



UPSC MONTHLY CURRENT AFFAIRS MAGAZINE

EDITION : DECEMBER 2022

Now even more
**COMPREHENSIVE
& HOLISTIC**



Important Current Affairs.
Six Sources. One Place.

THE HINDU
INDIA'S NATIONAL NEWSPAPER SINCE 1858

 **Kurukshetra**

 **YOJANA**

 **The Indian EXPRESS**

DownToEarth
CONCERNED WITH ISSUES OF DEVELOPMENT, ENVIRONMENT AND HEALTH

 **Science Reporter**

Outstanding performance by BYJU'S students in IAS 2021

Congratulations to our toppers

03

Ranks in
Top 10

12

Ranks in
Top 25

25

Ranks in
Top 50



RANK 01

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
Prabhesh Kumar



Rank 32
Avdesh 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

TABLE OF CONTENTS

<p>1. POLITY 12-27</p> <ul style="list-style-type: none"> ● Appointment and the Independence of Election Commission ● The impasse over the appointment of judges ● Lokayukta in Maharashtra ● Personality rights ● Karnataka and Maharashtra border dispute ● Article 200 of the Indian Constitution ● No uniformity in parole and furlough rules ● Committee on Content Regulation in Government Advertising (CCRG) ● Inter-State River Water Disputes Tribunal ● Committee to Protect Journalists ● Assam Accord ● Zonal Councils ● Rule 267 of the Rajya Sabha rulebook ● Ministry evades direct reply on demand to include Ladakh under 6th Schedule <p>2. ECONOMY 28-44</p> <ul style="list-style-type: none"> ● Reserve Bank of India's e-rupee ● The sustained growth in remittances ● RBI Report and Municipal Bonds ● Scenarios for the future of India, and the world ● Delhi HC verdict on 'Rooh Afza' trademark? ● The lingering labour crisis post-pandemic ● Port-led development: Sagarmala projects ● Vizhinjam port project ● What is causing delays and chaos at Delhi airport? ● India's Slowing Exports ● The rise of rural manufacturing ● Contract workers ● India favoring Foreign Trade Agreements (FTAs) ● Interest rates on several small savings plans ● Factors of production ● DGTR proposes anti-dumping levy on Indonesian viscose fibre <p>3. INTERNATIONAL RELATIONS 45-58</p> <ul style="list-style-type: none"> ● Russian Oil Price Cap ● India's foreign policy ● Connecting India's East with the Indo-Pacific ● Europe's concerns about the U.S. IRAX` ● BIMSTEC for South Asian regional order ● Focus on Africa, the heart of the Global South ● India-China face off in Tawang ● China's moves in the Indian Ocean ● The role of the 'China Test' in India's grand strategy ● India and Taliban ● Developments in India-Maldives Relations <p>4. ART AND CULTURE 59-64</p> <ul style="list-style-type: none"> ● Forging a connect along the Ghats ● Geographical Indication (GI) Tag ● Dokra metalcraft ● Three more sites added to tentative list of UNESCO ● Joynagar Moa ● Srimukhalingam temple ● PRASAD Project 	<p>5. SCIENCE AND TECHNOLOGY 65-76</p> <ul style="list-style-type: none"> ● Private Sector In India's Space Program ● Science and Technology in Agriculture ● Deepfake technology: how and why China is planning to regulate it ● Scramjet engine ● ChatGPT ● The challenges of quantum computing ● The uncontrolled re-entries of satellites ● Bharat Biotech's nasal COVID vaccine ● Patriot Missiles ● Gene Therapy ● "Dark Patterns" on the Internet ● ISRO inks MoU to establish SpaceTech Innovation Network ● B-21 Raider ● Lunar Mission by Japan <p>6. DEFENCE AND INTERNAL SECURITY 77-83</p> <ul style="list-style-type: none"> ● Ransomware attacks ● End-to-End Encryption ● The INS Mormugao and its capabilities ● Countering terror ● United Liberation Front of Asom (Independent) ● AGNI-V Missile ● Vagir <p>7. ENVIRONMENT AND ECOLOGY 84-101</p> <ul style="list-style-type: none"> ● Kunming-Montreal Global Biodiversity Framework (GBF) ● Wildlife (Protection) Amendment Bill ● Forest rights and heritage conservation ● Poor soil management will erode food security ● Coastal Erosion ● Marine Plastic Pollution ● What are carbon markets and how do they operate? ● Freshwater Turtles ● Rhino and Elephant conservation efforts ● Cheetahs and tigers: the saga of big cats in India ● Three Himalayan medicinal plants enter IUCN Red List ● Koundinya Wildlife Sanctuary ● Badri Cow Breed ● Lisu wren babbler <p>8. HEALTH ISSUES 102-109</p> <ul style="list-style-type: none"> ● Micronutrient malnutrition ● Benefits of reducing salt intake ● Antimicrobial Resistance ● Need to make cancer drugs affordable ● What is the proposal to ban the sale of single cigarettes? ● Curbing individualism in public health ● Ni-kshay Mitras <p>9. HISTORY 110-110</p> <ul style="list-style-type: none"> ● Veer Baal Diwas
---	--

- 10. SOCIAL JUSTICE 111-116**
- Age of Consent Issue
 - 81 cr. people to get free foodgrains for one year
 - A retelling of the Indian migrant worker's plight
 - A strong case exists for marriage equality
- 11. GOVERNANCE 117-128**
- TRAI proposing to help callers identify spammers?
 - The debate around conjugal visits for prisoners
 - Cooperative Societies Act
 - Working of RTI Act
 - Good governance
 - What do the J&K Land Grants Rules, 2022 entail?
 - Bihar's prohibition policy is not working
 - Old Pension Scheme (OPS)
 - CAG audit report on Assam's NRC?
 - Jan Vishwas Bill, 2022
 - 'Right to Repair' Portal
- 12. DISASTER MANAGEMENT 129-129**
- Road safety and environmental sustainability
- 13. GEOGRAPHY 130-131**
- Cyclone Mandous
 - Kalasa-Banduri drinking water project
- 14. INDIAN SOCIETY & SOCIAL ISSUES 132-135**
- Indian politics needs a dose of new experimentalism
 - Awareness on population control
 - Hattee community
- 15. MISCELLANEOUS 136-138**
- Palm-leaf manuscript museum in Kerala
 - Beypore Uru
 - Orans: Sacred Groves of Rajasthan
 - 'Kasturi'
 - Prajjwala Challenge
- 16. YOJANA 139-144**
- Restructuring Urban Galaxies
 - Central Vista Redevelopment Project
 - Development of Historic City Centres
 - Brihadeeswara Temple-A Stand Alone Marvel
 - Statue of Unity
 - Universal Public Designs
 - Architecture for Health and Well-Being
- 17. KURUKSHETRA 145-151**
- Bridging the Digital Divide
 - Technology Integration for Quality Education
 - Mobile Governance
 - e-Governance in Health Service Delivery
 - Citizen Participation and Rural Well-being
 - New Age Technology
 - E-Governance in Tourism
- 18. SCIENCE REPORTER 152-153**
- 5G: The Promise of Zippier Speeds!
 - Social Media to Amplify Scientific Research
 - Nobel Prize: Chemistry
 - Occupational Health Issues- Preventive Measures Necessary
 - Remembering Har Gobind Khorana on his Birth Centenary Year 2022
- 19. DOWN TO EARTH 154-155**
- Dunkel Draft: SPLIT ON AGRI-LIBERALISATION
 - KYOTO PROTOCOL: GHOST WILL RETURN
 - VULTURE: FLIGHTS INTO OBLIVION
 - BHOPAL GAS TRAGEDY: SUBTERRANEAN LEAK
 - ZONOTIC DISEASES: RISE OF PANDEMICS

BYJU'S IAS present another comprehensive learning program for UPSC aspirants.

The **BYJU'S Home Learning Program (BHLP)** provides you with the opportunity to attend live classes conducted by India's best IAS faculty, from the comfort of your homes, assuring you uninterrupted learning so that you can clear the IAS exam with ease. Check the program details below.

Here's how you can get started:

- Attend Live Classes by India's Leading IAS Trainers
- Choose a slot that works best for you

Morning Batch	Evening Batch	Weekend Batch	
Monday to Friday 06:30 AM to 09:00 AM	Monday to Friday 05:30 PM to 08:00 PM	Saturday 02:00 PM to 08:00 PM	Sunday 10:00 AM to 06:00 PM

- Participate in the 'Doubt Destroyer' session

How will **BYJU'S Home Learning Program** help you in your preparation?



Test Yourself: Evaluate your performance by attending weekly MCQ-based and descriptive tests.



IAS Tab: Get a complimentary IAS learning tab with pre-recorded video lectures for revising important concepts and topics.



Comprehensive Study Material: Study material provided is complete and includes well-known books like Indian Polity by M Laxmikanth, Ancient History by R S Sharma, etc.



Current Affairs Webinars: Be a part of the two-hour live sessions every Tuesday and Thursday for Current Affairs analysis of major newspapers, magazines, and RSTV debates.



Exclusive access to BYJU'S IAS Student Portal: This provides you with unlimited access to Prelims and Mains based questions, Monthly Magazines covering Current Affairs, 'Issues In News', and recorded webinar sessions.



Mentor Support: You will be assigned a mentor who will guide you throughout your preparation process.

For more information about the program contact us at iaslive@byjus.com or call us on +91 9241333666.

Stay safe and Keep Learning!

Team BYJU'S

Learn From Home

YEAR LONG TIMETABLE

(Weekend Batch)

Saturday - 12:00 PM to 8:00 PM

Sunday - 10:00 AM to 8:00 PM

Slots	Batch 1	Batch 2	Batch 3	Batch 4	Batch 5
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
December (11, 17, 18, 24 & 31) + January '23 (07, 08, 14, 15, 21 & 22)	Ethics + Governance	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT
January '23 (28 & 29) + February '23 (04, 05, 11, 12, 18, 19, 25 & 26) + March '23 (04)	Internal Security + CSAT	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture
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
April '23 (15,16,23,29 & 30) + May '23 (06,07,13,14,20 & 21)		Focus Prelims	Focus Prelims	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management
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
1st September to 30th September, 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023

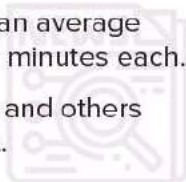


YouTube Channel



The Hindu News Analysis

- Analysis of "The Hindu" in a crisp and well-explained format.
- The videos are short, with an average length of not more than 25 minutes each.
- Ideal for working aspirants and others who have a time constraint.



[Click Here](#)

Economy This Week

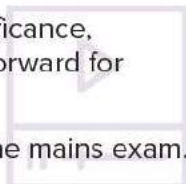
- Round-up of all the important topics in Economics every week.
- Watch video analysis of the weekly business news.
- Notes provided in an easily downloadable PDF format.



