia and has started negotiations with countries like the U.K. and the EU in order to facilitate the use of the Rupee in bilateral and global trade.

INTERNATIONAL RELATIONS

1.   Windsor framework

Syllabus: Effect of policies and politics of the developed world.

Prelims: About Windsor framework, Northern Ireland Protocol and Good Friday Agreement

Mains: Critical evaluation of Windsor framework

Context: The UK and the European Union negotiated a deal on February 27 regarding post-Brexit trade rules for Northern Ireland.

Details:
- The United Kingdom and the European Commission have announced a new deal known as the "Windsor Framework" to repair post-Brexit difficulties in Northern Ireland. It will also pave the way for improved cooperation between London and Brussels.
- The "Windsor Framework" intends to address the trade disruptions between Northern Ireland and the rest of the U.K. that were caused by the Northern Ireland Protocol.

The Northern Ireland Protocol problem:
- After the UK left the European Union, Northern Ireland remained its only constituent that shared a land border with an EU-member, the Republic of Ireland.
- Since the EU and the UK have different product standards, border checks would be necessary before goods could move from Northern Ireland to Ireland.
- However, the two Irelands have had a long history of conflict, with a hard-fought peace secured only in 1998 under the Belfast Agreement, also called the Good Friday agreement.
- Fiddling with this border was thus considered too dangerous, and it was decided the checks would be conducted between Great Britain (England, Scotland and Wales) and Northern Ireland (which together with Great Britain forms the United Kingdom). This was called the Northern Ireland Protocol.
- Under the protocol, Northern Ireland remained in the EU single market, and trade-and-customs inspections of goods coming from Great Britain took place at its ports along the Irish Sea.
- The checks made trade between Great Britain and Northern Ireland cumbersome, with food products, especially, losing out on shelf life while they waited for clearance.
- Some taxation and spending policies of the UK government could not be implemented in Northern Ireland because of EU rules.
- The sale of medicines, too, was caught between different British and EU rules.

Good Friday Agreement
- The Good Friday Agreement, also known as the Belfast Agreement, was a political deal designed to bring an end to 30 years of violent conflict in Northern Ireland, known as the Troubles.
  - Northern Ireland was created in 1921 and remained part of the UK when the rest of Ireland became an independent state.
  - This created a split in the population between unionists, who wish to see Northern Ireland stay within the UK, and nationalists, who want it to become part of the Republic of Ireland.
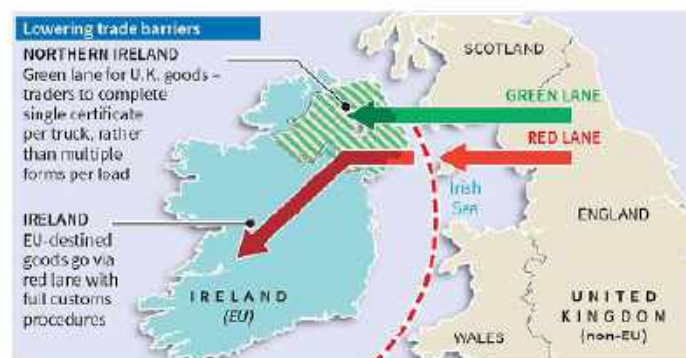- The Good Friday Agreement is based on the idea of cooperation between communities.

Windsor Framework:

Source: The Hindu

- The Windsor framework aims to resolve the disruptions in trade between Northern Ireland and the rest of the UK caused by the Northern Ireland Protocol.
- It would ensure better availability of British goods like medicine and food in Northern Ireland markets.
- **Trade:** The Windsor framework allows for free trade between Great Britain and Northern Ireland with the use of green and red lanes for goods flowing into Northern Ireland.
  - **Green lane goods** under the framework will have fewer checks and controls, including no customs checks or rules of origin.
  - **Red lane goods** under the framework will be subjected to checks and controls in order to preserve the EU's single market.
  - Further, with a view to ease the impact on farmers, agri-products like meat and dairy will have reduced checks and controls, and food retailers such as supermarkets, wholesalers, and caterers, will be allowed to move agri-food through the green lane.
  - Additionally, the ban on a few chilled types of meats from Great Britain being sold in Northern Ireland will be lifted.
- **Taxes:** The Windsor Framework will change Northern Ireland's tax laws.
  - Northern Ireland was historically bound to tax policies established by Brussels due to the requirement that it remain in the single market and have a physical border with Ireland.
  - Nevertheless, this has since been changed, thus Northern Ireland will now be subject to the UK's decision regarding VAT and excise.
- **Medicines:** The deal will also make it possible for pharmacies and medical facilities in Northern Ireland to sell and prescribe drugs that are currently governed by UK regulations.
  - The choice will permit the use of these medications as soon as they receive UK approval.

Critical evaluation of the framework
- The UK and EU officials believe that the latest framework would ensure greater availability of British goods such as food and medicines in Northern Ireland markets.
- The Windsor framework would also play a key role in safeguarding the position of Northern Ireland within the UK and restoring its people's sovereignty.
- However, there have been objections to the new framework centred around the "Stormont brake".
  - **Stormont brake** is an emergency measure that allows Northern Ireland's devolved government to halt new EU norms from being imposed and a measure that London retains the right to veto.
- Further, it is to be seen if the EU rules will be accepted in Northern Ireland as this depends on the balance of power between the Unionists and Republicans in the province.

Nut graf: The announcement on the Windsor Framework is an essential step to ensure peace and progress between the UK and the EU as it not only protects Northern Ireland's place within the UK's internal market but also the EU's single market.

2. International Criminal Court

Syllabus: Important International Institutions, agencies and fora- their structure, mandate.

Prelims: International Criminal Court

Mains: Implications of arrest warrant issued by International Criminal Court

Context: The International Criminal Court has issued an arrest warrant for war crimes for Vladimir Putin and a second Russian official.

News in details:
- The court says Putin bears individual criminal responsibility for the abduction and deportation of Ukrainian children since Russia's full-scale invasion began in February last year.
- The court also issued a warrant for Maria Lvova-Belova, Russia's commissioner for children's rights, who has been the public face of a Kremlin-sponsored program.

About International Criminal Court:
- The International Criminal Court was created two decades ago as a standing body to investigate war crimes, genocide and crimes against humanity under a 1998 treaty known as the Rome Statute. Previously, the United Nations Security Council had established ad hoc tribunals to address atrocities in places such as the former Yugoslavia and Rwanda.
- The USA & Russia never joined the court. The Biden administration has been engaged in an internal dispute over whether to provide the court with evidence gathered by the U.S. intelligence community about Russian war crimes.

Implications of the warrant
- The court cannot try defendants in absentia and Russia has said it will not surrender its own officials.
- Russia's Foreign Ministry quickly dismissed the warrants, noting that it is not a party to the court.
- If he travels to a state that is party to the ICC, that country must arrest him, according to its obligations under international law.

Will Putin face trial?
The court has no power to arrest sitting heads of state or bring them to trial, and instead must rely on other leaders and governments to act as its sheriffs around the world. A suspect who manages to evade capture may never have a hearing to confirm the charges.

Difference between International Court of Justice and International Criminal Court:

ICJ vs. ICC

	International Court of Justice (ICJ) La Cour Internationale de Justice (CIJ)	International Criminal Court (ICC) La Cour pénale internationale (CPI)
Year Court Established	1946	2002
UN-Relationship	Official court of the U.N., commonly referred to as the "World Court."	Independent. May receive case referrals from the UN Security Council.
Location	The Hague, The Netherlands	The Hague, The Netherlands
Types of Cases	Contentious between parties & Advisory opinions	Criminal prosecution of individuals
Subject Matter	Sovereignty, boundary, & maritime disputes, trade, natural resources, human rights, treaty violations, treaty interpretation, and more.	Genocide, crimes against humanity, war crimes, crimes of aggression.
Funding	UN-funded.	Assessed contribution from state parties to the Rome Statute; voluntary contributions from the U.N.; voluntary contributions from governments, international organizations, individuals, corporations and other entities.

3. Resolution in US senate on McMahon line

Syllabus: India and its neighbourhood- relations.

Prelims: McMahon line and Simla convention

Context: Two United States Senators recently have introduced a bipartisan resolution in the upper chamber of Congress reiterating that the US recognises the McMahon Line as the international boundary between China and India in Arunachal Pradesh.

About McMahon Line:
- The McMahon Line serves as the de facto boundary between China and India in the Eastern Sector.
- It specifically represents the boundary between Arunachal Pradesh and Tibet, from Bhutan in the west to Myanmar in the east.
- China has historically disputed the boundary and claims the state of Arunachal Pradesh as part of the Tibetan Autonomous Region (TAR).
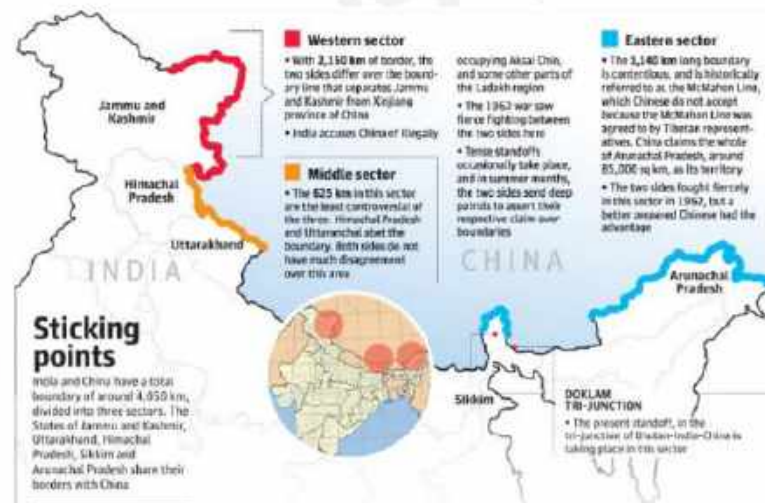

Figure: The McMahon Line
Source: Indian Express

Circumstances of Simla convention
- Simla Convention of 1914 - Convention Between Great Britain, China, and Tibet.
- China was represented by the govt. of the Republic of China (Nationalist Party)
- The McMahon Line delimited the respective spheres of influence of Tibet and British India in the eastern Himalayan region in what is today India's Northeast and northern Myanmar. The border in this region was undefined prior to the signing of the convention.
- After the first Anglo-Burmese War (1824-26), the British gained almost complete control over the Assam Valley. For a long time, these tribal lands acted as a buffer between British India and Tibet.
- The British signed the agreement to stop Tibet from falling under Russian control.

About Simla convention 1913-14:
- The treaty divided the Buddhist region into "Outer Tibet" and "Inner Tibet" – the former would "remain in the hands of the Tibetan Government at Lhasa under Chinese suzerainty", though China was not allowed to interfere in its affairs. The latter would be under the direct jurisdiction of the newly formed Republic of China.
- The final convention was only signed by McMahon on behalf of the British government and Shatra on behalf of Lhasa. China did not consent to the convention, arguing that Tibet had no independent authority to enter into international agreements.

How was the border decided?

- The 890-km border from the corner of Bhutan to the Isu Razl Pass on the Burma border was drawn largely along the crest of the Himalayas, following the "highest watershed principle". This principle, considered to be the most logical way of drawing borders in mountainous regions by the British, basically drew the border along the highest ridge between two river plains.
- However, exceptions were made. Notably, Tawang, which would have been a part of Tibet had this principle been uniformly implemented, was included in British India due to its proximity to the Assam Valley. Tawang would give an invading Chinese army easy access to the valley in the south.

## 4. India Bangladesh Friendship Pipeline (IBFP)

Syllabus: India and its neighbourhood- relations.

Prelims: India Bangladesh Friendship Pipeline (IBFP)

Mains: India-Bangladesh relations

Context: Recently India and Bangladesh have inaugurated a cross-border pipeline that will have the capacity to supply one million metric tonnes of diesel a year from Assam's Numaligarh refinery to the northern parts of the neighbouring country.

About India Bangladesh Friendship Pipeline (IBFP):
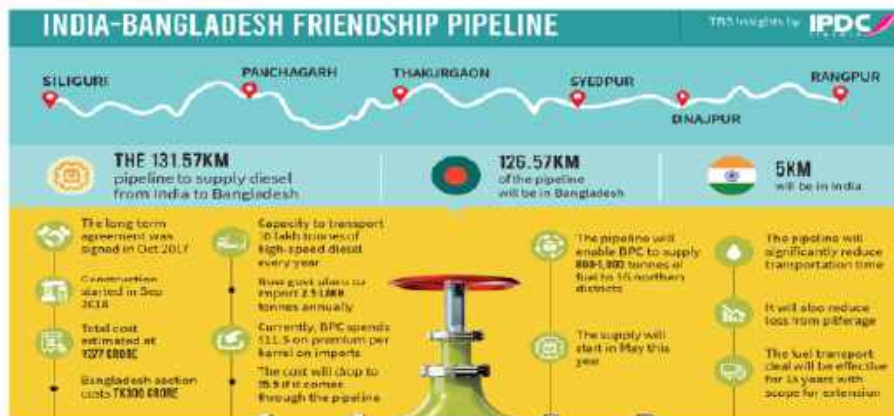
Source: Business standard

- IBFP is a cross-border energy pipeline that connects Siliguri in West Bengal, India to Parbatipur in Dinajpur district of Bangladesh.
- It has a capacity of transporting 1 Million Metric Ton Per Annum (MMTPA) of High-Speed Diesel (HSD) from India to Bangladesh.
- The pipeline is aimed at enhancing energy cooperation between India and Bangladesh and strengthening people-to-people linkages between the two countries.
- The construction of the pipeline was started in September 2018.

Importance of IBFP to Bangladesh:

- Bangladesh is facing a significant energy crisis that threatens to impede its growth.
- The country has frequent power cuts, even in the capital, Dhaka, which has had a negative impact on key export industries such as the ready-made garments sector.
- To address this problem, the Indian government has initiated several projects to help Bangladesh meet its growing energy demands.
- The IBFPL is one such project that will play a vital role in addressing the country's energy deficit.
- The pipeline will transport diesel quickly into Bangladesh, thus ending the country's reliance on importing petroleum products in oil tankers by road and rail from India.

Other projects to meet Bangladesh's energy demands:

- **Maitree project:** The US $2 billion worth project is being built under a concessional financing scheme offered by India to Bangladesh. The first unit of the Maitree Super Thermal Power Production in Bangladesh's Khulna province is already supplying 660 MW to the country's national grid.
- **Power import:** Bangladesh is also awaiting power from the Adani Group's 1600 Megawatt thermal power station at Godda in Jharkhand. Talks are currently underway to import at least 600 MW of power from this plant to meet Bangladesh's peak summer demand.
- **BIFPCL:** The two countries set up the Bangladesh India Friendship Power Company Limited (BIFPCL), a 50:50 joint venture between India's National Thermal Power Corporation and Bangladesh Power Development Board. Once completed, this will be Bangladesh's largest power plant.

Why is India helping Bangladesh?

- India's assistance to Bangladesh in meeting its energy needs is also aimed at offsetting that country's dependence on China.
- Chinese investments in Bangladesh's energy sector stand at US $8.31 billion.
- Beijing has also offered to help Bangladesh transition to renewable sources.

5.   Japan, South Korea renew ties

Syllabus: Effect of policies and politics of developed and developing countries

Prelims: About GSOMIA

Mains: Developments in Japan – South Korea ties and its significance

Context: Putting back a century of tensions in bilateral ties, Japan and South Korea have renewed their relations at the Tokyo summit.

Details
- The leaders of both countries have assured to resume ties as the two neighbouring countries look to combat the threats posed by the assertiveness of North Korea and China.
- These announcements have come at a time when North Korea has fired four rounds of missiles in a week.
- The leaders of both Japan and South Korea have agreed to resume regular visits, and resolve the existing disputes.
- The relationship between the two neighbouring countries has been affected for years due to their difficult history.
  - South Korea was colonised by Japan from 1910 until the end of the Second World War.
  - Japanese soldiers had forced thousands of Koreans to work in mines and factories whereas Korean women were forced into sexual slavery.
  - The diplomatic ties between the countries were normalised in 1965. However, historical disputes have continued to affect bilateral relations.
  - Various leaders of South Korea in the past have demanded Japan compensate the victims of its slavery.

Latest developments in Japan – South Korea ties

Source: World Map

- President Yoon Suk Yeol of South Korea has announced that the country has dropped the demand that Japan compensate some of the victims of its slavery and that the country would compensate victims of forced labour under Japan's occupation through a public foundation funded by private Korean companies.
- The South Korean President also announced the "complete normalisation" of GSOMIA, which South Korea had threatened to pull out of in 2019.
  - The General Security of Military Information Agreement (GSOMIA) which was signed in November 2016 aimed to improve intelligence sharing between Japan and South Korea.
- Japan has agreed to lift export restrictions imposed on high-tech materials such as chemicals used in the manufacturing of smartphone displays, TV screens and semiconductors.
- South Korea has also agreed to withdraw the complaint that it filed with the World Trade Organization (WTO) in 2020 against Japan's decision to tighten controls on exports to the country.
- The two countries have also agreed to resume defence dialogue and strategic talks, while also restarting a process of trilateral communication among Japan, South Korea and China.

Significance of the move
- As North Korea's nuclear missile program and Chinese aggression threaten to disrupt peace and stability in the region, deeper security ties between South Korea and Japan provide them an opportunity to address these threats and handle them efficiently.
- Furthermore, South Korea would benefit from sharing intelligence and closer defence ties with Japan at a time when nuclear-armed North Korea is becoming more dangerous.
- The move to normalise relationships would also come with economic rewards as the two countries look to address the challenges in trade.
- With the two of the US allies being brought closer, the US will try to advance the trilateral opportunities towards the vision of a free and open Indo-Pacific.
- More importantly, the latest meeting and bilateral summit offer a chance for both countries to repair years of broken trust.

Nut graf: In a ground-breaking meeting, the leaders of Japan and South Korea have agreed to repair their fractured relationship by reaching a mutual agreement on various contentious issues and reviving bilateral and security dialogues. This move is said to be extremely significant for the stability of the Indo-Pacific amid growing regional security challenges.

6.　AUKUS

Syllabus: Bilateral, Regional & Global Groupings & Agreements Affecting India's Interests

Prelims: About AUKUS

Mains: Significance of ongoing negotiations amongst the AUKUS members to Indo-pacific countries.

Context: Recently President Joe Biden and the leaders of Australia and the UK recently announced that Australia would acquire nuclear-powered attack submarines from the US to modernise its fleet.

News in details:
- United States President Joe Biden, alongside his Australian and British counterparts Anthony Albanese and Rishi Sunak, unveiled recently, a deal to sell the U.S. Virginia-class nuclear-powered submarines to Australia and to provide American technology for the production of such submarines in British and Australian facilities.
- The plan is expected to cost $268 to $368 billion between now and fruition in the 2050s. This is the first time the United States is sharing its nuclear-powered submarine technology with any country— other than the U.K. in the late 1950s.

Phases of AUKUS Plan
- **1st phase:** Embed Australian personnel in the American and British nuclear submarine establishments.
- **2nd phase starting in 2027:** Washington and London will forward deploy nuclear submarines in Australia "to accelerate the development of the Australian naval personnel, workforce, infrastructure and regulatory system necessary" to establish solid SSN capabilities in Australia.
- **3rd phase starting early next decade:** US will sell up to five nuclear-powered submarines to Australia.
- **4th phase, starting late 2030s:** London will deliver the first British-built AUKUS submarine to Canberra.
- **Final phase beginning early 2040s:** The nuclear submarines built in Australia will begin to roll out.

How will nuclear submarines help Australia?
- Firstly, the agreement represents a significant shift in Australia's strategic posture, as it seeks to enhance its military capabilities to better deter potential adversaries in the region.
- The acquisition of nuclear-powered submarines will provide Australia with a powerful tool to project its military power and strengthen its strategic position vis-à-vis China.
- Nuclear-powered submarines can reach far out into the ocean and launch attacks on the enemy, an important capability for blue water navies.
- Virginia class submarines and SSN-AUKUS will give the Royal Australian Navy the capability to go into the South China Sea to protect its assets and conduct patrols, a capability which it currently does not possess.
- This move to provide Australia with the technology and expertise to develop nuclear-powered submarines is seen as a significant shift in the balance of power in the Indo-Pacific region.

China's claim of nuclear proliferation?
- After the recent announcement, China reiterated its long-held view on the AUKUS alliance, calling it the reflection of a "typical Cold War mentality", and a move that would trigger an arms race and "sabotage" the global nuclear non-proliferation system.
- Under the Nuclear Non-Proliferation Treaty (NPT), to which the U.S. and U.K. (nuclear weapons states) and Australia (not a nuclear weapons state) are signatories, a nuclear-weapon country is not supposed to transfer such weapons or technology to a non-nuclear weapon state. While it prohibits the transfer of nuclear weapons, Article 4 of the Treaty allows the exchange of nuclear materials for "peaceful purposes".
- After the deal's announcement, China's Mission to the United Nations tweeted the next day saying that it was an "irony" that "two nuclear weapons states who claim to uphold the highest nuclear non-proliferation standard are transferring tons of weapons-grade enriched uranium to a non-nuclear-weapon state".

Impact on Indo-Pacific region
- Besides non-proliferation concerns expressed by China, the country's Foreign Minister Qing Gang on March 7, also described the Indo-Pacific strategy of the U.S. as "encirclement of China".
- In the run-up to the deal's announcement, Australia has been reaching out to its partners in the Indo-Pacific to inform them of the deal and calm concerns about an arms race. The Australian government made more than 60 calls over the last week to leaders, including those in the Pacific and Southeast Asia.

Defence pact to counter China

The U.S., UK and Australia have launched AUKUS – a new Indo-Pacific defence alliance to counter China's influence. The pact will enable Australia to build nuclear-powered submarines

Pacific region security treaties

AUKUS: Australia-UK-U.S. Pact scuppers $40 billion deal with France to build diesel-powered submarines

Australia will receive Tomahawk Cruise Missiles, AGM-158 JASSM stand off air-launched cruise missiles and anti-ship missiles

Countries to collaborate in cyber, quantum technologies and artificial intelligence

ANZUS Treaty: Australia-New Zealand-U.S. Treaty to protect security of Pacific emerged in 1951 during Cold War

QUAD: U.S., Japan-Australia-India. Quadrilateral Security Dialogue established in 2007 to contain China's territorial claims in Indo-Pacific

Five-Eyes: U.S.-UK-Canada-Australia-New Zealand Cold War-era anti-Soviet intelligence-sharing partnership. Four members oppose China's vow to 'take back' Taiwan by 2049 – New Zealand has opted out of confronting China, its largest trading partner

Source: Graphic News

Lessons for India:
- It is observed that even with its closest allies (for eg. Australia) the U.S. faces difficulties in transferring technology.
- This is because of the rigid and archaic export control system.
- Thus for India (which is not in the same league of partners as Australia), acquiring critical technology from the U.S. will remain a more daunting challenge

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Nuclear Technology Transfer:
- Nuclear technology transfer is difficult under the international system. For instance, Australia will be required to exploit the caveat that allows non-nuclear weapon countries to withdraw the fissile material required for submarine reactors from the International Atomic Energy Agency (IAEA)-monitored stockpile.
- It is suggested that it will further set a dangerous precedent and allow potential proliferators to utilize naval reactors as a cover for developing nuclear weapons.
- It should be noted that acquiring nuclear propulsion technology is also very difficult for India as it is not a party to Non-Proliferation Treaty (NPT).
- Moreover, the transfer of technology for high-enriched uranium (HEU) fuelled reactors to Australia from the U.S. and the U.K. would leave India with the only option to acquire a high-power reactor from France.
- The miniaturized low-enriched uranium (LEU) reactor core for SSNs in India has its own sets of limitations including fuel dependence.

Nut Graf: *Nuclear-powered submarines to Australia are expected to bring a significant shift in the balance of power in the Indo-Pacific region. It will help Australia enhance its military capabilities and strengthen its strategic position against China. The move has the potential to deepen the security cooperation between the US, the UK, and Australia.*

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7. Human Rights Council meet in Geneva

Syllabus: Important International institutions, agencies and fora- their structure, mandate.

Prelims: Human Rights Council

Mains: Key outcomes of Human Rights Council meet in Geneva

Context: India's development model is winning praise at the recent 52nd UN Human Rights Council meeting in Geneva with NGOs highlighting the Indian education model and urging other UN member states to follow it.

News in details:
- India's development model won praise at the 52nd UN Human Rights Council meeting in Geneva with NGOs highlighting the Indian education model and urging other UN member states to follow it.
- In recent years, India has implemented measures to promote gender equality, including the criminalisation of marital rape and a new law to protect women from sexual harassment in the workplace.
- Permanent Representative of India to the UN and other International Organisations in Geneva, Ambassador Indra Mani Pandey on March 17 highlighted Mahatma Gandhi's five core concepts i.e. Ahimsa, Satyagraha, Sarvodaya, Swaraj, and Trusteeship, pointing out that they are also the core principles of the UN Charter and Universal Declaration of Human Rights.
- Underlining that Gandhiji's advocacy of political, social and economic inclusion has been manifest in the SDGs.

About UN Human Rights Council:
- The Human Rights Council is an inter-governmental body within the United Nations system responsible for strengthening the promotion and protection of human rights around the world.
- The Council was created by the United Nations General Assembly in 2006. It replaced the former United Nations Commission on Human Rights.

Membership:

The Council's Membership is based on equitable geographical distribution. Seats are distributed as follows:
- African States: 13 seats
- Asia-Pacific States: 13 seats
- Latin American and Caribbean States: 8 seats
- Western European and other States: 7 seats
- Eastern European States: 6 seats

Members of the Council serve for a period of three years and are not eligible for immediate re-election after serving two consecutive terms.

Working of the council:
- In 2007, the Council adopted an "Institution-building package" to set up its procedures and mechanisms.
- Universal Periodic Review: Assesses the human rights situations in all UN Member States.
- The Advisory Committee: Serves as the Council's think tank providing it with expertise and advice on thematic human rights issues
- The Complaint Procedure: Allows individuals and organisations to bring human rights violations to the Council's attention.

Issues:
- Related to the Membership: A key concern for some critics has been the composition of Council membership, which sometimes includes countries widely perceived as human rights abusers. China, Cuba, Eritrea, Russia and Venezuela, all of which have been accused of human rights abuses.
- Disproportionate Focus: USA pulled out of the Agency in 2018 due to its disproportionate focus on Israel, which has received by far the largest number of critical council resolutions against any country.

8. Understanding the Saudi-Iran detente

Syllabus: Effect of policies and politics of developed and developing countries

Mains: Understanding the detente between Saudi Arabia and Iran

Context: The Saudi-Iran reconciliation in a China-brokered agreement reflects the new reality that Beijing is increasingly playing a bigger role at a time when the U.S. is preoccupied with challenges elsewhere.

What is the Conflict between Iran and Saudi Arabia?
- **Religious Aspect:** In 2016, after demonstrators broke into Saudi diplomatic missions following the execution of a prominent Shiite cleric days earlier, Saudi Arabia severed ties with Iran.
- While Iran sees itself as the guardian of the Shiite minority in Islam, Saudi Arabia has long portrayed itself as the world's main Sunni nation.
- **Attacks against Saudi Arabia:** In 2019, an attack that targeted the country's oil industry's centre was attributed to Iran.
- Saudi Arabia and Iran, two formidable rivals, are engaged in a bloody war for supremacy in the region.
  - With the Arab Spring in 2011, protests spread throughout the Arab world, resulting in political unrest all over the region.
- Mutual mistrust has increased as Iran and Saudi Arabia increase their influence, particularly in Syria, Bahrain, and Yemen.
- **Proxy Wars:** Although Iran and Saudi Arabia are not directly at war, they are both involved in a number of proxy wars (conflicts in which one side supports the opposing side's militias).
- Houthi insurgency in Yemen, as one example. These organisations might develop stronger capabilities, which might lead to further unrest in the area.
  - Iran is charged by Saudi Arabia with sponsoring them.

What is the agreement about?

Source: The Hindu

- Iran and Saudi Arabia will patch up a 7 year split by reviving a security cooperation pact, reopening embassies in each other's countries, resuming trade, investment and cultural accords.
- As per the reports, Iran has agreed to prevent further attacks against Saudi Arabia, particularly from the Houthi-controlled parts of Yemen.
  - Iran has been supporting the Houthis rebels, which is a Shia militia in Yemen whereas Saudi Arabia has been backing the government forces in Yemen.
- Further, Saudi Arabia has agreed to put a check on Iran International, a Farsi (modern Persian language) news channel which has been involved in criticising the Iranian regime.
  - Iranian intelligence has called this organisation a terrorist organisation.
- In the coming days, the foreign ministers of both countries are expected to meet and draft official terms of the reconciliation before reopening their embassies in each other's capitals.

Why was the agreement signed now?

Saudi's Perspective:
- Peace in the region will be essential to Saudi Arabia becoming the global hub that Vision 2030 envisions.
- Due to this, Saudi Arabia has made concerted efforts to resolve long-standing disputes with regional powers; the Iran deal is the most recent example of this.
- Away from US - In addition, it has caused Saudi Arabia to gradually move away from the United States' hegemonic influence on its foreign policy.
- Saudi Arabia still receives the majority of its military equipment from the US, but in recent years, the desert kingdom has courted other nations as well, including China, Iran, and now Russia.

Iran's Perspective:
- Nuclear deal - The agreement comes as Iran quickens its nuclear programme following two years of unsuccessful attempts by the United States to resuscitate a 2015 agreement that sought to forbid Tehran from developing a nuclear weapon.
- Yet, Iran has found it challenging to realise its objectives due to a harsh sanctions regime and internal strife.
- Seeking regional allies is crucial for Iran at this time, when the Khomeini administration may be at its weakest since the revolution.

What is the role of China in this agreement?
- Another indication of shifting currents in the region is China's position as a peace broker.
- The most recent agreement highlights China's expanding political and economic influence in the region. China has always maintained relations with both nations.

What are the concerns for the United States?
- In West Asia, the United States has historically exercised significant influence.
- The region's conflict-ridden geopolitics have been influenced by the dominating global power.
- The fact that China mediated this accord is crucial because it does not bode good for the United States.

What is the way forward?
- In light of the human cost incurred by the rivalry between Saudi Arabia and Iran, the deal is appreciated.
- This does not imply that all issues will be fixed right away, though.
- This diplomatic deal has brought about a significant change in the geopolitical dynamics in West Asia, even though Iran and Saudi Arabia may still have disagreements in the future.
- The deal might mark the beginning of a larger geopolitical realignment on a global scale.
- With China serving as the mediator for the historic agreement, the announcement not only has the potential to cause a significant realignment in West Asia but also poses a significant geopolitical danger to the United States.

Nut graf: *The restoration of diplomatic relations between Saudi Arabia and Iran under China's mediation could have far-reaching implications for regional security, stability and geopolitics. This is a wake-up call for countries such as India which would need to revisit their West Asia policies.*

9. India should stick to the middle path in the new world disorder

Syllabus: Effect of policies and politics of developed and developing countries on India's interests

Mains: India's non-alignment in the global order and the future course of Indian foreign policy

Context: India has once again abstained from voting in a UN General Assembly resolution that condemned Russia's invasion of Ukraine.

Background
- Post the Second World War, the global order witnessed two major transitions:
  - A bipolar world, led by the US and the Soviet Union.
  - Unipolarity replaced bipolarity with the disintegration of the Soviet Union in 1991, and the U.S. became the centre.
- However, in recent years, American unipolarity is questioned and challenged by the rapid rise of China and Russia's aggressive foreign policy which has marked the third transition post the War.
- While the US continues to remain the world's most powerful military power, countries such as India, Russia and China have welcomed multipolarity and the ability of the US to influence geopolitics is declining which was seen in the cases of NATO's withdrawal from Afghanistan and also during the course of the Russia-Ukraine war.
- These changes have made it harder for countries such as India as there is no clarity regarding the future course of the global order.

Non-Aligned Movement (NAM)
- The Non-Aligned Movement (NAM) is an international forum of 120 developing countries that believe in the idea of non-alignment with the major power blocs.
- Established in 1961, NAM aimed to create an independent path in world politics that would not result in member States becoming pawns in the struggles between the major powers.
- The first NAM Summit Conference took place in Belgrade, Yugoslavia, in September 1961.
- NAM has its origins in the Bandung Conference of 1945 in Indonesia, inspired by three world leaders namely Pandit Jawaharlal Nehru of India, Josip Broz Tito of Yugoslavia and Gamal Abdel Nasser of Egypt.
- NAM has about 120 countries as its members. India is a founding member of the organisation.
  - Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan, Myanmar and Afghanistan are all members of NAM.
  - All African countries except Western Sahara and South Sudan are members
  - China along with 16 other countries hold observer status.

India's non-alignment success
- At the time when India got its independence, the Cold War was in its early stages and it was a challenging task for India at that time to manage its foreign policy in an ideologically and geopolitically divided world.
- However, the adoption of non-alignment as a foreign policy doctrine by India played a key role in managing most of such geopolitical challenges.
- India's foreign policy during the Cold War phase was considered and regarded as "too idealistic" but India's foreign policy choices have actually been flexible and have readapted themselves to the changes in the global and regional equations.
- Then Indian Prime Minister Jawaharlal Nehru played a crucial role in turning non-alignment into a movement in the 1960s after the formation of the Central Treaty Organization (CENTO) and Southeast Asia Treaty Organization (SEATO)
- In line with the true spirit of non-alignment, India has been equidistant from both blocs of the cold war during the 1950s and 1960s.

- In the 1970s, as China started moving closer to the US, India began tilting towards the Soviet Union, but still did not join any Soviet-led military alliances.
- However, with the disintegration of the Soviet Union, India looked to better its ties with the US and integrate itself with the global economy in the new era of globalisation.
  - In doing so, India still managed to maintain close relations with Russia through defence and strategic ties and developed a vibrant economic partnership with China.

New challenges

- The centre of the Cold War was Europe but the theatre for the potential US-China great power contest would be Asia which will make it difficult for India to stay out of it.
- Additionally, during the Cold War, India did not have any hostile relations with the opposing superpowers. However, as per the current geopolitical scenario, India would be seen to join the US bloc as there are bilateral issues with China.
  - The power imbalance between India and China has increased of late.
  - China has been developing a strategic partnership with Pakistan, and increasing its influence in the Indian neighbourhood.
  - Also, the long-standing border peace between India and China was disturbed during the Galwan valley clash in 2020.
- India and Russia have maintained close relations traditionally but India is now under immense pressure from its Western partners to criticise Russia and its actions in Ukraine.
  - While taking such decisions, India should also consider the fact that isolating Russia would push the country further towards China.
- There has been a convergence of interests between India and the US with respect to China as the US sees China as a threat to the liberal international order and India sees China as a close competitor whose rise can change the regional balance of power.
  - These shared interests helped the US and India to build deeper ties to address the Chinese challenge. However, the Russia-Ukraine war has made it difficult to further the ties.

Learning from China

- Until the 1970s, the Soviet Union was an ideological guide and an important neighbour to China. However, China was not happy to play second fiddle to the Soviets and thus it moved away from the Soviet communist fold.
- China got into a quasi-alliance with the U.S. and helped them defeat the Soviet bloc and later as China acquired more economic and military might it started challenging the US.
- Experts feel that India's key focus must be on transforming itself economically and militarily like China did and should work towards bridging the gap with China.
- India should also look to involve itself as a stabilising power in the South Asian and the Indian Ocean regions as China is looking to extend its dominance in these regions.

Other challenges to India and possible solutions

- Besides the problems with China, India is also witnessing other challenges, especially near its northwestern borders post the withdrawal of the US from Afghanistan which has allowed the Taliban to return to power.
  - To address the security challenges posed by such developments, India has to work closely with Central Asian and Eurasian powers such as Russia and Iran, both of which are at odds with the US.
  - Thus changing the current stance on strategic autonomy and joining the US-led bloc would adversely impact India's options in the new world.
- Furthermore, experts believe that even if a new cold war breaks out between the US and China, the global order is unlikely to be bipolar as the current global order is diverse ideologically and integrated economically.
  - In case of such a scenario, India must adopt a multi-engagement strategy i.e. instead of joining any bloc, India should look to develop new pillars of the order by engagement and partnership with middle powers.

Nut graf: As the arena of the possible US-China great power contest is shifting towards India's neighbourhood, it has become crucial for India to adopt a multi-engagement approach and stick to the middle path rather than following a multi-alignment approach.

10.   Russia and China vow to deepen relations

Syllabus: Effect of policies and politics of developed and developing countries

Mains: Developments in Russia and China relations and their geopolitical implication

Context: Chinese President Xi Jinping visited Russia and held strategic meetings with Russian President Vladimir Putin.

Key outcomes of the meeting

- Post the meeting the leaders of China and Russia announced a broad long-term blueprint for deepening their relations and pledged to collaborate to counter the U.S. Indo-Pacific strategy and any attempts to politicise multilateral platforms.
- A joint statement released after the meetings also expressed concern over NATO's growing military-security ties with various Asia-Pacific countries and said that the two countries oppose the formation of exclusive bloc structures in the Asia-Pacific region which promotes bloc politics and camp confrontation.
  - China in the past had referred to the "Quad" as an exclusive bloc and the latest statement accused the U.S. of following "a Cold War mentality".
  - The statement also used the term "Asia-Pacific" instead of "Indo-Pacific".
- The joint statement further stated that China and Russia are committed to building an equal, open and inclusive security system in the Asia-Pacific region that does not target other countries.
- The statement has also criticised the West over their involvement in Ukraine and said that both countries are against the practice of seeking military, political and other advantages which are detrimental to the legitimate security interests of other countries.
- The countries also expressed willingness to collaborate in multilateral groupings such as BRICS, and efforts to revive the dormant Russia-India-China (RIC) grouping.

Economic cooperation

- The President of Russia and his Chinese counterpart declared an enduring economic partnership and discussed the prospects of bringing more Russian energy to China and more Chinese companies to Russia.
- The two countries also announced a "Plan to Promote the Key Elements of Russian-Chinese Economic Cooperation until 2030."
- According to the Russian President, both sides have agreed to a package of 80 crucial and favourable bilateral projects in diverse fields worth around $165 billion.

- Russia is a strategic supplier of oil, natural gas, LNG, coal, and electricity to China and an agreement has been reached on a second Power of Siberia gas pipeline across Mongolia.

China's Solomon port deal

Source: Encyclopedia Britannica

- Meanwhile, a state-backed Chinese company named China Civil Engineering Construction Corporation has been granted a contract to develop a key port in the Solomon Islands.
- The contract is to upgrade an international port in Honiara and the project is being funded by the Asian Development Bank (ADB)
- The U.S. and its allies such as Australia, New Zealand and Japan, have raised concerns about China building a naval base in the region ever since the Solomon Islands signed a security agreement with China in 2022.
- However, both China as well as Solomon Islands have said that the pact would not lead to the establishment of a permanent Chinese naval base.

Nut graf: The visit of the Chinese President to Russia, following bilateral meetings and the joint pledges made post the meetings have gained significance as the differences between the U.S. and its allies on one hand and Russia and China on the opposite hand seem to be growing.

11. Multilateral reforms as a priority in the G-20

Syllabus: Global groupings involving India

Prelims: About G-20

Mains: Multilateralism – its significance, challenges, need for reforms and the way forward

Context: India's G-20 presidency and new global order.

Background
- India announced its agenda would be inclusive, ambitious, action-oriented, and decisive as India assumed the G-20 presidency in December 2022.
- India further has stated its main objectives would be to develop global consensus over critical development and security issues thereby delivering global goods.
- These announcements have resulted in placing multilateral reform as one of the key presidential priorities for India. Additionally, the **G-20 idea bank** and **Think 20** have also proposed multilateral reforms as top priorities.
  - Also, the T20 Task Force on "Towards Reformed Multilateralism (TF7)" aims to formulate a roadmap for "Multilateralism 2.0".

Multilateralism and its significance
- Multilateralism refers to the collaboration between various nations in pursuit of a common goal which could also involve the participation of civil society groups and the private sector.
- Though there is a long history, multilateralism is mainly associated with the time after World War II.
- Various multilateral organisations such as the United Nations (UN), World Health Organization (WHO), Organisation for Economic Cooperation and Development (OECD), etc. play a key role in ensuring multilateral global order.
  - Multilateral organisations are organisations made up of three or more partner countries with the objective of working together to solve problems and create favourable circumstances for all members.

The main objectives of
multilateralism today

The Joint Statement entitled *Together for stronger multilateralism*, launched in 2020 to mark the 75th anniversary of the UN aims to strengthen the multilateral system to address major global challenges.

Reduce inequality and leave **no one behind** with a just transition.

Ensure **sustainable financing** for a change of model.

Improve health and well-being conditions and the efficiency of the health system.

Harness the potential of the **digital revolution.**

Protect our planet from the threat of climate change.

Defend **human rights, democracy and gender equality.**

Build and promote **peace, security and justice.**

Source: Iberdrola

Challenges to Multilateralism

Multilateral cooperation in the current era is facing multiple crises which include:
● Loss of trust in multilateral cooperation due to persistent deadlocks.
● Multilateralism is witnessing a utility crisis as powerful and most developed countries have started to believe that multilateral cooperation is no longer beneficial for their interests.
● Furthermore, increasing great-power tensions, populist nationalism, de-globalisation, climate change emergencies, and the COVID pandemic have aggravated the crisis.
● This crisis has forced nations to resort to other arenas such as bilateral, plurilateral and minilateral groupings which are polarising global politics.

Need for reforms and associated issues
● Most of the challenges to the multilateral global order are global in nature and require collaborative solutions.
● However, reforming multilateralism would be a challenging task.
● At present, multilateralism is deeply entangled in global power politics and thus any effort or action to reform multilateral institutions will ultimately affect and bring about changes in the current distribution of power.
   ○ However, bringing about changes in the distribution of power in the global order is not an easy task and can have far-reaching implications.
● Furthermore, the status quo powers look at multilateral reforms as a zero-sum game.
   ○ i.e. if dominant global powers believe that reforms would impact their influence and dominance it becomes difficult to reach a consensus on such reforms.
● Multilateralism often appears to be at loggerheads with the realities of the changing global order which has led to the formation of new groupings and coalitions of like-minded. This has made it difficult to reform older and traditional institutions and frameworks.

Way forward for India and G-20
● In order to fix the current multilateral crises, the G-20 must step in and devise solutions.
● It is important for the G-20 to focus on building a proper narrative on multilateral reforms and G-20 can establish a separate engagement group for this purpose.
● The limitations of multilateral cooperation must be acknowledged and hence it is important for the G-20 to continue to encourage minilateral groupings as a new form of multilateralism.
   ○ Establishing such networks of issue-based minilateral groupings would play a key role in preventing competitive coalitions.
● Multilateral reforms demand concessions and compromises which would require mobilising the political will. This is where India as the current chair can step in.
● In order to address the issue of trust and utility, India and the G-20 must undertake efforts and resolve pressing global issues which would showcase the efficiency of the model of multilateralism.
● India must urge Brazil and South Africa, the upcoming chairs of the grouping, to also focus on multilateral reforms.

Nut graf: *Pressing global issues such as climate change, migration, macroeconomic instability and cybersecurity require collective efforts and can only be resolved through multilateral channels. However, the multilateral global order is currently experiencing various crises which makes multilateral cooperation and reform the need of the hour.*

12. A 'Zeitenwende' in the India-Germany relationship

Syllabus: Bilateral relations of India.

Mains: Bilateral relations between India and Germany.

Prelims: India-Germany relations.

Context: Germany Chancellor Olaf Scholz's two-day visit to India on 25th February 2023.

Details:
- India's relationship with Germany has lagged behind its bilateral relations with other European countries like France.
- This is because of benign mutual neglect and Germany's focus on China.
- However, the relations are seeing rapid changes. In Mr. Scholz's own words, the Russian invasion has been a Zeitenwende or turning point.

Germany's changed stance:
- The Russian invasion has been a watershed moment in the security policy of Germany. It resulted in the abandonment of decades of post-war pacifism towards strategic matters.
- Germany also increased its defence spending to 2% of GDP and has pledged to provide special funding to bolster its military.
- Russia's war and China's assertive stance have questioned Germany's strategy of "change through trade" (Wandel durch Handel). It has prompted a deep rethink of its energy and trade dependencies in diversifying economic relations.
- European countries are increasing the prioritization of value-based partnerships with countries like India. In this context, even Germany is advancing its relationship with India. For instance, Germany's coalition agreement in 2021 refers to relations with India among its top foreign policy priorities.
- In a departure from its stance on Asia (that focused on China), Mr. Scholz after assuming office in 2021, first visited Japan and then invited the Indian Prime Minister for the 6th Inter-Governmental Consultations to Berlin.
- Germany is also devising a new official China strategy amidst a wider national security strategy.

India-Germany Relations:
- German Chancellor Scholz's visit is built on the German Foreign Minister's visit to India on December 2022 and the 6th India-Germany Inter-governmental Consultations.
  - India-Germany Inter-governmental Consultations are a biannual format of engagement that began in 2011, to strengthen cooperation in the field of defence, trade, clean energy, migration, digital transformation, and the Indo-Pacific.
- German Chancellor's visit is important as India is holding the G20 presidency.
- Moreover, Germany aims to enhance its strategic involvement in the region through greater military deployment. For instance, Germany sent its frigate Bayern, to the Indo-Pacific in 2021, which stopped in Mumbai.
- Germany is India's largest economic partner in the European Union (EU).
- There is also the India-Germany triangular cooperation that involves development projects in third countries.
- Germany could become an important defence partner for India, as New Delhi aims to diversify its military dependence from Russia and Germany reassess its arms export policy.
- A negotiation (worth $5.2 billion) where Germany can jointly build six conventional submarines in India is also underway.
- The France-India-Germany military exercise drill will also take place for the first time in 2024. It will enhance security and defence collaboration.
- Germany invited Indian Prime Minister Narendra Modi to attend the G-7 summit of 2022.
- India and Germany also cooperate in many multilateral forums like G-4 (that push for reforms in UNSC).
- Both countries also collaborate in clean energy and green technologies, which have emerged as the central pillar in the relations. The Green and Sustainable Development Partnership was launched in 2022. There is also cooperation in the field of green hydrogen.
- Skilled Indians can also fill the gaps in manpower in Germany.

Conclusion:
- Despite the lack of trust in China, the German industry is intertwined with Chinese markets.
- It is observed that the divergent positions on the war have not undermined India's regular political engagements with Europe.
- Against volatile geopolitical shifts, emerging multipolarity, and Europe's enhanced trust in India could be vital in shaping a new global order.

Nut Graf: *India-Germany relations are strengthening in the backdrop of Russia's invasion of Ukraine and China's assertive stance. There is also an increased convergence in the Indo-Pacific region.*

13. India-U.S. Semiconductor Subcommittee

Syllabus: Effect of Policies & Politics of Developed & Developing Countries on India's Interests

Mains: Broad-based and multi-sectoral cooperation between India and the U.S.

Context: India and the United States of America held the 5th Ministerial level meeting of the bilateral Commercial Dialogue in New Delhi on 10 March 2023.

Introduction:
- India and the US on March 10, 2023, inked an initial pact on increasing private sector cooperation in the area of semiconductors under which the two countries would facilitate business opportunities and develop an ecosystem with a view to reducing their dependence on China and Taiwan.
- The Memorandum of Understanding (MoU) on establishing the semiconductor supply chain and innovation partnership under the framework of the India–US Commercial Dialogue was signed by the US Secretary of Commerce and the Union Commerce and Industry Minister during the Commercial Dialogue.
- According to a joint statement, both sides have agreed to set up a semiconductor sub-committee, led by the Department of Commerce for the US side and the Union Ministry of Electronics and Information Technology (MeitY) and the Union Ministry of Commerce and Industry.
- Both also welcomed the recently launched U.S.-India initiative on Critical and Emerging Technology (iCET), which elevates and expands the strategic technology partnership between the governments, businesses, and academic institutions of our two countries.
- The U.S. also welcomed India's active partnership in the Indo-Pacific Economic Framework for Prosperity [IPEF].