[Click Here](#)

Explained: Issues In News

- Short and crisp videos to explain the issues in news relevant for UPSC.
- Covers: Background, significance, current updates and way forward for each issue.
- Helps to cover topics for the mains exam.



[Click Here](#)

Strategy & Analysis

- How to prepare for Civil Services Exam.
- Important sources and strategy.
- Previous year question paper analysis.



[Click Here](#)

POLITY

1. Appointment and the Independence of Election Commission

Syllabus: Election Commission of India

Mains: Election Commission of India and its functions

Context: The ongoing hearing before the Supreme Court on the need to have a neutral mechanism for the appointment of Election Commissioners raises questions on the body's functional independence.

Introduction:

- A five-judge Constitution Bench of the Supreme Court is examining a bunch of petitions recommending reforms in the process of appointment of members of the Election Commission.
- A batch of four public interest litigations (PILs) pressed for the issuance of directives to the Centre for setting up a neutral and independent selection panel for recommending names to the President for appointments as Chief Election Commissioner (CEC) and Election Commissioners (ECs).
- The Supreme Court Bench is also expected to examine electoral reforms suggested to governments by successive Election Commissions over the last two decades or so.
- A list of over 20 reform proposals was compiled in 2004. More proposals were added to the list over time and are pending with the government.
- These range from strengthening the Commission's inherent structure to handling the misuse of muscle and money power during elections that violate the Model Code of Conduct.

Appointment and autonomy of CEC and ECs

- At present, ECI is a three-member body, with a CEC and two ECs.
- Under **Article 324(2)** of the Constitution, the President is empowered to appoint the CEC and ECs.
- This provision further stipulates that the President, who **acts on the aid and advice of the Prime Minister and the council of ministers**, will make the appointments "subject to the provisions of any law made in that behalf by Parliament".
 - However, with no such law having been framed till date, CEC and ECs are appointed by the Prime Minister and the council of ministers under the seal of the President.
- **Security of tenure** - term of 6 years or until they attain 65 years.
- Further, CEC cannot be removed from his office except in the same manner and on the same grounds as a Judge of the Supreme Court.
- The Election Commissioners cannot be removed from office except on the recommendation of the Chief Election Commissioner.

Current issues with appointments:

- The rules for such appointments are silent on the qualification of a candidate. This may result in the:
 - Likelihood of bias in the appointments
 - Possibility of biased conduct by CEC and ECs in the future
 - Scope for personal whimsy in appointments of EC
- Uncertainty over the elevation of an Election Commissioner to the post of CEC makes them vulnerable to government pressure.
- The ECs must also be provided with security of tenure as they can be removed from office on the CEC's recommendation.
 - Without the security of tenure, they may hesitate to act independently, which they otherwise might if they were truly secure.

Various recommendations on appointments to Election Commission:

- The **Dinesh Goswami Committee** in 1990 suggested that the CEC be appointed by the President in consultation with the Chief Justice of India and the Leader of the Opposition (and in case the Leader of the Opposition was not available, then consultation be held with the leader of the largest opposition group in the Lok Sabha). It said this process should have statutory backing.
 - It also applied the same criteria to the appointments of ECs, along with consultation with the CEC.
- The **National Commission to Review the Working of the Constitution**, under Justice M.N. Venkatachaliah, said that the CEC and other ECs should be appointed on the recommendation of a body comprising the Prime Minister, the Leaders of the Opposition in the Lok Sabha and the Rajya Sabha, the Speaker of the Lok Sabha and the Deputy Chairman of the Rajya Sabha.
- The **255th Report of the Law Commission**, chaired by Justice A.P. Shah, said the appointment of all the ECs should be made by the President in consultation with a three-member collegium consisting of the Prime Minister, the Leader of the Opposition of the Lok Sabha (or the leader of the largest opposition party in the Lok Sabha), and the Chief Justice of India.

- It also suggested measures to safeguard ECs from arbitrary removal similar to the CEC, who can only be removed by impeachment.
- The Supreme Court in its judgement in the **T.N. Seshan case 1995**, conferred equal powers on the ECs as those enjoyed by the CEC and even offered majority power, whereby any two can overrule even the CEC.

'Fourth Branch Institution' of Modern Democracy

- As per the classical understanding of modern democracy, there are 3 "wings" of the state: the legislature, the executive, and the judiciary.
 - Conventionally, bodies that are involved with administrative and implementation issues like elections fall within the executive domain.
- However, in contemporary times, it is a well-accepted fact that healthy constitutional democracies require "fourth branch institutions" as various basic rights and guarantees cannot be effective without an infrastructure of implementation.
 - For instance, without an infrastructure of implementation, the right to information will remain only a paper guarantee.
 - Therefore an adequately staffed and funded Information Commission is required to oversee the enforcement of the right.
- The "fourth branch institutions" should be functionally independent of the political executive because they are the vehicles for implementing rights against the executive.
 - **For example:** citizens invoke the right to information to extract public information from government departments for transparency.
- Governments have a direct interest in these cases. Thus to be effective, these institutions must be thoroughly independent of the government.

Examples from different countries:

- The Constitutions of South Africa and Kenya have dedicated constitutional provisions for "fourth branch institutions" like Human Rights Commissions, Election Commissions, etc. calling them "integrity institutions", and requiring them to be "independent."
- The appointment procedure for these bodies usually involves multiple stakeholders from different wings of the state.
- The constitutional court of South Africa observed in one of its landmark judgments that true and functional independence is effectively impossible if the power to appoint rests entirely within a single individual/office/entity.

Way Forward:

- It is important to note that nearly no constitutional democracy in the entire world allows the political executive sole power to staff a body as important to sustaining democracy as an Election Commission.
- Therefore, accepting and implementing various recommendations made by previous Commissions would go a long way in strengthening the independence of the Election Commission.
- The CEC and EC should be appointed by a collegium and the collegium should be wide-based with selection by the top constitutional luminaries of the country.
- The Election Commission must also be protected equally from arbitrary removal with a constitutional amendment to provide the same removal process to other election commissioners that currently applies only to the CEC.
- Functional and effective independence from the executive, from the moment of appointment to retirement, and then beyond should be the guiding principle.

Nut Graf: *The ECI helps in conducting elections with the highest standard of credibility, fairness, transparency, integrity, accountability, autonomy and professionalism which is crucial for a vibrant Democracy. Accepting reforms mooted by previous panels will strengthen the Election Commission's independence.*

2. The impasse over the appointment of judges

Syllabus: Structure, organization and functioning of the Judiciary

Prelims: About National Judicial Appointments Commission (NJAC)

Mains: Collegium System and NJAC, and the Supreme Court's judgment on NJAC

Context

The ongoing debate between the Union Government and the Supreme Court over the matter of judicial appointments.

The tussle between the Government and the Supreme Court

- The Union Law Minister criticised the Supreme Court Collegium by saying that the court was “preoccupied” with making judicial appointments instead of focusing on its main function which is to deliver justice.
- The Minister also raised concern over the lack of accountability of the Collegium system and criticised the Supreme Court's move of striking down the National Judicial Appointments Commission (NJAC) Act in 2015.
- The Union Law Minister had earlier described the Collegium system as “alien” to the Constitution.
- Further, the Vice-President of India also made reference to the 2015 judgement of the Supreme Court and questioned how the judiciary struck down a unanimously-passed constitutional provision that reflected the will of the people.
- The Court also began its counter-offensive with a Supreme Court Bench raising concerns over the delay in judicial appointments as the government is delaying Collegium recommendations for years together for undisclosed reasons.
- The Supreme Court Bench also said that the court is not stopping the government from introducing a new law on judicial appointments and the Collegium system and its Memorandum of Procedure (MoP) would be the final word till a new law is enacted.
- Meanwhile, the Chief Justice of India (CJI) has opined that the Government and the Collegium must work with a sense of “constitutional statesmanship” instead of highlighting each other's faults.

National Judicial Appointments Commission (NJAC)

- Parliament in 2014 through the **99th Constitutional Amendment Act** and the **National Judicial Appointments Commission (NJAC) Act**, set up NJAC which was entrusted with the task of appointing judges to the Supreme Court as well as High Courts.
- NJAC was to replace the existing collegium system which has evolved through various judgements of the Supreme Court over the years.
- **Articles 124 and 217** of the Indian Constitution deal with the appointment of judges to the Supreme Courts and High Courts of the country.
 - According to **Article 124(2)**, all the judges of the Supreme Court are to be appointed by the President after consultation with the judges of the SC and the HCs.
 - As per **Article 217**, all the judges of High Courts shall be appointed by the President after consultation with the Chief Justice of India, the Governor of the State, and, in the case of appointment of a Judge other than the Chief Justice, the Chief Justice of the respective High Courts.
- The 99th Constitutional Amendment Act (99th CA Act) introduced three Articles namely:
 - **Article 124A:** Provisions to set up the NJAC as a constitutional body to replace the collegium system.
 - **Article 124B:** Empowered the NJAC to make appointments to courts.
 - **Article 124C:** Accorded authority to the Parliament to make laws regulating the manner of the NJAC's functioning.
- As per the NJAC Act, the Chief Justice of India and Chief Justices of the HCs would be recommended by the NJAC based on seniority and the judges of the Supreme Court and High Court were to be recommended based on their ability, merit, and other such criteria mentioned in the regulations.
- **Composition of the NJAC:** The Chief Justice of India, two senior most judges of the Supreme Court, the Law Minister and two eminent persons.
- Additionally, the NJAC Act empowered any two members of the NJAC to veto a recommendation if they did not agree with it.
- The two Bills (99th CA Act and NJAC Act) were ratified by the required number of State Legislatures and got the President's assent on December 31, 2014.

Why was the NJAC challenged?

- In 2015, the **Supreme Court Advocates-on-Record Association (SCAORA)** filed a petition challenging the provisions of the 99th CA Act and NJAC Act.
- According to SCAORA, the two laws were “unconstitutional” and “invalid”.
- SCAORA had argued that the 99th CA Act which provided for the establishment of the NJAC took away the “primacy of the collective opinion of the Chief Justice of India and the two senior-most Judges of the Supreme Court of India” as their collective recommendation could be vetoed by a majority of three non-Judge members.
 - SCAORA invoked the Second Judges Case to say that the primacy extended to the Chief Justice of India had to be protected.

- SCAORA had also alleged that the amendment violated the basic structure doctrine of the Indian Constitution as the independence of the judiciary in appointing judges was an integral part of the doctrine.

Supreme Court's judgement on NJAC

- In October 2015, the five-judge bench of the Supreme Court while hearing the plea made by SCAORA ruled that the NJAC was “unconstitutional” and violated the “basic structure of the constitution” with a 4:1 majority.
- During its judgement, the Supreme Court bench also admitted that there were several shortcomings with the collegium system and that the system of judicial appointments must improve.

Collegium system, its Memorandum of Procedure (MoP) and the current procedure

- The procedure for the appointment of judges to the Supreme Court (SC) and the High Courts (HC), with respect to the recommendations by the Collegium, has been mentioned in the Memorandum of Procedure (MoP) which was drafted in 1998.
- The Collegium system is responsible for appointments and transfers in the higher judiciary of the country. This has been in practice for three decades now. The legal basis of this function is the three Judges' Cases.
 - In the First Judges Case, it was ruled that the consultation with the CJI should be full and effective.
 - In the Second Judges case(1993), the collegium system was introduced. The CJI would have to consult a collegium of the two senior-most judges of the SC on matters of judicial appointments.
 - While the Third Judges Case case (1998), enlarged the collegium to its present composition of the CJI and four senior-most judges of SC.
- According to MoP, the initiation of proposals for the appointment of SC judges is vested with the CJI and that of HC judges is vested with the Chief Justices of the respective HCs.
 - The MoP mandates the Chief Justices of HCs to start the proposals six months before the potential vacancies.

Government's issues with the Collegium system:

- **Delayed appointments:** The Central government has argued that the Collegium system is causing delays in judicial appointments to the Supreme Court and High Court.
 - According to the government data, the High Courts have not begun proposals to fill 56% of the total vacancies till November 2022.
 - There are 332 judicial vacancies in the High Courts, out of a total strength of 1108 judges.
- **Higher rate of rejection:** On average, the Supreme Court rejects 25% of the names suggested by the High Courts.
 - The delay in appointing judges has **hampered the prompt filling of vacancies in the higher courts**, denying the underprivileged section of society access to justice.
- **Striking down of NJAC:** The government is of the view that the Act did not diminish the primacy of the judiciary but rather diminished the power of the executive because the NJAC only had one member (the Law Minister) as opposed to three SC judges.
 - According to the central government, the Amendment strengthened the independence of the judiciary, checks and balances and democracy, which were all part of the basic structure.
- **Lack of transparency:** The Collegium system is based on the principle of interdependence, with little transparency.

Supreme Court's View

- **Collegium system:** The Supreme Court has ruled that the **Collegium system, in conjunction with the MoP, is the current law for appointing judges.**
- **Delay by the Government:** Supreme Court is of the view that the government is not appointing persons who are not palatable to them.
 - The Central Government has either **kept the Collegium recommendations pending for no reason** or has continually returned names reiterated by the Collegium.
- **Safeguard the rights of the citizens:** According to the court, the **judiciary must be kept completely separate and independent of other organs of government** in order to protect citizens' rights.

Nut graf: The executive as well as the judiciary must stop the blame game and come together to develop a suitable system for the appointment of judges which is in line with the democratic values enshrined in the Constitution, ensuring transparency and the independence of the judiciary.

3. Lokayukta in Maharashtra

Syllabus: Statutory, regulatory and various quasi-judicial bodies.

Prelims: Facts about office of Lokpal and Lokayukta

Mains: Important details about the office of Lokpal and Lokayukta

Context: The Maharashtra state Assembly unanimously passed the Maharashtra Lokayukta Act, 2022.

About the Maharashtra Lokayukta Act, 2022:

- **Anna Hazare Committee report:** The Maharashtra government has approved the Anna Hazare Committee report of introducing Lokayukta in the State along the lines of the Centre's Lokpal law.
- The Lokayukta will be a retired chief justice of the High Court or a Supreme Court (judge).
- The Lokayukta will have a team of five people including retired judges.
- Additional powers to the Lokayukta to direct state agencies to probe public servants which include the chief minister and state ministers.
- Additional powers to direct state agencies to undertake the investigation.
- **Process of investigation:** Any present or former chief minister of Maharashtra can be investigated by the Lokayukta only if the motion for the same is passed by the Legislative Assembly by a two-thirds majority.
 - To conduct an inquiry into present or former ministers Approval of the governor and views of the group of ministers appointed by the governor is required.
 - To probe the Legislative member approval of the Council chairperson or Assembly speaker is required.
 - To probe IAS, approval of the chief minister and the views of the chief secretary to initiate the probe is required.

What is Lokpal?

- It is an anti-corruption authority or ombudsman.
- The institution of ombudsman originated in Sweden.
- It was first proposed by Ashok Kumar Sen in the Parliament in the 1960s.
- Dr.L.M.Singhvi coined the terms Lokpal and Lokayukta.
- 2011- Jan Lokpal movement by Anna Hazare.
- 2013 - The Lokpal and Lokayuktas Act passed.
- **2019 - India's first Lokpal appointed.**

Composition of Lokpal:

- Lokpal is a statutory body.
- Lokpal is headed by a Chairperson and maximum of 8 members.
- Out of the maximum 8 members, half will be Judicial Members.

Structure of Lokpal:

- Chairperson - either a former Chief Justice of India or a former Judge of the Supreme Court or an eminent person.
- Appointed by the President.
- The **Selection Committee is composed of –**
 - Prime Minister – Chairperson.
 - Speaker of Lok Sabha.
 - Leader of Opposition in Lok Sabha.
 - Chief Justice of India or a Judge nominated by him or her.
 - One eminent jurist.
- Minimum 50% of the Members will be from SC / ST /OBC / Minorities and Women.
- The Judicial Member of the Lokpal should be either a former Judge of the Supreme Court or a former Chief Justice of a High Court.
- The Non-Judicial Member should be an eminent person.
- The members are appointed by the President on the recommendations of the Selection Committee.

Term of Lokpal:

- 5 years or till the age of 70 years.
- Salaries, allowances and service conditions of the Lokpal chairperson will be the same as those for the Chief Justice of India.
- For other members it will be the same as a Judge of the Supreme Court.

Jurisdiction of Lokpal:

- It includes Prime Minister, Ministers, Members of Parliament, Groups A, B, C and D officers of the Central Government.
- Jurisdiction of Lokpal over the Prime Minister excludes allegations of corruption relating to international relations, security, the public order, atomic energy and space.
- The Lokpal does not have jurisdiction over Ministers and MPs in the matter of anything said in Parliament or a vote given there.

Lacuna of Lokpal:

- It is not entirely free from political influence.
- The Act does not provide concrete immunity to the whistle blowers.
- Exclusion of Judiciary
- No constitutional backing

Lokayukta:

- The Lokayukta is an anti-corruption authority constituted at the state level.
- It investigates allegations of corruption and maladministration against public servants and is tasked with speedy redressal of public grievances.

Origin:

- The Administrative Reforms Commission headed by Late Morarji Desai in 1966 recommended the creation of the Lokpal at the Centre and Lokayukta in the states.
- The State of Maharashtra is the first and pioneer State in India to introduce the concept of Lokayukta by enacting the Maharashtra Lokayukta and Upa-Lokayuktas Act, 1971.

Lokpal and Lokayukta Act, 2013:

- It provided for the establishment of Lokpal for the Union and Lokayukta for States.
- The Act states that not less than 50% of the members of the Lokpal should be from among persons belonging to the SCs, the STs, OBCs, minorities and women.
- The same rules apply to members of the search committee.

Selection, Appointment and Removal of Lokayukta:

- The Chief Minister selects a person as the Lokayukta after consultation with
 - High Court Chief Justice.
 - Speaker of the Legislative Assembly.
 - Chairman of the Legislative Council.
 - Leader of Opposition of Legislative Assembly and Legislative Council.
- The Governor appoints the person selected by CM.
- After being appointed, Lokayukta cannot be dismissed nor transferred by the government, and can only be removed by passing an impeachment motion by the state assembly.

4. Personality rights

Syllabus: Constitution of India – features and significant provisions

Prelims: About personality rights

Mains: The protection of Personality rights in India and the key differences between Personality rights and Publicity rights

Context: Recently, the High Court of Delhi passed an order to prevent the unlawful use of Amitabh Bachchan's name, image and voice and asked to restrain from infringing the personality rights of the actor.

Personality Rights

- Personality rights are the rights of an individual to protect their personality under the right to privacy or property.
- Personality rights are particularly important to celebrities and well-known personalities because their names, images or voices can be easily misused by various companies to advertise and boost the sales of their products.
- A number of unique personality traits or attributes contribute to the making of a celebrity such as names, nicknames, stage names, images, and other identifiable personal properties and all of these traits must be protected.
 - Therefore, it has become important for renowned personalities or celebrities to register their names to save their personality rights.
- As a result, personality rights are seen as property rights rather than personal rights.

Personality Rights in India

- At present, there is no statute or law that protects personality rights in India.
- However, Article 21 of the Constitution of India under the right to privacy and right to publicity makes reference to the protection of personality rights.
- Other statutory provisions protecting personality rights include the **Copyright Act, 1957**.
 - As per the Act, moral rights are attributed only to authors and performers which include actors, singers, musicians, dancers, etc.
 - The provisions of the Act mandate that the Authors or the Performers have the right to be given credit or claim authorship of their work and also have a right to restrain others from causing any kind of damage to their work.
- Personality Rights are also accorded some degree of protection under Section 14 of the **Indian Trademarks Act, 1999**, which puts restrictions on the use of personal names and representations.
- Further, the Delhi High Court in its judgement in **Arun Jaitley vs Network Solutions Private Limited and Ors Case (2011)** observed that the popularity or fame of an individual will be no different on the internet than in reality.
 - The court had also stated that the name also falls in the category wherein besides it being a personal name it has also attained distinctive indicia of its own.
 - Therefore, the name due to its distinctive nature coupled with its popularity in various fields would be treated as a well-known personal name/mark under the Trademark Law which makes sure that the individual gets the right to prevent others from using this name unjustifiably.

Personality rights v/s Publicity rights

- Both Personality rights and Publicity rights differ from each other in various aspects.
- Personality rights mainly consist of two types of rights namely,
 - The **Right of Publicity** or the **right to protect one's image** from being commercially exploited without permission or compensation similar to the use of a trademark.
 - The **Right to Privacy** or the **right to not have one's personality represented publicly without permission**.
- But, as per various provisions, Publicity rights come under the scope of "**tort of passing off**".
 - "Passing off" is when individuals intentionally or unintentionally pass off their goods or services as those belonging to another party.
 - Such misrepresentation of goods and services impacts the goodwill of a person or business, resulting in financial or reputational damage.
 - Publicity rights are mainly governed by laws and regulations such as the Trademarks Act 1999 and the Copyright Act 1957.

Impact of false advertisements on consumer rights

- The misuse of well-known personalities to promote false advertisements not just violates the Personality rights of celebrities/well-known personalities but also affects consumer rights.
- Acknowledging the challenge, the Ministry of Consumer Affairs has made a notification to check such misleading endorsements.

Nut graf: There has been an increase in the number of instances where endorsements have misused the name and fame of celebrities due to the increasing rate of commercialisation of such endorsements because of their huge value and potential. This issue requires immediate intervention by various governing bodies and the judiciary to not just protect the Personality rights of individuals but also the interests of the consumers who get influenced by such ads.