Commercial Dialogue:

- The Commercial Dialogue is part of ongoing efforts to strengthen the U.S.-India Comprehensive Global Strategic Partnership, develop inclusive and fair trade and investment policies, and leverage the interests of the private sector in pursuing new market opportunities that advance prosperity in both countries.
  - The bilateral goods and services trade has almost doubled since 2014, exceeding US $191 billion in 2022, signalling accelerated growth benefitting both countries.
  - The United States became India's largest trading partner in 2022.
- The features of the Commercial Dialogue included,
  - Creating reliable supply chains
  - Diversifying and friend-shoring [sourcing of material from countries with similar social and political values]
  - Facilitating climate and clean technology cooperation
  - Inclusive digital growth
  - Talent development
  - Post-pandemic economic recovery

Nut Graf: India and the United States have reaffirmed their commitment to strengthening the Comprehensive Global Strategic Partnership by re-launching the Commercial Dialogue during the 5th Ministerial level meeting held recently in Delhi. Both emphasised on exploring future and emerging areas of bilateral commercial partnership that foster inclusive and fair trade and investment policies.

14. Slow steps to India-China border tranquillity

Syllabus: India and its Neighborhood – Relations

Mains: Root Causes of Tension Between India-China Relations

Context: This article discusses various attempts to ease the border situation between India and China.

Introduction:

- India and China are moving towards a new agreement to maintain peace and tranquillity along their disputed 4,000 km border.
- The clash between Indian troops and the Chinese PLA at Galwan in 2020 and the recent altercation between troops at Yangtse in Arunachal Pradesh have highlighted the lingering boundary dispute as well as the complex Line of Actual Control (LAC).
- Clash at Yangtze suggests that new measures may be needed across the LAC, and not just in Ladakh.
- Events in 2020 have destroyed the trust that was built up with patience between 1993 and 2020. The bar for normality in China-India relations is now much higher.

Attempts to ease the border situation:

- Despite tensions, Indian and Chinese Ministers and officials have been meeting with each other regularly.
- India's External Affairs Minister S. Jaishankar met his Chinese counterpart Qin Gang recently on the sidelines of the G-20 Foreign Ministers meeting in New Delhi.
- The two sides have managed to disengage in four of the six points, namely Galwan, Pangong Tso, Gogra Post and near Jianan Pass (PP15).
  - But two key areas remain unsettled, i.e., the Depsang Bulge and the Charding Ninglung Junction in the Demchok area involve nearly 1,000 square kilometres.
- The proposals for disengagement in the remaining areas were discussed in an open and constructive manner during the 26th Meeting of the Working Mechanism for Consultation and Coordination (WMCC) on China-India Border Affairs, held in Beijing on February 22, 2023.
  - This could create conditions for restoration of normalcy in bilateral relations.
- The discussions have also reportedly taken up the issue of upgrading the border management means to replace the WMCC with a mechanism that will have both military and civilian officers.

Discussions on No-Patrol Zones:

- One proposal that has been discussed is the conversion of other parts of the LAC into similar no-patrol zones.
  - This could lead to a package settlement in the two remaining areas of Depsang and Charding Nala.
- The no-patrol zones could be confined to the places where the two sides have overlapping claims.
- Till 2020, both sides patrolled till the limit of these contending claims and there was a protocol that if the two patrols met, they would stop and display banners to ask the other side to go back to their area. Thereafter, the issue was dealt with through meetings at one of the five designated border meeting points.
- In 2020, Chinese journalist-scholar Qian Feng suggested that the concept of the "zone of actual control" could replace the "line of actual control" in some areas that had no obvious geomorphological features or population.
- Other areas, too, could be delimited as a "border belt" if they did not require population adjustment.
- Poor demarcation of border areas with no detailed maps has been at the root of the problem. Over the years, the Chinese have been able to shift goalposts at will, especially in relation to the Ladakh border.

Nut Graf: India and China are working towards a new agreement to maintain peace along their disputed border. Recent clashes have highlighted the complex Line of Actual Control (LAC) and the need for new measures. Discussions on upgrading border management means and creating no-patrol zones are being explored.

15. What is the new U.K. policy on refugees?

Syllabus: Policies and politics of developed countries.

Mains: New U.K. Policy on refugees.

Context: The U.K. has proposed a new policy to regulate refugees.

Details:
- The U.K. government is proposing a new, stricter policy to deal with asylum seekers. It is one of the five key policy priorities announced by Prime Minister Rishi Sunak.
- The proposed plan intends to deport to the origin or remove asylum seekers arriving in the U.K. by boat to a third country.
- The new policy is sharply criticized by UNHCR and the European Union. It is argued that the new policy is incompatible with international laws like the 1951 Convention Relating to the Status of Refugees and the European Convention on Human Rights (ECHR).
- Though the Illegal Migration Bill (IMB) is not yet passed in the U.K. Parliament, once done it will have retrospective applicability from 7th March 2023.

Political Context of the Bill and recent trends:
- Regulation of immigrants(particularly undocumented workers and asylum seekers) has always been a sensitive issue in the U.K.
- The Conservative Party has always been a strong advocate for tighter immigration policies to protect U.K. jobs.
- The COVID-19 pandemic and the consequent economic distress in developing countries along with the displacement of certain communities in countries like Afghanistan, Iran, and Iraq, has resulted in even more asylum seekers arriving in the U.K.
- Approximately 45755 refugees arrived in small boats across the English Channel. The "small boat arrivals" comprised nearly 45% of the total asylum applications in 2022. It was close to 89000 highest since 2010.
- The top sources of asylum applications are Albania, Afghanistan, Iran, Iraq, and Syria.
- In 2022, the U.K. government returned asylum decisions for nearly 29150 applicants and granted some form of protection to 17747 people (61% of the total number).
- Earlier measures adopted by the government to deal with asylum seekers were:
  - In December 2021, the U.K. passed the Nationality and Borders Bill. It empowered the government to remove asylum seekers to a "safe" third country for "offshore asylum processing" and also set a precedent to "push back boats at sea".
  - In April 2022, the U.K. and Rwanda signed a Memorandum of Understanding to relocate asylum seekers. It was strongly criticized by the UNHCR.

Features of the Bill:
- The Bill allows the Home Secretary to detain and remove those arriving in the U.K. illegally, either to Rwanda or another "safe" third country.
- It will deny migrants the right to bail or judicial review for the first 28 days of their immigration detention.
- Once passed, the law will only allow migrants who are minors, medically unfit, or at risk of serious harm in the country of their removal to delay their departure from the U.K.
- The bill also intends to set a cap on the number of refugees permitted to settle in the U.K. through "safe and legal routes".
- A small number of refugees can enter the U.K. through the U.K. Resettlement Scheme, the Community Sponsorship Scheme, the Refugee Family Reunion, and the Mandate Resettlement Scheme.

Proposed bill vis-a-vis Human rights law:
- The bill is incompatible with international laws. For instance, in the context of non-refoulement.
  - Non-refoulment is an idea encapsulated in the Refugee Convention and the ECHR (the U.K. is a signatory to both).
  - It means that refugees should not be returned to a country where they face threats to life and liberty.
- However, as per the U.K. High Court, the Rwanda deportation plan does not violate human rights conventions.

Nut Graf: *The United Kingdom has proposed a new policy for refugees and asylum seekers. It intends to deport them either to their origin country or a 'third country' in order to safeguard its own citizens. However, the new policy seems to be inconsistent with human rights and needs a review.*

16. IBSA can play vital role in reforming digital governance, says DiploFoundation report

- As per the Geneva-based DiploFoundation, the tripartite IBSA Forum which includes India, Brazil, and South Africa could play a significant role in the process of reforming digital governance, at a time when digital geopolitical tensions are rising.
- The foundation also notes that the first tangible results from IBSA's digital momentum can be expected during India's G-20 presidency, which would promote a new gold standard for data.
- The report has highlighted the fact that digitisation is driving growth in the IBSA economies and that India with a vibrant digital economy is the leader among them.
  - The three nations have spearheaded digital inclusion by prioritising affordable access to citizens, extending training, and bringing a legal framework for the growth of small digital enterprises.
- However, the report says that digitalisation tends to aggravate societal tensions such as the digital divide which demands that digital governance takes into account the local cultural, political landscape, and economic specificities.
- According to the report of the DiploFoundation, digital geopolitics will be centred on the issues pertaining to the protection of submarine cables and satellites, the production of semiconductors, and the free flow of data.
- India's G-20 presidency urges for a new stan

17. World Bank to lend $1 billion to India

Syllabus: Important International Institutions

Prelims: World Bank; Government Schemes on Health

Context: World Bank to lend $1 billion to support India's health sector.

Introduction:
- The World Bank has approved $ 1 billion in support to India's healthcare project, Pradhan Mantri-Ayushman Bharat Health Infrastructure Mission(PM-ABHIM).
  - It was launched in October 2021, to improve the public healthcare infrastructure across the country.
- The lending will be divided into two complementary loans of $500 million each.

Key Details:
- The loan is intended to help India with preparedness for future pandemics as well as to strengthen its health infrastructure.
- In addition to the national-level interventions, one of the loans will prioritise health service delivery in seven States — Andhra Pradesh, Kerala, Meghalaya, Odisha, Punjab, Tamil Nadu, and Uttar Pradesh.
- The $500-million Public Health Systems for Pandemic Preparedness Programme (PHSPP) will support the government's efforts to prepare India's surveillance system to detect and report epidemics of potential international concern.
- Another $500-million Enhanced Health Service Delivery Programme (EHSDP) will support the government's efforts to strengthen service delivery through a redesigned primary healthcare model, which includes improved household access to primary healthcare facilities, stronger links between each household and its primary care facility through regular household visits and risk assessment of non-communicable diseases.
- Both the PHSPP and the EHSDP loans from the International Bank for Reconstruction and Development (IBRD) have a final maturity of 18.5 years, including a grace period of five years.
- India's performance in health has improved over time. According to the World Bank estimates, India's life expectancy has increased from 58 in 1990 to 69.8 in 2020. This is higher than average for the country's income level.

18. World Happiness Index 2023

Syllabus: Important International Institutions, agencies and fora- their structure, mandate.

Prelims: World Happiness Index 2023

Mains: Evaluating India's performance in World Happiness Index

Context: Recently, the UN Sustainable Development Solutions Network released the World Happiness Report 2023 which ranks countries on happiness.

What is the World Happiness Report?
- It is the report that ranks countries on the basis of how happy their citizens perceive themselves to be. It is different from the Human Development Report (HDR) which focuses on three dimensions — healthy life, knowledge and standard of living.
- **The World Happiness Report, which has been published since 2012, is founded on two main principles:**
  - Identifying key elements that determine well-being and life evaluation across countries.
  - Happiness or life evaluation measured through opinion surveys.
  - Each variable is measured annually and given a populated-weighted average score on a scale from 0 to 10, which is then tracked over time and further compared with other nations.
- The report typically awards rankings to 150 nations based on a number of variables, including Real social support, GDP per capita, Freedom of choice in one's life, Healthy life expectancy, Perceptions of corruption and Generosity.

World Happiness Report 2023:
- Finland has topped the chart and is the happiest country in the world while Denmark and Iceland hold second and third positions respectively.
- Afghanistan has secured the last position in the chart since 2020 due to the humanitarian crisis it has been facing since the Taliban took over the administration.
- In the 2023 edition, India has improved its ranking to 126th position out of 137 countries in comparison to the 135th position in the 2022 report.
- But, if we compare our neighbouring countries in South Asia, India still ranks below countries such as Nepal, Bhutan, Pakistan, Sri Lanka, China and Bangladesh.
- **India only ranked better than Afghanistan which was placed at 137, the bottom position.**
- Despite being the fastest economy India has secured a very low rank in the index, even Russia and Ukraine, despite being at war for more than one year, ranked better than India at 70th and 92nd in terms of happiness. So it raises doubts about the credibility of the report and the method of evaluation.

India's Performance:
- **India moved up three ranks from 139th in the 2021 report to 136th in the 2022 edition and in the 2023 edition it reached the 126 spot.**
- According to the Happiness Report, India was one of the nations where people's assessments of their quality of life declined by more than one full point on a scale of 0 to 10 over the previous ten years.
- **Numerous factors contribute to the persistent unhappiness of the nation, including**
  - Rapid urbanization and congestion in cities
  - Declining incomes and unemployment
  - Unfavourable perceptions about corruption in the country
  - Rising costs of healthcare
  - Women's safety
  - Environmental pollution
  - Poor mental well-being

Sustainable Development Solutions Network:

- The Sustainable Development Solutions Network (SDSN), established in 2012, mobilises scientific and technology knowledge from around the world to advance real-world problem resolution for the Sustainable Development Goals (SDGs) and the Paris Climate Agreement.
- The Sustainable Development Goals (SDGs) Index & Dashboards Global Report, published annually since 2016, is a collaboration between the SDSN and the Bertelsmann Stiftung.
- It was established under the direction of the UN Secretary-General.

ART AND CULTURE

1. 'Adopt a Heritage' scheme

Syllabus: Indian Heritage and Culture.

Prelims: Adopt a Heritage Scheme.

Mains: Adopt a Heritage Scheme and associated concerns.

Context: Recently the government announced that it will hand over around 1,000 monuments to the private sector for their upkeep under the control of the Archaeological Survey of India (ASI).

Details
- Private companies/firms and public sector entities can adopt and maintain State-owned archaeological sites/monuments by entering into an agreement with the Ministry of Culture.
- These entities will be called Monument Mitras. It is a revamped version of the 'Adopt a Heritage' scheme.
- The 'overhauled' scheme will allow businesses to use their Corporate Social Responsibility funds to construct and maintain ticket offices, museums, restaurants, toilets, and walkways.
- They can also illuminate monuments, set up guided tours, organize cultural programmes, arrange for light and sound shows, etc.

Adopt a Heritage Scheme
- The President of India had launched the "Adopt a Heritage" Scheme on World Tourism Day i.e., 27th September 2017.
- The scheme allows private and public sector corporations to adopt most of India's top heritage sites and improve tourism in such sites.
- This is a unique venture of the Ministry of Tourism in close collaboration with the Ministry of Culture and the ASI which envisages developing heritage sites, tourist sites and monuments across the length and breadth of the country.
- The Scheme further aims to make the heritage site of the country tourist-friendly so that the tourism potential and the cultural importance could be enhanced in a phased and planned manner.
- The Ministry of Tourism has the power to terminate the MoU of Monument Mitras in case of noncompliance of guidelines and expression of interest (EoI), or any other reason of non-performance.

Benefits of Adopt a Heritage Scheme
- Corporate control of some monuments and heritage sites ensure that their maintenance and operations would be handled more professionally.
- The project would help provide basic amenities such as cleanliness, safe drinking water, light, and sounds in the lesser-known monuments.
- Such heritage sites also would get advanced amenities and features to offer such as Visitor Facility Centres; Sound and Light Shows, 3D-Projection Mapping; Snack Counter & Souvenir Shops; Augmented Reality (AR) and Virtual Reality (VR) experience.
- An agency with the best vision for the heritage site will be given an opportunity to associate pride with their CSR activities.
- The company would also get limited visibility on the premises and the Incredible India website.

Concerns associated with Scheme
- Though the scheme is intended to improve visitor services and amenities, there are chances of perils. For instance,
  - In Morbi, Gujarat, a watch company (without expertise in bridge engineering) was permitted to maintain a colonial-era bridge.
- Similarly, giving businesses a chance to maintain museums and interpretation centres (overlooking the professional experts) can endanger India's own understanding of its past.
- It is argued that the new plan sidelines the mandate of the ASI and abandons The Sarnath Initiative, guidelines devised by the ASI, the Getty Trust, the U.S., the British Museum, and National Culture Fund to safe-keep excavated objects and display them to visitors in an engaging manner.
- Many monuments selected for the scheme already have tourist infrastructure.
  - For example, Sanchi stupas, the Brihadeshwar temple (Thanjavur), etc.
- Moreover, the businesses will occupy the public land and build their own brands.
  - This would diminish the valuable land around iconic monuments.
- There are apprehensions that it might undermine local communities and their relationships with historical sites.
  - For instance, guided tours by business entities would endanger the livelihood of local communities.
- The illumination of monuments at night would further result in pulling electricity away from rural homes and hospitals.
- Many monuments/sites selected for the scheme are already maintained by central agencies or the Archaeology Directorate of the State.
- There are accusations of placing reckless tourism and corporate interests over historical preservation.

Way Ahead
- Rather than adopting monuments and historical sites, businesses could support citizens' understanding of why monuments matter.
- Businesses should help citizens understand the monuments better. The CSR funds can be earmarked for researching, writing, publishing quality textbooks, and developing innovative methods of teaching history.
- Corporates can also help by instituting fellowships, endowing professorships, and supporting research training.
  - For instance, Mr. and Mrs. Narayan Murthy aided organizations to continue writing history by rationally linking the textual record and the archaeological evidence.
- Industrial houses can also utilize their CSR funds to install equipment that releases fewer noxious gases and discharge fewer effluents into rivers.
- Organizations can also train individuals in restoration skills. Advanced-level training can also be provided to deal with emerging climate change threats. Some of the examples of climate change impacting monuments are:
  - Rising sea levels and salination are disturbing the foundation of various forts in Maharashtra.
  - High rainfall is causing Ladakh's stucco houses to crumble.
  - Similarly, high temperatures are risking Shekhawati murals.
- Finally, private sector resources and expertise can be used to secure monuments from various other threats such as mining projects, defacement, and looting.

Nut Graf: *The revamped 'Adopt a heritage' scheme has several issues associated with it. The government of India should embrace forward-looking principles of historical preservation. It will further inspire India's citizens to safeguard India's pluralistic heritage.*

2. Parrot Lady of Khajuraho

Syllabus: Salient aspects of Art Forms, literature and Architecture

Prelims: About Parrot Lady of Khajuraho sculpture and Archaeological Survey of India (ASI)

Context:
- About 26 repatriated Indian antiquities will be exhibited and displayed in the national capital in order to spread awareness on the prevention of illicit trafficking of antiquities.
- Among the antiquities displayed, the "Parrot Lady of Khajuraho" sculpture was a major attraction.

Parrot Lady of Khajuraho sculpture

Source: The Hindu

- The "Parrot Lady of Khajuraho" is a 900-year-old sandstone sculpture.
- This is a three-foot-long sculpture that is exquisitely carved and depicts a lady with a parrot near her right ear which symbolises love.
- A few historians believe that the "Parrot Lady" may have been the queen of Khajuraho portrayed as the majestic 'Abhisarika' or cupid-struck lady, always engaged in conversation with her pet parrot.
- The sculpture was smuggled from Delhi to Canada (Toronto) and was brought back to India from Canada in 2015 in accordance with the 1970 UNESCO Convention.
- The Archaeological Survey of India (ASI) is the nodal agency for dealing with antiquities and about 244 stolen or missing artefacts have been repatriated to India to date.

3. SCO- Shared Buddhist Heritage

Context: In a first-of-its-kind event, India hosted a conference last week on 'Shared Buddhist Heritage' under the ambit of the Shanghai Cooperation Organisation (SCO), which saw participation of scholars and experts from Russia, China, Pakistan, Tajikistan, Belarus, Bahrain, Myanmar, the United Arab Emirates and Kazakhstan.

Details:
- **The aim of the conference is to re-establish trans-cultural links, seek out commonalities between Buddhist art of Central Asia, art styles, archaeological sites and antiquity in various museums' collections of the SCO countries.**
- The first-of-its-kind international conference on "Shared Buddhist Heritage", under the ambit of the Shanghai Cooperation Organization (SCO), was inaugurated in New Delhi.
- It is a two-day conference that highlights India's civilizational connection with the SCO nations.
- The objective of the Conference is to renew trans-cultural links and shared histories between different countries. It aims to strengthen the cultural bonds between SCO members.
- The event will bring together Central Asian, East Asian, South Asian, and Arab countries to discuss "Shared Buddhist Heritage".
- **The conference is being organized by the Ministry of Culture, the Ministry of External Affairs, and the International Buddhist Confederation.**

4. Difficult to allocate public fund to art and culture: govt.

- According to the Ministry of Culture, the high disparity in basic rural infrastructure such as health, education and transportation makes it difficult for a developing country such as India to allocate a significant amount of public funds to the promotion of art and culture.
- The observations made by a parliamentary committee have revealed that the allocation for the Ministry of Culture was only about 0.075% of the total Budget for the FY 2023-24 which is significantly less than the allocations in countries like China, the UK, the US, and Australia, which spend about 2%-5% of their Budget for promoting art and culture.
  - However, officials of the Ministry have further said that the majority of the amount allocated to the promotion of art and culture in these countries is sourced from non-government sources.
- Under the Union Budget for 2023-24, the Ministry of Culture has been allocated ₹3,399.65 crores under revenue and ₹285.4 crores under capital heads for prioritised programmes.
- The Ministry is looking at and evolving various innovative methods to maximise the participation of non-government organisations for the promotion and conservation of art and culture in the country.

5. Sokra Misawa Festival

- Sokra Misawa Festival is celebrated by Tiwas tribals in Karbi Anglong district, Assam.
- Tiwa tribal boys perform rituals wearing headgears called sakrashata during the festival.
- Tiwas worship nature during this spring-time festival and then prepare their fields for the next crop.

SCIENCE AND TECHNOLOGY

1. CE-20 Cryogenic Engine

Syllabus: GS-3; Science and Technology; Indigenization of technology and developing new technology.

Prelims: About CE-20 cryogenic engine and Chandrayaan-3 Mission

Context: The Indian Space Research Organization (ISRO) has completed the flight acceptance hot test for the CE-20 cryogenic engine, which will power the Cryogenic Upper Stage of the LVM3 launch vehicle for the upcoming Chandrayaan-3 mission.
● The test was conducted at the ISRO Propulsion Complex in Mahendragiri, Tamil Nadu, and all propulsion parameters were found to be satisfactory during the test.

What is CE-20 Cryogenic Engine?
● The Liquid Propulsion Systems Centre (LPSC), an ISRO subsidiary, designed and developed the CE-20 cryogenic engine.
● It will power the LVM3 launch vehicle's cryogenic upper stage for the Chandrayaan-3 mission.
● It is India's first cryogenic engine with a **gas-generator cycle.**
   ○ The gas generator produces gas. The resultant hot gas (from the gas generator) is circulated to power the propellant pumps in the gas generator cycle. The generator cycle is now used by all of the world's most successful rockets. This includes Ariane 5, SpaceX's Falcon 9, the recently launched Soyuz, China's Long March 3B, and others.
● It is one of the world's most powerful upper-stage cryogenic engines.
● In vacuum, this engine produces a nominal thrust of 186.36 kN.
● Because of the use of propellants at extremely low temperatures, as well as the associated thermal and structural issues, the cryogenic stage is a technically complex system.
● It runs on liquid fuels that have been cooled to extremely low temperatures.
● When compared to solid and earth-storable liquid propellant rocket stages, a cryogenic rocket stage is more efficient and provides more thrust per kilogramme of propellant burned.

What is LMV3?
● LVM3, formerly known as GSLV MkIII, is ISRO's heaviest launch vehicle.
● LMVIII is India's largest launch vehicle that is currently in operation.
● This fourth-generation three-stage launch vehicle has four liquid strap-ons.
● The GSLV Mk III's third stage is the indigenously developed, built, and flight-tested Cryogenic Upper Stage (CUS).

Features
● Capable of lifting and parking a 4.3-ton satellite on a GTO.
● The payload capacity for LEO missions is 10 tonnes.
● From a financial standpoint, it is commercially viable.
● Reliability, operability, and redundancy management have all improved.
● Future payload expansion is possible with minor design changes.
● To provide assistance to manned missions in the Indian Space Program, such as the Gaganyaan mission.

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2. ALMA telescope

Syllabus: Awareness in the field of space

Prelims: About ALMA telescope

Context: ALMA (Atacama Large Millimetre/submillimetre Array) telescope is getting software and hardware upgrades that will allow it to collect more data and produce sharper images.

What is ALMA?
● ALMA is a cutting-edge radio telescope that studies celestial objects at millimetre and submillimetre wavelengths that can penetrate dust clouds and assist astronomers in studying dim and distant galaxies and stars.
● It has been operational since 2013, and was designed, planned, and built by the National Radio Astronomy Observatory (NRAO) of the United States, the National Astronomy Observatory of Japan (NAOJ), and the European Southern Observatory (ESO).
● It also has a high sensitivity, allowing it to detect even the most faint radio signals.
● It is made up of 66 high-precision antennas spread across a distance of up to 16 kilometres in northern Chile's Atacama Desert.
● These antennas can be moved closer or farther apart for different perspectives, much like a camera's zoom lens.

Why is ALMA Located in Chile's Atacama Desert?
● ALMA is located on the Chajnantor plateau in Chile's Atacama Desert at an elevation of 16,570 feet (5,050 m).
● The desert is the driest place on the planet, so most nights are clear of clouds and light-distorting moisture.
● All of this makes it an ideal location for studying the universe, as the millimetre and submillimetre waves it observes are very susceptible to atmospheric water vapour absorption on Earth.

What are Some of the Notable Discoveries made by ALMA?
● Scientists are attempting to answer age-old questions about our cosmic origins.
● One of the first discoveries was made in 2013, when it discovered starburst galaxies and the formation of dust inside supernova 1987A.
● The following year, ALMA released detailed images of the protoplanetary disc surrounding HL Tauri, a very young T Tauri star in the constellation Taurus about 450 light years from Earth.
● In 2015, the telescope assisted scientists in observing the Einstein ring, which occurs when light from a galaxy or star passes through a massive object on its way to Earth.
● It recently provided the first image of the supermassive black hole at the centre of our own Milky Way galaxy as part of the Event Horizon Telescope project, a global network of radio telescopes.

3. H3N2 virus

Syllabus: Awareness on various diseases

Prelims: About H3N2 Virus

Context: Due to the influenza A subtype H3N2 virus, India has recorded the deaths of two people, one each in Karnataka and Haryana.

What is the H3N2 virus?
- Influenza viruses, which cause the infectious disease known as flu, are of four different types: A, B, C and D. Influenza A is further classified into different subtypes and one of them is the H3N2.
- The "swine influenza viruses" or H3N2v are non-human influenza viruses that mostly infect pigs but have also infected people. These viruses are known as "variant" viruses when they infect people. With genes from avian, swine, and human viruses as well as the M gene from the 2009 H1N1 pandemic virus, the particular H3N2 variant virus was discovered in humans in 2011.
- The 1968 flu pandemic, which killed 100,000 people in the US and about a million people worldwide, was brought on by H3N2.
- According to a 2020 study that was published in the journal Nature Communications, the virus strains have substantially changed over the previous five decades as a result of persons born in the late 1960s and early 1970s becoming infected with it as youngsters.

What are the symptoms of H3N2?
- Similar to other flu symptoms, it has some of the same ones. They consist of a runny or stuffy nose, runny or feverish nose, body ache, headache, sore throat, and excessive exhaustion. In very few instances, nauseousness, vomiting, and diarrhoea have been observed.
- H3N2 infections typically last five to seven days, with the fever starting to subside after three days. Coughing, however, can continue for up to three weeks.

Which age group is more vulnerable?
- Typically, people under the age of 15 or over the age of 50 fall victim to this virus.
- Risk factors include being a child, having co-morbid illnesses like asthma, diabetes, heart disease, a weaker immune system, and neurological or neurodevelopmental disorders.

Transmission:
- The extremely contagious H3N2 influenza can be transmitted from one person to another through droplets released when coughing, sneezing, or talking by an infected individual.
- It can also spread if someone touches their mouth or nose after contacting a surface that has the virus on it. Pregnant women, young children, elderly adults, and persons with underlying medical issues are at a higher risk of flu-related complications.

How to prevent it from spreading?
- The best defence against the transmission of H3N2 is good personal cleanliness.
- One can prevent getting sick from the H3N2 infection by washing their hands before eating or touching their face, nose, or mouth, carrying pocket sanitizer, and avoiding others who have the virus or any other seasonal flu.
- A healthy diet that is rich in fruits and vegetables can also significantly contribute to boosting immunity. The doctor also suggested eating home-cooked, low-spice, low-fat food and drinking lots of water.

Treatment options:
- Treatment for H3N2 influenza includes getting enough rest, drinking lots of water, and reducing fever with over-the-counter pain relievers like acetaminophen or ibuprofen. Antiviral medications like oseltamivir and zanamivir may also be suggested by a doctor if a patient has severe symptoms or is at a high risk of complications.
- WHO recommends that neuraminidase inhibitors be prescribed as soon as feasible (preferably, within 48 hours of symptom start) in suspected and confirmed cases to maximise therapeutic benefits.
- It is crucial to take precautions against H3N2 influenza, such as being vaccinated each year.

4. Scrub typhus

Syllabus: Developments of Drugs & their Applications & Effects

Mains: Treatment guidelines to manage Scrub Typhus endemic

Context: This article discusses about the treatment guidelines for Scrub Typhus

What is Scrub Typhus:
- Scrub typhus is an infectious disease caused by the bacterium Orientia tsutsugamushi, which is transmitted to humans through the bites of infected chiggers (larval mites).
- It is also known as bush typhus, Japanese river fever, and tsutsugamushi disease.
- Scrub typhus is typically found in rural areas of the Asia-Pacific region, including parts of Southeast Asia, China, Japan, and Australia. The disease is most common during the rainy season, when chiggers are more prevalent.
- As per estimates, nearly one million cases are reported from South and Southeast Asia with 10% mortality.
- India is one of the hotspots with at least 25% of the disease burden.
- The symptoms of scrub typhus can include fever, headache, muscle aches, and a rash that usually appears a few days after the onset of symptoms.
- If left untreated, the disease can lead to severe complications, such as meningitis, respiratory failure, and organ failure.
- Prevention measures for scrub typhus include wearing protective clothing, using insect repellent, and avoiding areas where chiggers are likely to be present.

Treatment Guidelines:
- Till date, monotherapies using either doxycycline or azithromycin was the commonly used treatment.
- A trial carried out now in seven centres in India where patients were randomly assigned to receive a combination therapy of both doxycycline and azithromycin showed faster resolution of complications compared with two other arms where patients were given monotherapy of either doxycycline or azithromycin.
- The 28-day mortality was the same (12.1%) in all the three groups. But the combination therapy group achieved faster resolution of complications at day seven.
- In severe cases, hospitalisation may be necessary, and supportive care may be required to manage complications.

Saving lives by faster resolution of complications

India is one of the hotspots for scrub typhus disease with at least 25% disease burden

- Combination therapy with doxycycline and azithromycin achieved faster resolution of complications compared with monotherapy using either drug
- Combination therapy achieved faster clearance of the bacteria compared with monotherapies

Of concern: Mortality due to severe disease with multi-organ dysfunction was 24%, as per a 2014 study

- Faster resolution of complications using combination therapy can potentially save

thousands of lives

- Scrub typhus infection does not cause typical symptoms, making correct and early diagnosis difficult
- Awareness about the infection and disease is very low, despite the high disease burden and mortality rate
- In Vellore, increased awareness and early diagnosis led to sharp drop in mortality even with monotherapy

Source: The Hindu

Nut Graf: Scrub typhus is a bacterial infection transmitted through chigger bites. The very high mortality rate in patients with severe disease despite diagnosis and treatment makes scrub typhus a major public health threat. Recent trials on combination therapy of drugs have shown faster resolution of complications from the disease.

5. Megha-Tropiques-1 (MT1) satellite

Syllabus: GS-3; Science and Technology; Awareness in the field of space

Prelims: Megha-Tropiques-1 (MT1) satellite

Context:
The Indian Space Research Organisation (ISRO) is undertaking a controlled re-entry of the decommissioned Megha-Tropiques-1 (MT1) satellite on March 7th, 2023.

Megha-Tropiques-1 (MT1) satellite
- The Megha-Tropiques-1 (MT1) satellite was launched in October 2011 through ISRO's Polar Satellite Launch Vehicle (PSLV) from the Satish Dhawan Space Centre, Sriharikota.
- The launch of MT1 Satellite was a joint satellite venture of ISRO and the French space agency.
- The key objective of the satellite was to study tropical weather and climate conditions and provide data services to support regional and global climate models till 2021.
- MT1 Satellite has provided key scientific data about the role of the water cycle on the tropical atmosphere, with data such as the influence of condensed water in clouds, water vapour in the atmosphere, precipitation, and evaporation.
- The Megha-Tropiques had day, night and all-weather viewing capabilities.
- **The payload of the satellite consisted of:**
  - Microwave Analysis and Detection of Rain and Atmospheric Structures (MADRAS)
  - Sounder for Probing Vertical Profiles of Humidity (SAPHIR)
  - Scanner for Radiation Budget (ScaRaB)
  - Radio Occultation Sensor for Vertical Profiling of Temperature and Humidity (ROSA)
- In April 2022, ISRO announced the end of the mission for the MT1 satellite due to the issues with the attitude control sub-system.
- As per UN/IADC space debris mitigation guidelines, it is recommended that a Low Earth Orbit (LEO) object at its end-of-life should be deorbited preferably through controlled re-entry to a safe impact zone, or by bringing it to an orbit where the orbital lifetime is less than 25 years.
- The re-entry experiment of MT1 has been undertaken as a part of the ongoing efforts as this satellite with sufficient left-over fuel offered a unique opportunity to test the relevant methodologies.

6. India's push for semiconductors

Syllabus: Indigenisation of technology

Mains: Significance of promoting Semiconductor fab units, opportunities for India and the efforts undertaken by the government.

Context: As part of its efforts to encourage the electronics supply chain to India, the Union Government has disbursed close to ₹1,645 crores through performance-linked incentives (PLI) for electronics manufacturers.

Why are countries prioritising semiconductor manufacturing?
- Semiconductor fabrication units or fabs are manufacturing plants that help turn raw materials such as silicon into integrated circuits which are a part of almost all electronic hardware.
- Semiconductor fabrication units or fabs are highly capital-intensive undertakings and require billions of dollars in the case of large facilities.
- Fabs also require a highly reliable and high-quality supply of water, electricity, and insulation from the elements and a high degree of precision, cost and capital are required to make the sophisticated circuits.
- Countries across the world have now realised strategic value associated with the segments of the value chain for fabs.
  - As per a report by the Semiconductor Industry Association (SIA), in 2022 China surpassed Taiwan in terms of share of global sales from fabs.
  - The U.S. enacted the CHIPS Act in August 2022, which extends about $280 billion in subsidies and investments to encourage manufacturers to set up fabs and make semiconductors in the U.S.
- The government's Invest India agency says that electronics manufacturing as a whole sector would be worth $300 billion by FY 25–26.
  - Further, facilities for assembling finished products have been steadily increasing in number in India.
  - However, the number of fabs for making chipsets and displays, which are essential parts of the manufacturing process for electronic devices in the country, is a cause of concern.
  - According to the Minister of Electronics and Information Technology, the first semiconductor manufacturing fab will be announced in the coming future.

Opportunities for India
- The Semiconductor Industry Association (SIA) has said that India must rely on its strengths in the electronics manufacturing value chain.
- A significant portion of semiconductor manufacturing involves design and intellectual labour. India is said to have an advantage as a large share of semiconductor design engineers working across the world are either Indians or of Indian-origin.
- Further, top chipmaking firms like Intel and NVIDIA have already established large facilities in India and have provided the required exposure to Indian talent.
- Experts feel that China is losing control over such an advantage on account of sanctions and an ageing population.

Way forward
- Setting up display and semiconductor fabs is looked at as one of the strategic and economic goals of India and both the Union as well as the State governments are looking for opportunities to connect with popular brands such as Apple
- The government is also looking to develop various parts of the ecosystem that promise sustainable growth and fiscal feasibility.
- As per the SIA, rather than setting up "foundry companies", which turn silicon into semiconductors, countries like India must focus on encouraging companies that specialise in Outsourced Semiconductor Assembly and Test (OSAT).
  - Foundry companies require huge capital investment with entry costs itself being close to billions of dollars.
  - The OSAT set-ups are involved in the less capital-intensive processes of chipmaking which include assembling the components and undertaking testing.
  - (OSAT set-ups hence are less expensive and generate better margins.
- Furthermore, like-minded countries must specialise in different aspects of semiconductor manufacturing and come together for distribution which can help solve the geopolitical problem of Chinese dominance.

Nut graf: In the wake of China's dominance and the geopolitical challenges of semiconductor chip shortage, India and other countries across the world are coming up with various initiatives to encourage semiconductor manufacturing within their territories. In this regard, the country's intellectual labour is said to be a key advantage for India.

7. Superconductors

Syllabus: Science and Technology – developments and their applications and effects in everyday life.

Prelims: About superconductors

Context
A study has reported the discovery of room-temperature superconductivity in nitrogen-doped lutetium hydride at about a thousand atmospheres of pressure.

What are superconductors?
- Superconductors are those materials that do not resist the flow of current and hence conduct electricity without any energy losses.
- Scientists have found out that superconductors can exhibit truly quantum phenomena and can enable revolutionary technologies, such as quantum computing.
- Some of the popular examples of superconductors are Aluminium, Magnesium diboride, Niobium, Copper oxide, Yttrium barium and Iron pnictides.
- As per the studies, all the materials which are known to be superconductors gain such properties in special circumstances and outside those circumstances, they resist the flow of current.
  - **Example:** Aluminium becomes superconducting when it is cooled below its critical temperature i.e. less than −250°C.
- Researchers across the world have been working towards finding materials that exhibit superconductive properties in ambient conditions such as a few atmospheres of pressure and at room temperature.
  - Studies have indicated that hydrogen and materials based on it could hold great promise in this regard.
  - **Example:** In 2019, scientists in Germany found lanthanum hydride (LaH10) to be a superconductor at −20° C but under more than a million atmospheres of pressure which is almost equal to the pressures at the centre of the earth.

Room-temperature superconductors
- Recently, scientists at the University of Rochester in the US have reported the discovery of room-temperature superconductivity in nitrogen-doped lutetium hydride at about a thousand atmospheres of pressure.
- According to the researchers, the presence of nitrogen led to the findings.
- The nitrogen-doped lutetium hydride exhibited superconductivity upon the jiggling motion of the crystal, and the scientists have inferred that the right amount of nitrogen could induce the right amount of jiggling that can induce superconductivity at room temperature but without destabilising the crystal.
- However, the discovery has become controversial as there are scientific criticisms of the methods employed by the researchers to process the data and other subtraction methods.

8. What are 'bio-computers' and how do they function?

Syllabus: Science and Technology- developments and their applications and effects in everyday life

Prelims: About Bio-computers

Mains: Bio-computers – functioning, benefits, and challenges associated with their development.

Context:
Researchers at Johns Hopkins University (JHU) have come up with a plan for a new area of research named "organoid intelligence", which aims to create "bio-computers".

Background
- Understanding the functioning of the human brain has been one of the most complex challenges for researchers across the world.
- Researchers have resorted to the use of rat brains to examine or research various neurological disorders traditionally.
- Recently, the researchers at JHU have come up with a technique for developing "bio-computers" from "brain organoids" or "mini brains".

Bio-computers
- Researchers are developing 3D cultures of brain tissue in the lab which are called brain organoids or mini brains.
  - Mini-brains, which are up to 4 mm in size, are developed using human stem cells and thus they have the ability to capture various functional and structural features of a human brain.
  - Such brain cultures that are created or developed are then coupled to the real-world through various sensors and input/output devices.
- Researchers at the JHU have developed a technique wherein brain organoids are integrated with modern computing technologies to create "bio-computers".
- Plans are in place to also integrate rain organoids or mini brains with machine learning (ML) techniques by developing such organoids inside flexible structures affixed with multiple electrodes (similar to the ones used to record EEG readings).
  - Such a mechanism will help record the firing patterns of various neurons and deliver electrical stimuli to mimic sensory stimuli.
  - The following response pattern of the neurons and their effect on human behaviour will be analysed by ML techniques.
- Furthermore, developing brain organoids or mini brains using the stem cells of patients with neurodegenerative or cognitive disorders and analysing the data on brain structure, can provide key insights.

Functioning of Bio-computers
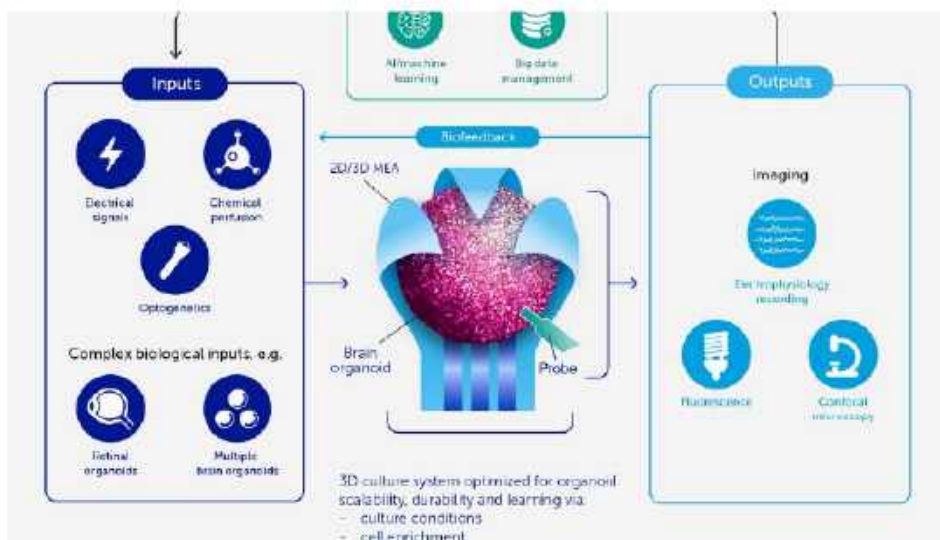
Source: The Hindu

- Recently, researchers transplanted human brain organoids into rat brains where they were found to have formed connections with the rat brain which would provide the much needed blood circulation.
- These organoids were transplanted into the visual system and when flash light was shown to the rats as part of the experiment, the human neurons were found to be activated.
  - This shows that the human brain organoids were functioning actively.
- Scientists believe that the advancement of this system will help significantly understand the biological basis of human cognition, learning, and various neurological disorders.

Key challenges
- Integrating brain organoids with various sensory inputs which mimic realtime touch, smell, vision, etc. would be a complex task that requires a significant amount of investment, technological expertise and sophisticated laboratories.
- Also, such human brain organoids are still tested in the rat-brain microenvironment and the effects of drugs in this case will only show behavioural changes in rats, which is not sufficient and there is a need for developing more human-relevant systems or models.
- Further, another key challenge would be enabling long-term memory of such systems.

Path ahead
- At present, brain organoids are being developed with a diameter of less than 1 mm and fewer than 1,00,000 cells, which make it about three-millionth the size of an actual human brain.
  - There is a need for scaling up the brain organoid in order to improve and better its computing capacity.
- Scientists are working on adopting such brain organoids and Bio-computers in developing drugs for diseases such as autism and Alzheimer's.

***Nut graf*:** *Studying the human brain has always been a complex process and neuroscientists study the brain of the lab mouse with the hope of understanding the basic principles of the human brain. However, the development of "bio-computers" with the help of organoid intelligence techniques is expected to revolutionise neuroscientific studies.*

9.   Scientists devise 'glowscope' to bring fluorescent microscopy to schools

Syllabus: GS-3; Science and Technology – developments and their applications and effects in everyday life.

Prelims: About fluorescent microscopy and glowscope techniques

Context
According to the researchers, fluorescence microscopes are very expensive making them unaffordable for students in various resource-poor labs. However, students could use rudimentary characteristics to study the microscopic world.

Fluorescence microscopes
- A normal optical microscope helps view an object and study how it absorbs, reflects or scatters visible light.
- Whereas a fluorescence microscope views an object by studying its fluoresces i.e. how it re-emits light that it has absorbed.
- Objects are illuminated with light of a specific wavelength and the particles in the object absorb the light and re-emit it at a higher wavelength (i.e. different colours).

- o   Such particles are called fluorophores and the object is infused with such particles before being placed under the microscope.
- A fluorescent microscope can track such particles or fluorophores when they shine or glow brightly due to fluorescence as they move inside the object thereby revealing various characteristics of the object.
- There are several versions of such fluorescent microscopes such as epifluorescence and confocal laser-scanning microscopes.
- Fluorescence microscopes are very expensive costing up to crores.

Latest developments – Glowscope

- Researchers from Winona State University have come up with a way of developing a rudimentary fluorescence microscope that could be developed at a cost of ₹2,500 to ₹4,100.
- Researchers have said that such devices can detect green and red fluorophores.
- The set-up of a rudimentary fluorescence microscope consists of two plexiglass surfaces, an LED flashlight, three theatre stage-lighting filters, a clip-on macro lens, and a smartphone.
  - o   The smartphone with the lens is placed on one surface that is suspended at a height and a second sheet is placed below that holds the object.
- The object which is to be observed is then injected with different fluorophores depending on the interest and the stage-lighting filters held between the flashlight and the object and others held between the object and the smartphone ensure that light of the right frequency would reached the object and the fluoresced light of a suitable frequency reached the camera.

10.   Japanese encephalitis vaccination

Syllabus: Awareness about various diseases

Prelims: Types of Vaccines; Antibodies

Context: A recent study found no neutralising antibodies after Japanese encephalitis vaccination

Introduction:

- A small study involving 266 children, who had received two doses of a live, attenuated Japanese encephalitis vaccine SA-14-14-2 made in China, found very low levels of neutralising antibodies IgG at different time points after vaccination.
  - o   Study did not measure cell-mediated immune responses (T-cell immune responses).
- Nearly 98% of the children who received the vaccine did not have any IgG antibodies against the virus.
- The results are in line with other studies conducted outside India, which too found a decline in neutralising antibody levels post-vaccination.
- Immunisation of children with the Chinese vaccine began in 2006 in 11 endemic regions, and became a part of the Universal Immunisation Programme in 181 endemic districts in 2011 first with a single dose and subsequently (2013) with two doses.
- Despite vaccination, there have been several outbreaks in the endemic regions, particularly in Gorakhpur district.
  - o   The disease burden is highest in the Gorakhpur region of eastern Uttar Pradesh.

Jenvac:

- In contrast, a trial carried out using an inactivated vaccine-Jenvac, developed by Bharat Biotech in collaboration with National Institute of Virology(NIV), Pune using a virus strain collected in India, has found superior protection at the end of two years even with a single dose.
- Jenvac has been approved as a single-dose vaccine; two doses of Jenvac are used as part of the Universal Immunisation Programme.
- In the head-to-head comparison trial using Jenvac and the Chinese vaccine, the seroprotection at the end of one year and two years was 81.7% and 88.5% for Jenvac and just 47.9% and 68.3% for the Chinese vaccine, respectively.
- The trial also found significantly higher neutralising antibodies when children received two doses of Jenvac rather than two doses of the Chinese vaccine.

11.   Sickle cell anaemia

Syllabus: Awareness about various diseases

Prelims: National Health Mission; Genetic Disorders

Context: Sickle cell screening meets only 1% of target.

Key Details:

- Under the National Health Mission, Government of India supports the states for prevention and management of sickle cell disease as per their annual performance improvement plans proposals.
- The Union Health Ministry has also released technical operational guidelines for prevention and control of hemoglobinopathies in 2016 including sickle cell anaemia.
- Further in terms of treatment, support is given under NHM for capsule hydroxyurea, free blood transfusion for all Sickle cell patients (men & women) as per State's proposal.
- In the union budget of FY 2023-24, it is announced to launch a mission to eliminate sickle cell anaemia by 2047.
- The mission entails focus on awareness creation, universal screening of approximately seven crore people in the 0-40 years age group in affected tribal areas and counselling through collaborative efforts of central ministries and state governments.
- However, the Health Ministry has completed a minuscule 1% of its ambitious target to scan one crore people for sickle cell disease in 2022-23.
  - o   The target set for 2022-23 was to screen one crore people. However, only 1,05,954 people have been screened so far, out of which 5,959 people (5.62%) were found to be carrying the traits.

Challenges:

- In India, sickle cell anaemia is particularly prevalent among certain tribal communities, but there are several challenges to screening patients for the disease.
- There is a lack of awareness and education about sickle cell anaemia among both patients and healthcare professionals in India. Many patients may not realise they are carriers of the disease or understand the importance of getting screened.
- Screening for sickle cell anaemia requires specialised testing facilities and equipment, which make it difficult for patients to access screening services, particularly in rural or remote areas
- Sickle cell anaemia is often associated with social stigma and discrimination,particularly among tribal communities. This can make it difficult for patients to access screening services.
- There are approximately 15 lakh estimated patients living with sickle cell disease, who have not been yet identified by the screening system.

Sickle cell disease:

- Sickle cell disease is a genetic disorder in which the red blood cells of the patient turn into sickle-shaped crescents, become rigid and sticky, and get clogged in the blood vessels.
- It causes a debilitating systemic syndrome characterised by chronic anaemia, acute painful episodes, organ infarction and chronic organ damage and by a significant reduction in life expectancy.

12. Type 1 diabetes

Syllabus: Awareness about various diseases

Prelims: Type 1 diabetes

Context

The National Commission for Protection of Child Rights (NCPCR) has written to the Education Boards of all States and UTs, saying that it is the duty of schools to ensure that children with Type 1 diabetes are provided with proper care and required facilities.

Type 1 diabetes

- Type 1 diabetes is a condition in which the immune system destroys insulin-making cells in the pancreas called the "beta cells".
  - Thus the disease is caused by an autoimmune reaction.
- Since the pancreas doesn't produce insulin or produces very little insulin, the blood sugar can't get into cells and builds up in the bloodstream.
  - Insulin helps blood sugar enter the cells in the body for use as energy.
- Type 1 diabetes was earlier known as "insulin-dependent or juvenile diabetes".
- Type 1 diabetes is less common than type 2 diabetes which is common among adults.
- Type 1 diabetes cannot be prevented but can be treated successfully by managing sugar levels via managing insulin levels.
- Hypoglycemia and Diabetic Ketoacidosis are two common complications associated with diabetes.
  - Hypoglycemia refers to low blood sugar levels.
  - Diabetic ketoacidosis (DKA) is a serious complication of diabetes, which develops when the body lacks the required amount of insulin to let blood sugar into cells.
    - Since the body does not get enough glucose for fuel, it breaks down fat cells instead. This creates chemicals called ketones.

13. Fatty Liver Disease

Syllabus: Awareness about various diseases

Prelims: Lifestyle Disorders; Non Communicable Diseases

Context: This article discusses the impact of inadequate sleep on fatty liver disease.

Key Details:

- A high-quality study showed that inadequate sleep duration was strongly associated with an elevated risk of developing non-alcoholic fatty liver disease, and adequate sleep helped prevent it.
- Several experiments on lab mice and rats have shown the impact of inadequate sleep which increased Liver enzymes, blood, and liver fat.
- Sleep deprivation stresses liver cells and the activity of certain genes that escalate insulin resistance and fat content within liver cells also increased with sleep deprivation.
- The sympathetic nerves that supplied the liver, best known for their role in responding to stress and danger, were hyperactive in sleep deprived people.
- With every one-hour decrease in sleep time from the recommended seven-eight hours, the risk of fat deposition in the liver increased by 24% compared with those who slept adequately.

Importance of sleep:

- Sleep is a vital function of human life and accounts for up to one-third of the lifespan. Contrary to normal belief, during sleep, the brain is not 'resting' but is engaged in various activities necessary to improve well-being, increase life, and especially impact the liver.
- A study of nearly 55,500 people from Europe showed that those who slept 7-8.5 hours daily had higher life expectancy than those who slept less than seven hours.
- In those between ages 50 and 75 without sleep disturbances, the expectation of living longer without chronic disease development was significantly higher.

Non-alcoholic fatty liver disease:

- Nonalcoholic fatty liver disease (NAFLD) is an umbrella term for a range of liver conditions affecting people who drink little to no alcohol.
- The main characteristic of NAFLD is too much fat stored in liver cells.
- Early-stage NAFLD does not usually cause any harm, however, individuals with NAFLD can develop nonalcoholic steatohepatitis (NASH), an aggressive form of fatty liver disease, which is marked by liver inflammation and may progress to advanced scarring (cirrhosis) and liver failure.
  - This damage is similar to the damage caused by heavy alcohol use.
- Having high levels of fat in the liver is also associated with an increased risk of serious health problems, such as diabetes, high blood pressure and kidney disease.
- Increase in NAFLD in diabetic patients will heighten the chances of developing heart problems.
- If detected and managed at an early stage, it's possible to stop NAFLD getting worse and reduce the amount of fat in the liver.

14. India's Deep Ocean Mission

Syllabus: Indigenization of Technology & Developing New Technology

Mains: Significance and Implications of Deep Sea Exploration

Context: India prepared an underwater mission at 6000 metres depth.

Introduction:
- India's Deep Ocean Mission is a landmark initiative by the Government of India that aims to explore and study the ocean depths surrounding the Indian peninsula.
- The mission is a multidisciplinary project that seeks to advance our understanding of the ocean's vast and complex ecosystem, its geology, and its mineral resources.
- It aims to develop the technology and infrastructure necessary for deep-sea exploration and research, to discover new marine species, to map the ocean floor, and to study the ocean's biogeochemical cycles and its impact on climate change.
- Additionally, the mission also seeks to explore the potential of deep-sea minerals and to develop technologies to extract and utilise them sustainably.

Manned Submersible:
- Development of Technologies for Deep Sea Mining, and Manned Submersible is one of the important features of Deep Ocean Mission.
- National Institute of Ocean Technology (NIOT) in Chennai is developing 'MATSYA-6000', an advanced underwater vehicle developed as part of the Mission.
    - It is a Remotely Operated Vehicle (ROV) that is designed to carry three people and operate at depths of up to 6,000 metres, making it one of the deepest diving ROVs in the world.
    - At a depth of 6,000 metres, the weight of water would be nearly 600 times that at sea level which makes the pressurised titanium hull the most important component of the submersible.
    - It is equipped with a wide range of sensors, cameras, and sampling devices. It is capable of collecting high-resolution images and videos of the deep-sea environment and its inhabitants, as well as collecting samples of water, sediment, and biological material.
    - MATSYA-6000 is equipped with advanced navigation and positioning systems that allow it to navigate through the deep-sea environment with great accuracy. It is also equipped with powerful thrusters that enable it to manoeuvre in strong currents and turbulent waters.
- India's mission is expected to take place in late 2024 or in 2025. Success of this mission would make India only one among six countries (Japan, USA, Russia, France and China) to have piloted a manned under-sea expedition beyond 5,000 metres.
- MATSYA-6000 is a major milestone in India's deep-sea exploration capabilities. It will allow scientists to study the deep-sea environment in greater detail than ever before, leading to new discoveries and insights into the ocean's vast and complex ecosystem.
- The vehicle is expected to play a key role in the Deep Ocean Mission and in future scientific expeditions in the Indian Ocean region.

Nut Graf: Deep Ocean Mission is a multi-disciplinary project aimed at exploring and studying the Indian Ocean's depths, utilising advanced technologies such as MATSYA-6000 ROV. The mission aims to develop sustainable deep-sea mineral extraction technologies, study the ocean's biogeochemical cycles, map the ocean floor, and discover new marine species.

15. MQ-9A 'Reaper'

- The MQ-9A Reaper is an unmanned aerial vehicle (UAV) primarily used by the United States Air Force and the Central Intelligence Agency (CIA) for reconnaissance, surveillance, and targeted strikes.
- It is a larger and more advanced version of the earlier MQ-1 Predator drone.
- The Reaper is equipped with advanced sensors, cameras, and precision-guided missiles, and can remain airborne over 27 hours at speeds of 240 KTAS (knots true airspeed) and can operate up to an altitude of 50,000 feet.
- It is manufactured by General Atomics Aeronautical Systems.
- It has been used extensively in the US military campaigns in Iraq, Afghanistan, and Syria, as well as in other countries in the Middle East and Africa.
- The use of Reaper drones has been controversial due to concerns over civilian casualties and violations of international law.
- On March 14, the U.S. Air Force (USAF) ditched an MQ-9 Reaper in the Black Sea after a confrontation with two Russian Su-27 jets over international waters west of Crimea.
- The Indian Navy is currently operating two MQ-9As on lease. A bigger proposal for procuring 30 armed MQ-9As, popularly called Predator-B, has been delayed.
- MQ-9As are also operated by the U.K., France, Italy, the Netherlands, Spain and on order by Belgium. Japan recently inducted the MQ-9B Sea Guardian, the maritime configuration.
- At Aero India in February 2023, Hindustan Aeronautics Limited (HAL) and General Atomics announced that the turbo-propeller engines which power the MQ-9B will be supported by HAL's engine division for the Indian market.

DEFENCE AND INTERNAL SECURITY

1. Development of Defence export ecosystem

Syllabus: Various Security forces and agencies and their mandate

Mains: Development of Defence export ecosystem

Context: As a result of the government's move from perceiving India as a net importer to a net exporter during the past few years, the defence sector has seen a quantum jump. In 2021-22, India's defence exports reached a record USD 1.6 billion, and by 2023, they will exceed USD 2.2 billion.
- A credible effort combined with an appropriate policy framework has aided in the exploration of fragmented export opportunities, with the exception of the BrahMos Missile export to the Philippines.
- While the accomplishment should be celebrated, it is also critical to learn from the missed defence export opportunities. After successfully executing policy reforms and strengthening the business ecosystem, it is time to improve the export ecosystem.

What is the State of Defence Exports from India?
- India's defence export status has been improving in recent years, with the country emerging as a leading exporter of defence equipment to friendly countries. However, there have been missed opportunities.
  - India's defence exports for 2021-22 were estimated at Rs 13,000 crore, the highest ever.
  - The private sector accounted for 70% of the exports, while public sector firms accounted for the rest.
- Personal protective equipment, offshore patrol vessels, and avionics have been successfully exported by India to countries such as the Maldives, Sri Lanka, Russia, France, Nepal, Mauritius, Sri Lanka, Israel, Egypt, the UAE, and Chile.
- Nonetheless, there is a need to enhance the value of defence exports and seek broader markets to fulfil the USD 5 billion export objective set for 2025.
- India has failed to convert interest in products such as the BrahMos and Akash missile systems from countries such as Indonesia, Malaysia, Singapore, Vietnam, Egypt, South Africa, and Brazil into commercial action.
  - These countries have expressed interest in the BrahMos missile system, but India has yet to convert this interest into commercial action.
  - India has also failed to secure large naval defence orders from countries such as Oman, Myanmar, Mauritius, and Vietnam.

What are the Challenges with India's Defence Export?
- **Lack of Competitiveness:** India's defence products are frequently regarded as of inferior quality and higher cost when compared to those of other major defence exporters such as the United States, Russia, and Israel.
- **Export Portfolio Is Limited:** Defence exports from India are restricted to a few nations and product categories. This hinders its ability to enter the global defence market.
  - Many bureaucratic impediments and red tape exist in India's defence export procedure, making it tough for exporters to negotiate.
- **Lack of Clarity in Policy:** India's defence export policy is unclear, which leads to confusion and concern among potential exporters.
- **Import Dependence:** India continues to import a major portion of its defence equipment, limiting its ability to export modern defence technology.

How can India Boost its Defence Export?
- **Export Infrastructure:** The Export Infrastructure can be used for training, support, and market intelligence systems.
  - PSU training, particularly for those involved in foreign business, should be prioritized, as the bulk of officers come from engineering backgrounds and have inadequate understanding or skill sets to manage international commercial operations.
  - A dedicated Export Promotion Council, focused on the demands of the defence sector, with export promotion officials who understand not only India's policy framework, but also the policy frameworks of other countries involved in defence production and exports.
  - Via EPC authorities, the Indian defence sector should become acquainted with international treaties/protocols (Nuclear Supplier Group/Australia Group/Missile Technology Control Regime/Wassenaar Group) as well as India's UN mandated and other international commitments and obligations.
- **Trade Support:** The Indian defence sector requires specific 'Trade Support' from regulatory bodies in order to expedite clearances, both for production and export compliance.
  - There is a need to expose the Indian defence sector to trade fairs, Buyer-Seller Meets (BSM), reverse BSMs, incubation chances with partner countries, and knowledge transfer for fragmented commercial potential.
  - In the case of platform-based export (Tejas/Brahmos/Sarang/Light Combat Helicopter (LCH), Indian missions overseas can play a critical role in not just finding evolving opportunities, but also tapping them with specialized diplomatic support during the lengthy talks.
- **R&D Infrastructure:** Depending on industry demands, the Department of Defence Production may look into collaborative or co-development opportunities with other countries.
  - Another aspect of R&D infrastructure is that the Indian defence sector should be willing to share it with possible friendly clients in exchange for potential export orders.
  - With joint/co-development agreements, for example, Egypt could get a fighter plane or Bangladesh could get a rocket launcher system.

2. Global Terrorism Index 2023

Syllabus: Security challenges and their management

Prelims: Global Terrorism Index 2023

Mains: Key findings of Global Terrorism Index 2023 and learnings for India

Context: The Global Terrorism Index report is produced by the Institute for Economics & Peace (IEP) using data from TerrorismTracker and other sources.
- Terrorism Tracker provides event records on terrorist attacks since 1 January 2007. The dataset contains almost 66,000 terrorist incidents for the period 2007 to 2022.

Key Findings:
- Globally, deaths from terrorism fell by 9% to 6,701 deaths, marking a 38% decrease from its peak in 2015.
- South Asia remains the region with the worst average GTI score.
- South Asia recorded 1,354 deaths from terrorism in 2022.

- Islamic State (IS) and its affiliates were the deadliest terror group globally for the eighth consecutive year, recording the most attacks and deaths of any group in 2022.
- **Pakistan recorded the second largest surge in terror-related deaths worldwide in 2022, the toll increasing significantly to 643.**
- **India ranks 13th on The Global Terrorism Index (GTI).**
- Afghanistan continues to be the country most affected by terrorism for the 4th year in a row, even though attacks and deaths decreased.

Challenges Related to Terrorism Globally:
- **Terror Financing:** According to the International Monetary Fund (IMF) and World Bank, criminals are estimated to launder up to four trillion dollars a year. Fund movements by terrorists have also been concealed through charities and alternative remittance methods.
- **Politicisation of Countering Terrorism:** The members of the United Nations Security Council (P5) have exercised the veto power to varying degrees when it comes to identifying terrorists. Also, absence of universally accepted definitions for what constitutes terrorism provides terrorists with an edge and allows some countries to remain silent and veto any action at global institutions.
- **Use of Emerging Technology by Terrorists:** Innovations in computing and telecommunications like widespread internet access, end-to-end encryption, and virtual private network (VPN) have made new types of operations possible for a higher number of radicalised individuals across the globe, contributing to the threat.

3. India slams Pakistan for hosting terrorists designated by UNSC, flays OIC remark on J&K

Syllabus: Security challenges and their management in border areas – linkages of organized crime with terrorism.

Mains: India's views against Pakistan supporting terrorism.

Context: India exercised the right of reply at UNHRC.

Details:
- Slamming Islamabad's "malicious propaganda", India said that Pakistan has the "unique distinction" of hosting the highest number of UNSC-designated terrorists and terror organizations
- It further said that Pakistan's policies are directly responsible for thousands of civilian deaths in the world.
- While exercising India's right to reply to Pakistan, at the United Nations Human Rights Council (UNHRC) in Geneva, the First Secretary of India's Permanent Mission to the UN accused Pakistan of nurturing and sheltering various UN-designated terrorists and terrorist organizations.
- India also criticized the Organisation of Islamic Cooperation (OIC) for its "unwarranted references" to the Union Territory of Jammu and Kashmir. It also raised concerns against OIC for allowing Pakistan to hijack and misuse its platform in advancing Islamabad's "nefarious agenda" against New Delhi.
- Indian secretary also highlighted that "the Union Territories of Jammu and Kashmir and Ladakh have been, are, and shall always be part of India and Pakistan is in illegal occupation of Indian territory".

Nut Graf: *Exercising its right of reply to Pakistan at the United Nations Human Rights Council (UNHRC), India has accused Pakistan of hosting many United Nations designated terrorists and terrorist organizations. It has also criticized the Organization of Islamic Cooperation for supporting Pakistan in matters related to Jammu and Kashmir.*

4. India's Paramilitary Forces

Syllabus: Various Security Forces & Agencies & Their Mandate

Mains: Issues faced by India's paramilitary forces

Context: This article discusses various grievances of India's paramilitary forces that need to be addressed.

Introduction:
- India's paramilitary forces play a critical role in maintaining internal security and safeguarding the nation's borders.
- These forces operate under the Ministry of Home Affairs and work alongside the Indian Army, Navy, and Air Force to ensure the nation's safety and security.
- Despite their crucial role, the paramilitary forces face numerous grievances that need to be addressed.

Lack of Adequate Equipment and Infrastructure:
- These forces operate in some of the most challenging environments and are responsible for maintaining law and order in various regions of the country.
- However, they often lack basic equipment such as bulletproof jackets, helmets, and proper weapons, which puts their lives in danger.
- Additionally, many paramilitary camps and facilities are in poor condition and lack basic amenities such as clean water, sanitation facilities, and medical care.

Poor Working Conditions and Pay:
- These forces work long hours in challenging conditions and are often stationed in remote areas away from their families for extended periods. Despite this, their salaries and benefits are significantly lower than those of other uniformed services such as the Army or Police.
- Many paramilitary personnel feel that they are not given the same level of respect and recognition as other uniformed services, despite their crucial role in maintaining internal security.

Inadequate Training and Career Advancement Opportunities:
- Unlike the Army or Police, which have well-established training institutions and career paths, the paramilitary forces often rely on ad-hoc training and development programs. This can result in a lack of standardisation in training and a lack of clear career paths for personnel.
- Additionally, many paramilitary personnel feel that they are overlooked for promotions and career advancements, which can lead to a lack of motivation and job satisfaction.

Mental Health and Stress-Related Issues:
- Paramilitary personnel often work in high-stress environments which can lead to a range of mental health issues, including anxiety, depression, and PTSD.
- However, many paramilitary personnel feel that their mental health issues are not taken seriously, and they do not receive the support and treatment they need.

Lack of Accountability and Transparency:
- There have been several instances where paramilitary personnel have been accused of human rights violations and other illegal activities, but there has been a lack of accountability and punishment for these actions. This lack of accountability can lead to a lack of trust in the organisation and can damage its reputation.

Nut Graf: India's paramilitary forces, responsible for maintaining internal security and safeguarding the nation's borders, face numerous grievances. These include a lack of adequate equipment, poor working conditions, inadequate training, and mental health issues. Addressing these grievances is crucial for the forces' effectiveness and morale.

5. Khalistan Movement

Syllabus: Role of External State & Non-State Actors in Creating Challenges to Internal Security

Mains: Khalistan movement and its associated challenges to internal security

Context: Major crackdown against pro-Khalistan supporters in Punjab.

Introduction:
- The Punjab Police on March 18 in a major crackdown against pro-Khalistan propagator Amritpal Singh and his supporters arrested 78 persons in connection with multiple criminal cases.
  - Amritpal Singh is the chief of a pro-Khalistan organisation called 'Waris Punjab De (WPD)'.
  - The accused WPD activists are involved in four cases of spreading disharmony among classes, attempted murder, attack on policemen and creating obstructions in the lawful discharge of duties of public servants.
- Internet services were suspended across the State to prevent any incitement to violence.
- The police seized numerous weapons and have appealed for calm, cautioning people against spreading fake news or hate speech.
- The agencies are conducting investigations to determine Amritpal's links with overseas pro-Khalistan backers.

Khalistan Movement:
- The Khalistan movement is a separatist movement that emerged in the late 1970s in the Indian state of Punjab.
- The movement seeks to create a separate Sikh homeland called Khalistan, which would comprise Punjab and other parts of northern India.
- The 1980s were a period of intense violence and political unrest in Punjab, as the Khalistan movement led by Jarnail Singh Bhindranwale gained momentum.
- Bhindranwale and his followers occupied the Golden Temple in Amritsar, which is the holiest Sikh shrine, in 1984. The Indian government responded by launching Operation Blue Star, a military operation to flush out the militants from the temple.
- The Khalistan movement continued to gain strength in the late 1980s, with militant groups carrying out a series of bombings and assassinations.
- The Indian government responded with a heavy-handed crackdown, leading to a cycle of violence and counter-violence.

The Decline of the Khalistan Movement:
- By the early 1990s, the Khalistan movement had lost much of its momentum. The Indian government had largely succeeded in suppressing the militant groups, and public support for the movement had waned.
- The decline of the Khalistan movement can be attributed to several factors. One of the main factors was the lack of international support for the movement. Most countries did not recognize the Khalistan movement as a legitimate separatist movement, and the movement was largely isolated from the international community.
- Another factor was the fracturing of the movement into several competing factions. The movement lacked a cohesive leadership structure and was plagued by infighting and factionalism.
- In addition, the Indian government launched a series of economic and political reforms in the 1990s, which helped to address many of the grievances that had fueled the Khalistan movement. Punjab saw significant economic growth during this period, and the state became more integrated into the Indian economy.

Contemporary Relevance:
- Despite these factors, the Khalistan movement continues to exist in some form today. There are still a small number of militant groups that espouse the Khalistan ideology, although they are much weaker and less active than they were in the 1980s.
- The Khalistan movement continues to have relevance in contemporary India. The movement has inspired a new generation of Sikhs who feel marginalised and discriminated against in Indian society.
- In recent years, there have been several incidents of Sikh activists advocating for Khalistan and engaging in protests and demonstrations. In 2020, a group of Sikh activists erected a Khalistan flag at the Red Fort in Delhi during a protest against the Indian government's controversial farm laws.
- Moving forward, it is important for the Indian government to address the underlying grievances that have fueled the Khalistan movement, such as discrimination against Sikhs and political and economic marginalisation.
- At the same time, it is important to reject violence and extremism and to promote dialogue and peaceful resolution of conflicts.

Nut Graf: The pro-Khalistan movement in India poses internal security challenges for the country due to its violent and extremist character. The movement has been linked to acts of terrorism and separatism which continues to be a concern for Indian authorities.

6. Supreme Court on banned outfits

Syllabus: Role of External State & Non-State Actors in Creating Challenges to Internal Security

Mains: Evolution of UAPA and its impact on Fundamental Rights

Context: Supreme Court verdict on membership in a banned organisation under UAPA.

Introduction:
- A three-judge Bench of the Supreme Court on March 24, 2023, clarified that mere membership of an unlawful outfit is an offence under the Unlawful Activities (Prevention) Act (UAPA).
- With this judgement, the Supreme Court has set aside a series of its own judgments which had concluded that "mere membership" — unlike "active membership" — of an unlawful association or organisation did not make a person criminal or a terrorist.
  - The court was examining three of its judgments delivered in 2011 — State of Kerala vs Raneef; Arup Bhuyan vs Union of India; and Indra Das vs State of Assam.

- On February 3, 2011, the court acquitted suspected ULFA member Arup Bhuyan, who was held guilty by a TADA court on the basis of his alleged confessional statement, and said mere membership of a banned organisation will not make a person a criminal. Similar views were taken by the court in the two other verdicts.
- The Union government and Assam had appealed against the ruling in the Arup Bhuyan case, following which a two-judge bench referred the matter to a larger bench in 2014.

Supreme Court judgement:

- The Supreme Court clarified that a person who "is or continues to be" even a "mere member" of a banned organisation is liable to be found criminally liable under the UAPA for acting against the sovereignty and integrity of India.
- The judgement referred to Section 10(a)(i) of the UAPA which deals with membership in an unlawful association.
- The provision says that "where an association is declared unlawful by a notification issued under Section 3 which has become effective under sub-section (3) of that section, —(a) a person, who — (i) is and continues to be a member of such association shall be punishable with imprisonment for a term which may extend to two years, and shall also be liable to fine".
- Under Section 3 of the UAPA, the Union government must openly notify the public when an organisation or association has been declared unlawful. The court reasoned that this logically implies that every member of the organisation would be aware of the ban.
  - But a person choosing to continue as a member despite knowing about the ban is acting against the sovereignty of the nation, the court noted.
- The court also clarified that persons who had left the organisation and were not members at the time it was declared unlawful, cannot be held liable under Section 10(a)(i) of the UAPA.

Reasonable restrictions of Fundamental Rights:

- The court referred to Article 19(4), which mandated that the citizens' right to form unions or associations was subject to the power of the state to make laws to impose "reasonable restrictions" in the interests of the sovereignty and integrity of India or public order or morality.
- The Bench also disagreed with the previous benches relying on certain decisions of the US Supreme Court and pointed out that there are differences in the laws of the two countries.
  - Unlike the US, the right to freedom of speech in India is not an absolute right and is subject to reasonable restrictions, and the Constitution permits Parliament to frame the laws taking into consideration the public order and/or the sovereignty of India.

Nut Graf: *In a significant judgement, the Supreme Court has clarified that being a mere member of an unlawful outfit is an offence under the Unlawful Activities (Prevention) Act. The court also emphasised that citizens' right to form unions is subject to "reasonable restrictions" in the interest of public order or the sovereignty and integrity of India.*

7. INS Androth

Syllabus: Various Security forces and agencies and their mandate.

Prelims: About INS Androth

Context: The INS Androth was launched in Kolkata.

INS Androth

Source: The Hindu

- INS Androth is an anti-submarine warfare craft.
- INS Androth is the second in a series of eight Anti-Submarine Warfare Shallow Water Craft (ASW SWC) projects.
- INS Androth is named after Androth or Andrott Island which is the largest and the longest island in the Lakshadweep archipelago.
- It is built by the Garden Reach Shipbuilders and Engineers (GRSE) for the Indian Navy.
- The contract for building eight ASW SWC ships was signed between the Ministry of Defence and GRSE in April 2019.
  - INS Arnala was the first of the eight indigenously-built ASW SWC.
  - These Arnala-class of ships are expected to replace the in-service Abhay class ASW Corvettes of the Indian Navy.
- The ASW SWC ships are designed to undertake anti-submarine operations in coastal waters, Low-Intensity Maritime Operations, Mine Laying operations and subsurface surveillance in littoral waters.
- INS Androth and ASW SWC ships are 77.6 metres long, have a displacement of 900 tons and can achieve maximum speeds of close to 25 knots.
- These ships are propelled by three diesel-driven water jets.

8. Very Short Range Air Defence (VSHORAD) missile system

Syllabus: Defence and Security systems

Prelims: About VSHORADS missile

Context: The Defence Research and Development Organisation (DRDO) conducted flight tests of Very Short Range Air Defence (VSHORAD) missiles at the Integrated Test Range, Chandipur, off the coast of Odisha.

Very Short Range Air Defence (VSHORAD) System
- The Very Short Range Air Defence (VSHORAD) System is a Man Portable Air Defence System (MANPAD) used for neutralising low altitude aerial threats at short range.
- VSHORAD has been designed and developed indigenously by Research Centre Imarat, Hyderabad in collaboration with DRDO and other Indian industry partners.
- The VSHORAD missile system is equipped with advanced technologies such as Dual-band IIR Seeker, miniaturised Reaction Control System and integrated avionics.
- The VSHORAD missiles are propelled by a dual-thrust solid motor.
- The VSHORAD missiles are expected to replace the existing Igla in service.
- VSHORAD can be deployed in the mountains close to the LAC at a short notice and hence is said to be critical for the defence of major cities or strategically significant locations in the wake of recent developments along the LAC and northern borders.

9. S-400

Syllabus: Defence and Security systems

Prelims: About S-400 air defence system

Context: The deliveries of five regiments of S-400 air defence systems are expected to be completed by year-end or early 2024.

S-400 air defence system

Source: The Eurasian Times

- The S-400 air defence system is an anti-aircraft missile defense system developed by Russia's Almaz Central Design Bureau.
- The S-400 defence system not just consists of a surface-to-air missile system but a complete family of systems which includes radars, command centres, missiles, and support components that together help defend vast areas of airspace.
- Every squadron of the S-400 defence system consists of two S-400 batteries, and each S-400 air defense system battery usually consists of four missile launch vehicles.
  - Further, there are four tubes with missiles ready to launch within each launch vehicle.
- The current version of the S-400 can launch four different types of missiles with various ranges and heights.
- India had signed a $5.43 billion or ₹40,291 crore deal with Russia for the delivery of five S-400 missile systems in October 2018.
- Delivery of the third S-400 regiment has been completed with the deliveries of two more regiments remaining.
- However, the deliveries of systems have been delayed due to the threat of CAATSA (Countering America's Adversaries Through Sanctions Act) by the US.

10. P-8I aircraft and Sea Dragon 23 Exercise

Syllabus: Various Security forces and agencies and their mandate

Prelims: About P-8I aircraft and Sea Dragon 23 Exercise

Context: The Indian Navy has deployed P-8I aircraft in the third edition of the coordinated multilateral Anti-Submarine Warfare (ASW) exercise conducted by the U.S. Navy in Guam.

P-8I aircraft
- The P-8I aircraft is an anti-submarine warfare aircraft.
- The aircraft is designed for undertaking long-range anti-submarine warfare (ASW), anti-surface warfare (ASuW), and intelligence, surveillance and reconnaissance (ISR) missions. Thus the P-8I is also regarded as a multi-mission maritime patrol aircraft.
- The P-8 aircraft are designed and manufactured by the US-based Boeing Company.
  - It is one of Boeing's most advanced aircraft.

- The P-8 aircraft has two variants, namely:
  - The **P-8I**: Manufactured for the Indian Navy
  - The **P-8A Poseidon**: Deployed by the US Navy, the UK's Royal Air Force, the Royal Australian Air Force, and the Royal Norwegian Air Force.
- The P-8I aircraft has the ability to fly at an altitude of about 41,000 feet and has a short transit time.
- P-8I is a dual-engine aircraft and has a top speed of 490 knots (789 km/hour) along with a range of over 1,200+ nautical miles (2,222 km).
- In 2009, India placed an order for eight P-8I aircraft and the first of these aircraft was inducted in 2013 making India the first country outside the US to get one.

Sea Dragon 23 Exercise
- Exercise Sea Dragon 23 is the third edition of the coordinated multilateral Anti-Submarine Warfare (ASW) exercise conducted by the US Navy.
- The Sea Dragon is an annual, multinational high-end exercise hosted by the US Navy.
- The Ex Sea Dragon 23 would test the capabilities of the aircraft in tracking simulated and live underwater targets.
- Other than P-8I of the Indian Navy, aircraft such as P8A of the US Navy, P1 of the Japanese Maritime Self Defence Force, CP 140 from the Royal Canadian Air Force and P3C from the Republic of Korean Navy will also take part in the exercise.

11. Exercise Cobra Warrior

Syllabus: Various Security forces and agencies and their mandate.

Prelims: About Exercise Cobra Warrior and Mirage-2000 aircraft

Context: The Indian Air Force's (IAF) Mirage-2000 aircraft have been undertaking joint training involving high intensity, large force, and tactical air war fighting operations as part of Exercise Cobra Warrior.

Exercise Cobra Warrior
- Exercise Cobra Warrior is the largest air exercise conducted by the Royal Air Force of the U.K.
- Exercise Cobra Warrior takes place twice a year.
- The Exercise is designed to train participants in high intensity, large force, tactical air warfighting operations.
- Apart from India, the other countries participating in the 2023 edition of the Exercise include Finland, Sweden, South Africa, Saudi Arabia, the U.S., and Singapore.
  - Finland, India and Saudi Arabia have joined for the first time.
- The aim of the exercise is to participate in diverse fighter aircraft engagements and share the best practices of various Air Forces.

Mirage-2000 aircraft

- Mirage 2000 is a multirole, single-engine, fourth-generation fighter jet.
- Mirage 2000 aircraft are manufactured by Dassault Aviation of France.
- India signed a deal with France in 1980 and the jet is considered IAF's strategic aircraft.
- Mirage 2000 was designed as a lightweight fighter, however, it has evolved into a multirole aircraft with various variants.
- The Mirage 2000 aircraft have played a crucial role in various operations of the IAF including in Kargil and Balakot air strikes.

12. TROPEX Exercise

Syllabus: Various security forces and agencies and their mandate.

Prelims: TROPEX Exercise

Context: The recent TROPEX exercise was conducted for four months from November 2022 to March 2023.

TROPEX Exercise
- TROPEX is the Indian Navy's major "theatre-level operational readiness exercise".
- TROPEX operational level exercise is a biennial exercise.
- The exercise not only involves the Indian Navy units but also the Indian Army, Indian Air Force and Coast Guard units.
- Thus the maritime exercise facilitates operational-level interaction with the Indian Navy, Indian Army, Indian Air Force and the Coast Guard.
- TROPEX exercise provides an opportunity to test the combat readiness of the combined fleets of the Indian forces.
- TROPEX 2023 has been conducted across the expanse of the Indian Ocean, over a duration of four months.
- TROPEX-23 saw the participation of about 70 Indian Navy ships, six submarines and more than 75 aircraft.
- The overall exercise included a pan-India coastal defence exercise named **"Exercise Sea Vigil"**, which was conceptualised to validate various post-26/11 maritime security measures along with the amphibious exercise named **"Amphex"**.

13. India, Italy elevate ties, sign MoU on defence cooperation

- After a period of stagnancy in bilateral relations in the past few years, India and Italy look to elevate the bilateral ties to the level of strategic partnership as the countries signed a memorandum of understanding (MoU) on defence cooperation.
- Further, India and Italy also announced the establishment of a "Startup Bridge" between the two countries.
- The Indian Prime Minister welcomed Italy's active participation in the Indo-Pacific and said that Italy has also decided to join the Indo-Pacific Ocean Initiative (IPOI) which would help enhance cooperation in the Indo-Pacific region.
- The two countries also concluded a Declaration of Intent (DOI) on migration and mobility.
- While delivering the inaugural address of the 8th Raisina Dialogue organised by the Observer Research Foundation jointly with the Ministry of External Affairs, the Italian Prime Minister said that global interconnection has enabled the economies to grow and flourish but it has also come at a cost, especially in times of turbulence in the international community.

14. Sukhoi Su-35 fighter Jets

- Iran has finalised a deal to buy Sukhoi Su-35 fighter jets from Russia.
- The air force of sanctions-hit Iran has an ageing fleet of aircraft and has struggled to acquire spare parts to keep its warplanes in the air.
  - Iran currently has Russian MiG and Sukhoi fighter jets that date back to the Soviet era, as well as Chinese aircraft, including the F-7.
  - Few F-4 and F-5 fighter jets from the U.S. dating back to before the 1979 Iran Revolution are also part of its fleet.
- Iran was restricted from purchasing conventional weapons under UN Resolution 2231. This expired in October 2020.
- Iran has forged strong ties with Moscow in various sectors including the military in recent years.
- Ukraine has accused Tehran of supplying Moscow with Shahed-136 "kamikaze" drones used in attacks on civilian targets since Russia's invasion of Ukraine in February 2022.

15. India remains world's largest importer of arms: SIPRI report

- As per the report by the Swedish think tank **Stockholm International Peace Research Institute (SIPRI)**, India has remained the world's largest arms importer between 2018 and 2022 despite there being a drop in imports by around 11% between 2013-2017 and 2018-2022.
  - According to the report, Russia was the largest arms supplier to India from 2013 to 2022. However, the percentage of total imports from Russia has fallen from 64% to 45%.
  - France has displaced the US (11%) to become the second-largest supplier of arms to India, accounting for close to 30% of its defence imports.
- **The latest report has also revealed that:**
  - Among the top 10 arms exporters for the period 2018 to 2022, India was the biggest arms export market to Russia, France and Israel.
  - India has been the second-largest export market to South Korea and the third-largest market for South Africa.
- Saudi Arabia is the second largest arms importer after India.
- While India's tensions with its neighbouring countries such as Pakistan and China have been the major drivers in the arms imports and the decrease in the share of imports compared to the 2013-2017 period is mainly on account of India's slow and complex arms procurement process, efforts to diversify arms suppliers, and the attempts by the government to achieve self-reliance in the defence sector.

ENVIRONMENT AND ECOLOGY

1. High Seas Treaty

Syllabus: Conservation, environmental pollution and degradation

Prelims: About high seas and treaty on the high seas

Mains: Threat to high seas, the need for protection and the significance of the High Seas Treaty

Context: Intergovernmental Conference on Marine Biodiversity of Areas Beyond National Jurisdiction (BBNJ) representatives from over 100 nations have finished drafting a United
Nations agreement to safeguard the open ocean.

Background
- The U.N. Convention on the Law of the Sea (UNCLOS) was adopted in 1982 and came into force in 1994.
    - UNCLOS set out rules to govern the oceans and the use of its resources, but there was no comprehensive legal framework that covered the high seas.
- As climate change and global warming became global concerns, there was a need to formulate an international legal framework to safeguard high seas and marine life.
- The UNGA after years of informal talks decided to develop a legally binding instrument within the framework of UNCLOS in 2015.
- An Intergovernmental Conference (IGC) was convened to come up with a legal instrument on Marine Biodiversity of Areas Beyond National Jurisdiction (BBNJ).
- Recently, the UN members reached an agreement on this treaty to protect the world's oceans after about 15 years of negotiations. However, the treaty has still not been formally adopted as members are yet to ratify it.

What are High Seas?

Source: The Guardian

- According to the 1958 Geneva Convention on the High Seas, parts of the sea that are not included in the territorial waters or the internal waters of a country are known as the high seas.
- It is the area beyond a country's Exclusive Economic Zone (that extends up to 200 nautical miles (370 km) from the coastline) and till where a nation has jurisdiction over living and non-living resources.
- No country is responsible for the management and protection of resources on the high seas.

Significance of high seas
- Since the high seas account for over 60% of the world's oceans they cover about half of the Earth's surface.
- The high seas are a hub of marine life and they house close to 2.7 lakh known species and many are yet to be discovered.
- Due to their sheer scale, the high seas have become extremely crucial for human survival and well-being.

High Seas and their Biodiversity Risks:
- The 'Treaty of the High Seas', also known as the 'BBNJ Treaty' is an international agreement on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction within the framework of the UNCLOS.
- 66% of the world's oceans.
- Only 1% safeguarded so far.
- IUCN states: 10% of marine species are at risk of extinction, mainly due to pollution and overfishing
- 41% of the total threatened species are also getting affected by climate change
- 25% of carbon dioxide released into the atmosphere is being taken in by the ocean.
- Further, the high seas are increasingly under threat from various anthropogenic activities such as pollution, seabed mining, overfishing, chemical spills, geoengineering, disposal of untreated waste and introduction of invasive species which endanger marine flora and fauna.

Global species assessed for extinction threat

Reef corals	15%
Sharks and rays	90+%
Fishes	67%
Molluscs	11%
Green algae	0.1%
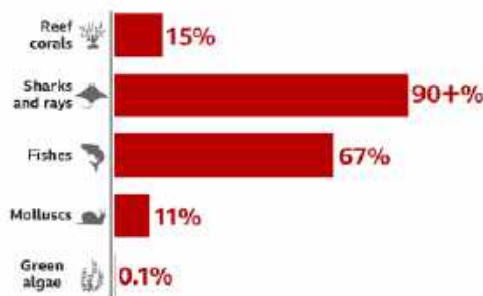
*Assessed species include lobsters, freshwater crabs, freshwater crayfishes and freshwater shrimps

Source: BBC

The High Seas Treaty:
- The High Seas Treaty is a **legally binding pact** that aims to conserve and ensure the sustainable use of ocean biodiversity.
- The treaty provides a legal framework for establishing **marine protected areas (MPAs)** to protect against the loss of wildlife and share out the genetic resources of the high seas.
  - The treaty places **30% of the world's oceans into protected areas** and includes provisions to increase investments in marine conservation.
- The treaty will facilitate the constitution of an **access- and benefit-sharing committee** to frame guidelines to manage and look after the conservation of ocean life.
- The treaty will introduce arrangements for sharing marine genetic resources like biological material from plants and animals in the ocean.
- The treaty also mandates that activities concerning marine genetic resources on the high seas must be carried out in the interests of all States, for the benefit of humanity and exclusively for peaceful purposes.
- The treaty further puts in place various rules for conducting environmental impact assessments for commercial activities in the oceans.
- Scientific and Technical Committee
- Polluter Pay Principle
- Funding mechanism: Establishes a special fund (contribution by developed world) which along with the GEF trust fund will assist the developing world implement this treaty, and support the conservation efforts of indigenous committees.

Significance of the treaty
- The treaty also helps strengthen multilateral cooperation to preserve crucial marine life and biodiversity.
- The treaty will play a critical role in enforcing the 30×30 pledge and historic Biodiversity Deal made by the member nations at the UN biodiversity conference in December 2022, to protect a third of the sea (and land) by 2030.
  - Without such a treaty, the target would fail since there was no legal mechanism to set up MPAs on the high seas.
- Furthermore, the treaty is also vital for achieving ocean-related goals and targets of the 2030 Agenda for Sustainable Development, and the Kunming-Montreal Global Biodiversity Framework (GBF).

The Economics of the Treaty:
- Blue Economy according to the World Bank: "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystems".
- The treaty will help reign in monopolization and overexploitation of fisheries and use of genetic resources from the seas by countries who have the resources.

Nut graf: *The High Seas Treaty is regarded as a historic and pathbreaking development as it finally opens the door to providing protection to marine biodiversity across the high seas and a significant platform for governments to work together and protect global ocean health which is crucial for socioeconomic wellbeing and food security across the globe.*

2. Global sea level rise : State of global climate report

Syllabus: Conservation, environmental pollution and degradation,

Prelims: State of global climate report

Mains: Implications of Global sea level rise and key recommendations

Context: India, China, Bangladesh, and the Netherlands are the countries that are most at risk from sea level rise globally, according to the World Meteorological Organization's (WMO) report, "Global Sea-level Rise and Implications."
- The hazard posed by the sea level rise affects a number of major cities on all continents.

What are the Highlights of the Report?
- **Trends and Projections:**
  - From 2013 and 2022, the average global sea level increased by 4.5 mm per year, with human activity presumably playing a major role in these rises at least since 1971.
  - There will still be a significant rise in sea level even if global warming is kept to 1.5 degrees Celsius over pre-industrial levels.
  - Yet, every fraction of a degree matters. The rise in sea level might double if temperatures rise by 2 degrees, and future temperature increases will cause exponential sea level rises.
- **Contributors to Sea Level Rise:**
  - Between 1971 and 2018, the sea level rose by 50% as a result of thermal expansion, while ice loss from glaciers, ice sheet loss, and changes in land water storage each contributed 22%, 20%, and 8% of the total.
  - From 1992-1999 and 2010-2019, the pace of ice-sheet loss accelerated by a factor of four. Between 2006 and 2018, mass loss from icesheets and glaciers together accounted for the majority of the rise in the global mean sea level.

- **Impacts:**
  - The Greenland and West Antarctic ice sheets will virtually totally and irrevocably melt over a period of millennia at sustained warming levels of 2-3 degrees Celsius, potentially raising the sea level by numerous metres.
  - Sea-level rise will have cascading and compounding effects that, in the short to long term, pose risks to livelihoods, settlements, health, well-being, food security, water security, and cultural values.
    - These effects include losses of coastal ecosystems and ecosystem services, groundwater salinization, flooding, and damage to coastal infrastructure.

What is the Scenario for India?

- **Rate of Sea Level Rise:** According to the Ministry of Earth Sciences, on average, the sea level along the Indian coast was observed to be rising at a rate of about 1.7 mm/year during the last century (1900-2000). (1900-2000).
  - A 3 cm sea level increase might force the sea to invade inland by around 17 meters. At future rates of 5 cm/decade, there may be 300 metres of land taken by the water in a century.
- **India is more Susceptible:** India is most vulnerable to compounding impacts of sea level rise.
  - In the Indian ocean half of sea level rise is due to the volume of water expanding since the ocean is warming up rapidly.
  - The contribution from glacier melt is not as high.
  - The Indian Ocean is the fastest warming ocean in terms of surface warming.
- **Consequences:** India is currently experiencing multiple extreme events along our coastline. Cyclones are intensifying rapidly due to more moisture and heat from ocean warming.
  - The amount of flooding also increases because storm surges are compounding sea level rise decade by decade.
  - Cyclones are bringing more rain than earlier. Super Cyclone Amphan (2020) caused large-scale flooding and inundated tens of kms inland with saline water intruding.
  - The vast deltas formed by the Indus, Ganga, and Brahmaputra rivers may eventually become uninhabitable due to sea level rise, a deep saltwater intrusion, and possible river shrinkage.

What are the Recommendations?

- There is a need to address the climate issue and widen our understanding of the core causes of insecurity.
- It is imperative to actively support grassroots resilience efforts to tackle climate change and improve Early Warning Systems.

3. Becoming Atmanirbhar in Climate Finance

Syllabus: Conservation, environmental pollution and degradation.

Mains: Becoming Atmanirbhar in Climate Finance

Context: The Climate Finance Working Group estimates that 118 trillion rupees are needed to combat climate change, of which 64 trillion are already available and 54 trillion are unrestricted.

- Foreign and domestic debt must be used to close this deficit. Commercial banks and Indian Development Financial Institutions (DFIs) must help by generating money domestically and directing funding from overseas.

What is climate Finance?

- The financial resources set aside to address climate change and its effects are referred to as climate finance. It includes a wide range of financial tools and frameworks that aid in climate change adaptation and mitigation. In an effort for nations to transition to low-carbon and climate-resilient economies and fulfil the objectives outlined in the Paris Agreement, climate finance is essential.
- In order to help poor nations cut their greenhouse gas emissions, prepare for the effects of climate change, and pursue sustainable development, finance is crucial.
- Instead of adhering to the conditions set forth by the Western nations, India must create its own framework and a range of funding strategies to handle the difficulties of climate finance.

What are the Challenges in Climate Financing?

- **Lack of Western Financial Support:** Historically, the majority of greenhouse gas emissions that have contributed to climate change have come from wealthy nations.
  - However, a large number of developed nations have fallen short in their efforts to finance developing nations' climate action.
  - As a result, there is a substantial financial gap, which makes it challenging for developing nations to put mitigation and adaptation plans in place.
- **Lack of Access to Finance:** Due to a variety of circumstances, including poor financial systems, insufficient regulatory frameworks, and restricted access to international markets, many developing countries and small island states have limited access to funding.
- **High Cost of Financing:** It can be challenging to find long-term financing at reasonable rates for climate-related projects, which frequently require significant upfront costs. This may deter investors from funding these initiatives, especially in developing nations.
- **Risk and Uncertainty:** Because of the unpredictability of regulatory and policy frameworks, evolving technologies, and natural calamities, investing in the climate can be risky. Investors may find it challenging to precisely predict the prospective returns on their investments as a result.
- **Lack of capacity and technical expertise:** Many developing nations lack the ability and technical know-how necessary to plan and carry out successful climate projects, which can cause delays and ineffective project execution.
- **Political and policy obstacles:** Problems with politics and policy, such as graft and political instability, can make it difficult to get money for climate change.
- **Insufficient Private Sector Engagement:** Private sector investment is essential for scaling up climate financing, but there is still insufficient private sector engagement due to a number of issues, including a lack of regulatory frameworks, a lack of market incentives, and a lack of public awareness of climate risks.

What are national initiatives for climate finance?
- **The National Adaptation Fund for Climate Change (NAFCC)**
  - It was formed in 2015 to cover the costs associated with climate change adaptation for India's State and Union Territories, which are particularly susceptible to its negative consequences.
- **National Clean Energy fund:**
  - The Fund was established to support sustainable energy, and it was first financed by a carbon tax on sectors that use coal.
  - It is managed by an Inter-Ministerial Group, whose chairman is the finance secretary.
  - Its mission is to support the development and study of cutting-edge clean energy technologies in both the fossil fuel and non-fossil fuel industries.
- **National Adaptation Fund:**
  - With a corpus of Rs. 100 crores, the fund was founded in 2014 with the intention of bridging the funding gap.
  - The Ministry of Environment, Forestry, and Climate Change is in charge of managing the fund (MoEF&CC).