5. Karnataka and Maharashtra border dispute

Syllabus: Functions, issues, and challenges of State legislatures.

Mains: Interstate border disputes.

Prelims: Interstate border disputes.

Context: The Maharashtra government filed a petition in the Supreme Court about the maintainability, challenging some provisions of the State Reorganisation Act-1956.

Details:

- The dispute between Karnataka and Maharashtra over areas that are claimed by both States has deepened in the past few weeks, also leading to violence.
- Campaigners favouring the merger of Karnataka's Marathi-speaking regions with Maharashtra upped the ante by organizing a conference in Belgaum.
- Politicians from Maharashtra willing to attend it were stopped by the police, leading to a flare-up.
- The Maharashtra government is demanding 865 villages from five districts of Karnataka.
- Argument of the Karnataka government is that **under Article 3 of the Constitution the Supreme Court does not have the jurisdiction to decide the borders of states, and only Parliament has the power to do so.**

- But the Maharashtra government argues that under **Article 131** of the Constitution the Supreme Court has jurisdiction in cases related to disputes between the Union government and states.

Karnataka-Maharashtra Border Dispute:

- The Maharashtra-Karnataka border dispute has continued ever since the two states came into existence.
- In 1957, the Government of Maharashtra claimed 814 villages and the 3 urban settlements.
 - Maharashtra has further staked claim to over 7,000 sq km area along its border with Karnataka.
 - It comprises 865 villages in the districts of Belagavi (Belgaum), Uttara Kannada, Bidar, and Gulbarga, and the towns of Belagavi, Karwar, and Nippani.
- All these areas are predominantly Marathi-speaking, and Maharashtra wants them to be merged with the state.
- However, the Karnataka government has reiterated the state's claim over 48 villages of Sangli in Maharashtra which drew a sharp rebuttal.
- The panchayats in Jat taluk had passed a resolution in the past to merge with Karnataka when there was a severe drought situation and acute drinking water crisis.
 - Karnataka has also demanded that the Kannada-speaking areas of Maharashtra like Solapur and Akkalkot should join Karnataka.
- Karnataka's practice (since 2006) of holding the winter session of the Assembly in Belgaum, is an expression of its authority over the region.



Source: Times of India

The genesis of the dispute:

- In the 1881 census, Belgaum had 864,014 people of which 556,397 were Kannada-speaking (64.39%), while 225,008 were Marathi-speaking (26.04%).
- The erstwhile Bombay Presidency, a multilingual province, included the present-day Karnataka districts of Vijayapura, Belagavi, Dharwad, and Uttara Kannada.
- In 1948, the Belgaum municipality requested that the district, having a predominantly Marathi-speaking population, be incorporated into the proposed Maharashtra state.
- However, the States Reorganisation Act of 1956 made Belgaum and 10 talukas of Bombay State a part of the then Mysore State (which was renamed Karnataka in 1973).
- While demarcating borders, the Reorganisation of States Commission included talukas with a Kannada-speaking population of more than 50% in the State of Mysore.

Steps taken to resolve the Belgaum Dispute:

- **Four-Man Committee:** In 1960, both States agreed to set up a four-man committee with two representatives from each State.
 - However, this committee could not arrive at a unanimous decision to solve the issue.
- **Mahajan Commission:** The Mahajan Commission was set up by the Government of India in October 1966 to look into the border dispute.
 - In its report submitted in August 1967, the Commission, led by former Chief Justice of India Mehr Chand Mahajan, recommended that 264 villages should be transferred to Maharashtra and that Belgaum and 247 villages should remain with Karnataka.
 - Maharashtra rejected the report, calling it biased and illogical.
 - Despite demands from Karnataka, the Centre never implemented the report.
 - The Karnataka government has demanded the status quo.
- **Supreme Court:** In 2006, the Maharashtra government filed a petition in the Supreme Court, claiming Belgaum city.
 - The Supreme Court ruled the issue should be resolved through mutual negotiation and that linguistic criteria should not be considered as it may create more practical problems.
 - This case has again come up to the Supreme court.

Key causes for Inter-State Border Disputes in India:

- **Reorganisation of states:** Several inter-state border disputes have their roots in the linguistic reorganisation of states in the 1950s. As a result, there is a border dispute between Karnataka and Maharashtra, Karnataka and Kerala, Karnataka and Andhra Pradesh, and so on.
 - This policy strengthened regionalism and regionalism sometimes compromises national interest for narrow interest.
 - There have been many demands for separate linguistic states for minority languages too like Nagalim, Bodoland, etc.
- **Use of British Era Maps to demarcate boundaries:** Many of the state boundary demarcations were based on district boundaries created by the British and not village boundaries. They seldom acknowledge the socio-cultural liminality of borders.
- **Ethnicity:** States Reorganisation Commission recommended the creation of just one state, Assam, which would administer what are now Mizoram, Meghalaya, Nagaland, Arunachal Pradesh and Tripura.
 - So, Assam is involved in all the disputes in the region: With Nagaland since 1965, Mizoram since 1972, Meghalaya since 1974 and Arunachal Pradesh since 1992.

Way forward

- Though it is wise to defer to the Court's decision on any dispute, harmony can be achieved only by embracing and promoting a political culture that is respectful of diversity.
- It should be remembered that if new fires are lit through divisive politics, the judiciary also can do very little. This will result in double engine failure.

Nut Graf: The interstate dispute between Karnataka and Maharashtra has once again flared up. The resolution to such interstate disputes lies in a political culture that is respectful of diversity.

6. Article 200 of the Indian Constitution

Syllabus: Indian Constitution - features and significant provisions

Prelims: About Article 200

Mains: Role of Governor in Indian Polity

Context: This article discusses various issues with Article 200 of the Indian Constitution.

What is Article 200:

- Article 200 of the Indian Constitution deals with the powers of the Governor with regard to assent given to bills passed by the State legislature and other powers of the Governor such as reserving the bill for the President's consideration.
- When a Bill has been passed by the State legislature, it shall be presented to the Governor and the Governor can,
 - Give his assent
 - Withhold his assent
 - Return the bill
 - Reserve the bill for the President's consideration (In instances where the bill introduced in the state legislature endangers the position of the state High Court.)
- The Governor shall reserve for the consideration of the President, any Bill which in the opinion of the Governor would, if it became law, so derogate from the powers of the High Court as to endanger the position which that Court is by this Constitution designed to fill.

Rationale behind Article 200:

- The real objective behind Article 200 was to let an independent Governor act as a check and balance, to avoid the state-enacted law being repugnant to the Union laws.
- Some State governments expressed an opinion before the Sarkaria Commission that a "Governor will act as a safety valve against hasty legislations and by their operation enable the State Government and Legislature to have a second look at it".

Issues with Article 200:

- Article 200 does not prescribe a timeline for the Governor to provide assent to Bills sent by the Legislative Assembly.
- This has been used to advantage by the Governors of various States to obscure the mandate of democratically elected governments.
 - In Tamil Nadu alone, almost 20 Bills are awaiting assent by the Governor. The situation is no different in Telangana and West Bengal as well.
- When a Governor refuses to sign a bill that has been duly enacted by the legislature, he is directly undermining the federal structure of the Constitution by using unlawful methods.

- Even the President is taking too long to give assent to the bills that the Governor had deferred for the President's consideration.
 - For Instance, The President has not yet acted on the National Eligibility cum Entrance Test (NEET)-exemption Bill passed by the Tamil Nadu Assembly, after it was referred to the President in May 2022.
- There is no timeline prescribed for the President, under Article 201 of the Constitution, to decide on the outcome of the Bill.

Call for Reforms:

- In *Purushothaman Nambudiri vs State of Kerala (1962)*, a Constitution Bench of the Supreme Court clarified that the Constitution does not impose any time limit within which the Governor should provide assent to Bills.
- However, the Court has maintained that the Governor must honour the will of the Legislature and that the President or a Governor can act only in harmony with their Council of Ministers.
- The 'National Commission to Review the Working of the Constitution' headed by Justice Venkatachaliah recommended that "there should be a time-limit — say a period of six months — within which the Governor should take a decision whether to grant assent or to reserve a Bill for consideration of the President."
- The Sarkaria Commission suggested that delay can be avoided by streamlining the existing procedures thus by making prior consultation with the Governor at the stage of the drafting of the Bill itself, and by prescribing time limits for its disposal.

Way Forward:

- An unreasonable delay in granting administrative sanction would be violative of the rule of law. Therefore, it implies that the Governor will have to grant assent or decline the same within a 'reasonable time'.
- The Supreme Court in a case on anti-defection law held that the Speaker must act on disqualification petitions against the defecting MLAs within a 'reasonable time'.
 - It clarified in the same judgement that reasonable time is three months in the case of disqualification petitions.
- The Constitution should be read contextually to provide a meaning that the Governor must act on the Bills within a reasonable time- three months, in line with the above judgement.

Nut Graf: Giving assent to a Bill passed by the legislature is a part of the legislative process and not of the executive power. Article 200 of the Indian Constitution has been used to advantage by the Governors of various States to neutralise the entire legislative exercise which obscures the mandate of democratically elected governments.

7. No uniformity in parole and furlough rules

Syllabus: Constitution of India — features and significant provisions.

Prelims: Parole and Furlough.

Mains: Parole and Furlough provisions across states.

Context: The release of convicts on parole and furlough in Haryana and Tamil Nadu.

Details

- There are no specific provisions related to parole and/or furlough either in the Prisons Act, 1894, or the Prisoners Act, 1900. However, Section 59 of the Prisons Act authorizes States to make rules regarding the shortening of sentences or rewarding good conduct.
- It should be noted that Prisons, Reformatories, and other associated institutions fall in the State list of the Seventh Schedule of the Constitution.

Parole

- It involves release of a prisoner with suspension of the sentence.
- It is conditional and is usually subject to the behaviour of the prisoner.
- A person who is released under parole has to periodically report to the authorities for a set period of time.
- It was introduced with a view to humanise the prison system and is hence considered as a reformatory process.
- The Prisons Act of 1894 has provisions associated with Parole.
- Since prisons come under state list, the rules associated with parole are governed under the prisons act of each state government and parole is granted by the state executive.
- The convict can move the High Court challenging the rejection of a plea for parole.

Prisoners who are not eligible for parole

- Prisoners convicted of multiple murders.
- Prisoners convicted under the anti-terror Unlawful Activities Prevention Act (UAPA).

Furlough

- Furlough is similar to parole but with a difference that it is given in cases of long-term imprisonment.
- In addition the period of furlough granted to a prisoner is treated as remission of his sentence.
- The Prisons Act of 1894 covers the concept of Furlough also.