Way Forward for Climate Financing:
- **Obtaining funding from DFIs:**
  - It is crucial to clearly define the priority sector in order to integrate climate finance because the banking system is unlikely to finance investments in climate mitigation and adaptation due to their lower commercial viability.
  - However, due to a significant funding shortage, long-term resources will need to be raised through Development Financial Institutions (DFIs).
  - DFIs have always shied away from taking on foreign currency loans because of domestic fund competition and expensive hedging.
  - To persuade DFIs to contribute the required funds for climate investments, the government may need to intervene to manage hedging costs.
- **The private sector's investments:**
  - Investments from the private sector are essential for funding climate change adaptation and mitigation measures.
  - Bank credit can be used to finance some investments, but many others cannot due to subpar returns, lengthy gestation periods, and increased financial risks.
- **Encouragement of Hybrid Financing:**
  - There are many approaches to promote climate financing through blended finance.
  - To accomplish development goals, blended finance is a cutting-edge financing strategy that blends public and private capital.
  - For instance, it can be applied to the funding of eco-friendly infrastructure, climate-smart agriculture, and renewable energy initiatives. Additionally, it can be used to finance climate adaptation initiatives like erecting coastal barriers or enhancing water management systems.
- **Catalytic or Start-up Funding**
  - Catalytic or start-up money should be used to "re-purpose" important economic operations into green ones, something that western finance and its frameworks might not recognise according to their taxonomy.
  - Repurposing, supported by a straightforward and unbreakable classification framework, oversight, and capacity-building processes, can transform current economic activities into green ones, critically with lower investment levels.
- **Requirement for Innovative Funding Mechanisms:**
  - Innovative finance methods are required in order to fund projects related to the climate, especially in developing nations.
  - Green bonds, climate funds, and carbon markets are a few of these tools.

4. Plastic consumption: bending the curve

Syllabus: Conservation, environmental pollution and degradation,

Mains: Implications of increased plastic consumption and various measures undertaken to address increased plastic usage

Context: According to a recent research, the G20 countries would almost double their plastic usage by the year 2050, going from 261 million to 451 million tonnes.
- The report, "Peak Plastics: Bending the Consumption Curve," explores the potential impact of policies being considered by the United Nations' plastic treaty negotiators.

What does the Report on Plastic Consumption Suggest?
- The paper looked at the potential effects of three important policies that deal with plastic's whole lifecycle, from manufacturing to disposal.
  - These policies include a prohibition on problematic single-use plastic, an extended producer responsibility programme that holds polluters accountable for all end-of-life expenses, and a fee on the manufacture of virgin plastic.
- The study concluded that peak plastic will be reached and consumption will drop as a result of a combination of existing policies and more audacious measures, such as potential bans on virgin plastic manufacture.
  - Peak plastic consumption, according to the experts, is the volume and point at which the world's use of plastic stops expanding and starts to decline.
- Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, United Kingdom, and the United States are the 19 nations that make up the G20.
- According to the report, extended producer responsibility programmes will not significantly reduce the use of single-use plastic products.
  - The best course of action is a universal ban on unneeded single-use plastic items. In 2019, South Korea was the first country to impose the ban nationally on a few products, later extending it to cover more goods. Other countries that have enacted broad prohibitions include China, Canada, France, Germany, Italy, and India.

What is the Significance of Plastic?
- Plastic is a lightweight, inert material that offers a variety of advantages to businesses, consumers, and other societal segments. This is all a result of how inexpensive and adaptable it is.
- Plastics are used in the medical sector to keep things sterile. All syringes and surgical tools are made of plastic and are only used once.
- It has made it possible for the automotive industry to significantly reduce vehicle weight, which has decreased fuel consumption and, as a result, the environmental impact of automobiles.

Steps taken by India to control plastic pollution:
- **Ban on single-use plastics:** Single-use plastics are no longer produced, used, or sold in many Indian states. This includes straws, bags, plates, cups, and cutlery.
- **Extended Producer Responsibility (EPR):** The Indian government has implemented extended producer responsibility (EPR), which requires plastic manufacturers to handle and dispose of the waste produced by their products.
- **Plastic Waste Management Rules:** Introduced in India in 2016, these regulations offer a framework for managing plastic trash through a variety of methods, such as recycling and waste-to-energy projects.
- **Swachh Bharat Abhiyan:** The Indian government started the Swachh Bharat Abhiyan, a nationwide cleanup initiative that includes the collection and disposal of plastic trash.
- **Plastic Parks:** Specialized industrial zones for the recycling and processing of plastic waste have been established in India.
- **Beach clean-up campaigns:** To gather and remove plastic garbage from beaches, the Indian government and a number of non-governmental organisations have established beach clean-up campaigns.
- **Awareness-raising initiatives:** India has started awareness-raising initiatives to inform people about the negative consequences of plastic pollution and to persuade them to use environmentally friendly alternatives.

Issues / Challenges with Plastic:
- **Environmental:** Because it is not biodegradable and takes a long time to break down, it is bad for the environment.
  - Sea animals including seabirds, whales, fish, and turtles consume plastic trash, and the majority of them starve to death because their stomachs are so full of plastic waste.
- **Food and health:** It has been discovered that invisible plastic is found in tap water, beer, salt, and all samples taken from the world's oceans, including the Arctic.
  - It has been determined that eating seafood poses a health risk for the transmission of pollutants from marine organisms to people.
  - Each year, fish eat thousands of tonnes of plastic, which is then transferred to marine mammals farther up the food chain.
- **Climate change:** Plastic, a petroleum-based material, also has a part in climate change. When plastic waste is burned, carbon dioxide is released into the atmosphere, causing a rise in carbon emissions.
- **Tourism:** Plastic waste degrades the aesthetic appeal of tourist destinations, resulting in lower tourism-related incomes and significant economic costs for site upkeep and cleaning.
  - The direct damage to the blue economy of the ASEAN of Southeast Asian States will cost $2.1 billion annually, according to cautious projections given in March 2020.

Challenges in controlling plastic pollution:
- **Weak enforcement of regulations:** Regulations are not being enforced properly despite India having laws in place to control plastic pollution. This is because there are not enough resources available, and there are insufficient monitoring and reporting systems.
- **Lack of public awareness:** More extensive public education programmes are required to promote alternatives to plastic and effective trash disposal techniques.
- **Inadequate infrastructure:** There aren't enough procedures in place to collect and separate waste, and many landfills are poorly run and overflowing.
- **Recycling challenges:** India has a thriving informal recycling industry, however there are issues with the quality and security of recycled plastics as well as a lack of standardized recycling technology and processes.
- **Production of single-use plastics:** India continues to generate a sizable volume of single-use plastic products, including straws, cutlery, and bags. These products are challenging to recycle and frequently wind up in landfills or waterways.

Wayforward:
- The report on plastic pollution in G20 nations should serve as a wake-up call to individuals, businesses, and policymakers to reduce plastic consumption and pollution.
- According to the study, the G20 countries' plastic consumption might quadruple by 2050 if significant policy changes are not made, with dire effects for the environment and human health.
- Although it is encouraging to see several G20 nations taking action to reduce single-use plastics, bolder and more ambitious measures are required to significantly reduce plastic pollution.
- To change the plastic consumption curve, bold and comprehensive measures are required, and the issue must be managed by all interested parties, including petrochemical firms and consumers.

5. International Big Cat Alliance

Syllabus: Biodiversity Conservation

Prelims: International Big Cat Alliance

Mains: Significance of launching the International Big Cat Alliance and its associated issues

Context: India has recently proposed to launch global alliance for big cats with an investment of $100 million

About International Big Cat Alliance:
- The proposed alliance will offer five years of guaranteed support and funding totaling more than Rs 800 crore.
- The seven big cats—the tiger, lion, leopard, snow leopard, puma, jaguar, and cheetah—will be protected by the group.
- Membership to the alliance will be open to 97 "range" countries, which contain the natural habitat of these big cats, as well as other interested nations, international organisations, etc.

Why is India launching the International Big Cat Alliance?
- The only place in the world where leopards, lions, tigers, snow leopards, and cheetahs can be found in the wild is India. They are now extinct in the wild in other nations.
- While only a handful, let's say one or two, are discovered in the wild in certain other nations. India should therefore take the lead in order to bring all big cat countries together.

Activities and Governance of the IBCA
- The IBCA will take part in lobbying, partnerships, an e-portal for knowledge, capacity building, ecotourism, collaborations between expert groups, and financial exploitation.
- The partnership will spread knowledge on resources repositories, research and development, benchmarked practices, capacity building, and awareness raising.
- A General Assembly made up of representatives from each of the member nations will serve as its governing body, together with a council of at least seven.
- It will only have a Secretariat and a maximum of 15 member countries chosen by the General Assembly to serve 5-year terms.

Criticism of the IBCA Proposal:
- The development of another platform without the political resolve to conserve big cats would not aid conservation, according to critics who assert that India cannot afford to pay $100 million for the 22 endangered species.
- Big cat biologists have expressed concerns that a number of important landscapes and species recovery efforts are suffering from a lack of funding.
- IBCA lacks the political will to deliver the vision necessary to get through these obstacles.
- The IBCA is anticipated to be self-sustaining after the first five years through membership fees, contributions from bilateral and multilateral organisations, and the business sector.

6. Vanuatu's initiative on climate change

Syllabus: Conservation, environmental pollution and degradation

**Prelims:** Vanuatu's initiative and the International Court of Justice.

Mains: Role of International Courts in climate change.

Context: Vanuatu is taking up an initiative of seeking an advisory opinion from the International Court of Justice on the issue of climate change.

Background:
- A group of sixteen countries has launched an effort to tackle the issue of climate change at the United Nations.
- The group led by Vanuatu has drafted a United Nations General Assembly (UNGA) resolution requesting an advisory opinion from the International Court of Justice (ICJ).
- The ICJ has two types of jurisdictions: namely **contentious** and **advisory**.
  - **Contentious jurisdiction** refers to resolving legal disputes between consenting states.
  - Under **Advisory jurisdiction**, the UNGA, the UN Security Council (UNSC) and other specialised bodies of the UN can request the ICJ for an opinion on a legal question.
- It is to be noted that ICJ's advisory opinions are non-binding. However, they carry a normative weight and clarify international laws.

Initiative by Vanuatu:
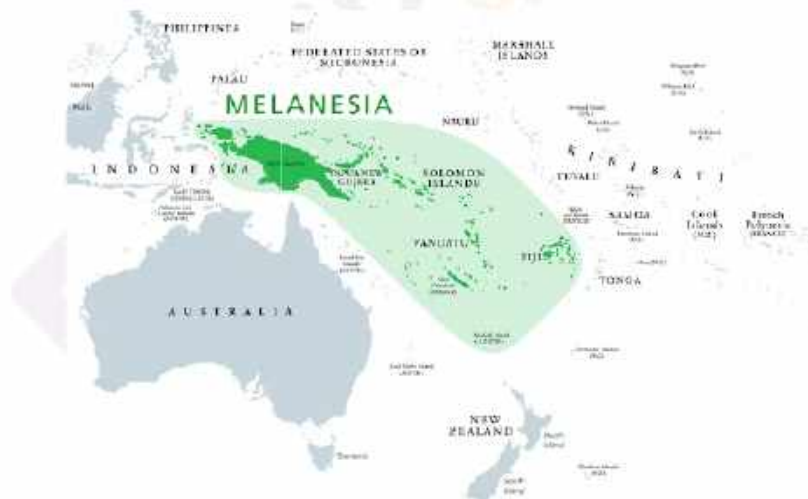
Source: Down To Earth

- Despite several international agreements on climate change like the UN Framework Convention on Climate Change, the Kyoto Protocol, and the Paris Agreement, the international community has not delivered enough solutions for climate change.
- Small Island Developing States (SIDS) are at relatively higher risk due to rising sea levels and increasing temperatures.
  - Vanuatu is one of many small island states in the Pacific threatened by rising seas.
- Vanuatu launched an initiative in September 2021 through UNGA to seek an advisory opinion from ICJ on the "legal obligations of all countries to prevent and redress the adverse effects of climate change".
  - According to Vanuatu, the ICJ is the only principal organ of the UN organisation that has not yet been given an opportunity to help address the climate crisis.
- Ove 105 nations have backed Vanuatu in its initiative.

Legal questions asked through the initiative

The draft resolution seeks answers on the following aspects:
- International obligations of countries for the protection of the climate from anthropogenic emissions of greenhouse gases.
    - It is suggested by some scholars that ICJ can also use general and customary international law (CIL) to fill the gaps in these treaties.
    - Thus, it can use the 'no harm' principle (an important part of CIL) to highlight equivocal provisions of the Paris Agreement.
        - As per the 'no harm' principle states are under an obligation that activities within their jurisdiction do not damage other countries.
- It would seek answers on the legal consequences for countries that have caused significant harm to the climate and the SIDS.
- At COP-27, it was agreed to establish a "loss and damage" fund to financially assist vulnerable developing countries. Hoever, there is little clarity on which countries will provide the funding.
- The resolution further demands clarification on climate reparations, which is a long-standing demand in the direction of climate justice.

Role of ITLOS
- The Commission of Small Island States on Climate Change and International Law (including countries like Antigua, Barbuda, and Tuvalu) has also sought the advisory opinion of the International Tribunal for the Law of the Sea (ITLOS).
- ITLOS is requested to determine the obligations of the countries for preventing, controlling, and reducing marine pollution under the United Nations Convention on the Law of the Sea (UNCLOS).

Conclusion: Nations across the world and international groupings like G20 should support the efforts of Small Island Developing States. India should also use the opportunity of the G20 Presidency to lay relentless emphasis on the LiFE campaign.

Nut Graf: A group of countries led by Vanuatu has sought an advisory opinion from the International Court of Justice on the issue of climate change. All countries should support the initiative and take lead in their own respective ways to address the ever-increasing challenge of climate change.

7.   IPCC Synthesis report

Syllabus: International Environment Agencies & Agreements

Mains: Key findings of sixth assessment report of Intergovernmental Panel on Climate Change

Context: The IPCC released its Synthesis Report for the Sixth Assessment Cycle.

Introduction:
- The Intergovernmental Panel on Climate Change (IPCC) released its Synthesis Report for the Sixth Assessment Cycle on March 20 in Interlaken, Switzerland.
- This Synthesis Report (SYR) of the IPCC Sixth Assessment Report (AR6) summarises the state of knowledge of climate change, its widespread impacts and risks, and climate change mitigation and adaptation.
- It integrates the main findings of the Sixth Assessment Report (AR6) based on contributions from the three Working Groups.
    - WG I evaluated the physical science basis of climate change; WG II evaluated the impacts, adaptation, and vulnerability, and WG III evaluated the mitigation.

Highlights of the report:
- The report highlights the urgency of drastically reducing the emission of greenhouse gases and thereby limiting rising global temperatures by 1.5°C from pre-industrial levels, set by the Paris Agreement.
    - The report says that the planet's best chance to keep temperatures below 1.5°C is to ensure greenhouse gas emissions are reduced to 48% of 2019 levels by 2030 and 99% by 2050.
- The report also recognises the impact of the rise in temperature which has made people much more susceptible to food insecurity and water shortages with vulnerable populations disproportionately facing the brunt of climate change.

Adverse impacts from human-caused change will intensify

Source: IPCC

- The report, therefore, stressed the need for financial resolution for a more equitable world.
- The report stresses the need for finance to flow from developed countries to developing countries and the need to compensate countries that are poised to lose the most from climate change, to help them build resilience.
- The report also emphasised the role of financial investments to achieve climate goals and encouraged public funding through central banks, government and financial regulators to reduce emissions, scale up climate resilience and protect marginalised communities.
- The report highlighted the benefits of climate-resilient development in mitigating the effects of climate change and also in providing wider benefits.
- Access to clean energy, improving air quality, increasing employment opportunities, boosting healthcare through technology, and delivering equity are among the report's recommended goals to help adapt to climate change.

Implications for India:
- The IPCC Synthesis Report underscores the urgency of action to address climate change and its impacts, particularly in countries like India that are already vulnerable to its effects.
- It highlights the need for a concerted effort by governments, businesses, and individuals to reduce greenhouse gas emissions, adapt to the changing climate, and build resilience to the inevitable impacts of climate change.
- The report has been "welcomed" by India, which noted that several parts support its stance that unequal contributions are to blame for the climate crisis and that climate justice must underpin mitigation and adaptation.
- Several messages emerge in the report that are salient for India as it suggests a strategy that emphasises "climate-resilient development."
- However, India's priority should be to minimise loss and damage in terms of lives, livelihood and biodiversity, and accelerate equitable action and adaptation.
  - As a developing country, India can lower its per-capita emissions through energy efficiency policies already being implemented in almost every sector.
  - It can also decarbonise the energy sector by using cleaner options like solar and renewable energy.

Nut Graf: *The 'Synthesis Report' from IPCC recognizes the interdependence of climate, ecosystems and biodiversity, and human societies and highlights the insufficient pace and scale of climate action to tackle climate change.*

8.   Why is India's CAMPA at odds with new IPCC report?

Syllabus: Conservation, environmental pollution and degradation

Prelims: About IPCC report and CAMPA fund

Mains: Critical evaluation of compensatory afforestation policies

Context: The release of the Synthesis Report of the Intergovernmental Panel on Climate Change (IPCC).

Details
- The Synthesis Report of the IPCC has said that safeguarding and conserving the existing ecosystems in the first place will play a better role in mitigating the impact of the climate crisis rather than efforts to restore ecosystems that have already been degraded.
- These findings of the report by the IPCC have shed focus on CAMPA Law, which has been a controversial policy in India.
- CAMPA allows for the cutting down of forests in one part of the country which can be replaced or compensated with afforestation elsewhere.

Compensatory Afforestation Fund Management and Planning Authority (CAMPA)
- Based on an order of the Supreme Court, the Environment Ministry established the Compensatory Afforestation Fund Management and Planning Authority (CAMPA).
- CAMPA Law aims to mitigate the impact of diversion of forest land for non-forest purposes by making sure that proper afforestation and regeneration activities are undertaken to compensate for the lost forest land.
- CAMPA was established for the purpose of managing the money collected towards compensatory afforestation (CA) and any other money recovered by the agencies for utilizing forest land for non-forest purposes under the Forest (Conservation) Act, 1980.
  - As per the Forest (Conservation) Act, 1980, for projects to divert the forest land, a land elsewhere must be identified to afforest, and money has to be paid for the land value and the afforestation exercise.
  - Further, such land will be stewarded by the forest department thereafter.

Concerns associated with CAMPA law
- The CAMPA has been criticised for allowing the destruction of natural ecosystems in return for afforestation in some other or faraway places.
  - For instance, setting up single-species plantations in Haryana does not really compensate for the deforestation of a natural sal forest in a Central Indian forest in terms of biodiversity, local livelihoods, and hydrological services.
- Experts and researchers have also shown that nature ecosystems sequester more carbon.
- Activists have also claimed that climate action such various means to mitigate climate change, renewable energy farms, etc., should not come at the cost of natural ecosystems.
- Further, it is seen that the money paid just sits in a fund overseen by the CAMPA.
  - As of 2019, the fund had close to ₹47,000 crores.
- The IPCC report has pointed out that "reducing conversion of natural ecosystems" is less expensive than "ecosystem restoration, afforestation, [and] restoration"

Other key findings of the IPCC Synthesis report
- According to the report the only option with more mitigating potential than "reducing conversion of natural ecosystems" was solar power and the third-highest was wind power.
- However, solar projects in India have also been criticised as local people believe that such projects limit land-use and increase local water consumption.
- Also, studies have found that wind farms in the Western Ghats had impacted the abundance and activity of predatory birds, which led to an increase in the density of lizards.

Nut graf: *With the Synthesis Report of the IPCC highlighting the fact that conserving natural ecosystems is more important and beneficial than ecosystem restoration, afforestation and restoration, the Central and State government must re-look at the existing compensatory afforestation policies.*

9. World Wildlife Day & CITES

Syllabus: Conservation

Prelims: World Wildlife Day & CITES

Context: World Wildlife Day, 2023

World Wildlife Day
- All member states of the United Nations observe March 3 as World Wildlife Day.
- In 2013, the United Nations General Assembly (UNGA) proclaimed March 3rd as the UN World Wildlife Day to celebrate and raise awareness of protecting the world's wild animals and plants.
- This day is significant, as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was signed on the 3rd of March in 1973.
- The year 2023 marks the 50th anniversary of the establishment of CITES.
- World Wildlife Day is celebrated annually to draw attention to the issues of the conservation of flora and fauna.
- Theme for 2023: "Partnerships for Wildlife Conservation".

About Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- CITES was conceptualized in 1963 at a meeting of the (IUCN) International Union For Conservation Of Nature.
- It came into force in 1975 and consists of 183 member-countries till date that abide by CITES regulations by implementing legislation within their own borders to enforce those regulations.
- Located in Geneva, Switzerland, the CITES is administered by the United Nations under its UNEP (United Nations Environment Programme) Wing.
- The Convention of Parties to CITES is the supreme decision-making body of the Convention and comprises all its Parties.
- Its aim is to ensure that international trade (import/export) in specimens of animals and plants included under CITES, does not threaten the survival of the species in the wild.
- This is achieved via a system of permits and certificates.
- CITES affords varying degrees of protection to more than 38,000 species.

Appendix	Description	Examples of Species
CITES Appendix-I	• Species that are in danger of extinction • Commercial trade is prohibited. • Permits are required for import and export. • Trade permitted just for research only if the origin country ensures the trade won't harm the species' chance of survival.	• Asiatic lions and tigers (tiger skin trade). • Sea turtles, gorillas, lady slippers orchids (most species), etc. • Total 931 species on the list.
CITES Appendix-II	• Species that aren't facing imminent extinction but need monitoring so that any trade doesn't become a threat. • Trade permits obtained legally and only if the origin country ensures that its harvesting and trade won't harm the species' chance of survival.	• American Alligators (Alligator skin trade) • Paddlefish, Mahogany, corals, etc. • Total 34,419 species on the list.
CITES Appendix-III	• Species that are protected in at least one country. • Regulations for these species vary, but typically the country that requested the listing can issue export permits, and export from other countries requires a certificate of origin.	• Honeybadger (medicinal or bushmeat purpose) • Walruses, Map turtles, certain beetles, etc. • Total 147 species on the list.

Source: Byju's Ias

10. Cheetahs and India's grasslands

Syllabus: Biodiversity & Conservation

Mains: Significance of Cheetahs to India's Grasslands

Context: Twelve Cheetahs from South Africa were successfully translocated to Madhya Pradesh's Kuno National Park on February 18, 2023.

Introduction:
- Cheetah reintroduction in India involves the attempt to introduce and sustain a small population of Southeast African cheetahs in India more than 70 years after India's native subspecies, the Asiatic cheetah became extinct.
  - The Asiatic subspecies is now found only in Iran in critically endangered numbers.
- Since September 2022, India has translocated eight African cheetahs from Namibia and 12 from South Africa.
- Project Cheetah aims to bring back 50 cheetahs in various National Parks over five years.

Impact on India's Grasslands:

- Cheetahs, as apex predators, play an important role in maintaining the balance of grassland ecosystems.
- Grasslands cover a significant portion of India's land area and provide essential ecosystem services such as carbon sequestration, soil conservation, and water regulation.
- However, they are under threat from overgrazing, habitat loss, and fragmentation. This has led to the degradation of grassland ecosystems and a decline in the population of many grassland species.
- The reintroduction of cheetahs could help restore the ecological balance of India's grasslands. Cheetahs prey on herbivores, such as gazelles and antelopes, which helps control their population and prevent overgrazing. This, in turn, promotes the growth of vegetation and helps maintain the biodiversity of the grasslands.
- Additionally, the presence of cheetahs could attract tourists, which could provide economic benefits to local communities and incentivize conservation efforts.
- Overall, the reintroduction of cheetahs to India has the potential to save the country's grasslands and promote ecological sustainability. It is a complex and long-term project that requires careful planning and implementation, but it could have significant benefits for the environment, the economy, and local communities.

Success stories:

- The Project Tiger initiative, launched in 1973, has been a great success in the conservation and protection of tigers and their habitats in India. At present, India has 53 reserves making up 2.3% of the country's geographical area.
- Tiger reserves are also important for the development of larger ecosystems. These reserves provide a safe haven for a variety of flora and fauna, many of which are threatened or endangered.
- By conserving and protecting tiger habitats, Project Tiger has contributed to the conservation of many other species as well.
- *Beavers* were introduced into many parts of North America during the 20th century, and they have had a positive impact on the ecosystems they inhabit. Beavers create dams and ponds, which provide habitat for a wide range of aquatic and terrestrial species, including fish, amphibians, birds, and mammals.
  - The beaver ponds also help to maintain water quality by trapping sediment and pollutants, and they can increase the productivity of the surrounding land by providing additional water for irrigation.

Nut Graf: *Cheetah reintroduction program aims to build a self-sustaining population, centred at Madhya Pradesh's Kuno National Park, which will also contribute to the global survival of the cheetah as a species. Cheetahs can help maintain the balance of the grassland ecosystem by controlling herbivore populations and promote the growth of native plant species, leading to a healthier ecosystem.*

11. A grave mistake in Great Nicobar

Syllabus: GS-3, Environment conservation.

Mains: Development project in Great Nicobar and its consequences.

Prelims: Great Nicobar.

Details:

- The Ministry of Environment, Forest and Climate Change (MoEFCC) has given clearance to a mega project in the southern part of Andaman and Nicobar Islands.
- The NITI Aayog will steer the project and the Andaman and Nicobar Islands Integrated Development Corporation is the project proponent.
- **The project is titled 'Holistic Development of Great Nicobar Island'. Its objective is to develop:**
  - An international transshipment port of 14.2 mTEU cargo capacity at Galathea Bay
  - An international airport for 4000 passengers (during peak hours)
  - A 450 MVA gas and solar-based power plant
  - An ecotourism and residential township of nearly 160 sq km
- Moreover, offices of multinational corporations will be established by clearing a million trees in tropical rainforests.

Background Details:

- The Great Nicobar is located approximately 1650 km from Chennai and 40 nautical miles from the international shipping route.
- The project to establish a transshipment facility and free trade zone on the island began in September 2020.
- In December 2021, the draft Environment Impact Assessment (EIA) was placed in the public domain for comments and discussion. It was followed by quick approvals, clearances, exemptions, and de-notification.
- The Great Nicobar Island has a population of around 8000. The island will attract around three lakh people, once the project is completed.
- The island is spread over 900 sq km and was declared a biosphere reserve in 1989. In 2013, it was included in UNESCO's Man and Biosphere Programme.
- Notably, more than three-fourths of the island is designated as a tribal reserve under the Andaman and Nicobar Islands (Protection of Aboriginal Tribes) Amendment Regulation.

Associated Concerns:

- The environmental and ecological cost of the urbanization project in Great Nicobar (a region known for marine and terrestrial diversity) is significantly higher. Thus, it is argued that calling it 'holistic' would be a misnomer.
- It is suggested that the objective to convert the island into a commercial hub is nothing less than an 'ecocide'.
- It will impact the rights of vulnerable tribal communities that depend on forests for survival like the Shompen and Nicobarese.
- As per the EIA report, compensatory afforestation will be carried out in Madhya Pradesh and Haryana. It should be noted that far-field afforestation is not much significant.
- The project will destroy vast stretches of coral reefs.
- The report recommends the transplantation of corals but transplanted corals have a low survival rate and are susceptible to bleaching.
- The Great Nicobar is tectonically unstable. It is located in close proximity to the Ring of Fire and the Tsunami of 26 December 2004.
- The EIA report fails to mention scientific studies before and after the 2004 earthquake. The coastline sank several meters during the earthquake.
- The satellite studies show that the region is gradually regaining its original height. The report disregards this tectonic instability around the island.

Conclusion:
- It should be noted that growth in terms of GDP makes no sense if it results in the irretrievable loss of natural capital.
- India is championing conservation, sustainability, and green development models on international fora. But unsustainable projects will dilute such efforts.

Nut Graf: The clearance of mega development projects in Great Nicobar Island has raised several concerns about the environmental and ecological cost of the project. It is suggested that the vision of the 'green development model' should become the guiding principle for future economic activities.

12. Left high and dry in the Nilgiris

Syllabus: Environment conservation and associated concerns.

Mains: Relocation from forests and associated concerns.

Details:
- The Tamil Nadu Forest Department and more than 700 families in Mudumalai Tiger Reserve and Gudalur in the Nilgiris (including Kattunayakans, Irulas, Paniyas, and Kurumbas) signed the 'golden handshake' agreement.
- The agreement was made after the Mountadden and Wayanadan Chetty communities obtained an order from the Madras High Court in 2007 seeking relocation away from the forest due to a lack of basic amenities.
- The objective of the agreement was to benefit the local communities inside the tiger reserve and aid conservation efforts.
- However, the Adivasis claim that the Chettys wanted to relocate as they had no traditional ties to the forest.
- The first phase of the relocation started in 2017. Almost 569 families from the four Adivasi groups have been relocated so far.

Associated concerns:
- Adivasis are dissatisfied with the relocation as they have not received the promised compensation.
- An Adivasi rights activist highlights that many of the Adivasis are unaware of what they were owed in the first place because the promises were made with little paperwork and documentation.
- Though the Mountadden and Wayanadan Chettys have largely relocated, Kattunayakans and the Paniyas have not been resettled fairly.
- The two communities complain that they were cheated by a few Forest Department personnel, some landowners, or middlemen.
- **The activists are trying to ascertain the level of fraud, but there are many challenges like:**
  - The community is suspicious of outsiders and it is difficult to gain their trust.
  - They are illiterate and do not know the money and accounts clearly.
  - There is a lack of documents and evidence.
  - Many land brokers have cheated them by over-inflating the land prices or relocating them to government land.
- It is also argued by many experts that the funds for the relocation should have been granted by at least 2010 (as the land was affordable). Now with inflation, it is difficult to find adequate land for earning a living through agriculture.
- As there is no document to prove ownership of land, it is difficult to get compensation or a loan in case of crop failure.
- The government-built houses allocated to relocated families are in dilapidated condition. Several other structures suffered damage due to heavy rains in 2018 and 2019.
- Many cases of fraud have been perpetrated against Adivasi groups during the relocation process.
- The communities have a deep connection with the forests that are considered sacred groves and sites of worship. It is particularly difficult for older members of the community to leave the forest.
- They also fear an identity loss if they move out of the forests.
- Despite the allegations of fraud and cheating, the forest department is continuing the relocation process.

Conclusion:
- Though some state officials and forest staff are trying to address the concerns of the Adivasis, nothing concrete has been done or achieved till now.
- Many villagers are firm that they will not leave the forest until there are more favourable negotiations or at least what was promised in the original agreement is offered completely.

Nut Graf: The 'golden handshake' agreement between the forest dwellers of Mudumalai Tiger reserve and the forest department aims to benefit the local communities and aid the conservation efforts. However, there are several concerns associated with fraud and cheating that needs to be addressed by the government and forest officials.

13. Kappaphycus alvarezii

Syllabus: Conservation, environmental pollution and degradation

Prelims: World Wildlife Day & CITES

Context: Recently, the dead coral reefs were observed near Kurusadai (Tamil Nadu), one of the 21 uninhabited islands forming the Gulf of Mannar Marine National Park.

Details:
- The primary reason behind this loss is Kappaphycus alvarezii, a seaweed species deliberately introduced for commercial cultivation some two decades ago.

LETHAL SPREAD
Despite prohibition since 2005, invasive alien seaweed *Kappaphycus* is grown around the Gulf of Mannar, and has reached and killed corals near the Gulf of Mannar Marine National Park

Source: Indian Express

- Seaweed is the name given to the many species of marine algae and plants that grow in water bodies such as rivers, seas and oceans.
- Seaweed is found on the shores across the world, but is more commonly a staple in Asian countries.
- Seaweed has numerous benefits, including being a source of nutrition, containing anti-inflammatory and anti-microbial agents for medicinal purposes.
- Contributing to economic growth through its use in manufacturing, acting as a bioindicator by absorbing excess nutrients and balancing out ecosystems.
- In 2021, India cultivated around 34,000 tonnes of seaweed, and the Centre earmarked Rs 600 crore to increase seaweed production to 11.85 million tonnes by 2025.
- Currently, about 750 farmers are engaged in seaweed farming, primarily Kappaphycus, in 18 villages of Ramanathapuram, Tamil Nadu and it is also likely to be cultivated in Tamil Nadu's proposed seaweed park.
- The Kappaphycus alvarezii seaweed species has invaded six of the 21 islands of the Gulf of Mannar Marine National Park in Tamil Nadu and has killed the corals near Kurusadai.
- **It has also caused considerable damage to Coconut Island in Hawaii, Cubagua Island in Venezuela, Zanzibar in Tanzania, and Almirante and Cristobal in Panama and Costa Rica.**

14. Horseshoe Crabs

Syllabus: Biodiversity Conservation

Prelims: Endangered and endemic Species; Wildlife Trade

Context: Disappearance of Horseshoe crabs off Odisha's Coast.

Key Details:
- Members of the Odisha State Wildlife Advisory Board and scientists of the National Institute of Oceanography (NIO), Goa, appealed to the Union Ministry of Environment, Forest and Climate Change to place the horseshoe crabs on the list of marine species for which a Species Recovery Plan has to be developed.
- Horseshoe crabs appear to be disappearing from their familiar spawning grounds along Chandipur and Balaramgadi coast in Odisha.
- Scientists have also urged the Odisha government to come up with a robust protection mechanism before the living fossil becomes extinct due to destructive fishing practices.

Horseshoe Crabs:
- It is a marine chelicerate arthropod living in shallow coastal waters on soft sandy or muddy bottoms and spawns (releases or deposits eggs) mostly on intertidal beaches at summer spring high tides.
- Despite their name, these animals are not crabs at all but are related to scorpions, spiders, and extinct trilobites.
- Horseshoe crabs are an extremely ancient group and are often referred to as living fossils.
- Horseshoe crabs have been around for more than 300 million years, making them even older than dinosaurs.
- The horseshoe crab has a hard exoskeleton and 10 legs, which it uses for walking along the seafloor.
- In India, horseshoe crabs are endemic to coastal West Bengal, Odisha and Andhra Pradesh and the stretch of beaches along the West Bengal-Odisha border is home to the largest population of the species in the country.
- Estuaries, along with mangroves and mudflats of eastern West Bengal, Odisha and Andhra Pradesh are important breeding sites for horseshoe crabs.

Threats:

- According to the IUCN, all four surviving species of horseshoe crabs are at risk because of overfishing for use as food and bait, habitat loss and the production of biomedical products derived from their blood.
- Horseshoe crab blood is crucial in the preparation of rapid diagnostic reagents. All injectable medicines are tested on them.
  - A molecule has been developed from a reagent of horseshoe crabs to help treat pre-eclampsia.
- Poachers kill them for their meat which is popularly believed to have aphrodisiac qualities.

Conservation Status:

- It is in the Schedule IV of the Wildlife Protection Act 1972, under which the catching and killing of a horseshoe crab is an offence.
- The IUCN has marked all species of horseshoe crabs under the endangered category.

Source: nytimes

15. Eurasian Otter

Syllabus: Environment; Biodiversity

Prelims: About Eurasian Otter

Context: The first photographic record of the Eurasian Otter was caught on the infrared camera along the Neeru stream in Jammu and Kashmir.

Eurasian Otter

Source: IUCN Red List

- Eurasian Otter (*Lutra lutra*) is an elusive semi-aquatic carnivorous mammal species.
- The Eurasian Otter has one of the widest distributions as its range covers three continents (Europe, Asia and Africa).
- In India, Eurasian otters are found across the northern, northeast and southern parts of India.
- The Eurasian Otters have short limbs, brown fur, and sensitive whiskers near the snout that help detect prey.
  - They also have webbed feet and claws and the ability to close the small ears and the nose when underwater which has helped them adapt to an aquatic lifestyle.
- Eurasian Otters are usually nocturnal in nature and can be found near freshwater environments such as lakes, rivers, streams, marshes, and swamp forests.
- The diet of Eurasian Otters includes fish, crustaceans, amphibians, birds, eggs, insects and worms.
- Eurasian Otter is regarded as a flagship species and an indicator of high-quality aquatic habitats.
- **Conservation status:**
  - IUCN RedList: **Near threatened**
  - Wildlife Protection Act, 1972: **Schedule II**
  - CITES: **Appendix I**

About Neeru stream
- Neeru river is located in Jammu and Kashmir.
- The Neeru stream is a tributary of the Chenab river.
- Neeru is a 30-km perennial stream that originates in the Kailash Lake at 3,900 metres above mean sea level and drains into the Chenab at Pul-Doda in the Doda district.
- The presence of Eurasian Otters is encouraging for the health of the Neeru stream.

16. Seahorses

Syllabus: Biodiversity

Prelims: Vulnerable Species; Coromandel Coast

Context: This article discusses the migration pattern of seahorses

Key Details:
- Recent study published in the latest issue of the Journal of Threatened Taxa finds that extensive fishing off the Coromandel coast could be forcing the great seahorse to migrate laboriously toward Odisha.
- Fishing is less intense in the Bay of Bengal off the Odisha coastline. However, the shallow coastal ecosystem of the eastern Indian State may not be the new comfort zone for Seahorses.
- The study was based on a specimen of a juvenile great seahorse, or Hippocampus kelloggi.

Seahorses:
- Seahorses are a type of marine fish that are named for their distinctive head and neck, which resemble those of horses.
- There are 46 species of seahorses reported worldwide. The coastal ecosystems of India house nine out of 12 species found in the Indo-Pacific, one of the hotspots of seahorse populations that are distributed across diverse ecosystems such as seagrass, mangroves, macroalgal beds, and coral reefs.
  - These nine species are distributed along the coasts of eight States and five Union Territories from Gujarat to Odisha, apart from Lakshadweep and the Andaman and Nicobar Islands.
- Seahorses are unique in that the males are the ones that become pregnant and give birth to their young. They are also known for their monogamous mating habits, with some species of seahorses forming lifelong pair bonds.
- Seahorses are poor swimmers but migrate by rafting- clinging to floating substrata such as macroalgae or plastic debris for dispersal by ocean currents to new habitats for successful maintenance of their population.

Threats:
- Seahorses are threatened by habitat destruction, overfishing, and the illegal trade in traditional medicines and souvenirs. Some species of seahorses are considered to be endangered, and conservation efforts are underway to protect them.
- The population of the great seahorse, which is among the eight species tagged 'vulnerable', is declining due to its overexploitation for traditional Chinese medicines and as an ornamental fish, combined with general destructive fishing and fisheries bycatch.

17. Mimeusemia ceylonica

Syllabus: GS-3; Ecology and environment; Biodiversity

Prelims: About Mimeusemia ceylonica

Context
Researchers from Tamil Nadu have spotted a rare Moth species for the first time in India in the buffer zone of the Kalakkad–Mundanthurai Tiger Reserve after it was last sighted 127 years ago.

Mimeusemia ceylonica

Source: The Hindu

- *Mimeusemia ceylonica* is a moth species belonging to the subfamily Agaristinae and family Noctuidae.
- This Moth species was first illustrated and described by English entomologist George Hampson in 1893.
- The species was first identified in Sri Lanka.
- The species has been rediscovered after 127 years during a moth survey conducted in the year 2020 at the Agasthyamalai Community-based Conservation Centre (ACCC) situated in the buffer zone of Kalakad Mundanthurai Tiger Reserve (KMTR) in the Tirunelveli district of Tamil Nadu.
- The spotting of the Moth species in the district has added to the testimony of the rich biodiversity of the region.

18. Namdapha National Park

- After a gap of eight years, a tiger has been spotted in the Namdapha National Park and Tiger Reserve in Arunachal Pradesh.
  - It was the second tiger spotted in Namdapha after one in 2015.
- Namdapha, India's easternmost tiger reserve lies on the international border between India and Myanmar within Changlang District in Arunachal Pradesh.
- It is one of the biggest biodiversity hotspots in the Eastern Himalayan region and the fourth-largest national park in India.
- It is crossed from east to west by the Noa Dihing River that originates at the Chaukan Pass on the Indo-Myanmar border.
- The land cover changes with increasing elevation from tropical evergreen forest to temperate broadleaf and mixed forest.
- The park spans a wide altitudinal range from 200 m to 4,571 m at Dapha Bum, the highest point in the park.
- It was declared the country's 15th tiger project in 1983.
- It is the only park in the world to have the four feline species of big cats namely the Tiger, Leopard, Snow Leopard and Clouded Leopard and a number of lesser cats.
- Hoolock Gibbons, a highly endangered and only 'ape' species found in India dwells in this park.

19. 3 States chip in to stop illegal sand mining in Chambal sanctuary

- Three States namely Rajasthan, Madhya Pradesh and Uttar Pradesh have begun a joint action to put an end to the illegal sand mining in the National Chambal Sanctuary, situated at the trijunction of these states.
- Coordination between the three States was discussed at a high-level meeting in Jaipur with special emphasis on protecting the fragile ecosystem critical for the breeding of Gharials.
  - National Chambal Sanctuary is known for the critically endangered Gharial populations. Gharials are a species of fish-eating crocodiles.
- Illegal sand mining is threatening the flora and fauna of the sanctuary and close collaborations are required to address the issues associated with illegal mining.
- The Chambal river which is a tributary of River Yamuna cuts through the mazes of ravines and hills in the sanctuary which is also listed as an "Important Bird and Biodiversity Area" and is also a proposed Ramsar site.

20. Antibiotic drugs administered on livestock cut carbon in soil and affect climate, says IISc study

- In a study conducted in the Spiti region of the Himalayas by the researchers of the Centre for Ecological Sciences (CES), Indian Institute of Science (IISc), it was found that grazing by livestock leads to lower carbon storage in soil compared to grazing by wild herbivores.
- According to the researchers, the difference in carbon storage is mainly on account of the use of veterinary antibiotics such as tetracycline on livestock.
  - It was found that when antibiotics are released into the soil in the form of dung and urine, they alter the microbial communities in the soil which can be detrimental to carbon sequestering and can impact climate mitigation.
- In a previous study, it was observed that herbivores play a key role in stabilising the pool of soil carbon in a region and the recent study showcases the difference as to how they affect the soil carbon stocks between livestock such as sheep and cattle compared to their wild herbivores such as the yak and ibex.
- As per the latest study, despite the soils from the wild and livestock areas having many similarities, they differ mainly in one key parameter named carbon use efficiency (CUE).
  - Carbon use efficiency (CUE) determines the ability of microbes to store carbon in the soil.
  - The soil in the livestock areas had 19% lower CUE as antibiotics such as tetracycline can affect the microbial activity in the soil and can linger in the soil for a long period of time.

21. Net-zero waste to be mandatory for buildings

- As a part of the government's push for reforming and modernising the sewage disposal system, all the upcoming housing societies and commercial complexes in India will mandatorily have to ensure net zero waste and have their liquid discharge treated.
  - According to reports, 72,368 million litres of urban wastewater is generated in India per day out of which only 28% is treated whereas the remaining 72% of untreated wastewater may be entering rivers, lakes, or groundwater.
- Achieving net zero waste refers to reducing, reusing, and recovering waste streams to convert them to valuable resources so that zero solid waste is sent to landfills.
- The Ministry of Housing and Urban Affairs would also undertake efforts to integrate septic tank design into the building, adherence to standard specifications, geo-tagging of all septic tanks and manholes, and reducing GST on mechanised cleaning vehicles.
- The Union Finance Minister in her budget speech for 2023-24, has mentioned that all cities and towns will be enabled for 100% transition of sewers and septic tanks from manhole to machine-hole mode.
- These directives are being formulated as a convergence of initiatives such as Swachch Bharat, National Action Plan for Mechanised Sanitation Ecosystem (NAMASTE), and Atal Mission for Rejuvenation and Urban Transformation (AMRUT).

HEALTH ISSUES

1. The road to ending tuberculosis

Syllabus: Issues Relating to Development & Management of Health

Mains: Various shortcomings to end global TB epidemic

Context: World Tuberculosis Day is observed on 24 March each year.

Introduction:
- World Tuberculosis Day is designed to build public awareness about the global epidemic of tuberculosis (TB) and efforts to eliminate the disease.
- In 2018, 10 million people fell ill with TB, and 1.5 million died from the disease, mostly in low and middle-income countries. This also makes it the leading cause of death from an infectious disease.
- World TB Day is one of eleven official global public health campaigns marked by the World Health Organization (WHO).

Shortfall in global TB response:
- In 1993, the World Health Organization declared TB a global health emergency. Since then, there has been a lack of urgency in the response to the TB epidemic, despite adult TB treatment being labelled as the best investment among all developmental interventions in the 1993 World Development Report.
- The Global Fund to Fight AIDS, TB and Malaria was established in 2003 to address diseases of poverty.
  - This fund is the single largest channel of additional funding for global TB control. However, the allocation of resources and funding is often politicised and influenced by various interests, rather than being based solely on the needs and priorities of those working on the ground to fight the diseases.
- The goal of ending TB by 2030 is not well defined, which makes it difficult to measure progress and determine whether the goal has been achieved.
- The Stop TB Partnership got a formal presence on the board of the Global Fund close to seven years after it was constituted.

Under-served areas in global TB response:
- Three key areas remain under-served in TB response. Without bolstering or fundamentally reimagining these crucial areas, there is a slim possibility that TB will be eradicated by 2030.
- The first area is in the development and wide use of an adult TB vaccine. The current one is delivered at birth and is useful, particularly for children. However, it is over 100 years old and has limited effectiveness in preventing pulmonary TB in adults.
  - There is a need for a new and improved TB vaccine that can provide better protection, particularly for adults who are most at risk of developing TB.
- The second area is getting newer therapeutic agents for TB. Very few new anti-TB drugs have been developed after nearly 5 decades. However, they are more expensive with limited access.
- The third and most immediate area of action is within the space of diagnostics. Governments must utilise and universally roll out new developments in AI-assisted handheld radiology with 90-second reporting and 95% plus accuracy for diagnosing TB.

Way Forward:
- Artificial Intelligence tool 'Sentinel' could be used for passive surveillance and interpretation of cough sounds for TB for unobtrusive home-level screening and monitoring and provides nudges for seeking treatment.
  - This technology is ready for larger-scale use, and could potentially change the way public spaces can be monitored along with other air quality indicators.
- Confirmatory diagnosis using nucleic acid amplification could also be utilised universally for more specific diagnoses.
- Moving to an injection-free and shorter all-oral pills regimen for TB (the current standard is for at least six months) will improve compliance and reduce patient fatigue.
- Indigenisation of Diagnostics (InDx) diagnostics coalition and other biotech startups, should be incentivised to break the complexity of molecular testing and price barriers with affordable high-quality innovations.
- India's G20 presidency in 2023, StopTB board meeting in Varanasi in March 2023, and the United Nations High-Level Meeting on TB in September 2023 provide the perfect platform for India's actions to speak loudly which could enable the world to get to the end of TB sooner.

Nut Graf: There has been a lack of urgency in the response to the TB epidemic globally with various shortcomings in responses to address diseases of poverty. Government must focus on utilising affordable high quality innovations such as artificial intelligence tools to take action to end TB sooner.

2. India rejects J&J's attempt to extend patent on TB drug- Bedaquilline

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health

Prelims: About Tuberculosis and Bedaquilline

Context: In a victory for patients fighting for wider access to the crucial anti-tuberculosis drug Bedaquiline, the Indian Patent Office rejected U.S. pharmaceutical giant Johnson & Johnson's attempt to extend its monopoly on manufacturing the drug in India beyond July 2023.

Details:
- **Bedaquiline is a critical drug used to treat multidrug resistant TB patients for whom the first-line drug treatment has stopped working.**
- As J&J's patents on Bedaquilline come to an end in July, generic drug makers like Lupin and Macleods, among others can produce Bedaquiline which will make the drug cheaper and ensure wider access.
- At present, Bedaquiline tablets are priced at $400 for a six-month treatment course.
- **It is said that J&J had indulged in "evergreening" since 2007.**
- According to the latest available estimates, in 2019, over 55,000 patients who had developed multi-drug resistant TB could have benefited from access to Bedaquiline. As of March 2020, only a little over 10,000 of these patients had accessed the drug.
- Evergreening is a strategy employed by patent holders to extend the life of patents about to expire in order to retain revenues from them.
- J&J had sought for patent extension based on a claim that it had invented the method for making a derivative of quinoline in its salt form.
- However, as per Section 3(d) of the Patents Act, salt forms and derivatives of known substances are not patentable.

What is tuberculosis?

- The airborne disease is caused by mycobacterium tuberculosis
- Although the bacteria usually attacks the lungs, it can infect any part of the body such as kidneys, spine and brain
- Not everyone infected with TB falls sick. As a result, two TB-related conditions exist: latent TB infection and TB disease
- If not treated properly, TB disease can be fatal

Source: timesofindia
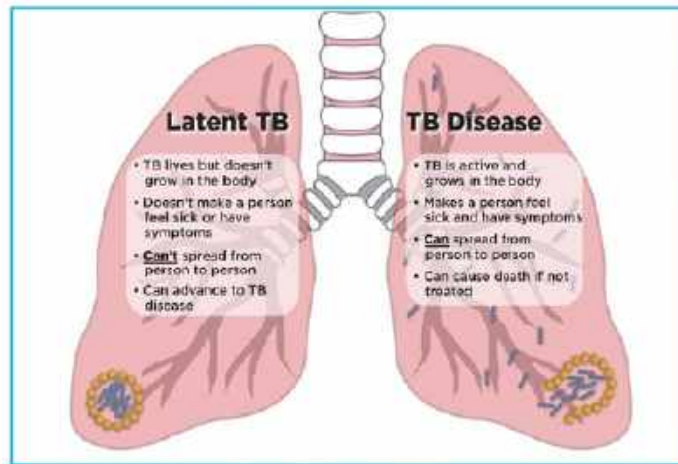
Anti-TB drugs for RR and MDR-TB

Group	Drugs		
Group A Fluoroquinolones	Levofloxacin, Moxifloxacin, Gatifloxacin		
Group B Second-line injectable agents	Amikacin, Capreomycin, Kanamycin (Streptomycin)		
Group C Other core second-line agents	Ethionamide, Prothionamide, Cycloserine, Linezolid, Clofazimine		
Group D Add-on agents (not core MDR-TB regimen components)	D1	Pyrazinamide, Ethambutol, High-dose Isoniazid	
	D2	Bedaquiline, Delamanid	
	D3	p-Aminosalicylic acid, Imipenem-cilastatin, Meropenem, Amoxicillin-clavulanate, (Thioacetazone)	

Ref: Treatment guidelines for Drug resistant TB. WHO 2016 update.

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3. Rajasthan's Right to Health Bill

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health

Prelims: About Right to Health Bill and Right to Health in Indian Constitution

Mains: Critical evaluation of Rajasthan's Right to Health Bill

Context: Rajasthan State Assembly passed the Right to Health Bill amidst strong protests by private doctors.

Rajasthan's Right to Health Bill

- Rajasthan's Right to Health Bill was introduced in the Assembly in September 2022 and was later referred to a Select Committee.
- With the passage of the Bill, Rajasthan has become the first and the only State in India to legislate the right to health.
- A key provision of the Bill is the provision for mandatory free-of-cost emergency treatment for every resident of the State at both government hospitals and privately-run institutions.
  - The Bill provides the right to emergency treatment care without prepayment of requisite fees or charges by any public health institution, health care facility and designated health care centres for all the residents of the State.

- Further, the Bill mentions about 20 rights to a State resident which include the right to informed consent, to seek information and to receive treatment without discrimination based on caste, class, age, gender, etc.
- The Bill guarantees these rights to patients and places the obligation on the government to protect these legal rights and requires the establishment of grievance redressal mechanisms.
- The Bill ensures that the residents of the State are eligible for free check-ups, drugs, diagnostics, emergency transport and care at all public health institutes, along with affordable surgeries.
- The Bill also mandates the government to formulate a Human Resource Policy for health ensuring equitable distribution of doctors, nurses and healthcare workers at all levels of the system across regions.

Right to Health in the Indian Constitution
- The Right to Health is not explicitly mentioned in the Indian Constitution.
- However, the concept of the Right to Health is derived from the Right to Life and Liberty guaranteed under Article 21 of the Constitution.
- Furthermore, various courts in the past have highlighted the State's obligation to safeguard and promote the health of citizens, based on constitutional provisions such as:
  - **Article 38** talks about promoting the welfare of people.
  - **Article 47** mandates the government to meet the nutrition and health requirements of the population.

Key concerns associated with the Bill
- The doctors and paramedical staff of private hospitals have been protesting against the Bill. They have criticised the provisions of the Bill as "draconian" as they significantly affect the private health sector.
- Further, the Bill has made it mandatory to provide free treatment during an emergency but the Bill does not define an "emergency".
- Private healthcare providers have also highlighted the ambiguity around who will pay for the mandatory free-of-cost emergency treatment.
- Experts also opine that the Bill abdicates the State's responsibility in providing health care protection and puts a larger patient load on the private sector.
- Private doctors have also argued that the Bill is futile and over-regulative in nature.
- According to agitating doctors and other staff of private healthcare establishments, amendments suggested by them to the Select Committee were not considered.
- Civil society groups and healthcare activists say that the Bill needs further clarity and must be sharpened to prevent implementation loopholes.

Nut graf: With the passage of the Right to Health Bill which ensures mandatory free and affordable medical services in both public and privately owned healthcare institutions, Rajasthan became the first ever state in the country to legislate the right to health. However, fault lines have appeared around the Bill as critics believe that the Bill is hastily drafted.

4. Universal Health Coverage

Syllabus: Issues Relating to Development & Management of Health

Mains: Challenges we face in achieving universal health care.

Context: This article discusses the status of universal health care in India.

Introduction:
- The right to health is one of the fundamental rights of every human being. India's constitution guarantees the right to life, which includes the right to health, as a basic human right.
- The World Health Organization (WHO) has defined health as a certain totality of health to the realms of mental and social well-being and happiness beyond physical fitness, and an absence of disease and disability.
- However, achieving health in its wider definition requires addressing health determinants, which necessitates intersectoral convergence beyond medical and health departments.

Health as a Basic Human Right:
- Reality of healthcare in India is far from ideal. According to the National Health Profile 2021, India has only 0.55 doctors and 0.8 nurses per 1,000 population, which is far below the WHO-recommended minimum of 1 doctor and 2.5 nurses per 1,000 population.
- Moreover, India's public health spending is only 1.28% of its GDP, which is one of the lowest in the world.
- Despite the constitutional guarantee, access to health care in India is not universal.
  - According to the National Family Health Survey 2019-20, only 51.9% of women in India received full antenatal care, and only 61.3% of children aged 12-23 months received all basic vaccinations.
  - Furthermore, out-of-pocket expenditures account for 64% of total health expenditures in India, which can cause catastrophic health expenditures that can lead to poverty and indebtedness.

The Alma Ata Declaration of Primary Health Care:
- In 1978, the International Conference on Primary Health Care was held in Alma Ata, Kazakhstan.
- The Alma Ata declaration of primary health care, which mandated basic health care for all citizens, was not implemented in its entirety, resulting in partial coverage of the population and partial responsibility of the government to pay for health care.
- The National Rural Health Mission (NRHM) in India, which operationalized a Comprehensive Primary Health Care model, is a sensible move towards achieving UHC.

Limitations of AB-JAY:
- While the intentions of the Ayushman Bharat Jan Arogya Bima Yojana (AB-JAY) are noble, it has received criticism from various quarters.
- One of the primary concerns is that it is an insurance-based model and not a tax-funded model, which means that the financial burden of the scheme falls on the government and the beneficiaries.
- The scheme provides insurance cover to only those who have been identified as being below the poverty line, which means that a large section of the population is excluded from the scheme.
- Additionally, the scheme has been criticised for its narrow focus on secondary and tertiary care, which ignores the importance of primary care in promoting good health.

Newer concept of UHC:
- The focus on primary care, as mandated by the Alma Ata declaration of primary health care, must be revived to ensure that healthcare services are accessible, affordable, and of good quality for all citizens.
- A tax-funded model of Universal Health Care would ensure that healthcare services are available to all citizens without discrimination.
- It would also ensure that the burden of healthcare financing is shared by the government and the citizens, with the government taking the responsibility for providing healthcare services to all citizens.
- Such a model would also prioritise primary healthcare services, which are essential for promoting good health and preventing diseases.
- Additionally, a tax-funded model would ensure transparency and accountability in healthcare delivery.
- Government should also focus on intersectoral convergence beyond medical and health departments, such as women and child development, food and nutrition, agriculture and animal husbandry, civil supplies, rural water supply and sanitation, social welfare, tribal welfare, education, and forestry, to address health determinants.

Nut Graf: While India's Constitution guarantees health as a basic human right, the current healthcare system in India falls short of this ideal. A tax-funded model of Universal Health Care that prioritises primary healthcare services and is accountable and transparent in healthcare delivery is essential for achieving this goal of Health for All.

5. The hardships of a career in Ayurvedic Practice

Syllabus: Issues Relating to Development & Management of Social Sector/Services-Health

Mains: Key Challenges associated with Ayurveda

Context: This article discusses hardships of a career in Ayurvedic Practice.

Introduction:
- Ayurveda is a traditional system of medicine that originated in India thousands of years ago. It is based on the principles of balancing the body, mind, and spirit to achieve optimal health and wellness.
- While it can be a rewarding career for those who are passionate about natural health and healing, it can also present its share of challenges and hardships.
- Despite the publicity campaigns to promote Ayurveda, Yoga, Unani, Siddha and Homeopathy (AYUSH), there is a trust-deficit in these systems.

Challenges:
- There is widespread scepticism in the public mind about the soundness of Ayurvedic theories and the fruitfulness of its practices.
- The Ayurveda establishment has failed to keep pace with the intellectual and scientific advances of the times as treatments are made to escape experimental scrutiny because of their supposed rootedness in such theories.
  - Thus, a major reason for the trust-deficit in Ayurveda is its diminished evidence-based quality.
- That Ayurveda treatments are slow to heal as Ayurveda on patient benefit and not just on instant patient gratification. Sustainability of treatments requires a gradual transition from illness to wellness.
- An Ayurveda practitioner has to depend on himself to discover treatments and approaches that actually work. The process involves a lot of trial and error with patients and predictably leads to an erosion of the practitioner's reputation.
- Ayurveda can be used safely and efficiently only in about 60%-70% of primary-care illnesses. Ayurveda practitioners would necessitate complementing Ayurveda with modern medicine.
  - However, most States prohibit the practice of modern medicine by Ayurveda graduates.
- Ayurveda is still not widely recognized as a mainstream medical practice in many parts of the world. Additionally, the lack of standardisation in training and education can make it difficult for practitioners to be recognized and respected.
- In many countries, Ayurvedic practice is not regulated by the government, which can lead to unscrupulous practitioners offering substandard or even dangerous treatments.
- With the rise of natural and alternative medicine, there is an increasing number of Ayurvedic practitioners, which can lead to stiff competition in the market

Way Forward:
- Ayurveda graduates can contribute enormously towards rejuvenation of primary care in India if trained properly.
- Government must promote a vigorous evidence-based appraisal of Ayurvedic theories and practices in order to sift the usable from the obsolete.
- Government must invest in providing high-quality education and training from reputable institutions which meet the standards set by it.
- Practitioners must obtain the necessary licences and certifications to practise Ayurveda legally. They can join professional organisations such as the National Ayurvedic Medical Association (NAMA) to stay up-to-date on industry developments and standards.
- The government can provide financial support and incentives to Ayurvedic businesses, including funding for research and development, and tax incentives for Ayurvedic products.
- The government can launch public awareness campaigns to educate people about the benefits of Ayurveda and encourage them to adopt Ayurvedic practices as a part of their daily lives.
- The government can also collaborate with other countries to promote Ayurveda globally. This can include joint research studies, training programs, and exchange programs for Ayurvedic practitioners.

Nut Graf: Although practising Ayurveda can be a rewarding career for those passionate about natural health, it comes with its share of challenges. Lack of standardisation in training and education can make it difficult for practitioners to be recognized and respected. If trained properly, Ayurveda graduates can contribute significantly to the rejuvenation of primary care in India.

6. How is Bengal tackling fatal viral infection?

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health

Mains: Acute respiratory infection among children in Bengal.

Prelims: Adenovirus infection.

Details:
- In Bengal, 19 (official figure) children below five years of age died in State-run hospitals due to acute respiratory infection (ARI). Out of the 19 children, 13 had comorbidities and 6 had only adenovirus infection.
- The state government claims that it is just a seasonal surge and there is no evidence of a viral epidemic.
- However, according to unofficial estimates, more than 100 children have died between December 2022 and March 2023 (first week).
- As per the government's statement, approximately 11000 cases of ARI in children have been registered. The government has thus set up an eight-membered task force to 'supervise the works related with the control of adenovirus and treatment of affected persons'.

Adenovirus infection:
- As per the Centre for Disease Control and Prevention of the U.S. adenoviruses are common viruses that cause a mild cold or flu-like illness.
- It spreads from an infected person to others through close personal contact. It can be transmitted through the air (coughing and sneezing) and through contacting adenovirus-infected objects or surfaces.
- It can affect any person but children with low and compromised immunity are at a much higher risk.
- The symptoms (apart from the common cold) include pneumonia, acute bronchitis, pink eye (conjunctivitis), and acute gastroenteritis.

West Bengal Situation:
- It is suggested that a recombinant of two strains of adenovirus is causing a spike in viral infections in West Bengal.
  - The two strains are human adenovirus type 3 (HAdV-3) and type 7 (HAdV-7).
- Around 88 human adenovirus (HAdV) serotypes have been found but epidemiologic reports suggest that nearly all fatal adenoviral diseases in children are associated with HAdV-7. Additionally, the HAdV-3 strain is found to be more prevalent.
- An expert also points out that most of the children who have been infected by the virus are less than the age of three years and were born during the COVID-19 pandemic. They suffer from an "immunity lag period" as they are mostly isolated at home and are more susceptible to viral infections.
- With an increasing number of cases, children from different districts are admitted to two popular paediatric institutions in Kolkata. However, an advisory was issued by the government on 28th February 2023 that no ARI cases should be referred to Kolkata without the knowledge of the medical superintendents of the hospitals.
- A large number of referrals to Kolkata has resulted in a shortage of beds.
- Moreover, referring children without stabilizing them or providing oxygen support might have caused the deaths of many children.
- The State government claims that there are around 5000 beds in 121 hospitals with almost 600 paediatricians. Furthermore, the government has announced the establishment of 5 additional paediatric hubs.

Other Details:
- In West Bengal, the Infant mortality rate(IMR) is 22 per live thousand births and the under-five mortality rate(U5MR) is at 25.4. It is better than the national average of IMR which is 35.2 and U5MR of 41.9.
- In terms of nutritional status in West Bengal:
  - The rate of Stunted children (under 5 years of age) is 33.8%.
  - The rate of Underweight children stands at 32.2%.
  - The children in the age group of 6 to 59 months that are anaemic are 69% (National Average 67.1%).
- Apart from the above factors, maternal health is also a crucial factor in increased risk among children.
- In the context of child marriage, 41.6% of women (national average 23.3%) in the age group 20-24 years were married before turning 18 years as per NFHS-5.
- There is also a high prevalence of anaemia with 62.3% among pregnant women aged between 15-49 years (national average 52.2%).

Nut Graf: *There is a surge in acute respiratory infection (ARI) cases among children in West Bengal. Many children also succumbed to the infection due to low birth weight and congenital heart or lung diseases. The government has taken several measures in this direction but more efforts are required so that it doesn't become an epidemic.*

HISTORY

1. Relevance of Colonial Past

Syllabus: Modern Indian history from about the middle of the eighteenth century until the present – significant events, personalities, issues.

Mains: Impact of colonial past in the present day

Context: This article discusses the relevance of colonialism in the present world.

Legacy of Colonialism:
- Colonialism refers to the practice of establishing control over a foreign country, its people, and its resources.
- Colonialism has left a significant legacy on the world we live in. It has shaped our understanding of race, culture, and identity.
- The impact of colonialism can be seen in the way power is distributed in the world, as well as in the economic and social systems that exist today.

The Persistence of Colonialism:
- Despite the fact that colonialism officially ended many years ago, its persistence can be seen in the way former colonial powers continue to exert their influence over former colonies, as well as in the way colonial attitudes and practices continue to shape our understanding of the world.
- Many former colonies continue to be dependent on their former colonial powers for trade and aid, which can be a source of ongoing economic exploitation.
- Additionally, colonial attitudes and practices continue to shape our understanding of the world. The idea that certain races or cultures are superior to others is a legacy of colonialism that continues to shape our understanding of race and culture today.
  - War broke out between Ethiopia and Eritrea over a colonial border that the Italians of an earlier era of occupation had failed to define with enough precision.

Indirect Impact of Colonialism:
- The intellectual history of colonialism also had a negative impact on anthropology. For instance, the Belgian classification of Hutus and Tutsis in Rwanda and Burundi, which created a distinction that had not existed before led to the Rwandan genocide that occurred in 1994 during the Rwandan Civil War.
- Impact on sociology: The British invention of "martial races" in India skewed recruitment into the armed forces and burdened some communities.
- The colonial administrative habit of "divide and rule", systematically promoted political divisions between Hindus and Muslims, which led to the Partition.
- Colonial-era distinctions also led to unequal distribution of the resources of the state within the colonial society.
  - Sinhalese resentment of privileges enjoyed by the Tamils in the colonial era in Sri Lanka prompted the discriminatory policies after independence, that in turn fuelled the Tamil revolt.

Danger from a 'mixed' history:
- 'Secessionism' can be prompted by a variety of factors, historical, geographical and cultural as well as "ethnic".
- However, different colonial experiences (Italian rule in Eritrea and British rule in Somaliland) resulted in secessions of Eritrea from Ethiopia and the "Republic of Somaliland" from Somalia.
- Boundaries drawn in colonial times create enormous problems of national unity, especially in Africa resulting in civil conflict along ethnic or regional lines.

Crisis of governance:
- State failure in the wake of colonialism is another evident source of conflict, as the by-product of an unprepared newly-independent state's inability to govern.
- The crisis of governance in many African countries is a real and abiding cause for concern in world affairs today.
- The collapse of effective central governments — as manifested in Sierra Leone and South Sudan recently could lead to further vulnerabilities.
- The uneven development of infrastructure and uneven resource distribution in a poor country due to colonialism lead to increasing fissures in society between those from "neglected regions" and those from developed regions.

Nut Graf: Colonialism remains a relevant factor in understanding the problems and dangers of the present world. Despite the fact that colonialism officially ended many years ago, many of the countries that were colonised continue to struggle with poverty, unemployment, and social inequality.

2. Slander against freedom fighters

Syllabus: The Freedom Struggle

Mains: Important contributors/contributions to India's freedom struggle

Context: This article discusses the contributions of various freedom fighters from contradictory and conflicting backgrounds and ideologies.

Introduction:
- India has a rich history of freedom struggle, which is marked by the contributions of several brave souls who sacrificed their lives for the cause of Indian independence.
- However, in recent years, there have been several attempts to malign the image of these freedom fighters by spreading false information and slanders.
- Contributions of figures like V.D. Savarkar, Jawaharlal Nehru, and C. Rajagopalachari cannot be ignored or dismissed based on isolated incidents, as the struggle for independence spanned over two centuries and involved various approaches and perspectives.

Selfless Zeal:
- The 1857 rebellion is called the First War of Independence. But the many spirited revolts against the British Empire in South India prior to this, such as the Attingal revolt, the Poligar rebellion and the Vellore Mutiny are scarcely mentioned.
  - The central government's 'Azadi Ka Amrit Mahotsav' initiative, to celebrate and commemorate 75 years of freedom, has endeavoured to honour such unsung mileposts and icons.

- Freedom movement brought together people from different backgrounds and ideologies, including moderates and extremists, who all played their part in India's freedom struggle.
- Freedom fighters such as Gopal Krishna Gokhale and B.R Ambedkar's service in the British Viceroy's executive council does not diminish their patriotism and contributions to India's freedom.
- These freedom fighters played a pivotal role in India's struggle for Independence. They inspired and mobilised millions of people across the country to fight against British colonial rule.
- They used various means such as peaceful protests, civil disobedience, and armed struggle to achieve their objectives. Their contributions to India's freedom struggle are immeasurable, and they are revered as national heroes in India.

The situation today:

- The recent political discourse in India has seen leaders and organisations being criticised and slandered for their role or lack of it in the freedom movement.
- V.D. Savarkar is one such figure who has been subject to such criticism. However, in a letter dated May 30, 1980, Prime Minister Indira Gandhi acknowledged Savarkar's contribution to India's freedom struggle and wished success to the plans to celebrate his birth centenary. It is important to understand the era and the context before indulging in coarse criticism.
- In recent years, there have been attempts to portray Bhaghat Singh as a terrorist who used violence to achieve his objectives. This is a gross misrepresentation of Bhagat Singh's legacy, as he was a firm believer in non-violence and used violence only as a last resort.
- Mahatma Gandhi himself supported the British in the bitter Boer war, or the South African war, and was later awarded the Kaisar-i-Hind medal by the British for his humanitarian work in South Africa, which he returned in 1920.
- The moderates in the Congress supported the 1919 Montagu-Chelmsford Reforms in the immediate aftermath of the Jallianwala Bagh massacre.
- In 1942, C. Rajagopalachari stayed away from the Quit India Movement as he felt it would not serve India's best interests.
- In recent years, there have been attempts to tarnish the legacy of Subhash Chandra Bose by accusing him of collaborating with the Nazis during World War II.
  - However, this does not mean that Bose collaborated with the Nazis or endorsed their ideology. Bose was a staunch nationalist who believed in the principles of democracy and freedom.

Holistic View:

- People today must take a holistic view of history that acknowledges the sacrifices and efforts of all those who fought for India's freedom, without indulging in selective denunciation or nit-picking.
- Therefore, it is crucial to have a nuanced understanding of history and the political context in which events took place.
- Criticising leaders for their actions during a particular time without taking into account the larger picture or the prevailing circumstances is counter productive.

Nut Graf: *Various events and figures in India's independence movement have been overlooked or unjustly criticised in the recent political discourse. In the 76th year of India's Independence, it is important to express unreserved gratitude to all, who were devoted to the national cause.*

SOCIAL JUSTICE

1. Phasing out the line, 'math is not for a girl'

Syllabus: Issues related to women.

Mains: Issues associated with the performance of girls in the STEM fields.

Context: This article talks about the representation and performance of women in STEM fields.

Details
- In an informal discussion with school students in a village in Bihar's Samastipur district, it was seen that girl students have shown interest to pursue their higher education in Science, Technology, Engineering, and Mathematics (STEM) fields.
- However, the representation of females in the STEM fields or other math-intensive fields has remained fairly low.
- This sort of underrepresentation is not just confined to India but is also seen in various other developing countries as well as the developed world.

Do girls perform poorly in basic mathematics in comparison to boys?
- There is this common belief in society that girls perform poorly in basic mathematics as compared to boys.
- A recent research paper that analyses test scores in mathematics and reading ability from 2010-18 for children (between eight to 16 years) based on the Annual Survey of Education Report (ASER) report suggests that boys outperform girls in mathematics significantly.
- However, there is a considerable variation in the test scores across the country.
  - In the north Indian states like Uttar Pradesh, Bihar, and Madhya Pradesh, it was seen that boys outperform girls substantially.
  - However, in the southern states of India, girls outperform boys in mathematics.
- But on average, the performance of girls continues to remain poor when compared with that of boys.
- This is a cause for concern as it reflects a lack of interest and understanding in the subject, which can have significant consequences for future academic and career success.

Important reasons for this difference in performance
- It is to be noted that the stringent social and cultural norms have played a significant role in widening the disparities between male and female children w.r.t. to their performance rather than their ability.
- The performance of girls better than that of boys in southern states shows that it is not the inherent ability that drives this difference.
- Across India, there is a widespread prevalence of the systematic devaluation of girls related to their mathematical aptitude in society.
- There is this stereotypic belief that "science and maths are meant for boys and arts and humanities for girls" in society.

Policy interventions
- Various States, as well as Central policies and programmes, have acknowledged such discrimination and biases faced by girls students.
- The National Education Policy 2020 (NEP) has recognised the need to address such gender-related gaps in schooling and the existing disparities across social groups.
  - NEP has highlighted the need for focusing on interventions that improve the attendance and academic performance of girls.
  - Furthermore, the policy talks about the need for initiating gender-sensitive training for teachers and establishing a Gender-Inclusive Fund for States.
- Likewise, the National Curriculum Framework for Early Childhood Care and Education (ECCE), developed by the National Council of Educational Research and Training (NCERT), also acknowledges gender disparities.
- The "Teaching of Mathematics" paper published by the NCERT in 2005 links the poorer performance of girls in mathematics to the societal devaluation of their ability.
  - It also talks about how gendered perceptions and the behaviour of teachers might adversely impact girl students and their performance in mathematics.

Key recommendations
- There is an urgent need to undertake efforts to address the prevalence and impact of the biases and perceptions that "math is not for a girl".
- Targeted behavioural interventions could help address the issues of gender stereotyping at the household, school and societal levels.
- References to female mathematicians and the inclusion of chapters that highlight the achievements of women in the STEM fields in the curriculum will provide exposure to female role models and inspire younger girls to take up such career options.

Participation of women in STEM (science, technology, engineering, and mathematics)
- There is an under-representation of women in STEM disciplines worldwide.
- As per the UNESCO data on a few selected countries, India has occupied the lowest rank with only 14% female researchers working in STEM areas.
  - However, India is not lagging far behind as various advanced countries have also performed poorly in this aspect.
    - **Example**: female researchers working in STEM areas in Japan is only 16%, in the Netherlands it is 26%, in the U.S. it is 27% and 39% in the U.K.
  - The highest participation of female researchers was seen in countries like Tunisia, (55%), Argentina (53%) and New Zealand (52%).
- In India, women among the graduate population in STEM account for nearly 43% which is one of the highest in the world. However, only about 14% of women got into academic institutions and universities. Further, the participation of women in research is also lower.
- The participation of women as faculty in universities and research institutes is very low and the participation percentage drops further as there is an increase in the hierarchy of the position held.
- The total number of women fellows in major science academies of India is:
  - 7% for the Indian Academy of Sciences (IAS) founded in 1934
  - 5% for the Indian National Science Academy (INSA) founded in 1935
  - 8% for the National Academy of Sciences India (NASI) founded in 1930
- The number of women employees at Indian Institutes of Technology (IITs) is also very low.
  - **Example**: At IIT Madras only 31 out of 314 professors (10.2%) and in IIT Bombay only 25 out of 143 professors (17.5%).

Government initiatives
- The Indian government has undertaken various efforts to improve women's participation and address the issues of gender inequality and discrimination.
- In this context, the major focus is on incentivising women to take up higher education. The major initiatives of the government include:
  - **Gender Advancement for Transforming Institutions (GATI)**: GATI is an innovative Pilot Project launched by the Department of Science and Technology that aims to promote gender equity in science and technology.
    - GATI project envisages to develop an enabling environment for equal participation of women in Science, Technology, Engineering, Mathematics, and Medicine (STEMM) disciplines at all levels and address key challenges.
  - **Knowledge Involvement in Research Advancement through Nurturing (KIRAN)**: KIRAN is an initiative launched by the Department of Science and Technology in 2014 which enables gender parity in science by nurturing research careers of women scientists and also prevents women from giving up research due to family reasons.
  - Other key initiatives include the **Women Scientists Scheme**, **Consolidation of University Research for Innovation and Excellence in Women Universities (CURIE)** and Indo-U.S. Fellowship for Women in STEMM.
- Further, universities and research institutes are setting up creches to help scientist mothers to carry on with their research work uninterrupted.

Nut graf: The gender stereotyping of "math is not for a girl" is highly prevalent in Indian society which calls for immediate interventions needed to address this problem in order to prevent further harm to female education, career choices, and job market opportunities.

2. World Bank Index on Working Women

Syllabus: Issues related to women.

Mains: Issues associated with the performance of girls in the STEM fields.

Context: The World Bank recently published the Women, Business, and the Law 2023 report.

Highlights Of The Report:
- The Report uses eight indicators to determine whether women and men are on equal footing.
- A perfect score of 100 on the Index indicates that women and men are on equal footing.
- Only 14 countries received a perfect score of 100.
- **India's status:**
  - India scored 74.4 in the Index, which was higher than the South Asian region's average of 63.7 but lower than Nepal, which scored 80.6.
  - India receives a perfect score in indicators such as restrictions on freedom of movement, laws affecting women's employment decisions, and restrictions on marriage.
  - In terms of laws affecting women's pay, laws affecting women's work after having children, restrictions on women starting and running businesses, gender differences in property and inheritance, and laws affecting the size of a woman's pension, India lags behind.

Suggested Reforms:
- Mandating equal remuneration for equal work
- Permitting women to work at night similar to men
- Permitting women to work in industrial sectors

Challenges faced by women labour force :
- **Economic Empowerment:** Even working women are not financially independent and are expected to hand over their earnings to male family members.
- **The Glass Ceiling effect:** women face discrimination in senior positions. Women account for only 5% of Fortune 500 CEO positions and 17% of global board positions on average.
- **Infrastructure:** Women are disadvantaged by a lack of adequate policing infrastructure.
- **Social norms:** society expects women to be submissive and to prioritise their families.
- **Uneven pay:** Women are paid less than men for doing the same amount of work.
- Women earn 79 percent of what men earn on average.
- **Role Stereotyping:** Certain jobs, such as teaching and nursing, are seen as advantageous, and women are forced to work in these fields rather than having the freedom to choose their own careers.

3. Understanding the street dogs-human conflict

Syllabus: Issues related to children.

Mains: Dog-human conflict.

Context: Rising dog-bite cases in India and associated concerns.

Details:
- Humans have coexisted with dogs for almost 25000 years. They were domesticated and considered loyal, friendly, and intelligent.
- However, there is a growing intolerance towards various creatures like cats, cows, birds and dogs.
- In Rajasthan, an infant was taken away by stray dogs. In Telangana, a four-year-old child was attacked by dogs with a fatal result.
- According to the 2019 livestock census, India has a population of nearly 1.5 crore stray dogs.
  - Moreover, India has the distinction of being the dog-bite-and-rabies-capital of the world.
- Despite the knowledge of the crisis by the authorities (Municipalities, State, Centre, Judiciary, and NGOs), the problem still persists.

Dog-human conflict and associated concerns:
- It is argued by the author that the Resident Welfare Associations instigate violence against dogs living near resident societies. For instance,
  - It was reported by a resident themselves that the child that was bitten to death in Hyderabad would constantly beat and tease animals. The child's father was informed by the locals.
- Residents who feed stray dogs are also targeted.
- It should be noted that dogs become aggressive only when they perceive a threat. They want to protect themselves and their litters from attack if they are hungry, unwell, forcibly relocated, or have witnessed neglect and abuse.
- Earlier, dogs were routinely killed to reduce their population. However, it did not work then and any such efforts in today's scenario will meet a similar fate.
- Moreover, if there is a vacuum, the space will be occupied by other species like rats, cockroaches, mongooses, etc. For example,
  - The London Plague (in 1665) was a consequence of the killing of 250000 dogs and cats. The incident caused the mice population to increase and nearly 70% of the human population was wiped out by the 'Black Death Pandemic'.
  - Similarly, Surat city of India had a plague after removing dogs.
- Challenges in controlling the dog population:
  - Lack of budget
  - Inadequate infrastructure
  - Prevalence of corrupt and inefficient practices
  - Lack of transparency
  - Fascination with foreign breeds of pets
  - Existence of illegal pet shops and breeders

Measures adopted by the Government:
- The Union government prohibited the import of pedigree dogs into India in 2016.
- Further, it notified Rules for regulating dog breeders in 2018.
- As per the recommendation of the Law Commission, the Pet Shop Rules were notified in 2018 to regulate the trade of pedigree dogs.
- The Delhi High Court in Dr. Maya D. Chablani v. Radha Mittal recognized the importance of people who look after the native breed of dogs.
- The new ABC rules (2023) have protected community dog caregivers from harassment.

Way Ahead:
- The multiplication of dogs should be checked.
- The World Health Organization and the World Organisation for Animal Health recommended the Animal Birth Control (Dogs) Rules (ABC Rules) in 2001.
  - The rules can bring a sustained decline in the population of dogs, rabies infection, and aggression in dogs.
  - These rules should be efficiently implemented by the local authorities to scientifically manage the dog population.
- The Union government has issued a new set of ABC rules that address the loopholes in the existing law.
- Instead of the removal of dogs, citizens should demand that municipal bodies formulate and implement the ABC programme in accordance with the new ABC Rules (2023).
- The adoption of Indian dogs should be encouraged. Notably, native dogs have better immune systems than foreign breeds and thus they should be adopted as pets.
- Reports of dog attacks should be verified on the basis of proof.

Nut Graf: *The rising cases of dog bites in India have highlighted the issue of human-dog conflicts. Being the superior species, it is the responsibility of humans to act responsibly, scientifically, and humanely.*

4. Human Capital in South Asia

Syllabus: Issues relating to development and management of Social Sector/Services relating to Human Resources.

Mains: Role of government in enhancing resilient human capital

Context: This article discusses the potential of human capital in South Asia.

Introduction:
- South Asia, which includes countries such as India, Pakistan, Bangladesh, Sri Lanka, Nepal, and Bhutan, has significant and diverse human capital.
- However, the region still faces significant challenges in fully realising its human capital potential due to various factors such as poverty, inequality, and limited access to education and health services.
- The recent pandemic, economic slumps and extreme weather events have hit South Asia in rapid succession since 2020. These events have already undermined decades of development gains.
- With nearly half its population under the age of 24 and over one million young people set to enter the labour force every month until 2030, the region could reap an enviably high demographic dividend.

Underutilisation of human capital:

South Asia, despite having a large and diverse human capital, is facing underutilization of its human resources. Some of the factors contributing to this underutilization are:

- **Limited access to education:** This limits the ability to acquire the skills and knowledge needed to participate fully in the labour market and contribute to economic growth.
- **Poor quality of education:** Many graduates lack the skills and knowledge needed for employment in modern industries, and are instead relegated to low-paying and low-skilled jobs.
  - South Asian governments on average spend just 1% of GDP on health and 2.5% on education. In comparison, the global average is 5.9% on health and 3.7% on education.
- **Poor healthcare:** Many people in South Asia face limited access to healthcare, particularly in rural areas. Poor health can limit individuals' ability to work and contribute to economic growth.
  - South Asia is also home to over one-third of the world's stunted children. And a child born in the region today can, by the age of 18, expect to attain only 48% of their full productive potential.
- **Discrimination:** Women, minorities, and marginalised groups often face discrimination in South Asia, limiting their opportunities to participate fully in the labour market and contribute to economic growth.
- **Inadequate infrastructure:** Inadequate infrastructure, such as poor roads, unreliable electricity, and limited access to technology, can limit economic growth and job opportunities.
- **Brain drain:** Many highly skilled professionals from South Asia choose to migrate to other countries in search of better employment opportunities and higher wages. This brain drain can further limit the region's ability to utilise its human capital fully.
- **Pandemic:** COVID-19 pandemic pushed an additional 35 million people across South Asia into extreme poverty, dealing an unprecedented blow to the region's human capital.
  - It resulted in a rise in learning poverty as schools remained closed for in-person learning between 2020 and 2022 for 225 days in South Asia against the global average of 141 days.
  - Coupled with ineffective remote instruction, this increased South Asia's learning poverty from 60% to 78%.

Way Forward:

- A robust human development system would not only mitigate the damage but also help ensure lives and livelihoods are protected and provide the resilience South Asia needs to prosper in an increasingly volatile world.
- Addressing these challenges will require significant investment in education, healthcare, infrastructure, and efforts to promote equality and reduce discrimination.
- It will also require a focus on creating more high-quality employment opportunities, particularly in modern industries such as technology and healthcare.
- Recent evidence suggests that even simple and low-cost education programmes can lead to sizable gains in skills.
  - For instance, in Bangladesh, attending a year of additional preschool through two-hour sessions significantly improved literacy, numeracy, and social-development scores.
  - In Tamil Nadu, six months of extra remedial classes after school helped students catch up on about two-thirds of lost learning linked to 18 months of school closures.
- Along with improving access to education, countries must also focus on enhancing the quality of education. This could involve revising curriculums to be more relevant to modern industries, training teachers to provide high-quality instruction, and investing in education technology.
- South Asian countries could also invest in research and development in areas such as technology and healthcare, which could lead to new innovations and create more employment opportunities.
- The health, education and skills people acquire at various stages of their lives, build and depend on each other. To be effective, human development systems must recognise and exploit these overlapping connections.

Nut Graf: *Human capital is a critical source of resilience that South Asian countries rely on for recovery from the recent pandemic and economic slumps. To strengthen resilience and protect the well-being of future generations, governments across South Asia need to take urgent policy action and invest in human capital.*

5. Migrant workers must feel safe

Syllabus: Issues related to the vulnerable section of society.

Mains: Migrant crisis and fake news.

Background Details:

- In Tamil Nadu, there were rumours and fake news about migrant workers being attacked. The authorities swiftly intervened and assured workers of their safety.
- A video clip of violence between two migrant groups was interpreted as an attack on migrant workers by locals. As a result, many workers (usually from Bihar) were seen leaving for their home state.

Details of migrant workers:

- Migrant workers play an important role in different economic sectors of Tamil Nadu. Their presence in the real state sector is immense.
- As per CREDAI Tamil Nadu, the migrant workers cover 85% of the work in big projects and 70% of the work in medium-scale projects.
- Migrants are also present in the textiles, construction, manufacturing, and hospitality sectors.
- According to the Tamil Nadu Labour Department survey, there were around 11.5 lakh migrant workers in 2015.

Action taken by the authorities:

- The Tamil Nadu Chief Minister M. K. Stalin contacted his Bihar counterpart Nitish Kumar to address the concerns.
- The State Police filed cases against those spreading the rumours, including even the Editor of a popular News Daily, under various sections of the Indian Penal Code (IPC).
- Similar actions have been taken in Bihar and Jharkhand against fake and misleading news reports and videos.
- Officials from Bihar and Jharkhand visited migrant hubs in Coimbatore and Tiruppur. Representatives from the industry are also trying to reassure the workers.

Way Ahead:

- Politicians should exercise caution and restraint while commenting on the issues regarding migrants and protecting the interest of locals.
- The role of migrant workers in the State's development should be internalized by all political parties.
- Government should also roll out welfare measures for migrant communities like supplying pulses and edible oil at a concessional rate under Public Distribution System thereby supplementing the 'One Nation One Ration Card' scheme.
- An exclusive wing can also be established to address the problems of the community.
- A fresh and comprehensive study about migrants should be conducted and they should be integrated with the local population.

Nut Graf: The fake news in Tamil Nadu has once again brought to the fore the concerns associated with the migrant population. Efforts should be made to ensure their safety and make them an integral part of the local population.

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EDUCATION

1. A reality check for foreign universities

Syllabus: Issues relating to development and management of Social Sector/Services relating to Education

Mains: Foreign Universities in India and associated concerns.

Context: The University Grants Commission (UGC) released the draft UGC (Setting up and Operation of Campuses of Foreign Higher Educational Institutions in India) Regulations 2023.

Details:
- The government's move to establish foreign universities in India has received mixed reactions. It has been appreciated by some for quality enhancement whereas others have called it a predatory practice.
- In terms of the economic aspect, Indian education appears attractive.
- Ten years ago, OECD's global study on the internationalization of higher education observed that "no matter how altruistic and enlightened the motivation, financial aspects of setting up an off-shore campus are likely to prevail."

Statistical Details:
- According to the Ministry of Education, the number of Indian students going abroad increased from 4.4 lakhs in 2021 to nearly 7.5 lakhs in 2022.
- As per the Reserve Bank of India, outward remittance spent on education from 2012 to 2022 was about $5.1 billion.
- The All-India Survey on Higher Education (AISHE) observed that approximately 4.13 crore students are enrolled in higher education. In order to achieve a target of a 50% enrolment ratio by 2035 from the existing 27.3%, student intake should almost double in 15 years.
- Much of this absorption of students is expected to happen in private institutions (currently covering only a quarter of enrollments).

Challenges for Foreign Universities:
- Foreign universities in India should position themselves on par with the premiere Indian universities in terms of costs and fees. For instance,
  - IIT Madras has nearly 7000 students with an annual operating expenditure of nearly ₹1032 crore (2020-21).
  - The students' fees partially meet this expense as it charges fees of only ₹2 lakhs yearly for its core programmes.
  - If it adopts an entirely fee-based model, then it would cost at least ₹14 lakhs a year.
- The University Grants Commission has placed a condition for foreign universities to offer services on par with what they offer in their home country. This would require foreign faculty and significant capital.
- The local education market in India is highly fragmented. Some institutes (like Shiv Nadar and Azim Premji) are backed by philanthropic organizations costing fees as low as around ₹1.6 lakhs; whereas others take a volume route and charge mid-level fees. Some other types of institutes follow the niche route and charge relatively high fees.
- Higher fees will not be a barrier if the institutes can create premiums for students in the form of recruiters offering enhanced remuneration. For instance, the IIM model is "high fees and high premium" in contrast to that of IITs which is "low fees and a high premium".
- Moreover, creating high-demand graduates is also a challenge for foreign universities as decades-old elite private institutions have not reached the level of IITs and IIMs.
- The 2019 Global Education Monitoring Report on the internationalization of higher education in Gulf Cooperation Council (GCC) countries highlighted that despite GCC nations heavily investing in foreign universities and providing them financial incentives, "the employment workforce nationalization has been elusive."
- Some countries like UAE offer 10-year visas for exceptional students and 5-year visas for others to seek work, thereby making it an attractive destination for students looking for better opportunities and rich cultural experiences.
- It is argued that establishing foreign universities will not lead to a radical reduction in outward flow. However, it might marginally increase local options and redistribute students amongst the elite institutions.

Nut Graf: *The Indian government has allowed the setting up of foreign universities in India in order to improve the quality of higher education. However, there are certain challenges for foreign universities that suggests a reassessment of the ground situation. The government should proactively look into the matter.*

2. Issues with Skill India

Syllabus: Issues relating to development and management of Social Sector/Services relating to Education

Prelims: Skill India initiative

Mains: Various issues and challenges related to Skill India initiative

Context: Even though skill development schemes and programmes have existed for decades, the current Government's emphasis on creating a demand-driven, industry-oriented ecosystem promises to be a game-changer.
- The Union Budget's emphasis on skill development could well be a giant step towards turning this demographic dividend into a reality.

Details:
- Last year's budget 2022 pushed for Centres of Excellence and integrated skill development portals, setting the stage for bigger commitments this year.
- The integration of e-Shram and National Career Service (NCS) portals led to a surge of more than 10 lakh registrations of which 1.2 lakh candidates have been shortlisted by employers for jobs, as per the Economic Survey .
- The Government has now allocated Rs 2,278.37 crores to the Skill India Programme, aside from introducing Pradhan Mantri Kaushal Vikas Yojana (PMKVY) 4.0 to skill lakhs of youth within the next three years.
- According to the Economic Survey, more than one crore citizens have been enrolled and trained since the scheme's inception in financial year 2017 and 7.4 lakh people are getting skilled under the third edition. Hence, the allocation reflects the government's added thrust on PMKVY.

Significance:
- These interventions come at a crucial time, when India is touted to take over China as the most populous country in the world. Moreover, with the sub-continent's G20 presidency, skilling has garnered further attention in policy circles.
- Be it creating a future-ready workforce to facilitate a just transition to Electric Vehicles (EVs), or generating large-scale livelihood opportunities for the youth, skill development is the key that can open many locks.
- The Government has also time and again expressed its vision to make India the Skill Capital of the world. Such ambitious plans indeed need a befitting budget. But how this allocation is utilised will be crucial to realising the goals of Amrit Kaal.

Issues:
- Despite decades of efforts, less than 10 percent of India's workforce has received any kind of skills training.
- On the other hand, the figures for China stand at 26 percent.
- There have been two recurring problems with the skills training in the country:
  - First, there is a mismatch in the demand of the industry and the supply in the labour markets
  - Second, the learning period often delays the income-earning period, which dissuades the labour force, especially in the unorganised sector, from taking upskilling/reskilling/upskilling initiatives.
  - However, both these concerns have been acknowledged and addressed in this Budget.

Governments efforts:
- Building on its efforts from the last budget the Government has now announced the launch of a unified Skill India platform, which aims to enable demand-based formal skilling, linked with employers, including MSMEs, while also facilitating access to entrepreneurship schemes.
- Such efforts will not only help workers access skill development, but also re-orient existing curricula to the demands of the industries.
- The integration of Skill India Portal with the NCS portal last year facilitated the registration of over 46 lakh candidates on the latter. An additional step for the new Skill India platform could be closely involving industry bodies and associations in the process, which may facilitate in reviewing and re-calibrating the various programmes linked to the platform.
- To address the second concern, the Government has proposed a stipend to support more than 74 lakh youth under the National Apprenticeship Promotion Scheme (NAPS).
- This is expected to encourage youth with freshly-acquired skills from ITIs and other skilling programmes to ply their trade and ready themselves to meet the industry standards through on-ground experience.
- Since its launch in 2016, the scheme has already engaged more than 21.4 lakh apprentices across industries and the new changes would likely reap positive results. Skilling models hinging on stipends have been tested at state levels as well, with Karnataka and Tamil Nadu providing allowance for re-skilling for EVs.
- As seen in European nations like Sweden, France and Portugal, the Government encourages entrepreneurship by providing certain limited-period benefits to workers who may want to venture into it.
- In India's context, a similar cost-effective solution is presented in the form of micro-entrepreneurship through platform-led skilling.
- Even with its conservative estimates, NITI Aayog projects the gig and platform workforce to expand to 2.35 crore workers by 2029-30, highlighting the potential of this new-age economy.
- Platform work (gig work through digital applications) offers the opportunity to skill, upskill and reskill on the job for vertical and horizontal mobility across sectors.
- Scores of formal as well as informal workers could be encouraged in the form of a limited-period stipend enabling them to join the platform economy to skill, reskill and upskill themselves.

Conclusion:
- Overall, Budget 2023 makes India's intentions clear — to be the Skill Capital of the world. This is the first time since its inception in 2015 that the Skill India initiative has received such an impetus, with the Government also proposing to set up 30 Skill India International Centres.
- The Union Government could encourage such models to promote micro-entrepreneurship, which can address the problem of low placement rates.
- During FY 2021-23, PMKVY's placement rate hovered around 5.59 percent, for the lack of opportunities, despite 66 percent of the trainees being certified.
- With the G20 presidency, the country is already the cynosure of all eyes, and such an ambitious allocation for skill development heralds India not only ready to finally reap its much-celebrated demographic dividend but also export it to the world.

GOVERNANCE

1. PM MITRA scheme

Syllabus: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

Prelims: PM MITRA scheme

Mains: Various issues associated with the PM MITRA scheme

Context: Recently the Central government announced that Seven mega textile parks under the ₹4,445-crore PM Mega Integrated Textile Regions and Apparel (PM MITRA) scheme will come up in Tamil Nadu, Telangana, Gujarat, Karnataka, Madhya Pradesh, Uttar Pradesh and Maharashtra.

All-in-one parks

The PM Mega Integrated Textile Regions and Apparel (PM MITRA) scheme was announced in October 2021

- The parks will come up by 2026-27
- The total outlay for the project is ₹4,445 crore, though the initial allocation in the 2023-24 Budget is only ₹200 crore
- States have offered to provide at least 1,000 acres, says Minister Goyal
- Spinning, weaving, processing/ dyeing, printing and garment manufacturing will be done at one location
- Effort is to reduce logistics cost of textile industry and make it globally competitive

Source: The Hindu

About the PM MITRA scheme:
- The scheme was announced in October 2021, and the parks will be established by 2026-27.
- MITRA aims to enable the textile industry to become globally competitive, attract large investments, and boost employment generation and exports.
- It will create world-class infrastructure with plug and play facilities to enable create global champions in exports.
- It will be launched in addition to the Production Linked Incentive Scheme (PLI).
- It will give our domestic manufacturers a level-playing field in the international textiles market & pave the way for India to become a global champion of textiles exports across all segments".