Difference between Parole and Furlough:

Sl. No	Parole	Furlough
1	Not a right of the prisoner	Right of a prisoner
2	Given for a specific purpose such as the death, serious illness, or marriage in the family.	Granted periodically without any reason
3	Parole is a suspension of sentence.	Furlough refers to an incentive for good conduct in prison and is counted as a sentence served

Provision of parole/leaves and furlough in different states:

- In Uttar Pradesh, the government grants the 'suspension of the sentence' for up to one month. The period may be extended beyond 12 months with prior approval of the Governor.
- The rules in Maharashtra permit the release of a convict on furlough for a period of 21 or 28 days (on the basis of the case). It also allows 'emergency parole' for 14 days and 'regular parole' for a span of 45 to 60 days.
- The rules of Haryana (revised in April 2022) allow 'regular parole' of up to 10 weeks (in two parts), 'furlough' for 3 to 4 weeks in a year, and 'emergency parole' of up to 4 weeks.
- The Tamil Nadu rules of 1982 grant 'ordinary leave' for 21 to 40 days, and 'emergency leave' up to 15 days (in 4 parts), which can be extended further by the government in exceptional circumstances.
- In Andhra Pradesh, there is a provision for furlough and parole/emergency leave for up to 2 weeks, which can be extended in exceptional circumstances.
- The rules in Odisha allow 'furlough' for up to 4 weeks, 'parole leave' for up to 30 days, and 'special leave' for up to 12 days.
- In West Bengal, the convict is released on 'parole' for a maximum of 1 month and in case of emergency for up to 5 days.
- The government of Kerala provides 'ordinary leave' of 60 days (in 4 spells), and 'emergency leave' for up to 15 days at a time.
- CUSTODY PAROLE: A convict who is ineligible for any furlough or parole is allowed to attend a funeral/marriage of a close relative under a Police escort. Different states have different periods for custody parole. For instance, in Haryana, it is 6 hours and in Kerala, it is for a maximum of 24 hours.
- There also exists huge diversity in states in terms of familial and social obligations and the list of relatives of the convict for granting furlough/parole/emergency leave. For instance, in Kerala, there is a list of 24 relatives in case of death and 10 in case of marriage, whereas in other states only close relatives like spouses, parents, or siblings are considered.
- Moreover, each State uses a different yardstick to punish a convict who fails to surrender after parole or the furlough period terminates.

Conclusion:

- It should be noted that temporary release cannot be availed of as a matter of right.
- Each State has its own set of provisions/guidelines which varies in scope and content. It is argued that such provisions may be flouted to give favours to a few powerful convicts.
- In the absence of a common legal framework to guide the States and check misuse, arbitrariness can creep in and eventually endanger the entire criminal justice system.
- As 'prisons' is on the State List, at least half of the States should come together to request the Central government to legislate a common law for the country on parole and furlough.

Nut Graf: There is a huge divergence across India in terms of prison rules, specifically parole and furlough. It is often argued that an absence of a common legal framework may result in some amount of arbitrariness which has the potential to hamper the entire criminal justice system. States should come together to formulate a uniform law for furlough and leave provisions.

8. Committee on Content Regulation in Government Advertising (CCRG)

Prelims: Committee on Content Regulation in Government Advertising (CCRG)

Mains: Functions of CCRGA and its 2016 order on Delhi government advertisements

Context

- The Lieutenant-Governor of Delhi directed the Chief Secretary to implement a 2016 order of the Committee on Content Regulation in Government Advertising (CCRG).
- The CCRGA order mandates recovering more than ₹97.14 crores of interest from the ruling party of Delhi for publishing/telecasting political advertisements as government advertisements in 2015 and 2016.
- This move has escalated the long-standing tussle between the Delhi government and the Lieutenant-Governor (L-G).

Committee on Content Regulation in Government Advertising (CCRG)

- CCRGA is a three-member body that was formed by the Union Ministry of Information and Broadcasting in April 2016.
- The Committee was set up based on the directions of the Supreme Court in its 2015 judgment in the Common Cause v.s. Union of India case.
- The Committee is mandated to regulate the content of the Union and State government advertisements on all media platforms.
- The apex court had also directed States to set up their own such bodies and several States have set up similar committees whereas a few of the states have provided consent to the CCRGA to monitor their advertisements.
- Further, the Supreme Court had provided a set of guidelines for public-funded advertising by governments which include that government advertising must be politically neutral and restrain from glorifying political personalities or showing a positive impression of the ruling party in power or a negative impression of opposition parties.
 - The guidelines also said that advertisements must not be used at patronising media houses.

2016 Order of CCRGA

- After its formation, the CCRGA issued notices to the Delhi government based on the allegations of violation of the SC-mandated guidelines in publishing advertisements.
- The Delhi government in its response to CCRGA had said that it would set up a committee of its own based on the Supreme Court's 2015 order which mandated that States can set up their own respective bodies to regulate public advertisements.
- This move of the Delhi government was challenged in the Delhi High Court and the High Court in August 2016 ruled that the Union Territories are not authorised to set up their own committees and hence come under the jurisdiction of the CCRGA.
- The CCRGA, after undertaking an investigation, issued an order in September 2016 which said that the Delhi government had violated the guidelines in several aspects such as publishing misleading advertisements, making direct reference to the party in power by name, self-glorification and targeting political rivals.
- The CCRGA had also directed the Delhi government's Directorate of Information and Publicity (DIP) (responsible for issuing government campaigns) to identify specific advertisements which violated the guidelines, compute the expenditure and recover it from the ruling party.
- Identification of such ads and computation of the expenditure revealed that over ₹97 crores were spent on such advertisements and the DIP in March 2017, directed the ruling party to pay about ₹42 crores to the State exchequer immediately and to pay the remaining amount to the agencies/publications which telecasted/published the ads within 30 days.
- However, the ruling party has been defending its spending on such ads by saying that it is for raising public awareness of various government schemes and campaigns.

Nut graf: Various ruling parties both at the Union as well as the State levels are seen spending huge amounts of public money on government advertisements that are used to promote the political interests of the ruling parties undermining their actual purpose. Hence, it is important to empower bodies such as CCRGA to prevent the misuse of public money.

9. Inter-State River Water Disputes Tribunal

Syllabus: Interstate relations

Prelims: Water Dispute Tribunals in India

Context: The Supreme Court in December 2022 gave the Union government three months to constitute an Inter-State River Water Disputes Tribunal to resolve the dispute of Pennaiyar river.

Details:

- The Supreme Court gave the Centre three months to constitute an Inter-State River Water Disputes Tribunal to resolve the dispute between Tamil Nadu and Karnataka over constructions in Pennaiyar river.
- Tamil Nadu had filed an original suit in 2018 against Karnataka's work on check dams and diversions' structures in the river.
 - Tamil Nadu had argued that the flowing water of an Inter-State river was a national asset, and no single State can claim exclusive ownership of it and the utilisation of Pennaiyar river waters by Karnataka is a detriment to the people of Tamil Nadu.

Pennaiyar River:

- The South Pennar River is also known as Dakshina Pinakini in Kannada and Thenpennai or Pennaiyar in Tamil.
- Bangalore, Hosur, Tiruvannamalai, and Cuddalore are the important cities on the banks of South Pennar river.
- This is the second longest river in Tamil Nadu, with a length of 497 km, after the Kaveri.
- The river is severely polluted by industrial waste as it flows through major industrial areas in the eastern suburbs of Bangalore, the industrial parks of Hosur and Chengam.
- The river originates in the Nandi Hills in Karnataka and flows through Tamil Nadu before emptying into the Bay of Bengal.
- The river is dry for the most part of the year. Water flows during the monsoon season when it is fed by the south-west monsoon in the catchment area and the northeast monsoon in Tamil Nadu.

Inter-State River Water Disputes Tribunal

- Currently in India, water disputes resolution is governed by the Inter-State Water Disputes Act, 1956.
- According to the Inter-State Water Disputes Act, the state governments can approach the centre for a tribunal for the resolution of a water dispute.
- The decision of the tribunal would be final.

Active inter-state river water disputes tribunals

Tribunal	Year of formation	States involved
Krishna Water Disputes Tribunal II	2004	Andhra Pradesh, Maharashtra, Telangana & Karnataka
Mahanadi Water Disputes Tribunal	2018	Chhattisgarh & Odisha
Mahadayi Water Disputes Tribunal	2010	Karnataka, Goa & Maharashtra
Ravi & Beas Water Tribunal	1986	Rajasthan, Haryana & Punjab
Vansadhara Water Disputes Tribunal	2010	Odisha & Andhra Pradesh

10. Committee to Protect Journalists

Prelims: Committee to Protect Journalists (CPJ)

Context: Recently the Committee to Protect Journalists (CPJ) released the “2022 Prison Census” report.

What is CPJ?

- The Committee to Protect Journalists(CPJ) is an American independent **non-governmental organization and non-profit organization**.
- It defends the rights of journalists and promotes freedom of press.
- **It is famously called the ‘Journalism’s Red Cross’.**
- The organization has been publishing this annual census of journalists killed or imprisoned in relation to their work.

Findings of the report:

- **Repression of Minorities:** In Iran and Turkey both classified as “worst offenders” it was Kurdish journalists who bore the brunt of the government crackdown. In **China, many imprisoned journalists were Uighurs from Xinjiang.**
- **Journalists Jailed:** Till 2022 november the number of journalists jailed around the world has increased 20% from last year and touched a record high with 363 reporters deprived of their freedom.
- **Countries with the most journalists jailed:** Iran, China, Myanmar, Turkey, and Belarus respectively.
- **Reason for jailing Journalists:** Major reason is the intention to keep the lid on broiling discontent in a world disrupted by COVID-19 and the economic fallout from Russia’s war on Ukraine.
- **India-** According to the report India uses the preventive detention law, the Jammu and Kashmir Public Safety Act(PSA) to keep Kashmiri journalists behind bars.
 - **Six out of the seven jailed journalists are being investigated under Unlawful Activities Prevention Act (UAPA).**

11. Assam Accord

Prelims: About Assam Accord and Section 6A of the Citizenship Act

Context: Recently, A Constitution Bench of the Supreme Court listed a series of long-pending petitions challenging Section 6A of the Citizenship Act, 1955 for hearing on January 10, 2023.

Section 6A of the Citizenship Act, 1955:

- Section 6A of the Citizenship Act, 1955 was introduced to give effect to the Assam Accord and is applicable to Assam only.
- It establishes the framework for recognising migrants in Assam as Indian citizens or expelling them based on the date of their migration.
- Classification of migrants in Assam Accord:
 - Under Section 6A, Foreigners who entered Assam before January 1, 1966, and were “ordinarily resident” in the state would enjoy all the rights and obligations of Indian citizens
 - Foreigners who entered the state between January 1, 1966, and March 25, 1971, would enjoy the same rights and obligations, with the exception of being unable to vote for ten years.
 - **Foreigners who came to Assam on or after March 25, 1971, will be detected and deleted, and practical efforts would be taken to deport them.**
- The National Register for Citizens (NRC) exercise in Assam was carried out in accordance with Section 6A of the Citizenship Act 1955 and the rules outlined in the Assam Accord 1985.