Implementation:
- A special purpose vehicle (SPV) owned by Centre and State Government will be set up for each park, which will oversee the implementation of the project.
- The Ministry of Textiles will provide financial support in the form of Development Capital Support up to ₹500 crore per park to the Park SPV.
- A Competitive Incentive Support (CIS) up to ₹300 crore per park to the units in PM MITRA Park shall also be provided to incentivize speedy implementation.
- Convergence with other Government of India schemes shall also be facilitated in order to ensure additional incentives to the Master Developer and investor units.

Benefits:
- The parks will boost the textiles sector in line with 5F (Farm to Fibre to Factory to Fashion to Foreign) vision.
- The Centre envisages an investment of nearly ₹70,000 crore into these parks, with employment generation for about 20 lakh people.
- The parks will function as centres of opportunity to create an integrated textiles value chain, right from spinning, weaving, processing, dyeing and printing to garment manufacturing, all at a single location.

Need for the scheme:
- Textile industry is critical to India's economy, employing 4.5 crore people and contributing 7% of GDP. Despite its potential, the industry is facing challenges that need to be addressed.
- The unorganized textile industry in the country increased wastage and logistical costs, impacting the competitiveness of the country's textile sector.

Challenges faced:
- High input costs due to high taxes and tariffs, inadequate infrastructure, and a lack of skilled labor.
- Competition from cheaper imports (ex. from Bangladesh) and a growing informal sector.
- Environmental concerns related to the industry's high water usage, pollution, and hazardous waste disposal.
- The pandemic further disrupted supply chains and led to reduced demand.

2. Digital India Act, 2023

Syllabus: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

Prelims: Digital India Act, 2023

Mains: Digital India Act - need for legislation, key features and its significance

Context: The central government in recent times rethinking about the 'safe harbour' provisions in the Digital India Bill.

Reconsideration of Safe Harbour:
- The government is reconsidering a key aspect of cyberspace — 'safe harbour'.
- Safe harbour is the principle that so-called 'intermediaries' on the internet are not responsible for what third parties post on their website.
- This is the principle that allows social media platforms to avoid liability for posts made by users.
- Safe harbour has been reined in in recent years by regulations like the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, which require platforms to take down posts when ordered to do so by the government, or when required by law.

About Digital Act, 2023:
- The act is a new legislation that aims to overhaul the decades-old Information Technology Act, 2000.
- The Act covers a range of topics such as Artificial Intelligence (AI), cybercrime, data protection, deep fakes, competition issues among internet platforms, and online safety.
- The Act also aims to address "new complex forms of user harms" that have emerged in the years since the IT Act's enactment, such as catfishing, doxxing, trolling, and phishing.

Why was it enacted?
- **Data privacy:** The Digital India Act will be implemented alongside the Digital Personal Data Protection Bill, 2022, which focuses solely on processing personal data in India.
- **Lawful use of data:** It seeks to address the processing of digital personal data in a manner that recognizes both the right of the individuals to protect their personal data and the need to process personal data for lawful purposes.
- **Comprehensive regulation:** This Act and the Digital Personal Data Protection Bill will work in tandem with each other.

Key features:
- Creating new regulations around newer technology, including 5G, IoT devices, cloud computing, metaverse, blockchain, and cryptocurrency.
- Reclassifying online intermediaries to separate categories instead of one general intermediary label, each one with its own set of regulations.
- Removing "safe harbour" immunity for online intermediaries for purposeful misinformation or other content violations from third parties.
- Creating digital standards and laws regarding artificial intelligence (AI) and machine learning (ML) technology.
- Criminalizing cyberbullying, identity theft, and unauthorized sharing of personal information without consent.

Significance:
- The Digital India Act provides a legal framework for promoting the growth of the digital economy in India.
- It aims to create a conducive environment for the development and deployment of digital technologies across different sectors.
- The Act also addresses various challenges associated with cybersecurity and data privacy, which are critical issues in the digital age.

Nut graf: *The technological advancements that took place post the enactment of the IT Act in 2000 have posed a new set of challenges which have made it extremely crucial to formulate new legislation to address modern challenges. However, such an act should only be drafted after holding extensive consultations with the stakeholders in order to ensure that it is future-ready and future-proof.*

3. Amendments to PMLA rules

Syllabus: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

Prelims: PMLA rules

Mains: Amendments in the PMLA Rules, its significance and associated concerns

Context: In order to include more disclosures for non-governmental organisations by reporting entities like financial institutions, banking businesses, or intermediaries, the Finance Ministry updated money laundering regulations.
- In accordance with the recommendations of the Financial Action Task Force, "politically exposed persons" (PEPs) under the Prevention of Money Laundering Act (PMLA) have also been defined (FATF).
- With rules to monitor illegal money transfers, cryptocurrencies were also included in the extended definitions.

Amendments in the PMLA Rules
- **Disclosure of beneficial owners:** The new regulations call for reporting entities like financial institutions, banking businesses, or intermediaries to disclose beneficial owners through papers like registration certificates and PANs, in addition to the present KYC standards that must be met.
- **Lowering the threshold for identifying beneficial owners:** The amended rules have now lowered the bar for identifying beneficial owners by reporting entities when the client is acting on behalf of its beneficial owner, in accordance with current provisions of The Income-Tax Act and The Companies Act.
  - The beneficial ownership threshold has been lowered to bring PMLA into compliance with the Companies Act and Income-tax Act.
  - If the client is a non-profit organisation, reporting entities must also register the client's information on the NITI Aayog's DARPAN portal.
- **Meaning of non-profit organisation:** In accordance with Section 2(15) of the Income Tax Act of 1961, the definition of a non-profit organisation has been updated and connected to the concept of a charitable purpose.
- **Definition of Politically Exposed Persons (PEP):** PEPs are people who have been given important public roles by a foreign government.
  - They consist of the leaders of States or Governments, major political party figures, leading politicians, and senior judicial, military, or government personnel.
  - The move to define PEPs under PMLA is intended to create consistency with a 2008 RBI circular for KYC standards/anti-money laundering standards for banks and financial institutions, which had defined PEPs in accordance with FATF guidelines.

- **Virtual digital assets (VDA)** trade has been brought under PMLA: Cryptocurrencies are currently unregulated in India, despite the fact that the government has taxed withdrawals into rupees.
  - The upkeep of client KYCs and the reporting of suspicious transactions to financial intelligence units are now requirements for cryptocurrency exchanges and intermediaries dealing in virtual assets under new regulations.
  - The new regulations will clarify the legal situation for both the investigating agency and those engaging in such digital currency fraud.
  - It will stop the exploitation of cryptocurrencies and NFTs for money laundering and other criminal purposes.

Significance of the FATF-related changes:
- Prior to India's scheduled FATF evaluation, which is anticipated to be conducted later this year, the revisions assume relevance.
- The overarching goal is to eliminate legal uncertainties and bring about uniformity in advance of the FATF review.
- According to the FATF's guidelines, financial institutions must have the right risk-management systems in place to identify if a client or beneficial owner is a domestic PEP or a person who is or has held a key position with an international organisation.

Concerns
- The term of PEP, however, leaves a lot up to interpretation, and without clear guidelines regarding what rank, how long after leaving office, etc., a person would be a PEP, it would give the authorities too much latitude.
- If such discretion were left unchecked, it could be easily abused, hence it would be prudent to clarify the unclear areas of this amendment.

4. A chance for India to shape a data governance regime

Syllabus: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

Mains: Data governance and data security.

Prelims: Data Empowerment and Protection Architecture.

Details:
- India has considerably advanced in its digital strategies and data governance. However, as the country evolves with technology and digitalisation, it is important that its approach is inclusive, transparent, secure, and conducive to sustainable development.
- The G-20 has recognized the need for international cooperation in addressing the challenges associated with the rapid growth of data and digital technologies.
- India's G-20 presidency provides it with a unique opportunity to display its digital transformation specifically in data infrastructure and data governance.

Data Empowerment and Protection Architecture (DEPA):
- Data Empowerment and Protection Architecture (DEPA) is a consent management tool which is launched by India.
- DEPA has the ability to improve citizens' data protection and privacy. It gives them greater control over the use and sharing of their personal information.
- It could build trust in digital technologies and data governance.

Associated Concerns:
- If the DEPA is not properly implemented or managed, it can increase the risk of misuse and misappropriation.
- Implementation of DEPA across different sectors and jurisdictions might be inconsistent. It could further result in ineffectiveness and confusion among citizens.
- Apart from security and privacy, there are concerns related to infrastructure, connectivity, and the availability of a skilled human workforce.
- There are also concerns associated with the misuse and commercialization of sensitive data from critical sectors like healthcare and agriculture.
- There are also concerns about ownership and governance of data generated and collected along with the rights of the data provider.
- Another major concern is data sovereignty.
  - Data sovereignty is a principle that a country has the right to control the data collection, storage, and usage within its borders. It also includes the right to informational self-determination of citizens over their data.

Measures taken and Way Ahead:
- India established the India Data Management Office (IDMO).
  - It is responsible for overseeing and implementing the country's digital strategies and data governance framework.
  - It will also promote the development of the open-source solution and ensure that data structures are a social public good.
- India stack should be designed and implemented in a way that is consistent with India's development strategies.
  - India stack is a unified software platform that provides digital public goods, and application interfaces, and ensures digital inclusion.
- Data governance should be a process in evolution that is agile and responsible. It should be built on fundamental rights, values, and norms.
- A strong and robust data protection regulatory framework with ethical data governance practices is the need of the hour. It also requires an accountable oversight mechanism.
- Many experts suggest the opening of data "silos" to capture the potential wealth of data sharing between governments, corporations, and citizens. However, others argue that it might jeopardize trust and security.
- India should explore a middle path between restrictive data sovereignty and limitless data flow. It can define the data, its sharing, and the purpose of sharing.
- It should balance the interest of all stakeholders while respecting and protecting the fundamental right to privacy.
- Investment should be made in digital infrastructure and the necessary skills for a resilient data governance regime.

Nut Graf: India has made significant progress in digital technologies and data governance. However, there are some challenges that should be addressed by a data governance strategy that is secure, transparent, robust, and aligned with the values and priorities of the country.

5. Concerns over linking Aadhaar with voter IDs

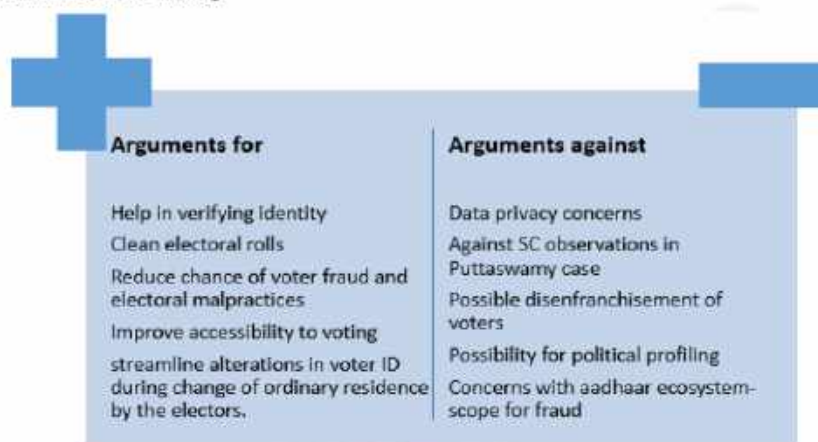**Syllabus:** Important aspects of governance, transparency and accountability.

Mains: Concerns over linking Aadhaar with voter IDs

Context: Close to 60% of Indian voters have currently linked their Aadhaar to their name on the electoral rolls

Key Details:
- The linking exercise has achieved coverage of over 90% in States like Tripura and is lagging behind in states like Gujarat and Delhi as only 30% of the electorate has provided their Aadhaar to election officials.
- The linking of Aadhaar with voter IDs is being carried out by filling Form 6B, which is provided by election officials and is a result of the Election Laws (Amendment) Act, 2021 that has allowed the linking.
- While the Election Commission of India (ECI) has maintained that the linking is optional, Form 6B requires voters to declare that they do not have an Aadhaar to avoid doing so.
- Before the passage of the Election Laws (Amendment) Act, the Supreme Court had restricted the mandatory use of Aadhaar to welfare schemes and PAN linking.
- Several activists have raised concerns about disenfranchisement, coercion and privacy as a result of this linking exercise.
- There have been concerns over privacy issues as Aadhaar linking may enable political parties to micro-target voters.
- Activists from the NGO Swechha have said that documents they had obtained through a Right to Information (RTI) request revealed that over 20 lakh voters were deleted from the rolls in Telangana following an Aadhaar-linking exercise.

Arguments for and against Aadhaar-voter ID linking:

Arguments for	Arguments against
Help in verifying identity	Data privacy concerns
Clean electoral rolls	Against SC observations in Puttaswamy case
Reduce chance of voter fraud and electoral malpractices	Possible disenfranchisement of voters
Improve accessibility to voting	Possibility for political profiling
streamline alterations in voter ID during change of ordinary residence by the electors.	Concerns with aadhaar ecosystem- scope for fraud

Arguments for:
- The linking of aadhaar and voter ID will help in **verifying the identity of voters.**
  - The Aadhaar database contains the unique identification numbers of every resident in the country.
  - Aadhaar information is authenticated **using biometrics,** which cannot be replicated, and in turn, the **duplication of voter ID cards is prevented.**
- The linking will help **weed out bogus voters and those who figure in the electoral rolls in more than one constituency** (help check multiple registrations of the same voter). Thus it will help in **reducing voter fraud and cleaning the electoral rolls of the country.** This will help in consequently reducing electoral malpractices.
- A Parliamentary Standing Committee report had also argued for linkage of unique Aadhaar ID Card numbers with voter I-card as it would help **streamline alterations in voter ID during change of ordinary residence by the electors.**
- As per the Election Commission of India, the integration can help **improve accessibility to voting** in India. The move can help allow migrant workers the right to vote regardless of their location, in order to let them participate in elections in their home states. One of the major reasons why India lags in voter participation compared to other large democracies is because of the large number of migrant workers in India— an estimated population of 300 million. Linking the two databases will allow the ECI to track migrant workers and improve election participation.

Arguments against:
- Given the reports of **data insecurity of the data of the Aadhaar Card** and the absence of robust data protection standards like a Personal Data Protection Law, there is always the danger of misuse and data leaks. This raises serious **data privacy concerns.**
- The linking of voter IDs and Aadhaar **violates the fundamental right to privacy** as defined by the Supreme Court in a judgment. The move goes against the Supreme Court judgment that limits the use of Aadhaar to the financial and welfare benefits given by the government, and bars the unnecessary expansion of the scope of Aadhaar to other areas of life.
- It may lead to large-scale deletion of names either inadvertently or by deliberate targeting. This **possibility of disenfranchisement of voters** is a major cause of concern associated with the move.
  - The Aadhaar database is also strewn with **errors** and therefore linking it to the voters' list could result in omission errors.
  - A similar attempt to curate electoral rolls in Telangana and Andhra Pradesh through the UIDAI in 2018 by the election commission had resulted in the deletion of names of lakhs of voters in Telangana.
- Though the law states that the step is voluntary in nature, the provision that the inability or non-submission of aadhaar number must have "sufficient cause as may be prescribed", means that it is not really voluntary, as only a set of reasons to be prescribed later can be given for those who cannot or do not wish to give their Aadhaar number.
- It may **help political parties to profile voters as favourable or unfavourable.** Hence it might be used for **political profiling** which does not augur well for a democracy. It could lay the foundation of **targeted political propaganda** which is against the model code of conduct as well.
  - Such fear has precedent. There have been examples of targeted surveillance using Aadhaar information and demographic data.
  - Justice B N Srikrishna, Chairman of the committee that drafted the Personal Data Protection Bill, had earlier called the ECI's proposal to link the two databases "most dangerous," arguing that "if [the government] can collate the data, [it] can profile human beings.
- Given the **reported scope for fraud with Aadhaar,** this process could undermine the sanctity of the voter roll.
- Some have pointed out the fact that **Aadhaar is not proof of citizenship.** They argue that the move to link Aadhaar with voter ID could lead to giving voting rights to non-citizens.

6. The forecast after a fake news campaign in Tamil Nadu

Syllabus: Government policies and interventions.

Mains: Significant impact of Fake news or Disinformation and ways to combat them

Details:
- A malicious fake news campaign in Tamil Nadu led to violence and a law and order crisis in early March 2023.
- The police acted promptly and countered the claims with factual reports, on-the-spot investigations, and personalized appeals.
- As most of the news is consumed through social media sources, the propagation of fake news is the biggest threat to democracy, specifically in an election season. Thus the issue should be ranked high as a potential threat to destabilize democratic institutions.

Details about the incident:
- On 1st March 2023, a significant political event in Tamil Nadu was attended by leaders of various political parties.
- On a subsequent day, video clips of migrant workers leaving Tamil Nadu for the Holi holidays started surfacing on social media. It was said that there was an exodus from the State because of incidents of violence.
- In order to support the narrative, fake news stories about the death of a migrant worker were seeded online.
- Even one of the reputed media groups projected these stories as news without verifying their authenticity.
- The fact checker (Alt News) stepped in and broke the cycle of disinformation.
- Significant actions were taken by the authorities.

Measures taken to address disinformation in different countries:
- The European Union (EU) has established the Code of Practice on Disinformation 2022. Some of the initiatives of the code are:
  - Transparent political advertising
  - Empowerment of researchers and fact-checkers
  - Steps to reduce manipulative behaviour
  - Tools for flagging disinformation
- The United Kingdom has also introduced an Online Safety Bill, which is under review by a committee in the House of Lords.
  - The bill expects social media platforms (intermediaries) to actively monitor problematic content.
  - However, many companies are opposing the bill in the interest of privacy.

Measures taken in India:
- It is argued that there is no serious discussion or action in addressing the menace of disinformation in India.
- The Indian government has often adopted Internet shutdowns without due regard to proportionality. It is suggested that this is a non-transparent and autocratic approach.
- It is often criticized that the union government has greater power to strike down any content that is "unpalatable". For instance,
  - The Union government can block access to any information in the interest of the sovereignty and the integrity of India, the security of the state, or public order through Section 69A of the Information Technology Act, 2000.
- The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 regulate content by online publishers of news and social media intermediaries.
- The draft amendment introduced in IT Rules 2021 intends to empower Press Information Bureau to flag inaccurate and fake information related to government bodies on social media.

Way Ahead:
- In order to balance free speech (Article 19 of the Indian Constitution) and protect citizens from disinformation, a more studied, comprehensive, and calculated set of legislative actions is required.
- The Supreme Court in Tehseen S. Poonawalla vs Union Of India case (2018), held that it is the responsibility of the government (both Union and State) to take measures to curb the dissemination of "irresponsible and explosive content that have the potential to incite mob violence or lynching of any kind".

Conclusion:
The fake news incident in Tamil Nadu serves as an indicator of what lies ahead in the run-up to the general elections of 2024 as voters rely on social media for information more than any other sources.

Nut Graf: *A disinformation campaign can not only lead to a law and order crisis but can also pose a serious risk to democracy, as most of the information is consumed through social media. Both the state and the central governments should collaborate to address this situation and come out with a robust framework to tackle the root causes of disinformation.*

7. The rise of the ESG regulations

Syllabus: Government policies and interventions for development in various sectors.

Mains: Details about ESG, difference between ESG and CSR laws, the need for ESG laws in India and its implications

Context: In recent years, people around the world have realised that businesses must be measured only on the basis of traditional economic metrics but also in terms of their environmental, social and governance (ESG) impacts.

ESG v/s CSR
- Corporate Social Responsibility (CSR) refers to a concept that suggests that it is the accountability of a modern company working within society to contribute towards their social, economic, and environmental development i.e. overall welfare of the society.
  - India already has an efficient CSR policy in place through the passage of the 2014 and 2021 amendments to the Companies Act of 2013.
  - These amendments mandate companies with a net worth of ₹500 crores or a minimum turnover of ₹1,000 crores or a net profit of ₹5 crores in a financial year to spend a minimum of 2% of their net profit over the next three years on CSR activities.
  - The activities which qualify as CSR activities are broad and include efforts to support the protection of historical monuments and promote safe drinking water.

- Whereas, Environmental, Social and Governance (ESG) regulations mandate that companies take into account their impact on the environment, commitment to social issues and the soundness of their corporate governance.
  - ESG regulations are different as compared to the CSR policy in the process as well as impact.
  - **Example:** The U.K. Modern Slavery Act mandates companies with business in the U.K. and with annual sales of over £36 million to publicly disclose the efforts undertaken by them to:
    - Combat the risks of human trafficking, child labour and debt bondage in their supply chain.
    - Constitute internal accountability mechanisms
    - Analyse and evaluate supplier compliance
    - Training supply chain managers over such issues

Environmental	Social	Governance
Renewable fuels	Health and safety	Ethical standards
Greenhouse gas (GHG) emissions	Working conditions	Board diversity and governance
Energy efficiency	Employee benefits	Stakeholder engagement
Climate risk	Diversity and inclusion	Shareholder rights
Water management	Human rights	Pay for performance
Recycling processes	Impact on local communities	
Emergency preparedness		

Source: The World Economic Forum

Relevance of ESG regulations in India

- India at present has numerous laws and bodies regarding environmental, social and governance aspects and various labour codes and regulations governing corporate governance practices.
- Despite such laws, regulations and bodies extending significant environmental and social safeguards, efforts are required to establish guidelines that emphasise monitoring, quantification and disclosure similar to the ESG regulations seen in other countries.
- The Securities and Exchange Board of India (SEBI) taking into account the increase in investing and the demand by investors for information on ESG risks, has revised its annual **Business Responsibility and Sustainability Report (BRSR)**.
  - SEBI has made notable amendments to its BRSR in order to align with the evolving global standards and emphasizes quantifiable metrics that help companies to engage meaningfully and better investor decision making.
    - The key changes in the report include the disclosures on greenhouse gas emissions, gender and social diversity.
- Further, formulating legislation on ESG considerations in India has become the need of the hour with the increased emphasis on various ESG issues such as:
  - India's active role in global climate forums.
  - Introduction of various policies like the announcement by the Reserve Bank of India (RBI) of auctioning ₹80 billion in green bonds.

Possible implications of ESG regulations on Indian companies and the way forward

- Mandatory compliance with ESG regulations both in India and around the world would pose a significantly different challenge to the companies as compared to the CSR regulations.
- It would be extremely critical for Indian companies to comply with the ESG regulations of the countries such as the U.S., the U.K., and the European Union in order to take full advantage of these nations' growing concerns over China and play an active role in global supply chains and markets.
- Further, companies and business players who wish to maximise their opportunities in the global economy must embrace and adopt ESG requirements quickly.
- Apart from the adoption of regulations, due diligence will also play a key role to ensure that the efforts to comply with the ESG regulations are in effect.

Nut graf: Governments and policymakers across the world have now realised that ESG considerations must be taken into account to accurately assess an enterprise. However, the evolution of ESG regulations is still at a nascent stage in India as the focus is still on ensuring safeguards rather than mandating controls and disclosure which are the hallmarks of ESG laws.

8. FAME India - Issues

Syllabus: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

Prelims: FAME India initiative

Mains: issues associated with FAME-2 scheme

Context: Indian electric vehicle (EV) makers are being subject to tight scrutiny over their eligibility for FAME-2 subsidies due to insufficient domestic value addition.

Issues:
- **Subsidy payments delayed-** According to industry estimates, subsidy payments of Rs 1100 crore under the FAME scheme have been held back by the government.
- **Subsidy extension-** EV companies seek an extension beyond FY2024. The scheme could be discontinued after the next fiscal year.
- **Investigations against manufacturers-** Indian electric vehicle (EV) makers have been subject to an ongoing probe over the misuse of subsidy allocation under the FAME-2 scheme and non-compliance with the standards required to be eligible for these subsidies.

What is the FAME-2 scheme?

- The FAME-2 India scheme was launched with an outlay of INR 100 billion to incentivize demand for EVs by providing upfront subsidies and creating EV charging infrastructure.
- The scheme hopes to support 1 million electric two-wheelers, 500,000 electric three-wheelers, 55,000 electric cars, and 7,090 electric buses through subsidies.
- The scheme also allocates INR 10 billion for the provision of EV charging stations. In 2022, 2877 EV charging stations were approved in 68 cities across 25 states and union territories. A total of 1576 charging stations were sanctioned across nine expressways and 16 highways.
- The FAME-2 India scheme was redesigned in June 2021 based on experiences during the Covid-19 pandemic period and feedback from industry and users.
- The redesigned scheme intends to enable the faster proliferation of EVs by lowering upfront costs. The scheme has been extended by a period of two years — that is, up to March 31, 2024.

Budget Allocation for FAME

Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles
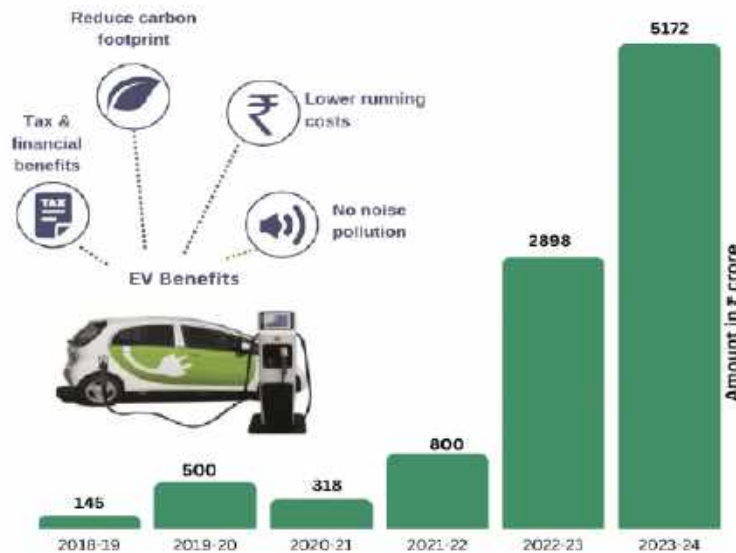
Electric Vehicle Incentives

Total approximate incentives	Approximate size of batteries
Two wheelers: Rs 15000/- per kWh upto 40% of the cost of Vehicles	2kWh
Three wheelers: Rs 10000/- per kWh	5kWh
Four wheelers: Rs 10000/- per kWh	15kWh
E Buses: Rs 20000/- per kWh	250kWh
E Trucks: Rs 20000/- per kWh	

Source: Niti Aayog

Source: Niti Aayog

Electric Vehicle Sales

Category	2020-21	2021-22	2022-23 (till 13th Feb)	Dec 22	Jan 23	Feb 23 (till 13th Feb)
E-2 Wheelers	44,394	2,49,615	6,02,553	64,547	64,514	27,744
E-3 Wheelers	88,497	1,78,169	3,27,020	33,951	32,909	14,591
E-4 Wheelers	5,952	20,172	36,066	3,845	3,420	850
E-Buses	217	1,066	1,739	142	97	1,905
Grand Total	**1,39,060**	**4,49,022**	**9,67,378**	**1,02,485**	**1,00,940**	**45,090**

Figures in units
Source: VAHAN

Source: Economic Times

Conclusion: Going forward, the government may instead focus on supporting the EV industry via ongoing production-linked incentive programs for battery manufacturing and auto/auto parts, tax cuts, fee waivers, etc. We briefly touch on some of these measures in this article.

DISASTER MANAGEMENT

1. ISRO Landslide Atlas

Syllabus: Disaster and Disaster Management

Prelims: ISRO's Landslide Atlas

Mains: Key highlights of Landslide Atlas

Context: The Landslide Atlas of India, a comprehensive guide identifying Landslide Hotspots throughout the nation, was recently released by the National Remote Sensing Centre (NRSC) under the Indian Space Research Organisation (ISRO).
- The mandate of NRSC includes the collection, processing, archiving, and distribution of data from remote sensing satellites to various consumers.

How was the Atlas Prepared?
- For the first time, scientists created a "Landslide Atlas" of the nation based on 80,000 landslides that were documented between 1998 and 2022 in 147 districts across 17 states and two Union Territories.
- The atlas utilises ISRO satellite data to track all seasonal and event-based landslides, including those brought on by the Sikkim earthquake in 2011 and the Kedarnath calamity in 2013.
- The pan-India landslide database divides landslides into three categories: route-based, event-based, and seasonal (monsoon seasons of 2014 and 2017).

What causes landslides?
- It is brought on by natural events such as strong rains, earthquakes, melting snow, and undercutting of slopes due to flooding.
- They can also be brought on by anthropogenic activity like livestock overgrazing, excavation, cutting down of hills and forests, and excessive infrastructural development.
- Lithology, geological features like faults, hill slopes, drainage, geomorphology, land use and land cover, soil texture and depth, and rock weathering are some of the key elements that affect landslides.
- When a landslide susceptibility zone is designated for planning and making forecasts, all of these are taken into account.

What are the Key Highlights?
- The states with the most landslides between 1998 and 2022 were Uttarakhand, Kerala, Jammu and Kashmir, Mizoram, Tripura, Nagaland, and Arunachal Pradesh.
- Top on the list was Mizoram, which had 12,385 landslip occurrences documented over the previous 25 years, with 8,926 of those events occurring just in 2017.
- Mizoram is followed by Kerala and Uttarakhand (11,219).
  - Recent land subsidence incidents recorded from Joshimath showed Uttarakhand's fragility.
- Arunachal Pradesh (16), Kerala (14), Uttarakhand and Jammu & Kashmir (13 each), Himachal Pradesh, Assam, and Maharashtra (11 each), Mizoram (8), and Nagaland(7) are the states with the greatest exposure to landslides.
  - In terms of landslide risk exposure, Uttarakhand's Rudraprayag and Tehri Garhwal districts have the highest rates.

How Vulnerable India is to Landslides?
- India is one of the top five landslide-prone nations in the world, with at least one landslide-related mortality per 100 square kilometres reported a year.
  - The country's landslides are primarily caused by variations in rainfall patterns, with the Himalayas and the Western Ghats remaining particularly vulnerable regions.
- 12.6% of the country's geographical land area, excluding snow-covered regions, is prone to landslides. Up to 66.5% of the reported landslides come from the North-Western Himalayas, followed by the North-Eastern Himalayas with 18.8% and the Western Ghats with 14.7%.
- Despite fewer incidents, it was discovered that landslides in the Western Ghats greatly increased the risk of fatalities among locals, particularly in Kerala.

2. Jalyukt Shivar Abhiyan

Syllabus: GS-3; Disaster Management

Prelims: Jalyukta Shivar Abhiyan

Context: The Maharashtra government is looking to launch the second phase of the Jalyukt Shivar Abhiyan.

Jalyukta Shivar Abhiyan
- The Maharashtra government launched a project called "Jalyukta Shivar Abhiyan" in 2015-16.
- The project "Jalyukt Shivar Abhiyaan" aimed to make Maharashtra a drought-free state by 2019 and to make 5000 villages free of water scarcity every year.
- The Jalyukt Shivar Abhiyaan involves the deepening and widening of streams, construction of cement and earthen stop dams, work on nullahs and digging of farm ponds.
- A mobile app, developed by Maharashtra Remote Sensing Application Centre (MRSAC) was used to map these locations.
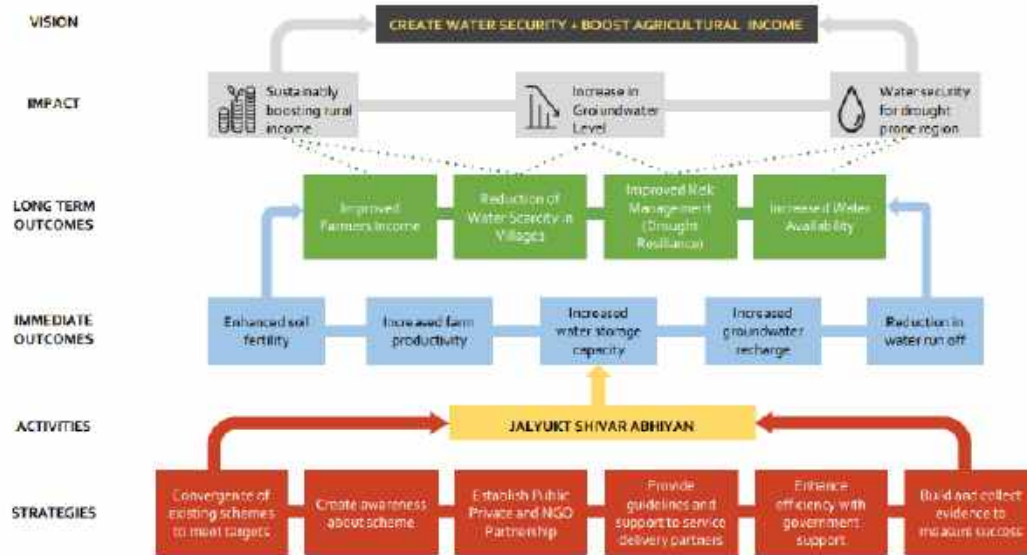
Source: cgwb.gov.in

3. Is heat in India set to get worse?

Syllabus: Disaster and disaster management

Mains: Increasing temperatures in India, challenges associated with it and possible remedies

Context
In India, the month of February in 2023 has been regarded as the hottest so far since 1901.

Background
- A study published in July 2021 in The Lancet, which took into account the data from two decades (2000-2019), notes that about 50 lakh people die every year (on average) across the world due to extreme temperatures.
- Further, the Intergovernmental Panel on Climate Change's (IPCC) Sixth Assessment Report (AR6) highlights the fact that extreme heat events would continue to grow with the rise in global warming and that every increment of warming matters.

Increased temperatures in India
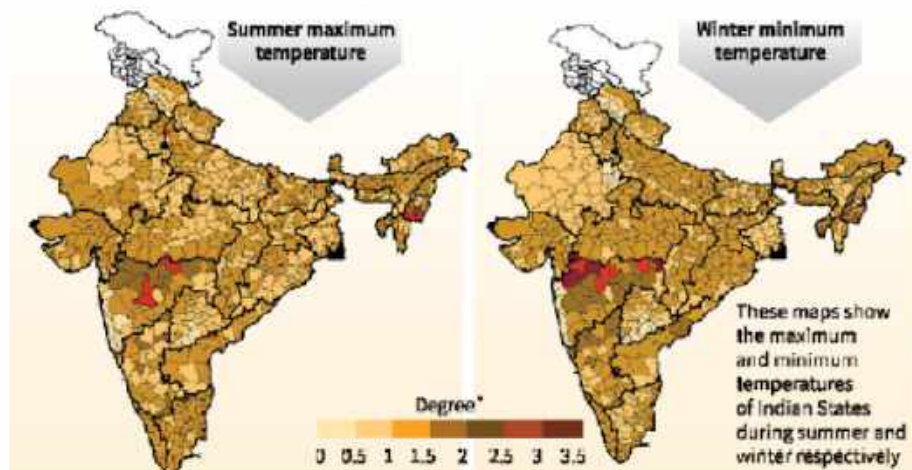
Source: The Hindu

- According to a study on the historical climate in India by the Centre for Study of Science, Technology and Policy (CSTEP), the temperature in the country has been increasing steadily both during summer as well as winter months.
  - The study further recorded an increase in maximum and minimum temperatures over 30 years (1990-2019) at 0.9°C and 0.5°C, respectively.
- In India, the temperatures during summer months have increased by 0.5°C to 0.9°C in several districts in States such as the Northeastern States, Bihar, Uttar Pradesh, Uttarakhand, Haryana, Punjab, Rajasthan, and Gujarat.
- Similarly, the temperatures in winter months have also increased by 0.5°C to 0.9°C in about 54% of districts in the country.
  - The Northeastern States have experienced higher levels of warming as compared to the southern States.
- This significant increase in temperatures has led to suffering and death in extreme cases and it further adversely impacts agriculture and other climate-sensitive sectors which play a key role in ensuring the livelihoods and well-being of people.
- A joint report by the International Federation of Red Cross and Red Crescent Societies (IFRC), the United Nations Office for the Coordination of Humanitarian Affairs, and the Red Cross Red Crescent Climate Centre says that an extreme-heat event which would happen only once in every 50 years without the influence of humans on climate is now likely to happen five times on account of human-induced climate change.
  - Further, the report states that such extreme-heat events would occur 14 times if the warming is under 2°C and occur 40 times if the warming is kept under 4°C.

Climate projections

Heat over the years | A look at the year-wise annual average maximum and minimum temperature (in degree celsius) recorded by the IMD between 1990 and 2019 in India
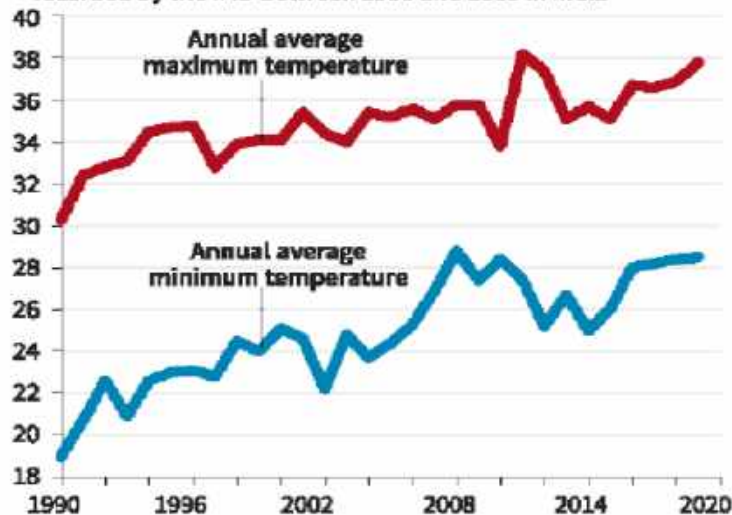
Source: The Hindu

- As per the climate projections by the CSTEP study for a 30-year period between 2021-2050, the maximum temperature during the summer months would increase even under a "moderate emissions" scenario.
  - The increase would be much higher in case of "higher emissions" scenarios and would likely be more than 2°C and up to 3.5°C in about 100 districts of the country and 1.5°C to 2°C in around 455 districts.
- Further, the minimum temperatures in winter months are expected to increase by 0.5°C to 3.5°C in the future.
  - The highest warming of 2.5°C to 3°C is estimated in less than 1% of the districts, and an increase of 1°C to 1.5°C is estimated in over 485 districts of the country.
- Further, there has been a change in the diurnal temperature range (DTR), which is the variation between high temperature and low temperature in a single day.
  - A recent study supported by the Department of Science and Technology has highlighted an alarming rate of decline in DTR between 1991 and 2016, especially in the northwest parts of the Gangetic plain, and central India agro-climatic zones.

Implications of heat stress
- The increase in summer maximum and winter minimum temperatures in the coming years can negatively impact the growth of plants, ecology, and the carbon economy as extreme variations in temperature affect the quality of the soil.
- The decline in the DTR indicates an asymmetrical increase in the minimum temperature compared to the maximum, which ultimately could increase the risk of heat stress which could result in droughts, instances of crop failures, and higher morbidity and mortality rates.
- A joint report by IFRC and others also predicts that heat waves would surpass human threshold levels to withstand them physiologically as well as socially.
  - This could result in large-scale suffering, death, and migration.
- In the context of urban areas, the combined effects of warming coupled with the rapid rate of urbanisation would increase the number of people at risk of extreme heat.
- As per an International Labour Organization (ILO) report, India would lose about 5.8% of working hours in 2030 on account of heat stress and the loss in escorts such as agriculture and construction would be close to 9.04%, which translates to 3.4 crore full-time jobs.

Way forward
- It has become important for the States to involve and share responsibility with other stakeholders to fully implement the Sendai Framework for Disaster Risk Reduction and improve early warning systems, public awareness, and come up with heat action plans.
- District-level heat hotspot maps must be prepared which can help various departments of the State in formulating long-term actions to reduce the impact of extreme heat.
- The policymakers and the stakeholders must also look at innovative strategies to address the challenges of extreme heat. Some of the innovative strategies adopted across the world include:
  - Setting up **emergency cooling centres** similar to those in **Toronto** and **Paris**.
  - **Public awareness through survival guides** that are strategically displayed in **Athens**.
  - Installing:
    - **White roofs like in Los Angeles**
    - **Green rooftops** similar to those in **Rotterdam**
    - **Self-shading tower blocks** like in **Abu Dhabi**
    - **Green corridors in Medellin**

Nut graf: Recent reports indicate that the instances of extreme heat would increase significantly by the end of the century and its associated death rates could be similar in magnitude to cancers or other infectious diseases. This has made it imperative for us to act immediately and come up with long-term measures that can prevent death and suffering due to extreme heat.

4. Why do landfills catch fire during summers?

Syllabus: Disaster and disaster management

Mains: Key issues associated with landfill fires and various short-term and long-term solutions

Context: The Brahmapuram plant landfill located in Kochi caught fire on the 2nd of March 2023 and toxic fumes were seen spreading from the site.

Why do landfills catch fire during summer?
- Municipalities in the country have been collecting over 95% of the waste generated in Indian cities. However, the efficiency of waste processing is only about 30% to 40%.
- Such solid wastes collected and accumulated at landfill sites are mainly made of biodegradable material (60%), non-biodegradable content (25%) and inert materials (15%) such as silt and stone.
- Municipalities in India are required to process the wet and dry waste separately and must also ensure that the recovered by-products are recycled. However, the rate of processing of waste in the country is very low compared to the rate of waste generation.
  - Thus, the unprocessed waste remains accumulated in open sewage plants or landfills for an extended period of time.
- Such sewage plants or landfills sites also consist of openly disposed waste which includes flammable material with relatively high calorific value (about 2,500-3,000 kcal/kg).
- During summer months, biodegradable material composts faster which increases the temperature beyond 70-80°C.
  - This higher temperature along with the flammable materials such as low-quality plastics, rags and clothes causes the landfills to catch fire.
  - Such landfill fires can go on for months in some instances.

Impact of landfill fires
- Landfill fires will have a direct impact on the life of workers of facilities and people living close to such sites as toxic gasses such as dioxins, furans, and polychlorinated biphenyls are emitted.
  - Exposure to the toxic fumes can cause large-scale throat pain, headache and eye allergy and other respiratory problems.
- Instances of landfill fires also impact the ambient air quality due to the emission of various hazardous air pollutants.
  - Landfill fires also result in the emission of harmful pollutants such as particulate matter (PM2.5), nitrogen dioxide (NO2) and ozone (O3).

Immediate measures to prevent landfill fires
- Since such landfill and sewage plants span about 20 to 30 acres and contain different types of waste, immediate measures must be undertaken to divide the site into smaller blocks based on the nature and type of the waste.
- Further, blocks with fresh waste must be separated from blocks with flammable material. Drain or soil bunds can be used to separate each block, as this reduces the chance of fires spreading across the blocks.
- The blocks or portions which consist of plastics and cloth are the most vulnerable part of the landfill and hence these portions must be capped with soil.
- The fresh-waste materials should be provided enough moisture by sprinkling water and they should be turned regularly for aeration as this process helps cool the waste.
- After dividing the site into such blocks, the landfill operator must classify incoming waste on arrival at the site and dispose such waste in the designated blocks.
- Non-recyclable and non-biodegradable wastes are to be segregated and sent to the cement kilns instead of collecting and accumulating such wastes in the landfill sites.
- Efforts must also be made to clear the dry grass and dry tree materials from the site if any.

Possible long term or permanent solutions
- Capping the landfill materials completely using soil, and closing landfills in a scientific manner.
  - However, such solutions are difficult to implement in India as land used for closed landfills cannot be used again for other purposes.
- Clearing the heaps of waste through bioremediation, which is a process of detoxifying contaminants present in the sludge through biological means.
  - Segregating flammable refuse-derived fuel (RDF) such as plastics, rags, clothes, etc. from biodegradable material by using automated sieving machines.
  - Sending the segregated RDF material to cement kilns which can be used as fuel, and distributing the biodegradable soil to farmers which can enrich their soil.
  - However, implementing such a solution takes over two to three years of time.
- Formulating stringent Solid Waste Management Policies, which emphasises on decentralised waste treatment, reduction, reuse, recycling, and recovery of waste phase-by-phase.
- Ensuring that cities have a systematic waste-processing system in place where wet and dry wastes are processed separately and their byproducts are treated accordingly.

Nut graf: *Landfill fires are most prevalent during the summer months as there is a greater chance of spontaneous combustion. Preventing such fires requires long-term, thorough and sustained interventions from municipalities. However, short-term measures such as segregating the site into smaller blocks can be used to mitigate the impacts of summertime landfill fires.*
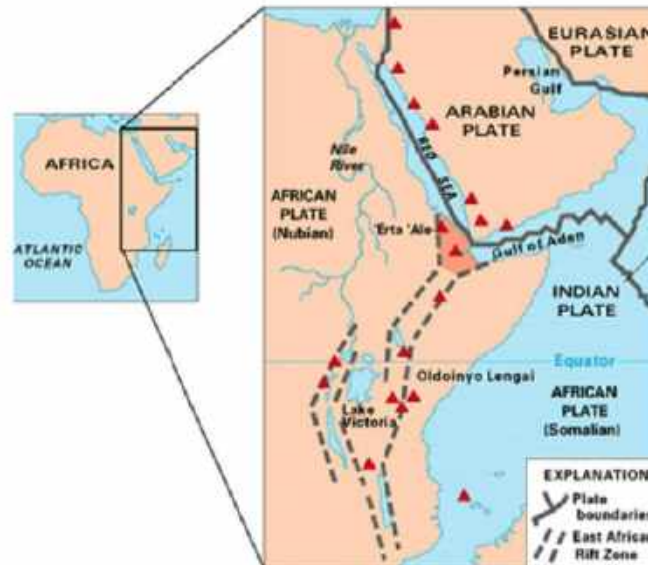
GEOGRAPHY

1.   The East African Rift

Syllabus: Salient features of world's physical geography

Prelims: East African Rift

Context: A new ocean is predicted to open up as Africa splits Study published in "Geophysical Research Letters".

Source: USGS

Great Rift Valley System:
- Stretches from the Middle East in the North to Mozambique in the South.
- One of the few Diverging Boundaries on the continental plates
- Isn't a single entity, and consists of multiple rifts.
- The East African Rift Valley is a part of the Great Rift Valley System.

East African Rift:
- The drift is said to emerge 22-25 mn years ago.
- Overland manifestation in 2005, with the development of a 35 mile long crack in the deserts of Ethiopia.
- Situated at the border of 3 plates: African Nubian, African Somali, and Arabian.
- A rare opportunity to learn how a continental rift might get converted into an oceanic rift.

Consequences:
- Africa will be split into 2 parts
- A new Ocean will emerge
- Countries like Uganda and Zambia will get coastlines in 5-10 mn yrs.
- Creation of a new continent.

2.   Salt flats

Syllabus: GS-1; Geography; Salient features of world's physical geography.

Prelims: About Salt flats

Context: A recent study has finally provided an explanation as to why salt flats around the world have similar patterns of pentagons and hexagons on their ridges.

Source: The Hindu

Salt flats

- Salt flats refer to those natural landscapes which include a large area of flat land covered by salt.
- Salt flats are formed from natural water bodies whose recharge rate is lower than the evaporation rate.
  - Due to the lower recharge rate, the water evaporates leaving behind dissolved minerals such as salts.
- Salt flats reflect sunlight strongly and hence appear bright.
- The underlying soil in these regions is highly saline and the groundwater is too salty for human consumption.
- Some of the world's most well-known salt flats are Salar de Uyuni in Bolivia (the largest in the world), Rann of Kutch in India, Salar de Atacama in Chile, Salt desert of Sirjan in Iran, Tunisian salt lakes such as Chott El-Jarid, and Bonneville Salt Flats in the USA.
- A recent study has used a combination of ground sampling and computer models to explain the way salt flows up and down in the soil below the salt flats.
- As per the study, the salt on the surface is influenced by the salt flowing through the soil below.
- The groundwater in the soils of such landscapes is known to be saline but the distribution of salt is not uniform as the salinity is highest near the top of the soil and decreases towards the bottom.
- Salt flats have a significant impact on humans and the climate.
  - Winds that blow over such salt flats can carry the salt with them as particulate matter and deposit them over oceans as the air mass reaches the ocean.
  - Such sea salt can enter the atmosphere and go on to swirl at the centre of cyclones.
  - Additionally, salt flats are large sources of particulate matter.
  - Salt suspensions are also an important group of aerosols that reflect sunlight.