What are the objections raised?

- The petitioners **challenged the discriminatory nature of Section 6A in granting citizenship to immigrants.**
- They also argue that the **special provision was in violation of Article 6 of the Constitution** which fixed the cut-off date for granting citizenship to immigrants at July 19, 1948.

About Assam Accord:

- Assam Accord is a Memorandum of Settlement (MoS) signed between the **Government of India, Govt. of Assam, All Assam Student Union and All Assam Gana Sangram Parishad in 1985.**
- It brought an **end to the Assam Agitation**, which started in 1979 with the All Assam Students’ Union (AASU) **demanding the identification and deportation of illegal immigrants from Assam.**
- According to **clause 5 of the agreement, midnight on March 24, 1971 was set as a cut-off date for detecting illegal immigrants in Assam, and those who arrived after that day were to be deported.**
- Under Clause 6, the central government promised to establish legislative and administrative safeguards to protect the cultural, social, and linguistic identity and heritage of the Assamese people.
- The **Home Ministry was the nodal Ministry for the implementation of the accord**, and the “Implementation of Assam Accord Department” was established in 1986 to carry out the terms of the agreement.

12. Zonal Councils

Prelims: Zonal Councils

Context: Recently the Union Home minister presided over the 25th Eastern Zonal Council meeting in Kolkata.

Zonal council:

- Zonal Councils are **advisory councils** formed by Indian states.
- 5 Zonal Councils were set up under the **States Reorganisation Act -1956**.
- The Zonal Councils Secretariat explores Center-State, Inter-State and zonal issues which need to be discussed by the Councils or the Standing Committees.
- **Each Zonal Council is an advisory body and discusses any matter which is necessary for the unity and integrity of India.**
- In addition to these **5 Zonal Councils**, a separate **North-Eastern Council** was created by a separate Act of Parliament, the North-Eastern Council Act of 1971.
 - It has 8 states - Assam, Manipur, Mizoram, Arunachal Pradesh, Nagaland, Meghalaya, Tripura and Sikkim.



Source: Mapsofindia

Structure Zonal council:

- **Chairman of each council:** The Union Home Minister.
- **Vice-Chairman of council:** The Chief Ministers of the States included in each zone act as Vice-Chairman of the Zonal Council for that zone **by rotation. Each state holds office for a period of one year at a time.**
- **Members of Zonal council:** Chief Minister and two other Ministers as nominated by the Governor from each of the States and two members from Union Territories included in the zone.
- **Advisers:** One person nominated by the Niti Aayog for each of the Zonal Councils, Chief Secretaries and another officer or Development Commissioner nominated by each of the States included in the Zone.
- Depending upon necessity **Union Ministers are also invited** to participate in the meetings of Zonal Councils.

13. Rule 267 of the Rajya Sabha rulebook

Syllabus: GS-2; Polity; Parliament — functioning and the conduct of business

Prelims: About Rule 267 of Rajya Sabha rulebook

Context: Rule 267 of the Rajya Sabha rulebook has become a bone of contention in the ongoing Winter Session (2022) of the Parliament.

Rule 267 of the Rajya Sabha rulebook

- Rule 267 of the Rajya Sabha rulebook deals with the “Suspension of rules”
- According to the Rule, “any member, may, with the consent of the Chairman, move that any rule may be suspended in its application to a motion related to the business listed before the Council of that day and if the motion is carried, the rule in question shall be suspended for the time being”.
- The Rule mainly allows for the suspension of the day’s business to debate an important issue suggested by a member.
- As per the Rule, the Chairman alone has the power to give consent for moving a motion for suspension of a rule and it is for the House to decide whether a particular rule should be suspended or not.
- Further, any member of the House can issue a notice to the Chairperson for a discussion on an issue under Rule 267.
- The last instance of the use of this provision was in 2016 when the then Chairman Hamid Ansari allowed for a debate on the “demonetisation of currency”.

14. Ministry evades direct reply on demand to include Ladakh under 6th Schedule

- The Union Home Ministry while evading a reply on the possible inclusion of Ladakh under the **Fifth/Sixth Schedule** of the Constitution, said that the main objective of the inclusion of tribal populations under the Sixth Schedule is to ensure the overall socio-economic development and the administration of Ladakh is already taking care of it since its inception.
- The erstwhile State of Jammu & Kashmir was divided into the Union Territories of Jammu & Kashmir and Ladakh and there is no Legislative Assembly in Ladakh at present.
- Post the removal of the special status, various political groups in Ladakh have been demanding the protection of land, employment and cultural identity under the Sixth Schedule.
 - In 2021, Ladakh’s only member in the Lok Sabha demanded constitutional safeguards by amending the Ladakh Autonomous Hill District Council Act.
 - Later, acknowledging the developmental requirements of the tribal population, the Parliamentary Standing Committee on Home Affairs placed a report in the Rajya Sabha recommending that special status may be granted to the UT.
- The Sixth Schedule contains provisions related to the Administration of Tribal Areas in the States of **Assam, Meghalaya, Tripura and Mizoram**.
- The provisions of the sixth schedule are provided under **Articles 244(2) and 275(1)** of the Indian Constitution.
- If an area is included under the Sixth Schedule, the tribal population of that area would be protected by extending autonomy to communities through the creation of Autonomous Development Councils, which can frame laws on land, public health and agriculture.



BYJU'S | **IAS**
EXAM PREP

Current Affairs Webinar

180+ hours of engaging current affairs sessions followed by doubt clearing sessions every **TUESDAY and THURSDAY**

- ✓ Comprehensive coverage and in-depth analysis of issues in news
- ✓ Special lectures on Economic Survey, the Union Budget and India Yearbook
- ✓ CSAT lectures

ECONOMY

1. Reserve Bank of India's e-rupee

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

Prelims: e-rupee.

Mains: Critical evaluation of the introduction of the e-Rupee in India

Context: Reserve Bank of India launched the digital rupee on a pilot basis.

Details:

- The Reserve Bank of India (RBI) launched the digital currency on a pilot basis in a few major cities in India. The digital rupee will be offered by some specific public and private banks.
- The digital rupee can be used for both person-to-person as well as person-to-merchant transactions.

Digital Rupee:

- The e-rupee (or digital rupee) is a digital currency issued by the central bank of India. They are held electronically in a digital wallet overseen by RBI.
- It is recognized as a legal tender by the RBI and thus should be accepted by everyone in the country as a medium of exchange.
- However, it should be noted that it is different from the deposits held in the bank as they will not be paid any interest by the central bank. Though deposits held in banks can be converted to digital rupees and vice-versa.
- e-Rupee or CBDC can be exchangeable one-to-one with the fiat currency and can also be accepted as a medium of payment, legal tender and a safe store of value.
- The RBI would be the sole issuer of the e-Rupee and its distribution will be handled by commercial banks.

Need for Digital Rupee:

- According to RBI digital rupee will make the rupee a more attractive currency in comparison to cryptocurrencies which gradually lose value over time due to debasement by the central bank.
- Central banks across the world are trying to release their own digital currencies as cryptocurrencies can threaten their sovereignty.
- Moreover, it would be easier and more economical to produce digital currency in contrast to physical cash notes.
- Additionally, digital transactions are more easily traceable by authorities in comparison to physical transactions.

Advantages of e-Rupee

- The introduction of CBDC will help replace paper currency in a phased manner and thus it helps in reducing the operational costs involved in physical cash management.
- The digitisation of banking facilities will also help in reducing the cost of operation of the banking system as there would be less requirement for people to physically visit banks.
- The introduction of e-rupee will foster financial inclusion as it caters to the needs of the people even in remote areas of the country.
- Digital currencies will play a key role in providing momentum to innovations in the payments system.
- e-rupee also facilitates easy cross-border payments and provides the public with uses that any private virtual currencies can provide.

Associated Risks

- There are apprehensions that the introduction of central bank digital currencies internationally might disrupt the overall banking system.
- In the case of low-interest rates offered by banks, a large number of people might convert their bank deposits into digital currencies as they would not lose much in terms of interest income. This would considerably reduce the cash holdings of banks and hinder their capacity to create loans.
- The lack of digital literacy in the country is a key impediment to the implementation of digital currency.
- Further, digital currency works efficiently with the internet. This is a major challenge in remote areas of the country where there is limited connectivity.
- Incidences of cybercrime have been increasing at an alarming rate in the country and in this context, the introduction of CBDC will make people more susceptible to cybercrime.
 - Also, digitally illiterate and poor would be more susceptible to such risks.
- The introduction of CBDCs also pose a severe threat to the privacy of the citizens.
- Additionally, the existing limitations in the banking infrastructure and the skills of the employees can also act as a roadblock to the effective implementation of digital currency.

Nut Graf: The digital rupee has been launched by the Reserve Bank of India on a pilot basis in select cities. It has the potential to change the banking system and the economic trajectory of a country. However, there are also some concerns associated with it, which need to be addressed in a timely manner.

2. The sustained growth in remittances

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

Prelims: About remittances

Mains: Trends in remittances worldwide and in India

Context

- As per the World Bank's latest Migration and Development Brief named the "Remittances Brave Global Headwinds", remittances to India are expected to reach a record level of \$100 billion in 2022.
- In 2021, India received about \$89.4 billion and is expected to become the first ever country to reach the \$100 billion mark.

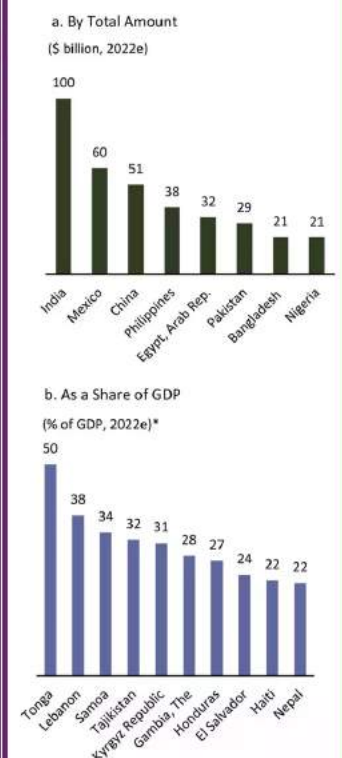
Remittance

- Remittance broadly means a sum of money transferred by one person to another.
- The term remittance is now used to describe the money sent by an individual working abroad to their family in their home country.
- Remittances can also be in the form of money sent as payment for a bill.
- Remittances are one of the most important sources of income for people in low-income and developing nations.
- With respect to India, the largest sources of remittances have been from Indians working in the Gulf Cooperation Council (GCC) countries, the U.S. and the U.K.

Trends in remittances

- The remittances sent worldwide are expected to cross \$794 billion in 2022 as compared to \$781 billion in 2021.
 - Trends indicate a 4.9% in 2022 as compared to 10.2% in 2021, which was the highest since 2010.
- Out of the total \$794 billion, \$626 billion worth of remittances were sent to low- and middle-income countries.
- In low- and middle-income countries, remittances have become a larger source of external finance even when compared to foreign direct investment (FDI), official development assistance (ODA), and portfolio investment flows.

Top Recipients of Remittances among Low- and Middle-Income Countries, 2022e



Source: Times of India

Reasons for the sustained growth in remittances

- Post-pandemic reopening, revival and recovery of various sectors in home countries.
- Improvement in the income of migrant workers and employment situations has improved their ability to send remittances.
- According to the report, the 10.2% growth in remittances achieved in 2021 was due to various stimulus measures introduced in high-income countries such as the U.S. and Europe to support their fluctuating economies.
 - This helped to better the employment situation and led to an increase in the incomes of migrant workers.
- Further, there seems to be an increased determination among migrant workers to help their families back home in the post-pandemic recovery phase.

Reasons for the sustained inward remittance flows in India

- The report highlights the fact that remittances to India have benefited from a structural change with respect to top destinations from low-skilled, informal employment in the GCC countries to high-skilled jobs in countries like the U.S., the U.K., Singapore, Japan, Australia and New Zealand.
- The share of remittances from the U.S., the U.K. and Singapore has improved from 26% to 36% between 2016-17 and 2020-21, whereas the share from GCC countries has declined from 54% to 28%.
- The U.S. (with a share of 23%), displaced Saudi Arabia as India's top source country for remittances.

- This structural change has made a huge impact during the pandemic as Indian migrants in high-income countries worked from home and also benefited from large fiscal stimulus packages and in the post-pandemic phase, wage hikes and record-high employment levels have led to a gradual growth in remittances.
- Additionally, the migrant workers in the GCC countries also benefited from the direct support measures undertaken in these countries to check the increasing inflation.
- The report also expects the Indian migrants to have taken advantage of the depreciation of the Indian rupee as compared to the U.S. dollar which might have also increased their remittances.

Path ahead

- The report expects the growth in remittances to decline by about 2% in 2023 as the drop in the GDP growth in high-income countries would affect migrant workers' wage gains.
- The growth in remittances is estimated to decline from 3.5% in 2022 to 0.7% in 2023 in South Asian countries.
- Also in the U.S., the higher inflation rate along with a slowdown is expected to restrict remittance flows and the GCC countries are also expected to witness a slowdown in remittance outflows.
 - The demand for labour would also decrease as the construction activities in Qatar on account of the FIFA World Cup have also ended.
- Despite this global trend, remittances to India are expected to grow by 4% in 2023 as a large percentage of Indian migrants are earning relatively high salaries in developed countries and their salaries are expected to be more resilient than those of lower-wage migrants in GCC countries.

Nut graf: The structural change in India's remittance economy, both in terms of the top destination countries and the nature of the jobs held by migrants is expected to underpin the faltering economy on account of rising inflation and the depreciation of the Rupee.

3. RBI Report and Municipal Bonds

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

Prelims: Municipal Bonds

Mains: RBI's Report on Municipal Finances

Context: The Reserve Bank of India (RBI) recently published the Report on Municipal Finances, which compiles and analyzes budgetary data from 201 Municipal Corporations (MCs) across all States.

Key findings of the report:

- **Limited sources of revenue generation:** In India, municipal corporations are overly reliant on grants from the Central and State governments to meet their expenditure needs.
 - This has affected the ability of Urban Local Bodies' ability to carry out their mandated functions.
- **State Finance Commissions (SFCs):** The majority of State governments have failed to establish SFCs on a regular and timely basis, despite the constitutional mandate. This has had an effect on the efficient rule-based devolution of funds to local governments.
- **Revenue generation:** Despite receiving constitutional recognition in 1992, Municipal revenue generation has remained broadly unchanged from 1946-47.
 - **Property tax**, a major contributor to municipal revenue collection in India, is significantly lower than in OECD countries due to a variety of factors, such as property undervaluation, incomplete registers, insufficient policy, and ineffective administration.
- **Lack of uniform accounting standard:** No uniform accounting standard has been developed for municipal corporations to date. This has resulted in different budgetary and accounting practices for the compilation, reporting and dissemination of financial data relating to ULBs

What are Municipal Bonds?

- A Municipal Bond, also known as Muni Bond, is a debt instrument issued by a local government or an allied agency in order to finance public projects such as roads, airports, schools etc.
- Guidelines for Municipal Bonds are issued by the Securities and Exchange Board of India (SEBI).
- The coupon rates offered by MCs are generally higher than those offered by government bonds of comparable maturity, even though they are rated as adequately safe with low credit risk
- First municipal bond was issued by Bengaluru Municipal Corporation in 1997, followed by Ahmedabad Municipal Corporation in 1998.
- According to the RBI report, the Indian municipal bond market faced an abrupt halt in 2005, following the launch of the Jawaharlal Nehru National Urban Renewal Mission, which made a total investment of approximately '1 lakh crore available to municipal corporations in the form of grants from the Centre.
- However, with recent government initiatives such as a lump-sum grant-in-aid for municipal bond issuances, there has been a resurgence of municipal bond issuances, with nine municipal corporations raising around 3,840 crores during 2017-21.

- In 2018, the **Indore Municipal Corporation** became the first municipal corporation to list a municipal bond on the **National Stock Exchange**.
- **Ghaziabad Municipal Corporation** became the first municipal corporation to issue **green bonds in 2021**.

Issues with Municipal Bond	What can be done?
<ul style="list-style-type: none"> ● Only large municipal corporations are meeting the criteria for issuing the municipal bond. 	<ul style="list-style-type: none"> ● Pooled Financing: Smaller ULBs' can access the capital market through pooled financing, under which a common bond is issued by pooling the resources of several local bodies. <ul style="list-style-type: none"> ○ Eg: The Tamil Nadu Urban Development Fund (TNUDF) issued bonds on behalf of 14 municipalities.
<ul style="list-style-type: none"> ● Lack of developed bond market and proper credit rating for the municipal bond. 	<ul style="list-style-type: none"> ● Government can help nurture a vibrant municipal bond market with policies to improve the environment for financial investment through sound and efficient regulation, greater transparency, and better governance.
<ul style="list-style-type: none"> ● Lack of a secondary market for municipal bonds 	<ul style="list-style-type: none"> ● Listing Municipal Bonds in the stock exchanges can develop a secondary market for municipal bonds in India
<ul style="list-style-type: none"> ● Excessive control by the state government over types of bonds issued, limits and the maximum repayment period. 	<ul style="list-style-type: none"> ● Municipal corporations should be devolved with enough power to generate their own revenue, The control state government should be limited to end-use restrictions and timely repayment of bonds.

Criteria for issuing municipal bonds:

- The SEBI has issued the following guidelines for municipal bonds issuance in India:
 - The municipal body must not have a negative net worth in the three years preceding the issuance of these bonds.
 - The municipal body must not have made any default in repayment of debt securities or loans obtained from banks or financial institutions in the previous year.
 - Such municipalities shall not be included in the Reserve Bank of India's list of willful defaulters (RBI). Furthermore, such an entity or person should not fail to make any interest or principal payments on debt instruments issued to the public.
- It is mandatory for these bonds to get a credit rating higher than the investment grade for the public issue.

Conclusion: In 2018, 59% of the corporations received a credit rating of investment grade or above, highlighting the underutilised potential for bond financing by Indian municipalities. Bond financing should be explored on a larger scale to meet municipal corporations' required Capex expansion plans in the coming years.

4. Scenarios for the future of India, and the world

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

Mains: Various forecasts and scenarios of the future of the Indian as well as the global economy.

Context: This article talks about the relevance and impact of predictions and forecasts of economists on the economic growth of nations.

Forecasts and predictions on economic growth

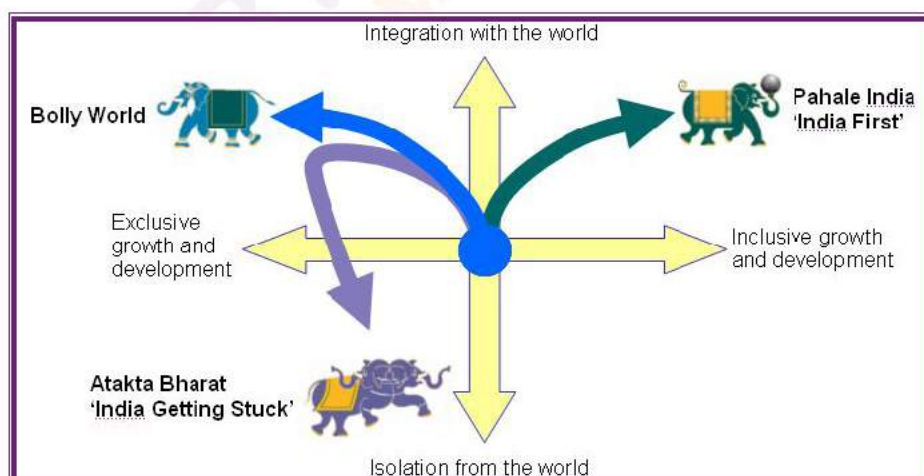
- Making predictions of the long term, annual, and quarterly economic growth of nations has become a lucrative industry that employs several economists, researchers, analysts, and commentators.
- The fast growth of BRICS economies was predicted by economists at the turn of the millennium and this prediction has had a significant impact on the public imagination and on corporate investments.
- However, experts of the World Economic Forum (WEF) say that economists in the 1980s had forecasted that the 21st century would be Japan's based on the remarkable post-war performance of Japan and very few had predicted/forecasted the collapse of the Soviet Union or the remarkable growth of China.
- Further, the forecasts by economists do not compute the impacts of social conditions and domestic politics on economic policies whereas the strategic thinkers in the Shell Oil company had predicted the collapse of the Soviet Union and the integration of the Russian economy with the West using various "scenario planning" methods.
 - By using such various scenario planning methods, Shell companies had redirected billions of dollars of investments and had gained a strategic advantage over others.

Scenario planning exercise

- The key aspect which distinguishes scenario planning from other forecasting methods is “systems thinking”.
- Systems thinking exercises include subjective perceptions of poverty and inequality, and also concerns about the institutions of governance, which are not considered by economists.
- Unlike other methods, the scenario planning method does not start with the data but it begins by hearing diverse points of view about the trends in a complex system and understanding the undercurrents that will surface and disrupt predictions made.
- Scenarios predict the possible changes in the country’s economy in the future depending on changes in social and political conditions with economic growth.
- Acknowledging the requirements of its members, WEF started a “scenario planning” exercise for the BRICS countries in 2004.