3. Zojila Pass

Syllabus: Physical geography of India

Prelims: Zojila and other important mountain passes

Context: The Border Roads Organisation (BRO) reopened the strategic Zojila Pass after it remained closed for about 68 days.

Zojila Pass

- The Zojila Pass is located at 11,650 feet in Dras, Kargil district of the Union Territory of Ladakh.
- Zojila is a high mountain pass that acts as a gateway between the Union Territories of Ladakh and Jammu & Kashmir.
- It helps connect Srinagar with Kargil and Leh.
- The Zojila Pass is also regarded as "The Mountain Pass of Blizzards".
- Every year the pass would be closed during the winter months due to extreme snowfall as temperatures dip to sub-zero degrees.

Other important mountain passes

- **Razdan Pass** is located at an elevation of 11,624 ft above sea level in the Bandipora district of Jammu and Kashmir.
  - The Razdan Pass provides the only road connectivity between the Gurez Sector and the Kashmir Valley.
- **Sadhna Pass** also known as Nastachun pass is located at an elevation of 10,269 ft above sea level in the Kupwara district of Kashmir.
  - The mountain pass connects Karnah tehsil in the Kishanganga valley of Kupwara district with the Kashmir valley.
- **Zamindar Gali** or Z-Gali is a pass at an elevation of about 10,446 ft that connects the villages of Machil with the mainland of Kupwara in Kashmir.
  - It is situated close to Varnau Forest and Tungwāli Baihk.

4. Ashtamudi lake

Syllabus: Water Bodies

Prelims: About Ashtamudi lake

Context: A huge chariot was ferried through the Ashtamudi lake as part of the annual festival of the Thrikkadavoor Sree Mahadevar Temple.

About Ashtamudi Lake

- Ashtamudi Lake is located in the Kollam district of Kerala.
- It is the second-largest lake in Kerala.
- Ashtamudi Lake is regarded as the "Gateway to Kerala Backwaters".
- The name Ashtamudi is derived from "Ashta" meaning eight and "Mudi" meaning branch.
- The lake which resembles the shape of a palm conifer or an octopus is one of the well-known tourist destinations in Kerala.
- The lake is fed by the River Kallada that originates in Kulathupuzha in the Western Ghats.
- The lake is known for its unique ecosystem and evergreen coconut groves.
- The lake houses over 50 avifauna species and about 97 aqua fauna species.
- Traditional houseboats or "Kettuvallams" across this lake attract visitors and tourists.
- In 2012, the brackish water Ashtamudi Lake with eight creeks was declared a Ramsar site by designating it as a wetland of international importance.

5. Mount Merapi

- Indonesia's Mount Merapi erupted on March 10.
- The 9,721 feet Merapi is one of Indonesia's most active volcanoes and was already on the country's second-highest alert level.
- Merapi is the youngest in a group of volcanoes in southern Java. It is situated at a subduction zone, where the Indo-Australian Plate is subducting under the Sunda Plate.
- A series of eruptions of the volcano in late 2010, which included pyroclastic flows, killed scores of people, injured dozens more, and forced tens of thousands to evacuate the area.

Source: BBC

6. Cyclone Freddy

- Cyclone Freddy has caused powerful winds and torrential rain in Malawi and Mozambique on its return to southern Africa after a first hit in February 2023.
- According to NASA, Cyclone Freddy has set the record for having the highest accumulated cyclone energy (ACE) of any southern hemisphere storm in history.
    - Accumulated cyclone energy (ACE) is an index used to measure the total amount of wind energy associated with a tropical cyclone over its lifetime.
- Freddy is set to become the longest-lasting storm and has impacted large areas of Northeast Zimbabwe, Southeast Zambia, Malawi and Mozambique.
- Globally, the rising mean sea levels have contributed to higher extreme sea levels associated with tropical cyclones and experts predict an increase in the average intensity, the magnitude of storm surge and precipitation rates associated with tropical cyclones in the coming days.

INDIAN SOCIETY & SOCIAL ISSUES

1. Reimagining the urban-rural dichotomy

Syllabus: Urbanisation

Mains: Various issues associated with Rural-Urban Continuum in India

Context: This article discusses the rural-urban continuum in India.

Introduction:
- The traditional dichotomy of rural and urban in India has been a longstanding feature of the country's socio-economic landscape.
- This dichotomy is based on a clear distinction between rural areas, which are typically characterised by agriculture and traditional practices, and urban areas, which are characterised by modernization, industrialization, and a more cosmopolitan lifestyle.
- However, over the years, this dichotomy has become increasingly blurred, giving rise to a rural-urban continuum that is unique to India.

Growing Trend:
- Technology and economic globalisation have increased mobility of resources and people, and enhanced inter- and intra-country connectivity.
- The extension of transport and communication systems, improved access to energy, increased affordability private and public transport as well as penetration of economic and other networks into remote areas promote a rural-urban continuum.
- Rural hinterlands are connected to multiple urban centres. The movement of goods, people, information and finance between sites of production and consumption has strengthened linkages between production and labour markets.

Impact of Rural-Urban Continuum on Socio-Economic Development:
- The continuum provides opportunities for people living in rural areas to access urban markets, services, and employment opportunities. This can help to stimulate economic growth in rural areas and reduce poverty levels.
- In addition, the rural-urban continuum can help to promote cultural exchange and integration, as people from different regions come into contact with each other.
- As the pull factors grow, push factors driving populations out from both rural areas and urban areas are also intensifying. In the process, a mixed economy zone of primary and secondary-tertiary sectors has evolved.
- The rural-urban continuum can also lead to a range of socio-economic challenges, including urbanisation, environmental degradation, and social inequality.
- As people in rural areas migrate to urban centres in search of employment opportunities, urban areas become increasingly congested and overpopulated. This can lead to a range of problems, including traffic congestion, pollution, and inadequate infrastructure.
- As more and more people move to urban areas, the demand for resources such as water, land, and energy increases, leading to unsustainable use of natural resources. This can have a negative impact on the environment, including soil erosion, deforestation, and loss of biodiversity.
- Finally, the rural-urban continuum can lead to social inequality, as people in rural areas are often marginalised and excluded from the benefits of economic growth.

Case Study:Kerala
- Kerala is well known for the rural-urban continuum in the coastal plain. This was noted even by Moroccan traveller Ibn Batuta in the 14th century. The trend further spread over the lowlands and adjoining midlands and highlands.
- Geographical factors supported by affirmative public policy promoting distributive justice and decentralisation have increased rural-urban linkages and reduced rural-urban differences in major parts of Kerala.

Way Forward:
- The rural-urban continuum in India is a reflection of the country's unique socio-economic and cultural landscape.
- Government must identify challenges for improving both urban and rural governance and opportunities for enhanced access to employment, services, institutional resources and environmental management.
- To achieve rural-urban partnership, a systems approach is recommended where the city and the surroundings form a city region for which a prospective plan is prepared integrating rural and urban plans within a common frame.
- Rural urban linkages must be better mapped, for which satellite-based settlement data and its integration with Census data may be useful.

2. Jews in India

Syllabus: Salient features of Indian Society, Diversity of India

Mains: Status of Jews in India

Context: This article discusses the status of Jews in India.

Key Details:
- Jews have a long history in India, with some estimates suggesting that they may have arrived in India as early as the 6th century BCE. Today, there are about 6000 Jews remaining in India.
- One community of Jews in India is the Bene Israel, who primarily live in the state of Maharashtra, but also have a presence in Andhra Pradesh.
  - According to tradition, the Bene Israel are descended from a group of Jews who were shipwrecked on the Konkan coast of Maharashtra over 2,000 years ago.
  - They have their own distinct traditions and customs, and have historically been involved in agriculture, fishing, and the diamond trade.
- Another Jewish community in India is the Baghdadi Jews, who arrived in India in the late 18th and early 19th centuries.
  - They were primarily involved in trade and commerce, and played an important role in the development of Mumbai as a major commercial centre.
  - The Baghdadi Jews were generally more affluent than the Bene Israel, and were known for their opulent lifestyles and fashionable dress.
- In addition to these communities, there are also smaller populations of Jews in other parts of India, including Andhra Pradesh, Kochi, Manipur, Gujarat and Kolkata.

- o   The Telugu Jew community is found only at Kothareddypalem in the Guntur district and at Machilipatnam in the Krishna district. The members of the community believe that they are 'Bene Ephraim', one of the lost tribes of Israel.
- While the Jewish population in India has declined significantly over the centuries, their cultural legacy lives on in the form of synagogues, festivals, and other traditions.
- Today, the Indian government recognizes Jews as a minority community, and has taken steps to protect and preserve their cultural heritage.

Return to Israel:
- The basic laws and teaching of Judaism come from the Torah, the first five books of the Hebrew.
- It is believed that 'Torah' demands all the separated members of the community to return to Israel.
- After Israel was formed in 1948, the Israeli government has been making arrangements so that Jewish people settled across the world can return.
- Over 3,000 Jews from Manipur left for Israel recently. The Israeli government is providing them shelter and employment opportunities.
- Jewish community members in Andhra Pradesh are registered as Scheduled Caste in all government records. "We have urged the government time and again to accord us minority status.
- Jewish religious leaders, called Rabbis, from Israel, had come to Kothareddypalem and to verify the claims of this community.
  - o   The Israeli government has demanded the community members to get the status of 'Madigas' (Schedule Caste) changed before moving there.

Nut Graf: Jews have a long and rich history in India. Though the Jewish population in India has declined, the Indian government recognizes them as a vulnerable community and has taken steps to preserve their cultural heritage. Many Jews across India are returning to Israel, including members of the community in Manipur and Andhra Pradesh insearch of better life.

3.   Bru Tribes

Syllabus: Indian Society

Prelims: Tribes of India; Refugees

Context: Bru tribal community exercised their franchise in Tripura for the first time in assembly elections in March 2023.

Bru-Reang Refugee Crisis:
- Bru or Reang is a community indigenous to Northeast India, living mostly in Tripura, Mizoram and Assam. In Tripura, they are recognised as a Particularly Vulnerable Tribal Group.
- Around 5,000 families consisting of around 30,000 Bru-Reang tribes were forced to flee Mizoram and seek shelter in Tripura following ethnic tension.
- The Union government had been assisting the two-State governments for taking care of the refugees.
- An agreement was signed between the Union government, the two-State governments and representatives of Bru-Reang refugees in 2018, as a result of which the aid given to these families was increased substantially and 328 families consisting of 1369 individuals returned to Mizoram under the agreement.
- A large number of people from this community have been living in camps on the boundary of Mizoram and Tripura due to the reluctance of both State governments to allow them to settle in their territory.
- During the subsequent revision in the electoral rolls, names of most of the Brus were deleted from the electoral rolls in Mizoram.
- The people of Tripura were also reluctant to allow Brus to be enrolled as voters in Tripura. They were also denied rations and other State-sponsored facilities.
- The Bru-Reang agreement was signed between the Government of India, the Governments of Tripura and Mizoram and Bru-Reang representatives on January 17, 2020.
- The agreement promised Bru tribe all the rights and benefits of social welfare schemes of both the Union government and the State government that normal residents of the State receive.
- Most of the families have received the land, the ₹1.5 lakh to build a house alongside and the ₹4 lakh as fixed deposit per family. Monthly payment of ₹5,000 per family and the land for cultivation was also promised by the government.

MISCELLANEOUS

1. Chameli Devi award

Syllabus: Miscellaneous

Prelims: About the Chameli Devi award

Context
Dhanya Rajendran, who is the co-founder and editor-in-chief of The News Minute portal, has been declared the winner of the Chameli Devi Jain Award for 2022.

About the Chameli Devi Award
- The Chameli Devi Award is awarded annually to recognise the outstanding work of women in the field of journalism.
- The Award is named after Chameli Devi Jain who was an Indian independence activist during India's struggle for independence.
- The Award is presented by the Media Foundation and was instituted in 1980.
  - The Media Foundation was founded in 1979 by B.G. Verghese and the family of Chameli Devi.
- Eligibility: Journalists in print, digital and broadcast along with photographers, cartoonists and newspaper designers.
- The criteria for selection include social concern, dedication, courage, and compassion.

2. Abel Prize

Syllabus: Miscellaneous

Prelims: About Abel Prize

Context: Argentine-American Luis A. Caffarelli, an expert in "partial differential equations" which can explain phenomena such as water flow and population growth has been awarded the Abel Prize 2023.

Abel Prize
- The Abel Prize recognises pioneering achievements in the field of mathematics.
- The prize is named after Niels Henrik Abel who is considered Norway's greatest mathematician.
- The Abel Prize was established by the Norwegian Parliament in 2002, on the occasion of the 200th birth anniversary of Niels Henrik Abel.
- The Abel Prize is awarded every year to facilitate outstanding mathematicians.
- The Abel Prize is given by the Norwegian Academy of Science and Letters, on behalf of the Ministry of Education of the Norwegian Parliament.

3. NIOT to set up green, self-powered desalination plant in Lakshadweep

- The Chennai-based **National Institute of Ocean Technology (NIOT)** which is working on an initiative for providing potable water on six islands of Lakshadweep using the Low-Temperature Thermal Desalination (LTTD) technology is looking to make the process free of emissions.
  - The NIOT is an institute working for harnessing energy from the ocean under the aegis of the Ministry of Earth Sciences (MoES).
- At present, the desalination plants provide about 1,00,000 litres of potable water every day and are powered by diesel generator sets since there are no other sources of power in these islands.
- The LTTD makes use of the difference in temperature in the ocean water at the surface and at depths of about 600 feet which is close to 15°C.
  - Under this technology, the warm surface seawater is flash evaporated at low pressure and the vapour is condensed with cold deep seawater.
  - The resulting vapour when condensed is free of salts and contaminants and fit to consume.
- However, diesel power is used to reduce the water pressure making the process to be dependent on fossil fuel which is also a precious commodity on the islands.
- NIOT is looking to deploy a desalination plant that will also supply power to the plant making it a self-sustaining plant.
- At present, five desalination plants are in operation in the Lakshadweep islands and four more are expected to be functioning in the near future.
  - The proposed self-sustaining plant would be the 10th plant and is expected to be ready by the end of 2023.

YOJANA MARCH 2023 - UNION BUDGET

1. Laying the foundations of India's Amrit Kaal

Introduction:
- The Union Budget is a key policy document that outlines the priorities of the Government, for the immediate and the long term, in tandem with domestic and global economic realities.
- India celebrated its 75th anniversary and its elevation as the world's 5th largest economy.
- With a rising profile on the global stage and India assuming the G20 Presidency, the country is set to embark on its journey into the 'Amrit Kaal' — the 25 years of achieving our developmental potential.

Focus of the Budget:
- The Budget for 2023-24 focuses on capital expenditure, inclusive growth, green economy, ease of living, and ease of doing business, especially for small enterprises.
- Notwithstanding the pandemic shock, the uncertainties triggered by a geo-political conflict, and the evolving context of global economic stress, Budget 2023-24 has displayed deft fiscal management and reiterated its commitment to fiscal prudence and responsibility while not losing sight of medium-term growth. This has been the signature approach of the Finance Minister throughout her Budgets since 2019, incorporating the following elements:
  - Commitment to fiscal prudence
  - Conservative assumption
  - Transparency
  - Commitment to capital expenditure
  - Incremental and steady reforms with an eye on the medium-term growth
- Guided by these principles, Budget 2023-24 adopted the 'Saptarishi' priorities to create world-class infrastructure, strengthen a trust-based governance framework and provide an impetus to micro, small and medium enterprises (MSME).
- The Budget also promotes green growth and gives thrust to skill creation for the youth in line with modern themes such as AI and Robotics.

Source: PIB

2. Towards Cooperative Fiscal Federalism

Introduction:
- Fiscal federalism refers to fiscal relations between Union Government and the State Governments. Both tiers of government need to possess adequate financial resources to discharge their respective responsibilities enshrined in the Constitution effectively.
- The announcements in the Union Budget 2023-24 and several initiatives taken in recent years depict the Union Government's quest to promote this cooperative fiscal federalism in India.
  - The budget allocated a sum of Rs 1.3 crore for providing financial assistance to States for capital expenditure.
- Article 246, Article 246A and the Seventh Schedule of the Constitution delineate taxation powers between the Centre and the States.
  - But the distribution of fiscal power has a centripetal bias with more buoyant tax areas assigned to the Union. The State governments have more expenditure responsibilities for providing core public services.
- To achieve cooperative fiscal federalism, the government must focus on enhanced fiscal decentralisation and distribution of revenue to the state governments.
- In India, the Union and the States together form an organic whole for the utilisation of mobilised resources, the Constitution makers have provided a mechanism to correct the fiscal imbalances through the Finance Commission.

Trends in Fiscal Decentralisation:
- The annual transfers from the Union to the States have increased from 4.7% of the Gross Domestic Product (GDP) in the financial year 2013-14 to 6.7% of GDP as per revised estimates for 2021-22.
  - Annual total transfers have increased from Rs 5.24 lakh crore to Rs 15.74 lakh crore during this period.
- It has been facilitated by the recommendations of the 14th and 15th Finance Commissions. The 14th Finance Commission had recommended an enhanced share of States in the central divisible pool of taxes and duties from 32% to 42%.
- The 15th Finance Commission, in its report for the period from 2021-22 to 2025-26, maintained the higher devolution proportion.
- This has established a decentralised fiscal architecture and drastically altered the composition of the Union transfers to States.
- A bulk of tax devolution is now formula based rather than grants. The higher untied resources thus made available to the States offer them greater flexibility and autonomy in incurring expenditure based on their priorities.

Steps taken towards better financial decentralisation:
- Formation of Niti Aayog to promote cooperative federalism.
- Rationalisation of centrally sponsored schemes.
- Introduction of Goods and Services Tax
- Cooperation to boost capital expenditure in states

3. Inclusive and Empowered Bharath

Focus on Capital Expenditure:
- This budget has increased capital expenditure by 33%. Continuing the rationale of the previous two budgets, the government is wisely pursuing India's growth through capital creation.
- Studies indicate that every rupee spent by the government on building capital assets has a 2.95 multiplier effect, a much higher rate of return than spending on consumption.
- The government's sizable investments in infrastructure are expected to create more job opportunities besides crowding in private investment and triggering a positive cycle of growth.

Inclusive Agriculture:
- Promoting inclusive development, this budget has prioritised growth in agriculture with several policy measures such as the establishment of digital infrastructure, an agriculture accelerator fund, targeted credit for animal husbandry, dairy, and fisheries, and plans to make India a global leader in millets.
- Through the GOBARdhan scheme, the government is setting up 500 new "Waste to Wealth" plants and augmenting farmers' income while generating green energy.

Ease of Living:
- This budget emphasises key areas such as food and nutrition, public health and education, skilling, social entrepreneurship, and rural housing, to enhance social impact through every rupee invested.
- Flagship schemes have focused on creating an India that is self-sufficient in all aspects and where all sections of the society have access to basic amenities.
- These efforts have included providing toilets to eliminate open defecation, access to tap water, electricity, LPG cylinders, healthcare, and bank accounts.

Women and Youth:
- Economically empowering women and youth goes hand in hand with the transformation of India into an economic superpower.
- The Deendayal Antyodaya Yojana National Rural Livelihood Mission announced in the FY24 budget aims to continue empowering 81 lakh self-help groups of rural women by assisting them in creating large producer enterprises and supporting them in branding and marketing.
- Mahila Samman Bachat Patra is a small savings scheme for the financial empowerment of women in Amrit Kaal.
- PM Kaushal Vikas Nana 4.0 and the Amrit Peedhi program aim to equip the youth with abilities such as coding, AI, and robotics, among others, while also offering financial assistance through the National Apprenticeship Promotion Scheme.

4. Social Sector Allocations

Health:
- The budget for the year 2023-24 indicates a significant trend as there is an increase in expenditure on health as percentage of GDP from 1.4 per cent in 2019-20 to 2.1 percent in 2022-23.
- Ayushman Bharat—Pradhan Mantri Jan Aarogya Yojana, launched in 2018-19, has emerged as a flagship programme. This is now the world's largest government funded healthcare programme targeting over 50 crore beneficiaries.
- Among the new initiatives for Amrit Kaal, it is proposed to eliminate sickle cell anaemia by 2047 through interventions like awareness creation, universal screening, etc.
  - A special scheme namely Sickle Cell Anaemia Elimination Mission would be launched.
- The Government has also announced the establishment of 157 new nursing colleges in co-location with the existing 157 medical colleges established since 2014.
- Budget also proposed to launch a new programme during 2023-24 to promote research and innovation in pharmaceuticals.

Nutrition:
- In the nutrition sector the proposed Aspirational Blocks Programme, covering 500 blocks for saturation of essential government services across multiple domains, would also include nutrition.
- The proposed Rs 15,000 crore Development Action Plan for the Scheduled Tribes would also provide nutritious food to vulnerable tribal groups (PVTGs).
- Similarly, PM Garib Kalyan Anna Yojana (PMGKAY), with an expenditure of about Rs 2 lakh crore, would provide food and nutrition security to over 80 crore persons for 28 months.
- The Budget has made provision for supporting the Indian Institute of Millet Research, Hyderabad as the Centre of Excellence for sharing best practices, research and technologies at the international level.
- The Integrated Child Development Scheme (ICDS), now known as Sakshann Anganwadi and POSHAN 2.0, is allocated Rs 20,554 crore.
- Another important initiative, Pradhan Mantri Poshan Shakti Nirman (the mid-day meal scheme) has been provided with a budgetary allocation of Rs 11,600 crore.

Education and Skilling:
- The allocation for education in this Budget is Rs 1,12,898.97 crore.
  - The Higher Education Budget is allotted Rs 44,094.62 crore for 2023-24, a considerable increase from Rs 40,828.35 crore in revised estimates for 2022-23.
  - The Budget has proposed support of Rs 68,804,85 crore for school education.
- Measures have also been announced for the effective implementation of all the provisions of the National Education Policy, particularly focussing on skilling.
- For promoting good governance, attention has also been paid to the skilling of government officers and staff under the Mission Karmayogi.
- To further boost reading habits a National Digital Library for children and adolescents is proposed to provide quality books in various local languages.
- To address the challenge of last-mile connectivity, education has also been included in the programmes for Aspirational Blocks. Women's education under the Samagra Shiksha, an overarching school education programme under the National Education Mission, has been provided Rs 37,453 crore.
- The budget has also proposed to set up three centres of excellence for Artificial Intelligence (AI) at the top educational institutions to help connect industry with academics and help evolve an ecosystem for AI.
- Pradhan Mantri Kaushal Vikas Yojana 4.0 will be launched to skill lakhs of youth within the next three years.

Green Growth:
- The Budget has elaborated some of the programmes that include green fuel, green energy, green farming, green mobility, green buildings, and green equipment and also talks about the industrial transition strategies.
- The National Green Hydrogen Mission, with an outlay of Rs 19,700 crore is planned with a target to reach an annual production of 5 MMT by 2030.
- Banks and other financial institutions would also be encouraged to launch a Green Credit Programme, which would be notified under the Environment (Protection) Act.
- Central and State Government Departments are also being encouraged to scrap old vehicles.
- For promoting green mobility, excise duty on GST paid compressed biogas has been exempted.
  - This would help in avoiding the cascading effect of taxes on blended compressed natural gas.
- It is also proposed to exempt customs duty on the import of capital goods and machinery required to manufacture lithium-ion cells for batteries used in electric vehicles.
- PM PRANAM, a new scheme, is also being launched to incentivise States/UTs to promote the usage of alternative fertilisers.

5. Budget Empowers India's Gen-Z

Introduction:
- For any country, youth is its biggest asset as youth power entails a spirit of innovation, technology prowess, entrepreneurship and sports acumen.
- India is blessed to have the highest number of young population. Under the leadership of the Prime Minister, several policies to meet the youth's aspirations have been implemented to achieve the vision of a developed India in Amrit Kaal by 2047.
- In the progressive landscape of India's economic growth and development, youth has a significant leadership role.

Tapping the Demographic Dividend:
- India is a consumer-driven economy with a young working-age population. Young people can adapt fast and be in sync with the dynamic macroeconomic ecosystem and technological change.
- With a population of more than 1.4 billion, India marks a new phase in its growth story, enabling the opportunity to frame development strategies.
- The median age in our country is 28.4, this is 38 in China and 47 in Germany. The rural youth population is 65 percent of the total population.
- The population bulge with young people has produced a demographic dividend providing an unprecedented economic development trajectory.
- Although there is a global economic slowdown, India's GDP is projected to grow by 7 per cent in the current financial year as one of the world's fastest-growing economies.

Skill Development:
- One of the top priorities of this year's budget is youth empowerment. Additional allocations in the budget for skill development and employment opportunities will empower the youth.
- The proposal to launch Pradhan Mantri Kaushal Vikas Yojana 4.0 and set up Skill India International centres will facilitate imparting of world-class skill training to our youth.
- Building the capacities of youth through quality education and skilling will contribute to economic growth.
- A manifold increase in the budget for youth affairs and sports will help develop an enabling ecosystem for learning sports-related disciplines and technology, thus creating opportunities for the youth to make a career in the field of sports.

Education:
- Education and Skill Development are the growth drivers for inclusive development. Building the capacities of youth through quality education and skilling will contribute to economic growth.
- The 2023-24 Budget for the Ministry of Education is Rs 1,12,898.97 crores. It is the highest allocation so far.
- The National Education Policy (NEP) lays the foundation for a comprehensive and inclusive education focusing on up-skilling and facilitating job creation at scale for well-rounded individuals armed with 21st-century skills.

Youth-led Entrepreneurship:
- India has an inherent entrepreneurial spirit as nearly 79% of organisations in India are family-led businesses.
- Our new-age businesses and Startups are creating a competitive edge for innovation and prosperity. With the burgeoning Startup ecosystem and the entrepreneurship culture, Indian youth are geared to become entrepreneurs and solve real-life problems.
- Many young entrepreneurs are now exposed to early-stage incubation support through Atal Tinkering Labs in schools which is crucial to boost entrepreneurship from a young age.
- The launch of the Startup India Initiative in 2016 has boosted innovation and economic activities in our country.
- India is the hub of the Startup ecosystem in the world, ranking third with more than 91,000 DP IIT- recognised startups and 108 unicorns worth 30 billion dollars; this has been manifested only by the contribution of India's youth.
- The Union Budget has proposed several strides to boost the startup ecosystem, improving the investment climate and boosting the entrepreneurial spirit of the youth.

Youth Power-one of the 07 top priorities:
- Yuva Shakti is the prime driver for nation-building. India's development journey depends on creating a progressive ecosystem for creating opportunities for youth to think big, create, innovate, and leapfrog for India's growth and global impact.
- The aspirational initiatives proposed in the Union Budget 2023-24 shall strengthen the Indian youth to realise their true potential thereby aiding their advancement, making them more competitive and securing formidable positions on the global front.
- India's youth are mindful of the critical challenges related to sustainable development; they are now more sensitised and have increased commitment to social, economic and environmental issues.

6. Fiscal Deficit Policy Shift and Sustainable Development

Introduction:
- The budget plays an important role in the overall development and socio-economic transformation of the country.
- The impact of the budget needs to be evaluated on how a particular expenditure would affect the country's long-term growth in terms of inclusive and sustainable development.
- From an economic perspective, the impact of the budget must be reviewed from the viewpoint of fiscal deficit and capital expenditure.
- The development of our nation depends upon fiscal discipline and fiscal consolidation.

Fiscal Deficit and Analysis:
- A fiscal deficit indicates the total borrowing requirements of a country during a fiscal year. It is used as an instrument to measure fiscal discipline and sets the fiscal roadmap of the country in terms of its current needs and future liabilities.
- The extent and magnitude of the fiscal deficit are determined by two components: revenue deficit and capital expenditure.
- In the Budget 2023-24, the proposed fiscal deficit is 5.9 percent of GDP while it is 6.4 per cent for FY 2022-23.
- Considering the post-Covid impact, global headwinds, Russia-Ukraine war, and other geopolitical tensions, trading on a fiscal deficit of 5.9 per cent is not too high, yet will remain a cause for concern.
- However, the government has to ensure that it does not deviate from the estimated deficit, to avoid an escalation of economic crisis, leading to inflation and other fiscal disturbances.
- The seriousness of achieving fiscal discipline rests on how to address the gap between the estimated and the actual fiscal deficit so as to get the desired result.

Fiscal Deficit and Capital Expenditure Trade-off:
- To lessen the negative impact of the fiscal deficit, the government has planned for higher capital expenditure of Rs 10 lakh crore, which is 33 per cent higher than last year's figure and 3.3 per cent of GDP.
- The overall 'Effective Capital Expenditure' of the Centre is budgeted at Rs 13.7 lakh crore, which will be 4.5 per cent of GDP.
- In the current context, a need for higher public spending is believed to be crucial for providing the required impetus to economic growth. A sustained increase in investment will strengthen infrastructure including power, transport and railways and contribute to higher GDP/employment/output through its multiplier effects and crowd-in private investments.
- In this Budget, more fiscal freedom has been given to all the states and accordingly each state has been allowed to have the leverage of a fiscal deficit of 3.5 percent of their SGDP.

Revenue Deficit and Sustainable Path:
- Revenue deficit reflects the excess of revenue expenditure over revenue receipts of the government. A higher revenue deficit compels the government to adhere to borrowings to meet the revenue shortfall.
- The government has proposed a tight revenue deficit of 2.9 per cent for FY 2023-24 compared to 3.8 per cent in FY 2022-23, despite various pressing needs of social sectors, welfare schemes, food and fertiliser subsidies, etc.
- Revenue deficit can be reduced by higher revenue mobilisation through tax buoyancy & wider tax base and with quality tax administration and by reprioritising expenditure through expenditure rationalisation.
- Based on the recommendations of the Expenditure Reforms Commission, all the expenditures, particularly revenue expenditure are reprioritised and rationalised which is very much visible in the budget provisioning.
- This will bring efficiency in the fund allocation among different heads, prevent leakages and shut the loopholes in the process to ensure efficiency. Most importantly all the revenue expenditure must be utilised for the socio-economic well-being of the nation and with greater efficiency.

KURUKSHETRA MARCH 2023 - BUDGET FOR RURAL INDIA 2023-24

1. Visionary Budget for Making India a Developed Nation

Budgetary Provision for Agriculture and Allied Sector:
- The total budgetary allocation of the Ministry of Agriculture and Farmers' Welfare is Rs. 1.25 lakh crore.
- The credit target of Animal Husbandry, Dairy, and Fisheries has also increased to 20 lakh crore.
- A substantial increase has been made in the Digital Agriculture mission and Rs. 450 crores has been allocated for it. Notably, it's a huge increase from Rs 70 crores in 2022-23.
- Moreover, digital infrastructure will be created to promote the agri-tech industry and start-ups and develop farmer-centric solutions.
- Rs. 2516 crores investment has been proposed to initiate the computerization of 63000 Primary Agricultural Credit Societies.
- To promote natural farming, approximately Rs 460 crores have been allotted. The government will encourage one crore farmers to adopt natural farming and for this 10000 bio-input resource centres will be established at the national level.
- Around 23000 crores have been allocated in Budget 2023-24 to enable farmers to continue availing the benefits through Kisan Credit Cards (KCC).
- A targeted investment of Rs 6000 crores will be made through a sub-scheme Pradhan Mantri Matsya Sampada Yojana.
- Ten thousand new Farmer Producer Organizations will be established in India and Rs. 955 crores has been proposed.
- For food and nutritional security, budgetary allocations have increased to Rs 1623 crores.
- Rs 60000 crores have been sidelined for PM Kisan Samman Nidhi.
- Rs 500 crores have been set aside for agriculture startups for the next five years.
- The budget provision for agriculture has increased from Rs. 1100 crore to 1800 crore
- The Atmanirbhar Clean Plant Programme will be launched with an outlay of 2,200 crores (in the next 7 years till 2030) to boost the availability of disease-free, quality planting material for high-value horticultural crops.
- 500 new waste-to-wealth plants will be established to promote a circular economy at an investment of Rs 10,000 crore under the GOBARdhan scheme.
- A provision of Rs. 5300 crores have been made for Bhadra Project to provide sustainable micro irrigation and to fill up surface drinking water tanks.
- Agriculture Infrastructure Fund and Fasal Bima Yojana are also benefiting farmers and their coverage has also increased.

2. Development Directions in Budget

Expenditure and Budget Allocation for Select Schemes

Schemes	Actual Expenditure 21-22	BE 22-23	RE 22-23	BE 23-24	BE 23-24 over BE of 22-23 (in %)
1	2	3	4	5	6
1. Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)	98,468	73,000	89,400	60,000	-17.8
2. National Social Assistance Programme	8,152	9,652	9,652	9,636	-0.2
3. Blue revolution	1,179	1,891	1,422	2,025	7.1
4. Jal Jeevan Mission	63,126	60,000	55,000	70,000	16.7
5. National Health Mission	32,958	37,160	33,708	36,785	-1.0
6. National Livelihood Mission (NLM) – Ajeevika	10,177	14,236	13,886	14,129	-0.8
7. Pradhan Mantri Awas Yojana (PMAY)	90,020	48,000	77,130	79,590	65.8
8. Pradhan Mantri Gram Sadak Yojana (PMGSY)	13,992	19,000	19,000	19,000	0.0
9. Pradhan Mantri Krishi Sinchai Yojana (PMKSY)	11,278	12,954	8,085	10,787	0.0
10. Swachh Bharat Mission (Grameen)	3,099	7,192	5,000	7,192	117.4
11. Computerisation of Primary Agricultural Credit Societies	-	350	350	968	176.6
12. National Mission on Natural Farming	-	-	-	459	-

Source: Kurukshetra

Rural Employment Programmes
- Union Budget has allocated Rs. 60000 crores to MGNREGA and approximately Rs 14129 crore to National Rural Livelihood Mission. However, both schemes have witnessed a reduction of 17.8% and 0.8% respectively.
- There is also a proposal to revamp the credit guarantee scheme of Micro, Small, and Medium enterprises through an additional equity infusion of Rs 9000 crore. It will enable the disbursement of collateral-free guaranteed credit of Rs. 2 lakh crores.
- There is also an emphasis on the mobilization of more self-help groups for the creation and operation of the rural warehouse and other agri-logistics. It would help in improving the rural livelihood and incomes by converging rural development efforts with agri-infrastructure.

Measures for Agri-development

The budget has proposed many methods to increase production, productivity, and farm incomes through active participatory action towards:
- Comprehensive water planning
- Promoting natural and organic farming
- Ensuring balanced use of fertilizers
- Promoting and nurturing Farmer Producer Organizations (FPOs)
- Mapping and geo-tagging agri-logistic
- Construction and operation of community-led village storage
- Connecting unconnected areas and sustaining a national cold supply chain
- Integrating e-negotiable warehouse receipts with e-NAM
- Developing fodder farms through MGNREGA
- Promoting fisheries sector
- Doubling milk-processing capacities
- Utilizing enhanced farm credit

Leveraging Digital Infrastructure: Digital infrastructure in agriculture has a tremendous potential to enable relevant, timely, and adequate information for crop planning and crop health; enhanced access to farm inputs like credit; quick and effective damage assessment; market supply; etc.

Encouraging nutri-cereals: The UN has announced 2023 as an International year of millets and to acknowledge this Budget 2023-24 has made significant provisions for promoting millet production and consumption.

Strengthening Cooperative: The Budget 2023-24 has reposed great faith in the cooperatives.

Conclusion: The initiatives and programmes announced in the Union Budget 2023 have the required potential to re-orient the rural economy. It also requires ensuring innovative and participatory investment opportunities, community participation, and research and development.

3. Efficient and Inclusive Healthcare Ecosystem

Introduction
- Healthcare has been a priority for the past few years and there has been a steady increase in the budgetary allocation for this sector.
- There is an increase of 3.4% compared to the Budget 2022-23. A total of Rs. 89155 crores have been allocated to the Ministry of Health and Family Welfare.
- Notably, the budgetary allocation for 2021-22 was Rs 73931.77 crores.
- The Indian government is committed to building an inclusive, accessible, affordable, efficient, and modern healthcare ecosystem in the country.
- India is referred to as the pharmacy of the world.

Highlights of Budget related to Healthcare
- 157 new nursing colleges will be created.
- An amount of Rs 2980 crores has been assigned to the Department of Health Research.
- The budgetary allocation for ICMR has gone up by 7.4%. Some labs will be open for research by public and private medical schools.
- A mission to eliminate sickle cell anaemia by 2047 will be initiated with a focus on raising awareness and conducting universal screening of 7 million people between the ages of 0 to 40 years.
- The budget allocation for National Health Mission has gone up from Rs 28974 crores in 2022-23 to Rs 29085 crores in 2023-24.
- The National Digital Mission has also received a boost in funding from Rs 140 Crore in 2022 to Rs 341 crore in 2023.
- The allocations for Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana have increased by 12% (to Rs 7200 crores).
- The budget allocation for AYUSH Ministry has also increased by 28%.
- Rs 6825 has also been allocated for the establishment of 22 new AIIMS.

Conclusion: The budget announcements are comprehensive and forward-looking, giving the sector its well-deserved attention.

4. Boosting Agriculture and Rural Development

Budgetary allocation for rural development
- The Ministry of Rural Development is provided with the seventh highest allocation among all ministries in the Union Budget 2023-24.
- Its allocation has increased from Rs 61,864 crore in 2013-14 to approximately Rs 1,60,000 crore in 2023-24. This implies a linear growth rate of 10.32% per annum.
- However, the budget expenditure for the Department of Land Resources came down by 3.93 % during the last decade.

Major Schemes under the Ministry of Rural Development
- There was a growth rate of 7.84% per annum in the last seven years for all centrally sponsored schemes for rural development.
- In 2022-23 it came down by 13.02% due to unusually high expenditure on Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) during the COVID-19 pandemic.
  - The fall in allocation can be attributed to lower demand for work due to strong agricultural growth and a post-pandemic recovery resulting in better employment opportunities.
  - In 2023-24, it accounts for nearly 38% of total expenditure on all centrally sponsored schemes of rural development.
- In terms of allocation, MGNREGS is followed by PM Awas Yojana-Gramin (35%), PM Gram Sadak Yojana (12%), and National Rural Livelihood Mission (9%).
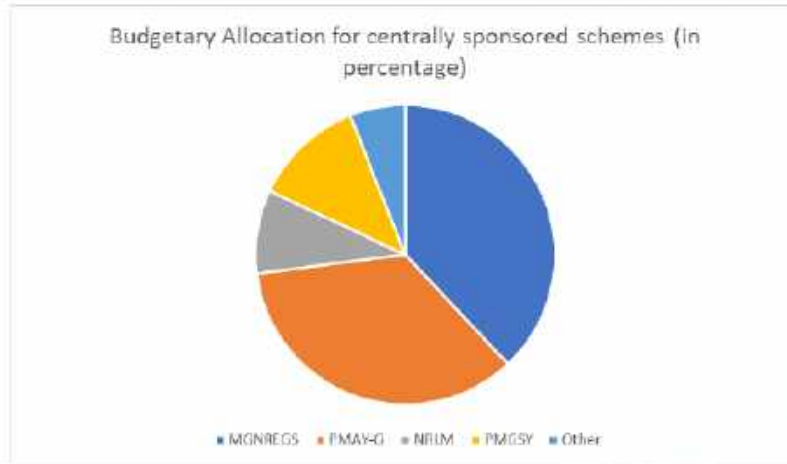
Scheme	2017-18 (A)	2018-19 (A)	2019-20 (A)	2020-21 (A)	2021-22 (A)	2022-23 (RE)	2023-24 (BE)	LGR
MGNREGS	55166	61815	71687	111170	98468	89400	60000	4.40
PMAY-G	22572	19308	18116	19269	30057	48422	54487	19.54
PMGSY	16862	15414	14017	13688	13992	19000	19000	3.03
NRLM	4327	5783	9022	9208	9383	13336	14129	17.21
NSAP	8694	8418	8692	42443	8152	9652	-	7.52
SPMRM	553	433	304	369	150	989	-	8.55
All Centrally Sponsored Schemes	108175	111842	121839	196147	160433	181122	157545	7.84

Figure: Budget Allocation to Centrally Sponsored Schemes for Rural Development
Source: Kurukshetra

- **Pradhan Mantri Awas Yojana Gramin (PMAY-G)**
  - Originally launched as Indira Awas Yojana, PMAY-G was revamped in 2016 with the objective to provide around 3 crore houses to eligible rural households by 2024.
  - Approximately 2.83 crores have been sanctioned and 2.14 crore houses have been completed (on February 2023).

- **Pradhan Mantri Gramin Sadak Yojana (PMGSY)**
  - The main objective is to provide all-weather road connectivity to un-connected rural habitations.
  - The scheme has been allocated Rs 19000 crore in 2023-24.
- **National Rural Livelihood Mission (NRLM)**
  - Renamed Deendayal Antyodaya Yojana – National Rural Livelihood Mission(DAY-NRLM) aims to create diversified and gainful self-employment for the rural poor.
  - It also aims to strengthen Self Help Groups (SHGs).
- **National Social Assistance Programme (NSAP)**
  - It is a social welfare programme that comprises many sub-schemes for the vulnerable section of society like the elder population, widows, unemployed, etc.
- **Shyama Prasad Mukherji Rurban Mission (SPMRM)**
  - It was launched on 21st February 2016 with the vision to deliver catalytic interventions to rural areas on the threshold of growth.

Budgetary Allocation for centrally sponsored schemes (in percentage)

■ MGNREGS ■ PMAY-G ■ NRLM ■ PMGSY ■ Other

Schemes for the Department of Land Resources
- The department is allocated Rs 2419 crore, which is 92% higher than the revised estimate of 2022-23.
- **The department implements two major schemes:**
  - Integrated Watershed Development component of Pradhan Mantri Krishi Sinchayee Yojana.
  - Digital India Land Records Modernization Programme.

Way Ahead
- It is important to promote economic activities through various incentives in rural areas.
- Public expenditure on social infrastructure should be prioritized for sustainable and inclusive growth.
- Socially and economically backward sections should be uplifted in order to bridge the gap between haves and have-nots.
- A joint effort of government, private sector, and self-help groups is vital for improving the quality of rural life.

5. MSME Sector on Growth Trajectory

Challenges for MSMEs
- MSMEs grapple with situations like low levels of technology use.
- They have limited access to inputs and credit facilities.
- They have an unfavourable market environment and fall outside the ambit of formal business and labour regulations.
- Rural MSMEs witness more locational disadvantages as compared to their urban counterpart.
- The MSME sector was severely impacted by the COVID-19-induced lockdown. They witnessed supply chain disruptions, reduced demands, loss of revenue, etc.

Measures taken by the Government
- In order to moderate the economic impacts of the pandemic on MSMEs, the government modified the definition of MSMEs.
- Provided financial assistance like equity infusion, and waived the global tender requirement for procurement of up to Rs 200 crore.
- The Udyam portal was also launched. MSME registrations on Udyam Portal crossed the one crore mark on August 2022.
- In order to transcend MSMEs to formal institutional networks and gain from the schemes and initiatives central government took various measures.
- To digitally empower the sector, various initiatives like MSME Sampark, MSME Sambandh, MSME Samadhaan, Udyamimitra, etc. were launched.
- Open Network for Digital Network will further strengthen its market.
- Some other initiatives include One District One Product, TRIFED (for onboarding Tribal artisans), Emergency Credit Line Guarantee Scheme, etc.

Budgetary Provisions for MSMEs in 2023-24
- The budget has infused Rs 9000 crores in the corpus of the Credit Guarantee Fund Trust for Micro and Small Enterprises. It will enable additional collateral-free credit of Rs 2 lakh crores to MSMEs with a reduced cost of credit by 1%.
- A National Financial Information Registry will be established to serve as a national repository of financial and ancillary information and enable an efficient flow of credit.
- The limit for presumptive taxation is also increased for micro-enterprises with a turnover of up to Rs 2 crore to Rs 3 crore.
- The government will return 95% of the forfeited amount related to the bid or performance of security in cases of failure of contract due to COVID-19. This will provide relief to pressurized MSMEs.
- Apart from the above measures, National Logistics Policy aims to bring down the logistics 14% to 8% of GDP. It would further encourage more MSMEs to use tech-powered logistics services.
- The 5-year rollout of the World Bank assisted Rs 6000 crore Raising and Accelerating MSME Performance (RAMP) would help MSMEs become more resilient, competitive, and efficient.
- A special package of PM Vishwakarma Kaushal Samman (VIKAS) is also announced to integrate traditional craftsmen and artisans with MSME supply chains and improve the quality, scale, and reach of their products.

Way Ahead
- The budgetary allocations should be duly executed.
- A robust mechanism should be designed to sensitize entrepreneurs about the available provisions and features.
- Special Gram Sabha like Udyam Gram Sabha should be conducted at the panchayat level to encourage aspiring entrepreneurs.

6. Inclusive Development in Education

Status of Education
- The Gross Access Ratio in 2021-22 at the primary level is 97.49%, 97.01% at the upper primary level, and 95.48% at the secondary level.
- According to Unified District Information System for Education Plus (UDISE+), approximately 26.5 crore children are enrolled in schools.
- Moreover, the enrollment of children with special needs stood at 22.67 lakhs in 2021-22.
- Initiatives taken in the year 2022-23 include PM SHRI, National Curriculum Framework for Foundational Stage, disability screening app called PRASHAST, National Credit Framework, Balvatikas, etc.

Budgetary Provisions in 2023-24
- The budgetary allocation for the education sector is approximately Rs. 112899.47 crores. The Department of School Education is allotted Rs. 68804 crores and the Department of Higher Education is allotted Rs. 44094 crores.
- The budget has followed on following key areas:
  - **Teachers' Training**
    - District Institutes of Education and Training will play a crucial role in in-service teachers getting high-quality training. They will be made centres of excellence for research and dissemination of best practices in teachers' education.
  - **National Digital Library for Children and Adolescents**
    - A national digital library for schools will be developed with the work of reputable Indian and international authors.
    - States will be urged to establish physical libraries at the ward and panchayat levels.
- In the next three years, the government will appoint nearly 38800 teachers and support personnel for 740 Eklavya Model Residential Schools that will provide education to 3.5 lakh tribal children.
- There is an increase in budget allotment for Samagra Shiksha, PM SHRI, the World Bank-aided STARS scheme, New India Literacy Programme, etc.

Conclusion: The Union Budget 2023-24 is a step to augment and further the efforts to achieve Sustainable Development Goal 4 (Quality Education).

7. Development of Tourism Sector

Introduction:
- According to the United Nations World Tourism Organization, tourists are people travelling for leisure and other purposes from their usual place of residence to their destination for at least one night and not more than one year and return back to their place of origin.
- Tourist Generating Regions are the regions where the tourist journey starts and ends. They are traditionally high-income regions as the population has some discretionary income to engage in travelling and leisure activities.

S. No.	Source Country	FTAs	Percentage (%) Share
1	United States	429860	28.15
2	Bangladesh	240554	15.75
3.	United Kingdom	164143	10.75
4	CaNADA	80437	5.27
5	NEPAL	52544	3.44
6	AFGHANISTAN	36451	2.39
7	AUSTRALIA	33864	2.22
8	Germany	33772	2.21
9	Portugal	32064	2.10
10	France	30374	1.99
	Total Top 10 Countreis	1134063	74.26
	Others	393051	25.74
	Grand Total	**1527114**	**100.0**

Figure: Top 10 Source countries for Foreign Tourist Arrival in India
Source: Kurukshetra

Budgetary provisions for Tourism Sector
- The budget allocation for the sector is Rs 2400 crore.
- Rs 1412 has been allocated to Swadesh Darshan Scheme.
- Rs 105 crore has been allocated for training and skill development and building capacity in the sector.
- Rs 250 crore has been allocated for the PRASHAD scheme.
- The budget has also announced the development of 50 new tourist destinations in the country.
- Infrastructure and investment are one of the seven priorities (Saptarishi) in the budget which will also have a role in the Tourism industry.
- Rural tourism is also being promoted through the Vibrant Village Programme.
- The cruise tourism potential is yet to be unveiled in India with a vast coastline of 7500 km. In this direction, MV Ganga Vilas is a great step.
- Budgetary allocation of approximately Rs 3400 crore to the Ministry of Culture will also complement tourism in India.

Conclusion
Tourism has great potential for the economy of the country. It can spearhead growth, generate employment, improve people's lives and protect the environment if properly managed.

SCIENCE REPORTER - MARCH 2023

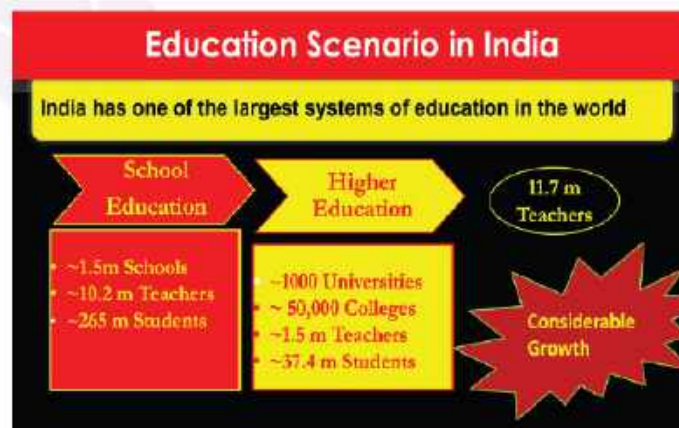**1.   India's Future is in Innovation Make Education More Creative**

Introduction:

● India is home to the world's largest youth population. The future of our nation lies in our youth who need empowerment.

● Empowerment through creative education is the foundation of Atmanirbhar Bharat. The changing needs of society require an education system that nurtures creativity and drives innovation. But this would require major reforms in our education system, especially in the way teaching and learning happen today.
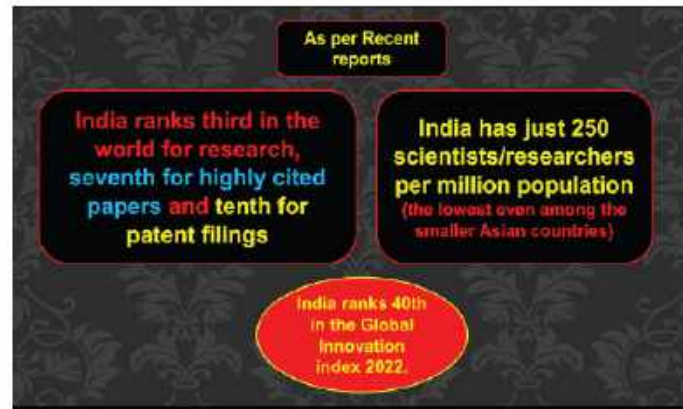
Creativity:

● **Creativity refers to the ability to generate new and unique ideas, while innovation refers to the process of turning those ideas into practical solutions or products.**

● For instance, the thought of creation of an electric four-wheel car is creativity, and its actual production is innovation. In other words, creativity is the fuel that powers innovation.

● Creativity can inspire innovation, and innovation can drive creativity.
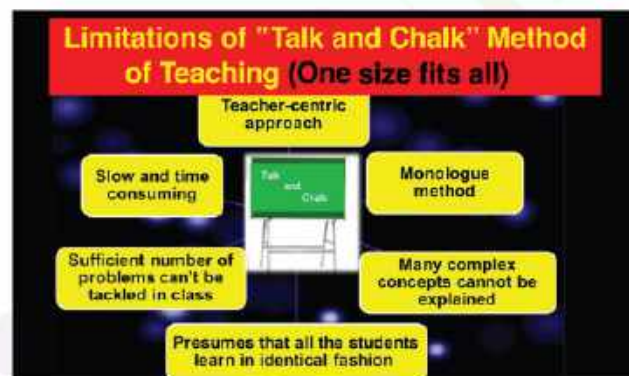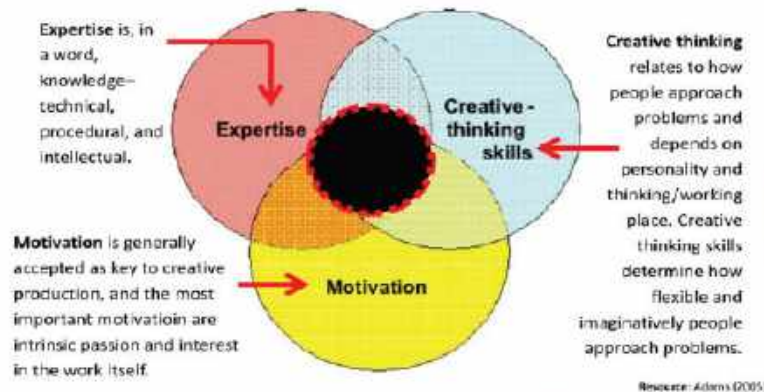

India's Education System and Crisis of Creativity:

● Creativity is not just a matter of luck or natural talent or some divine power; it can be developed and nurtured through education, practice, exposure to new experiences, and the right mindset.

● In the development of creative skills, education can play a very important role.

● India has an extensive education system with a network of more than 1.5 million schools (with over 250 million students enrolled) and more than 1000 universities and over 40,000 higher education institutes (with over 40 million students enrolled).

● **India is also home to the world's largest young learning population in the age bracket of 3-23 years.** These students may be 20% of our population but they are 100% of our future.

● **But there seems to be a dearth of creative minds leading to a crisis of creativity in India. No Indian scientist while working in India has been able to get a Nobel Prize after CV Raman in 1930.**

● India has been expanding the higher education system without a proportionate increase in budget. **The New Education Policy (NEP-2020) has set a target of 50% Gross Enrolment Ratio (GER) by 2035.** In contrast, China spends more money on two of its premier institutions – Tsinghua and Peking Universities – than the higher education budget of India.

   ○ This low spending eventually affects the quality of research in our HEIs and hence their world ranking. It is, therefore, imperative that a higher budget is allocated to R&D (at least 2% of GDP as proposed by the country's Science Technology and Innovation Policy 2013 as compared to the current 0.7%) to boost creativity and innovation in academia.

As per Recent reports

India ranks third in the world for research, seventh for highly cited papers and **tenth for patent filings**

India has just 250 scientists/researchers per million population (the lowest even among the smaller Asian countries)

India ranks 40th in the Global Innovation index 2022.

Identifying Three Components of Creativity

Expertise is, in a word, knowledge—technical, procedural, and intellectual.

Expertise

Creative-thinking skills

Creative thinking relates to how people approach problems and depends on personality and thinking/working place. Creative thinking skills determine how flexible and imaginatively people approach problems.

Motivation is generally accepted as key to creative production, and the most important motivatioin are intrinsic passion and interest in the work itself.

Motivation

Resource: Adams (2005)

Limitations of "Talk and Chalk" Method of Teaching (One size fits all)

- Teacher-centric approach
- Slow and time consuming
- Talk and Chalk
- Monologue method
- Sufficient number of problems can't be tackled in class
- Many complex concepts cannot be explained
- Presumes that all the students learn in identical fashion

Some of the ways to nurture creativity amongst students include:

1. **New teaching-learning methods:**
   - Students need to be encouraged to ask innumerable 'whys' and 'why nots'. Curiosity is the seed of creativity. By encouraging curiosity and hence creativity, we can train our students to become independent, thinking individuals who discover and solve problems on their own, thus nurturing their confidence and self-belief.
2. **ICT-empowered pedagogies:**
   - Many mistakenly believe innovation has to do with the use of technology. Technology is an enabler and helps personalize the learning experience.
   - In this information age, teachers need to be empowered with the new ICT empowered pedagogies such as blended learning and flipped classroom which can help meet the learning needs of the 21st Century. .
3. **Experiential learning and exploration:**
   - There is an urgent need to shift focus from passive learning to experiential learning i.e., learning by doing. By engaging students in hands-on practical experiments and reflection, they are better able to connect theories and knowledge learned in the classroom to real-world situations.
   - This approach is extremely effective in helping the students to grasp, explain and retain otherwise difficult concepts. But, India has started recognising the importance of hands-on, experiential learning as a powerful method to encourage thinking and creative expression. Experiential learning is one of the best ways to teach students creative problem-solving.
4. **Focus on keen observation:**
   - Keen observation of the world around has led to many important breakthroughs in science and medicine and in the social and business worlds. Strong observation skills are found to be greatly linked to greater creativity, originality and flexible thinking. Students must be taught and encouraged to observe deeply, to look beyond the obvious and come out with new ideas.
5. **Avoid excessive use of the Internet:**
   - One of the main reasons behind the lack of creativity in our students is the excessive usage of the Internet. This has adversely impacted the generation of original ideas and plans. Students do not bother to use their imagination while preparing a project or report or dissertation and, what is worse, the institutions also do not object.

6. **Reforms in assessment pattern:**
   - Assessment drives learning. Special training needs to be given to teachers through workshops in setting examination questions which test out of box thinking and hence creativity.
   - The assessment process needs to be made more scientific to encourage multiple skills of the students. The way we assess our students, the students will learn in that way. That is the best way to slowly draw our students away from rote learning towards innovation and creativity.

7. **Lighter syllabi:**
   - There is a need to have lighter syllabi in each discipline consisting of only core essentials and the focus of teaching should be on conceptual clarity. All of this will give the students ample time for creative thinking.

8. **Teaching beyond curriculum:**
   - At least one lecture per week should be devoted to "teaching beyond curriculum". In this lecture, students may be asked to decide what they would like to do in one year or in one semester.
   - This project may involve anything like writing poetry, news reports, general articles, scientific fantasies, etc. Open-ended projects in groups greatly enhance the learning abilities.
   - Students also need to change their mindset and become more proactive in their approach to day-to-day problems by changing their daily routine, devoting some time for creative thinking and overcoming fear of failure.

Conclusion: India is one of the youngest nations of the world with 65% of its population less than 35 years. If India wants to become a global leader and a superpower, we need to focus on fostering these two important skills amongst our students and for this we need to reform our education system by shifting its focus to encourage thinking, innovation and creativity among the students. Being creative and innovative can help India to solve different types of problems and create unique solutions.

2. Promoting and Nurturing Grassroots Innovations

Introduction: Grassroots innovations are essentially **creative solutions devised by the common people** who despite less education can sense an unmet need of the communities they live amongst and address it frugally. These solutions from the grassroots are born out of persistent efforts to find durable solutions amidst material and institutional constraints.

- These are different from 'innovations for grassroots' which include innovations by students, professionals & formal R&D institutions and which have applicability in the grassroots communities.

Grassroots Innovations:
- **Grassroots innovations emerge to address unmet (or suboptimally met) social and technological needs.**
- They address the inertia of the formal institutions of public policy and market as well as some of the informal community institutions like common property resource institutions.
- The Honey Bee Network along with its institutions, GIAN (Gujarat Grassroots Innovation Augmentation Network) & SRISTI (Society for Research and Initiatives for Sustainable Technologies and Institutions) and NIF (National Innovation Foundation) and several regional collaborators have been supporting grassroots innovators and traditional knowledge holders for the past three decades.

Some of the problems that they face and the support they need are:

1. **Regional language communication:**
   - Documentation of grassroots innovations need special efforts as most of our innovators are from the rural parts of the country and often are not fluent with even Hindi much less with the English language except in the north-east or some parts of south India.
   - With low literacy levels, they may not be able to articulate or pitch their innovations. The Vernacular Innovation Program of Atal Innovation Mission is trying to bridge this gap for learning about design thinking. However, most incubators are yet to issue calls for innovations and offers of support in regional languages.

2. **Funding for design inputs:**
   - Grassroots innovations are often at a crude prototype stage. They need a lot of refinement in terms of functionality, ergonomics, aesthetics, efficiency, etc., to turn them into marketable products. This needs grant support.

3. **Innovations for and by women:**
   - Innovations by women and for women need special attention because the rate of technological change has often been found to be slower in the activities that women, particularly rural women, perform.
   - Culturally, women were historically barred from occupations like blacksmith or carpentry and hence did not have access to make tools for themselves (except lambada community). However, their creativity in the activities they are involved in have been largely neglected for example in cuisines, childcare, crafts, management of natural resources, food processing, agriculture, livestock care, etc.

4. **Dedicated funds for validation and value addition:**
   - These products need to be validated and value-added in the laboratory/workshops or on-farm/in-field as the case may be before they are disseminated for wider public use. Inter-institutional agreements between innovation promotion platforms and reputed public/private R&D institutions/councils and entrepreneurs can facilitate such validation and value addition. The policymakers can provide dedicated funds.

5. **Mobile Labs and testing facilities:**
   - These are needed for small farmers, especially in the hills and economically disadvantaged regions where the cost of transportation is extremely high. Some additional certifications may be brought in to incentivize the value added products of small farmers in remote regions.

6. **Standards for innovations:**
   - In the absence of standards for these innovative products, certification is difficult. Policy to have a certain degree of flexibility without compromising on safety is needed.

7. **Support in the form of Micro Venture Innovation Fund (MVIF):**
   - A risk fund to take these innovations to the market is needed. Most innovators come from economically constrained backgrounds.
   - A combination of grants for redesign and user trials and MVIF for goto- market will be needed to support such innovation.
   - GIAN invested 44 lakhs in 24 technologies with the help of SIDBI during the COVID-19 pandemic. It has been able to generate jobs for at least 300 people and some have started paying back.

8. **Promoting DIY and IP:**
   - There are both DIY (Do-it- Yourself) solutions as well as Buy & Use It (BUI) and the latter can be IP protected or be open innovation, which are free to copy and sell. Policies must encourage a variety of IP conditions so that open innovations as well IP protected solutions flourish in a diversified ecosystem.

9. **Salvage components and circular economy:**
   - Many grassroots innovations salvage components from the scrap industry, second hand parts from the auto sector or other such sources.
   - That keeps the costs low for the buyer, often a small farmer or artisan, and also delays the entropy and thus helps the environment.
   - The new scrapping policy for cars may not help the 400 fabricators of Bullet Santi or Sanedo in Amreli and other districts of Gujarat.

10. **Inclusivity, Affordability and Frugality:**
   ● In a materially constrained environment, grassroots innovations often are extremely affordable and thus also inclusive.

Policy Incentives:
● **District Innovation Incubation Fund:** Every district should have a fund of at least 5cr for scouting, supporting, rewarding local grassroots innovators and traditional knowledge holders. Care should be taken not to divert this fund for routine infrastructural activities. For this, an annual goal of supporting at least 50 grassroots innovations and outstanding traditional knowledge holders can be put as a desirable outcome.
● **Public R&D Fund:** Every public R&D laboratory must earmark at least 10 percent of its budget for testing, validating and value-adding local GRIs and TKs. Additionally, private R&D labs can be mandated to spend at 2% (at par with CSR norms) on GRIs and TKs.
● **All India Coordinated Project for multi-location trials of GRIs and TKs:** One of the existing gaps in the current ecosystem is the lack of funding for doing multi-location pilots. Funds are available either for prototyping or very early stage or at an advanced stage.
● **Innovation Week:** Under the MGNREGA, at least one week can be celebrated as an innovation week when all the wages will be used to scout grassroots innovations, outstanding traditional knowledge, crafts, cuisines, new ideas for societal development, etc.
● **Micro Venture Innovation Fund:** A Micro Venture Innovation Fund should be formulated to provide funds in the form of soft loans without collateral if the innovator has a POC or has been able to sell the first few pieces. Unlike micro-finance, this is a risk fund where risk will have to be absorbed by the funding agency if the innovator fails to pay back due to failure of the enterprise.

Conclusion: Indian lead in developing and diffusing the idea of Grassroots Green Innovations deserves to be highlighted even during G-20 meetings with all the diversity. For supporting industrial ventures, huge funds and multiple institutions are available. But to generate a large number of jobs at the least cost, it is the GRI which will meet the emerging challenge in the country.

3. Promoting a Culture of Innovation in India

Introduction: With innovation and entrepreneurship high on the developmental agenda, several government initiatives are directed towards promoting and nurturing innovation at various levels and in several sectors in India.

Some programmes are:

INSPIRE (Innovation in Science Pursuit for Inspired Research) and INSPIRE-MANAK (Million Minds Augmenting National Aspiration and Knowledge)
● The programme is run by the **Department of Science and Technology (DST)** with the goal of encouraging young people to study science.
● **Objective:** The scheme encourages the young generation to pursue a college or university education in the basic and natural sciences, and also motivates them to pursue research careers in applied and basic sciences.
● Under INSPIRE, MANAK is an initiative that fosters a culture of innovation among talented school students and gets them interested in science and research early in life

Strengthening, Upscaling & Nurturing Local Innovations for Livelihood (SUNIL) Programme
● **Objective:** Provide technology delivery and social enterprise development models for economically weaker sections of society.

A Scheme for Promotion of Innovation, Rural Industries and Entrepreneurship (ASPIRE)
● It is an initiative of the Government of India's **Ministry of MSME** to set up a network of technology centres and incubation centres to promote entrepreneurship and agro-industry innovation.
● **Objective:** Creating new jobs and reducing unemployment, promoting entrepreneurship culture in India, strengthening the competitiveness of micro and small and medium-sized enterprises.

National Initiative for Developing and Harnessing Innovations (NIDHI)
● It is launched by the **Department of Science and Technology (DST)** to build an innovation-driven entrepreneurial ecosystem.
● **Objective:** To foster knowledge-based and technology-driven innovations into successful startups.

Promoting Innovations in Individuals, Startups and MSMEs (PRISM)
● It is launched by the Department of Scientific and Industrial Research (DSIR).
● **Objective:** Individual innovators can receive grants, technical assistance, and mentoring to transform their ideas into successful new enterprises.

Science and Engineering Research Board (SERB)
● **Objective:** To promote science and engineering basic research and individuals involved in such research by providing financial aid.
● It is launched by the **Department of Science and Technology (DST).**

Knowledge and Innovation Hub
● It is a state-of-the-art resource centre, a repository of research on good governance.
● **Objective:** It provides advice and encourages partnerships with key stakeholders, including colleges, universities, think tanks and non-governmental organizations.
● It is launched by **NITI Aayog.**

Atal Innovation Mission (AIM)
● **Objective:** The programme aims to foster an entrepreneurial culture in universities, research institutions, and small and medium-sized businesses by cultivating an innovative mindset in schools and an entrepreneurship ecosystem.
● It is launched by **NITI Aayog.**
● AIM has created four programmes: Atal Tinkering Labs, Atal Incubation Centres, Atal New India Challenges, and Atal Grand Challenges.

Biotechnology Industry Research Assistance Council (BIRAC)
● It was established by the Department of Biotechnology (DBT).
● **Objective:** To address nationally relevant product development needs through interaction between industry and academia.
● BIRAC provides this through various initiatives, including targeted funding, technology transfer, and IP management.

Schemes under MoE (Ministry of Education)

Research Parks
- The main aim of Research Parks is to support the government's focus on developing indigenous R&D capabilities, boosting manufacturing, and creating a startup culture in the country.

IMPacting, Research, Innovation and Technology (IMPRINT)
- It is a Pan-IIT + IISc collaborative initiative supported by MHRD.
- **Objective:** It guides and empowers India's pursuit of inclusive growth and self-reliance by addressing the major issues in science and engineering.

Uchhatar Avishkar Yojana (UAY)
- It encourages high-level innovations that have an impact on the needs of the industry thus improving the competitive level of manufacturing in India.

School Innovation Council (SIC)
- It was launched for schools across India by the Ministry of Education's Innovation Cell (MIC)
- **Objective:** To promote the culture of Innovation, Ideation, Entrepreneurship, Creativity, and Design Thinking.

Society for Innovation & Development (SID)
- It is an initiative by the Indian Institute of Science (IISc), Bengaluru for enabling S&T innovations.

Inspiring India in Research Innovation and STEM Education (iRISE)
- It is a three-year collaborative programme between the DST, IISER Pune, the British Council, the Royal Society of Chemistry, Tata Trusts, and Tata Technologies.
- **Objective:** support the Government of India's goal of creating a supportive ecosystem that encourages research and innovation in schools and universities.

National Innovation Foundation (NIF)
- **Objective:** to promote grassroots technological innovations and outstanding traditional knowledge.
- The NIF helps identify, support, and spawn grassroots innovations developed by local communities and individuals.
- The Grassroots Technological Innovation Acquisition Fund (GTIAF) of NIF addresses the challenges of grassroots innovators at the commercial and technology levels.

National Research Development Corporation (NRDC)
- It is an enterprise of DSIR, that promotes, develops, and transfers technologies emerging from various national research and development organisations.
- "Programme for Inspiring Inventors and Innovators" (PIII) of **NRDC** provides technical and financial aid too.

Council of Scientific and Industrial Research (CSIR)
- CSIR labs have incubated facilities which assist startups by providing innovation strategies, support services for businesses, etc.
- These incubation centres promote and support entrepreneurship and innovation.

Ministry of Electronics & Information Technology
- The Startup, Innovation & IPR division of the Ministry of Electronics & Information Technology (MeitY) has undertaken a slew of proactive measures to spur the technology-led startup-innovation ecosystem in the country.
- Some of the major initiatives are:
  - Technology Incubation and Development of Entrepreneurs (TIDE 2.0)
  - MeitY Startup Hub
  - Startup Accelerator Programmes

Department of Space
- Aatmanirbhar Bharat ARISE-ANIC program is a national initiative to promote research & innovation and increase the competitiveness of Indian startups and MSMEs.
- **Objective:** to catalyse research, and innovation and facilitate innovative solutions to sectoral problems.

Space Enterprise Encouragement & Development (SEED)
- It is envisaged as a competitive early-stage encouragement program to innovative small business concerns/start-ups, interested in developing products/services in focus areas of interest to ISRO.

4. Undertaking Scientific Social Responsibility

Introduction:
Science and Technology in India have progressed by leaps and bounds with many landmark discoveries being made. Science and Research can lead the country to success and help in realising the dream of making India a knowledge and technology hub.

Relevance of Science and Research in India:
- When the COVID-19 pandemic confronted us recently, scientists from all disciplines contributed by developing oxygen plants, air purifiers, make-shift hospitals, surveillance tools, testing kits and vaccines.
- Scientists connected to the public, they were visible, contributing to raising awareness, and coming forward to talk and write.
- Researchers whose outcomes are published papers in high-impact factor journals with high scientific credibility.
- Scientists consider it a responsibility to take the science to the people and help them understand the nuances and applications of the research.
- Science is a process where policymakers, infrastructure creators, scientists, curators, educationists, teachers, industry, and every person who comes under the gamut is a stakeholder.
- To accelerate growth in the nation and to better the living standards of citizens, the understanding of science and society interlinkage is important.

Scientific Social Responsibility

- The Department of Science and Technology, Government of India has released the guidelines relating to Scientific Social Responsibility (SSR).
- **Definition:** "The ethical obligation of knowledge workers in all fields of science and technology to voluntarily contribute their knowledge and resources to the widest spectrum of stakeholders in society, in a spirit of service and conscious reciprocity."
- It aims at inculcating a scientific temperament among the masses, to unveil the growth potential of the nation by strengthening its scientific roots.

Scientific Social Responsibility Outlines

- It shoulders the scientists with the responsibility of communicating science and technology to the people in a language they can easily understand.
- It is hoped to eradicate the knowledge gulf in the country.

Scientific Social Responsibility guidelines

- It is obligatory for all institutes dealing in science to take adequate steps for promoting SSR.
- Institutes are also expected to allocate funds for SSR activities.
- Eliminating the information gap and oblivion in society, establishing tight linkages between society and the scientific community.
- Mitigating the prevalent superstitions and promoting scientifically sound activities in the society.

Conclusion:

- The spread of knowledge, through discourses, and well-researched stories through verbal, art and written form contributed immensely towards building societies and civilisations that were symbols and reservoirs of wisdom.
- Scientific Social Responsibility can lead us to the end of the tunnel and India besides being a scientific knowledge-based society will also be a scientifically socially responsible society.

DOWN TO EARTH - MARCH 2023

1. Assam's crackdown on child marriage

Introduction:
- Child marriage is a chronic problem in India, even though it has been banned since 1929.
- According to the National Family and Health Survey (NFHS-5), in 2019-21, almost one out of every four women between the age of 20 and 24 years was married before turning 18.
- Child marriage is most prevalent in West Bengal, followed by Bihar, Tripura, Jharkhand, and Assam.
- Assam, a state in northeast India, has the highest maternal mortality rate (MMR) in the country, with 195 deaths per 100,000 live births, as per the Sample Registration System report.
- Despite the high incidence, Assam's crackdown on child marriage using the Prohibition of Child Marriage Act, 2006 (pcma) along with the Protection of Children from Sexual Offenses Act, 2012 (pocso) has come as a rude surprise.

Issue:
- Assam is cracking down on child marriage to curb high maternal mortality rates. However, this solution is imperfect because the problem of high maternal mortality has multiple triggers.
- The crackdown has created panic and fear among the people, and families are sending underage brides to their parents' homes or other places to evade authorities.
- Many expectant mothers are opting for home deliveries to evade the authorities.
- Underage mothers have also stopped taking their children to hospitals over fears of getting identified.
- The crackdown has led to various difficulties for the affected individuals.

The Extent of the Problem:
- Assam shares the same problem as many other Indian states, with a high incidence of child marriage.
- The state government's attempt to arrest child marriage under pocso is a bold move, and the crackdown has led to the arrest of over 3,000 people, mostly husbands and male family members of underage brides, from across the state.
- This is the most audacious attempt to arrest child marriage in India.

The Imperfect Solution:
- The government's actions have violated the provisions of the Prohibition of Child Marriage Act.
- The Act has not been about policing and cracking down, but rescuing the victims and punishing the offenders only through the laid-down procedures.
- The law has several mechanisms to avoid child marriages and provisions to ensure the well-being of the underage bride and any children born out of such marriages.
- The crackdown has led to confusion over whether the crackdown on child marriage is valid under pocso.

Causes of Maternal Mortality in Assam:
1. **Poor Access to Health Infrastructure:** In Assam, people have to travel long distances over difficult terrain to access health centers.
   - The state has a low population density of 398 people per square km. Each sub-center caters to 5,000-7,000 people, and each primary health center caters to 30,000-40,000 people.
   - Community health centers, which have specialist doctors such as gynecologists, are also overburdened in Assam.
2. **The Need for Well-trained Personnel:** The issue extends beyond infrastructure to the availability of well-trained personnel to handle emergencies.
   - In most rural areas, emergency services are not available after dark. Postpartum hemorrhage is a common reason for maternal deaths in the state.
   - Assam needs good emergency care at the peripheral level.

Conclusion:
- The crackdown on child marriage in Assam is an imperfect solution to the problem of high maternal mortality rates. The problem of child marriage has multiple triggers, and any solution should be comprehensive and address all triggers. There is a need for more awareness campaigns on the negative consequences of child marriage.
- To overcome the challenge of maternal mortality, the government needs to address the causes of MMR, improve access to health infrastructure, and ensure the availability of well-trained personnel to handle emergencies. The government should also focus on the four parameters and work towards improving them to reduce maternal mortality rates in the state.

What is Maternal Mortality:
- Maternal mortality refers to deaths due to complications from pregnancy or childbirth.
- Maternal mortality is a critical indicator of the overall health status of women and the functioning of healthcare systems.
- It is an important public health issue, especially in low- and middle-income countries where the majority of maternal deaths occur.
- Improving maternal health and reducing maternal mortality is a key goal of the Sustainable Development Goals (SDGs) adopted by the United Nations.

Causes of Maternal Mortality:
- Child marriage is a significant factor that increases the risk of maternal mortality. It is because minors are not mentally or physically prepared for childbirth.
- A research paper finds that 23.3% of maternal deaths in Assam were among adolescents.
- High blood pressure and anemia are the main causes of maternal mortality in India. More than half of the pregnant women in India are anemic.
- Lack of awareness and poor access to health infrastructure aggravate the problem.

Parameters Contributing to Maternal Mortality:
- Child marriage, multidimensional poverty, shortfalls in primary health centers, and the prevalence of anemia among expectant mothers are the four parameters responsible for maternal mortality. The states that perform the worst in terms of MMR also perform poorly in all or most of the other four parameters.

2. Odisha's Coastal Villages: Battling Shoreline Erosion and Rising Sea Levels

Context: The coastal villages of Odisha are facing an unprecedented challenge with rising sea levels, shoreline erosion, and the increasing frequency of cyclones.

- The National Centre for Sustainable Coastal Management, Chennai, has identified 74 villages in the state that are severely affected by shoreline erosion, the highest in the country.
- Furthermore, almost half of Odisha's coast has undergone erosion between 1990 and 2015.

Rising Sea Levels:

- The sea level along Odisha's coast is rising at a faster rate than the rest of the country.
- According to a study paper published in Applied Ecology and Environmental Research, sea levels along Odisha's coast have risen by 9.5 cm in the 50 years between 1966 and 2015, while the average sea level rise along the Indian coast during the period is 8.5 cm.
- This rise in sea level is a major reason for shoreline erosion, which is causing significant damage to the coastal villages of Odisha.

Shoreline Erosion:

- The impact of shoreline erosion is being felt across Odisha's coastal villages. Podampeta and Ramayapatnam villages of Ganjam district are two of the most severely affected areas.
- Podampeta, located close to the Rishikulya river's mouth, has already lost 200 houses to the sea, while the remaining 100 houses stand in a dilapidated condition.
- Similarly, Ramayapatnam village, located near the mouth of Bahuda river, has lost 47 houses to the sea.
- These villages are experiencing frequent flooding triggered by tidal events and storm surges, causing immense damage to the local communities.

What is Shoreline Erosion?
- Shoreline erosion is the process by which the shoreline of a body of water, such as a lake, river, or ocean, is gradually worn away and reduced in size due to the action of natural forces such as waves, currents, and winds.
- This can result in the loss of land, damage to infrastructure and property, and changes to the local ecosystem.
- Shoreline erosion can occur naturally over long periods of time, but human activities such as coastal development and climate change can accelerate the process.

Impact on Chilika lake:

- Chilika lake is the largest brackish water lake in Asia, with rich biodiversity created and nurtured by a delicate salinity gradient. This gradient is maintained by seawater flowing into the lake through the mouth and freshwater from 52 rivers and rivulets.
- However, the combined impacts of a dynamic mouth, extreme sea level events, and cyclones have altered the salinity gradient and affected the biodiversity and livelihoods of people who depend on it.
- **Impact of Cyclone Fani:** In 2019, intense storm surges during cyclone Fani opened four new mouths in Chilika lake. While two of the mouths closed in April 2022, two others are still open, resulting in a sustained opening of new mouths, which has never happened before. The opening of new mouths has altered the salinity gradient of the lake and negatively affected the fish catch, with some villages reporting a reduction of up to 80%.
- **Impact on Biodiversity:** The altered salinity gradient has also affected the biodiversity of the lake, with the movement of the 80-m-long mouth that opened in 2001 towards the north due to erosion further exacerbating the problem. The livelihoods of people who depend on fishing for a living have been severely impacted, and some families have planned to migrate to other states in search of livelihood.

Measures Being Taken:

- The government has been implementing measures to stabilize select areas of the state's coastline since 2012.
- The Union environment ministry had prepared an Integrated Coastal Zone Management Plan (iczm) to be implemented on a pilot basis in Odisha, along with two other states prone to shoreline erosion – Gujarat and West Bengal.
- However, the implementation of pilot investment activities that did not emerge from the iczm plan resulted in inordinate delay in the preparation of the plan.
- The implementation of the plan has been further delayed due to implementation flaws and unsuitability of measures for the state's highly dynamic shoreline.
- The state government plans to deploy geosynthetic tubes – large tube-shaped bags made of porous, weather-resistant synthetic material filled with sand – to tackle coastal erosion along the coast of Podampeta and Ramayapatnam in the second phase of iczm project.
- However, there is no clarity on when this phase will be implemented. Meanwhile, residents and analysts caution against mindless implementation of the technique.

Mangrove Restoration and Plantation:

- Before Cyclone Fani hit the state, a massive mangrove plantation was carried out under ICZM on the islets near Arakhakuda village between 2014 and 2019.
- While mangrove restoration and regeneration is being used globally as an ecosystem-based solution to protect the coast from the impacts of climate change such as storm surges, the 60 ha where the plantation was carried out was not suitable for mangroves.
- During Cyclone Fani, the mangroves were not mature enough, and many of them were lost to the storm surge.

Expert Suggestions:

- Experts suggest that the state government must not repeat the mistakes made during the mangrove plantation and ensure that any coastal adaptation measures implemented under the Enhancing Climate Resilience of India's Coastal Communities (ECRICC) project and ICZM project involve local communities in the decision-making process.
- The livelihoods of local communities must be taken into account before these measures are planned to avoid maladaptation.

Conclusion:

- Odisha's coastal villages are facing a serious crisis due to rising sea levels and shoreline erosion. The impact of this crisis is being felt across the state, with many villages already facing immense damage.
- While the government has been implementing measures to tackle the crisis, there is a need for more effective and timely implementation of these measures.
- In the face of this crisis, it is essential to ensure that the local communities and biodiversity are protected, and the impact of rising sea levels and extreme sea level events is minimized.

3. Chhattisgarh women lead efforts to end stigma against leprosy

Context: Women's Self-Help Group Sahara in Chhattisgarh brought changes in Leprosy Awareness and Livelihood.

Sahara's Role in Leprosy Awareness:
- The Leprosy Mission Trust India identified the lack of awareness and treatment options for leprosy patients in Amoda village.
- Sahara was set up to spread awareness about the disease, with a focus on women's participation.
- The SHGs efforts have resulted in increased awareness and understanding of leprosy and its treatments in the village.

Sahara's Role in Livelihood Improvement:
- Sahara has helped many women, who were former leprosy patients in starting livelihood. For instance - Hamida Begum, a former leprosy patient and a member of Sahara, started a bangle shop with the help of the SHG.
- During the COVID-19 lockdowns, the SHG helped her avail financial assistance, which she used to expand her business and increase her income.
- The SHG also focused on mushroom cultivation as a means of improving livelihoods, with impressive returns on investment.

Sahara's Role in Women's Empowerment:
- Sahara has played a crucial role in increasing women's participation in local governance.
- The SHGs efforts have helped women access government schemes and support for housing and ration cards.
- Women in Amoda village have come together to spread health awareness, learn about their rights, and participate in local governance.

What are Self-Help Groups (SHGs)?
- Self-Help Groups (SHGs) are small voluntary groups of people who come together to address common issues and problems.
- SHGs empower members, especially women, by providing a platform for social, economic, and political participation. They have become an important tool for poverty alleviation and women's empowerment in India.
- One example of a successful SHG is Sahara, located in Amoda village, Jajangir Champa district, Chhattisgarh.
- Sahara was founded by women affected by leprosy with the help of The Leprosy Mission Trust India.
- The SHG has played a critical role in raising awareness about leprosy, combating stigma, and improving the livelihoods of its members.

Conclusion:
- Sahara's success story illustrates the transformative impact of SHGs on rural communities.
- It highlights the role of SHGs in promoting women's participation in local governance, fighting social stigma, and providing economic opportunities to marginalized groups.
- The success of SHGs like Sahara has led to their widespread adoption across India, with more than 6 million SHGs active today.

4. Women rising

Introduction:
- Women's role in politics and governance in India has increased in recent years. Women are becoming an important electoral group, and political parties are using women-centric themes in their policies to woo them.
- Along with this, women-led self-help groups (SHGs) are emerging as a point of focus for politics and policy.
- The government has introduced women-centric policies, and the Union Budget for 2023-24 also focuses on advancing SHGs to help them grow into large producer enterprises for economic empowerment.

The Role of Women-led SHGs:
- India has around 12 million SHGs, and 88 per cent of them have only women members. SHGs are community-led and run initiatives that ensure economic opportunities for their members, leading to their social and political upliftment.
- SHG members are making Covid-19 protective equipment, masks, and sanitizers, educating communities and people about the importance of vaccination, spreading awareness around social distancing, and spearheading community kitchens.

Empowerment of Women:
- Women-led SHGs provide access to property and mobilize finance, and they are emerging as small microfinance institutions where women can bank on each other for lending and saving.
- SHGs are also providing women with opportunities to diversify their livelihoods for improved incomes and socio-economic growth.
- The Union rural development ministry has envisaged a target of creating "lakhpati SHGs" to enable rural women members of the SHGs to earn at least 31 lakh per year.

SHGs as Community Resource Persons:
- SHGs have empowered nearly 0.4 million members through training programmes to transform them into community resource persons, such as bank sakhis, pashu sakhis, poshan sakhis, and take up other such roles.
- Bank sakhis are women in charge of SHGs banking and bookkeeping activities.
- SHG members are also trained on best practices for livestock rearing and advising other farmers on the same.
- They are then appointed as pashu sakhis under joint convergence programmes of DAY-NIM and the Centre's Department of Animal Husbandry.

Conclusion:
- Women-led SHGs are not just important for their own economic empowerment but also for the overall economic growth of rural areas.
- Through their initiatives, SHG members are silently contributing to rural economic growth. The government needs to provide support to SHGs to help them overcome challenges in market access, marketing, and quality checks.

5. Disturbed - The Global Water Crisis :

Context: Water is one of the most essential resources for human existence, but the world is facing a severe water crisis.
- The UN predicts that the demand for freshwater will exceed supply by 40 per cent by 2030, and the impacts of climate change are felt through water in many parts of the world.
- The UN is holding its first conference on freshwater in almost 50 years, and it aims to accelerate action on existing water-related commitments.

Water Challenges and Solutions:
The concept papers prepared by the UN for interactive dialogues highlight the challenges and solutions for water management in different areas.

Water for Health:
- Access to clean and sustainable sources of water is imbalanced, and over 2 billion people live in countries that experience high water stress.
- Poor water quality and sanitation lead to health problems, such as waterborne diseases, which affect vulnerable populations the most.
- The solution lies in investing in water infrastructure, improving sanitation facilities and hygiene practices, and providing access to safe drinking water and sanitation services for all.

Water for Sustainable Development:
- Sustainable Development Goal 6 aims to achieve universal access to safe and affordable drinking water and sanitation for all.
- However, progress has been slow, and investment in drinking water services has not reached everyone.
- The solution lies in prioritizing water management in development plans, setting ambitious targets, and increasing funding for water infrastructure.

Water for Climate, Resilience, and Environment:
- Climate change impacts affect the availability, quality, and quantity of water, leading to water shortages, floods, and droughts.
- Transboundary basins shared by many countries face the greatest risks.
- The solution lies in building resilience to climate change through water management policies and practices, investing in adaptive measures, and promoting cooperation among countries.

Water for Cooperation:
- Water is a shared resource that requires cooperation and coordination among different stakeholders, including governments, communities, and private sectors.
- However, competition and conflict arise when water becomes scarce and polluted.
- The solution lies in promoting dialogue, trust, and joint management of water resources, involving all stakeholders, and resolving conflicts through peaceful means.

The Water Action Decade:
- The Water Action Decade (2018-2028) aims to address the global water crisis through ambitious targets and collective action.
- However, progress has been slow, and the world is not on track to achieve SDG 6 and related targets by 2030.
- The solution lies in renewing commitments, increasing political will and funding, and promoting innovative approaches to water management.

Conclusion:
- The global water crisis is a complex and urgent challenge that requires transformative water management policies and practices.
- The UN conference on freshwater provides a unique opportunity for countries to renew their commitments and accelerate action on existing water-related commitments.
- It is time to act and ensure access to clean and sustainable sources of water for all.

6. Western Disturbances and their impact on India's weather patterns

Introduction:
- India's winter season has been abnormal for the past three years. The primary cause of this change is the changing character of Western Disturbances.
- Western Disturbances are a series of cyclonic storms that originate in the Mediterranean region and travel over 9,000 km to bring winter rains to northwest India.
- They help farmers in India grow their rabi crop, bring snow to the Himalayas, and maintain the flow of the northern rivers.
- In this article, we will delve deeper into the impact of Western Disturbances on India's weather patterns.

> **What are Western Disturbances?**
> - Western Disturbances are cyclonic storms that form over land, and they occur mostly in the Mediterranean region due to a temperature gradient caused by the mixing of warm air from the tropics and cold air from the northern polar regions.
> - They occasionally form as far as in Alaska or the Arctic region. A Western Disturbance is in the shape of a spiral with a narrow mouth at the bottom and a wide mouth at the top.

Impact of Western Disturbances on India's weather patterns:
- Western Disturbances help in bringing winter rains to northwest India, which is crucial for the growth of rabi crops.
- They also bring snow to the Himalayas, which is important for the replenishment of glaciers that feed major Himalayan rivers like the Ganga, Indus, and Yamuna as well as mountain springs and rivulets.
- However, not everything that Western Disturbances bring is good. They are responsible for hailstorms that damage standing crops, fog events that interrupt air, rail and road services, and cloud bursts that result in flash floods.

The changing character of Western Disturbances:
- The reason for the abnormal winter seasons since 2020-21 lies in the changing character of the Western Disturbances. The storm systems' arrival has either been delayed or weakened since 2019.
- On an average, India receives four to six intense Western Disturbances a month between December and March, or 16 to 24 such events in the entire period.
- However, this winter season, the country has received only three intense Western Disturbances: two in January and one in March.

Impact of weak Western Disturbances:
- Weak Western Disturbances lead to severe cold waves and cold days in the north Indian plains in December and most of January due to the cold northern winds flowing down from the Himalayas.
- The lack of clouds formed by the Western Disturbances has a moderating effect on the maximum temperatures during the winter season. As a result, the country experienced its hottest ever December in 2021.

Impact of high temperature on crops:
- A strong Western Disturbance would have dissipated the high pressure caused by the formation of a high pressure area near the land surface, which caused the air to descend, compress, and heat up.
- The high temperature during the flowering and maturing period leads to the loss in yield of crops.
- Last year, high temperatures in March due to weak Western Disturbances damaged 30-40% of the wheat crop in Punjab, Haryana, Himachal Pradesh, Uttar Pradesh, and Madhya Pradesh.

Conclusion:
- Western Disturbances play a crucial role in India's weather patterns, especially during the winter season.
- Weak Western Disturbances lead to severe consequences such as crop damage, severe cold waves, and cold days in north India, and a rise in maximum temperatures.
- Therefore, it is essential to understand the changing character of Western Disturbances and their impact on India's weather patterns.

7. Extinction Risk

Introduction:
- Extreme weather events and rising input costs make betel leaf cultivation unviable in Mahoba, nearly destroying the unique Desawari variety that received Geographical Indications tag in 2021

Betel leaves
- Betel leaves, along with areca nuts and other assorted condiments, are chewed as mouth fresheners across the Indian subcontinent.
- Betel leaf is a highly profitable crop which lasts for two to three years; harvesting is done once every month.
- The leaves are sensitive to variations in temperatures and rainfall.
- Too much rain, or temperatures below 6°C or above 45°C, destroy them.

Mahoba Desawari betel
- Mahoba Desawari variety, which practically dissolves in the mouth and has a unique fragrance.
- It fetches double the price than most other varieties.

Challenges faced by farmers
- The number of pan growers in Mahoba has gone down by 75 per cent from 410 in 2000, while the area under the crop has reduced by 95 per cent.
- The rise in input costs has also made farming pan unviable.
- Setting up a bareja requires bamboo, iron wire mesh and straw, among other things.
- Prices of these items have increased fivefold since 2000.
- The cost of cultivating about 0.2 ha in 2000 was Rupees 1.5 lakh. Today it is Rupees 5 lakh. But income from pan sales has not seen a proportionate increase.
- The increase in the sale of gutkha (flavoured areca nuts) has also caused a fall in pan sales.

Initiatives by the government
- The Paan Protsahan Yojana, introduced in 2018 under the Rashtryia Krishi Vikas Yojana, covers 50 per cent cost borne by a farmer in setting up a bareja.
- Betel leaf is covered under Pradhan Mantri Fasal Bima Yojana.

Way forward
- The government should promote value-added products made from pan.
- Oil extracted from the pan is in great demand and sells for R1 lakh a kg. It is used in ayurvedic medicines and in making pan-flavoured candies, sweets and ice creams.

8. Climate's clear connect

Introduction:
- Climate change-linked diseases and crises have seen a clear rise across Africa in the past five years.
- Malawi is in the throes of its worst-ever cholera outbreak right after three cyclonic events hit the African country in 2022.
- Nigeria faces the same scourge after its heaviest floods in a decade last year.
- Kenya's most severe drought in four decades has also been followed by a cholera outbreak.

Health hazards in African Countries:
- **Diarrhoea:** The acute diarrhoeal infection, caused by consuming food or water contaminated with bacterium Vibrio cholerae, has been endemic to Malawi since 1998.
- **Malaria:** According to WHO's "World Malaria Report 2022", some 96 per cent or 238 million of all cases and 98 per cent or 603,877 of all deaths due to the disease occurred in Africa in 2021.
- **Measles:** Between January and March 2022, sub-Saharan Africa recorded a 400 per cent increase in measles cases.
- **Zoonotic diseases:** A July 14, 2022 analysis by who shows that Africa has seen a 63 per cent rise in outbreaks of zoonotic diseases in 2012-22 compared to 2001-11.

Climate-related health emergencies:
- Of the 2,121 public health events in the continent in the two preceding decades, 56 per cent were climate-related.
- Waterborne diseases like cholera accounted for 40 per cent of climate-related health emergencies; vector-borne diseases, notably yellow fever, accounted for 28 per cent of climate-related health emergencies.
- Zoonotic diseases, specifically Congo Crimean haemorrhagic fever, were the third most prevalent.
- 58 per cent (218 of 375) of infectious diseases faced by humanity have been at some point aggravated by climatic hazards. These include dengue, chikungunya, West Nile virus, Zika and malaria which are regularly reported by African countries.

Extreme climatic events and disease outbreaks:
- Analysts see a clear link between the uptick in cholera cases and the unprecedented monsoons, major floods and a succession of cyclones.
- The outbreak started after three tropical storms hit southern Malawi one after the other
- The region was flooded and over 1 million people were displaced and took shelter in cramped tents in swampy areas without access to safe water and sanitation. This aggravated the situation
- Tropical cyclones and floods destroyed most of the water and sanitation facilities in the southern region, and this was the start of the current problem of cholera.

Climate change being a causative factor:
- **Global warming:** The Intergovernmental Panel on Climate Change (ipcc), suggests that Africa is warming faster than the rest of the world on average. Rainfall will decrease in northern and southern Africa, and increase in the Sahel region.
- Climate change is a risk factor for disease surges due to increased rainfall and warmer temperatures.
- High temperatures can cause increased levels of pathogen growth and spread, while increased rainfall can lead to flooding, which can compromise water sources and lead to more cases of cholera.
- These lead to the displacement of large populations and overcrowding in camps, without sufficient supplies of clean water and food, leading to a perfect environment for disease outbreaks like cholera.
- Studies show this spread is due to climate change-induced favourable conditions. Malaria epidemics often occur after periods of unusually heavy rainfall.
- Warming in the east African highlands is allowing malaria-causing Anopheles mosquitoes to survive in higher altitudes.
- The virulence and survival of the measles virus in the air is mainly influenced by temperature and relative humidity.
- Increased encroachment on natural habitats, mining, and logging create an interface between humans and animals, leading to a spillover event or species jump.

Way forward
- The crisis needs a cross-sectoral working relationship within countries involving health and other ministries and departments.
- For the response and mitigation to be effective, it might require legislation or programmes that cut across more than one portfolio.
- Need support and advocacy within governments on the importance of paying attention to the link between climate change on public health.
- Need funds for adaptation to help build health centres that are more resistant and tolerant to extreme weather events.
- Incorporated health in Nationally Determined Contributions, or other climate action plans to cut emissions and adapt to climate impacts.
- Africa must foster cross-border, regional and global partnerships. Working together will help identify gaps and formulate practical response strategies, and guidelines on issues such as water scarcity, food security and sanitation for all.
- Within countries, Africa will need cross-sectoral collaborations on both research and response.
- At the regional level, there is a need for cross-border collaborations because some climatic conditions and ailments go beyond borders.

Conclusion
- African countries must urgently build climate-resilient health systems. A climate-resilient health system is one that is designed and implemented to withstand and adapt to the impacts of climate change. It recognises how climate change significantly influences human health, and the system seeks to address these climate-induced challenges with a multidisciplinary approach. These systems can anticipate, prevent, prepare for, and manage climate-related health risks.

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