Scenarios of the Indian Economy

- WEF joined hands with the Confederation of Indian Industry (CII) to prepare scenarios for India’s growth.
- The “India and the World: Scenarios to 2025” which was published by WEF/CII in 2005 had projected three scenarios of India’s future based on India’s economic policies.
- The first scenario was labelled “**BollyWorld**”: This scenario identified various forces which would affect the growth in the future if not addressed in a timely manner.
 - This scenario also indicated that the opening of the economy created more opportunities for private enterprises and significantly increased the wealth of the top 1% of millionaires.
 - However, as the entrepreneurial spirit was increasing and the youth aspired to become wealthy, signs of their increasing frustration were also visible as violence was now not just restricted to rural or Naxal areas but also to urban areas.
- The second scenario was named “**Atakta Bharat**”: This scenario highlighted how increasing inequality and insecurity could force the government to impose stringent controls and regulations on politics for security, and also force it to play a larger role in the economy without the required resources.
 - It noted that the stringent governance would impact India’s democracy and stall its economy.
 - In both the BollyWorld and Atakta Bharat scenarios, the “theory of change” was top-down i.e. the change was led by leaders on top of large organisations in government and businesses.
- The third scenario was called “**Pahale India**”: According to this scenario, the changes that people need are to be produced by them.
 - As per this scenario “enterprises by the people for the people” such as self-help groups; cooperatives and business enterprises based on local production and consumption were more sustainable than top-down or large-scale programmes.
 - Experts had projected that if India adopted such a model of change, economic growth would be more inclusive, environmentally sustainable, and faster.



Source: WEF

Analysis of the three scenarios

- The three scenarios on the Indian economy were made in 2006 before the global financial crisis and the governments of the G-7 had to take actions to save the “too large to fail” financial institutions in order to recover from the crisis.
- Further, there have been conflicts within the “BollyWorld” model of top-down, which the world has pursued in the last three decades.
- Increasing inequality and insecurity around the world along with the free market globalisation on account of the adoption of the top-down model, have led to various reactionary forces in many countries such as China, Russia and India too.
- Further, the violence between powerful countries by using the latest technologies is also affecting millions of people around the world.

- As per the Indian scenarists, there are two choices for policymakers when societal tensions increase in a “BollyWorld”-like scenario.
 - One choice is the concentration of power in governments and large business monopolies for imposing more security and pushing faster GDP growth which would result in further unrest and “Atakta” (stalling) economies.
 - The other choice is the adoption of local systems solutions for environmental and economic problems, and cooperative implementation by local communities. This model is said to be the solution to systemic problems across the globe.

Nut graf: As the world seems to be caught up in a “BollyWorld”-like situation, where the societal tensions are increasing significantly, India which has been accorded the presidency of the G-20 must adopt a “Gandhian” approach of using solutions based on local systems to help the world get out of the current situation.

5. Delhi HC verdict on ‘Rooh Afza’ trademark?

Syllabus: Indian Economy and issues growth, development and intellectual property rights

Prelims: About trademarks and intellectual property rights

Mains: Significance of the protection of trademarks and other intellectual property rights

Context: The Delhi High Court’s observation in the Hamdard National Foundation (India) v/s Sadar Laboratories Pvt. Ltd. case.

Details

- The makers of “Rooh Afza” had filed an appeal against the rejection of its application seeking an interim order against Sadar Laboratories Pvt. Ltd. for their product “Dil Afza”.
- The maker of “Rooh Afza” had said to the court that the trademark “Rooh Afza” is a reputed mark in the market with respect to sharbat (which is a sweet beverage) and had claimed that the product “Dil Afza” of the Sadar Laboratories was designed deceptively and similar to the trade dress of “Rooh Afza”.
- The High Court of Delhi in its observation has asked Sadar Laboratories to restrain from manufacturing and selling beverages under the trademark of “Dil Afza”.

Trademark

- A trademark is a unique sign/indicator used by an entity to distinguish its goods or products or services from those of other business entities.
- A trademark acts as a badge of origin which helps identify a particular business entity as the source of that particular good or product or service.
- Trademark infringement refers to the unauthorised usage of a sign/indicator that is identical or deceptively similar to a registered trademark.
- In India, the **Trademark Act of 1999** deals with the protection, registration and prevention of fraudulent use of trademarks.
- Trademarks in India are governed by the Controller General of Patents, Designs and Trademarks which works under the Department for Promotion of Industry and Internal Trade (DPIIT).

Delhi Court’s observations

- A Division Bench of the High Court asked Sadar Laboratories Pvt. Ltd. to stop manufacturing and selling any product under the trademark “Dil Afza” until the final disposal of the trademark infringement suit.
- The High Court further added that the trademark “Rooh Afza” had become a strong mark and had acquired immense goodwill which needed a higher degree of protection.
- Earlier, in **M/s Kirorimal Kashiram Marketing & Agencies Pvt. Ltd. v/s M/s Shree Sita Chawal Udyog Mil case**, the Delhi High Court had held that it is not permissible to copy a prominent part of the registered trademark of another person and had ordered the respondent, in that case, to restrain from using the trademark “Golden Deer” as it was deceptively similar to a registered trademark “Double Deer” with respect to rice.

What is a strong trademark?

- A trademark is considered to be strong when it is very well-known and has received a greater degree of goodwill.
- The degree of the protection of any trademark changes with the strength of the mark i.e. stronger the mark, the higher will be the requirement to protect it.
- For example: “Rooh Afza” has acquired more protection as it is more likely to be subjected to piracy as various other individuals/entities look to take undue advantage of its goodwill.

Rationale behind the Court's Observations

- The disputed trademark "Dil Afza" has a phonetic similarity with "Rooh Afza".
- If a recall from memory is triggered by the English meaning of the terms "ROOH" meaning soul and "DIL" meaning heart, it provides a common conceptual background for both products.
- Further, the trade dress of the disputed trademark, which consists of the bottle's shape, the placement of the house mark, the design, and the colour of the design are all material contributors to the commercial impression of the competing trademark.
- The value of the product was also taken into consideration as the court held that as the product is a low-priced consumable item general customers would not deliberate on the details of the product as compared to their tendencies while making a high-value investment choice.

Nut graf: The Delhi High Court's decision and views with respect to trademarks in its recent observations have gained significance as the protection of trademarks plays a key role in the protection of the interests of both the business entities as well as consumers.

6. The lingering labour crisis post-pandemic

Syllabus: Indian Economy and issues relating to growth, development and employment.

Prelims: About International Labour Organisation (ILO) and its reports

Mains: Key findings about the trends in employment in India and worldwide and important recommendations.

Context: The International Labour Organisation (ILO) has released two reports that provide an idea about the situation and trends in global employment post-pandemic.

Details

- The "**Global Wage Report 2022-2023: The Impact of inflation and COVID-19 on wages and purchasing power**" report talks about the twin crises namely the inflation and economic slowdown which have led to a fall in the real monthly wages across the world.
 - This report also discussed the impacts of the Russia-Ukraine war in worsening the global energy crisis.
 - In the Global Wage Report, the main aim is to collect wage data from about 190 countries and territories which are then categorised into five separate regions.
- The "**Asia-Pacific Employment and Social Outlook 2022: Rethinking sectoral strategies for a human-centred future of work**" report points out that the Asia-Pacific region has lost over 2.2 crore jobs in 2022.

Key findings of the reports

- The Global Wage Report analysed the trends in the real and nominal wages of employees.
 - According to the report, the term "wage" was defined as the total gross remuneration including regular bonuses extended to employees during a specified period for time (monthly for the report) worked and also for the time not worked which includes paid leaves and paid sick leaves.
 - As per the report, the **nominal wage** refers to the adjusted figures after considering consumer price inflation and **real wage growth** is nothing but the year-on-year change in the real average monthly wages of all employees.
- The reports note that the nominal wages increased from ₹4,398 in 2006 to ₹17,017 per month in 2021 in India.
 - This data for the computation of the report was taken from the Union Ministry of Statistics and Programme Implementation.
- Despite the increase in nominal wages, the real wage growth rate in the country has fallen from 9.3% in 2006 to -0.2% in 2021 when inflation is accounted for.
 - This negative growth in India has begun ever since the COVID pandemic.
- The real wage growth rate has plunged not just in India but also in countries like China, where the growth rate has declined from 5.6% in 2019 to 2% in 2022 and Pakistan, where the growth is -3.8%. In 2022.
- The report also notes that the increasing cost of living has had a severe impact on lower-income earners and their households because they are spending most of their disposable income on essential goods and services, which are experiencing greater price increases as compared to non-essentials.
- According to the report on employment in Asia-Pacific, only the trends in the high-skill jobs showed a recovery from the COVID-19 pandemic, which is also seen across all subregions.
- There have been concerns about the increasing inequality as the employment gain was seen to be 1.6% among high-skill workers between 2019 and 2021 and there was no improvement among low-to-medium-skill workers.
- Further, among the G-20 countries, there was a significant gap in the average level of real wages between advanced G-20 countries and emerging G-20 countries.
 - The average level of real wages was found to be around \$4,000 per month in advanced economies and about \$1,800 per month in emerging economies.

Recommendations

- Reports recommend a set of policy measures to address the issue of the cost-of-living crisis. Acknowledging the fact that over 7.5 to 9.5 crore people were pushed into extreme poverty during COVID-19, the report said that the bargaining process for future nominal wage adjustments should adopt a sufficiently large and prudent price expectation.
 - This way the standard of living of households, especially low-income households could be protected against unexpected future inflation and prevent an undesirable wage-inflation spiral.
- The reports also say that there is a need to strengthen labour market institutions and wage policies.
- The ILO opines that the development of decent formal wage employment is a prerequisite for an equitable distribution of wages and income, and the major contributor to equitable and sustainable wage growth.
- Further, the ILO has urged governments to focus on the gender pay gap because when women leave the labour market, they are less likely to return than men.
- There is also a need for adopting a multilateral approach that helps tackle the adverse effects of climate change, increasing inequalities, poverty, discrimination, violence and exclusion and also the increasing digital divide between poor and rich countries.

Nut graf: The recent ILO reports have indicated that the existing global crises have led to a decline in real wages and have pushed millions of workers into unemployment which has increased income inequalities and poverty levels. Thus, there is an urgent need to adopt well-designed policy measures that help maintain the purchasing power and living standards of workers.

7. Port-led development: Sagarmala projects

Syllabus: Infrastructure - Ports.

Prelims: About Sagarmala Programme

Mains: Achievements of Sagarmala Programme

Context: The Sagarmala project aims to promote port-led direct and indirect development by providing infrastructure to transport goods to and from ports in a timely, efficient, and cost-effective manner.

About Sagarmala Programme:

- The Sagarmala program, introduced in March 2015, is the **flagship initiative** of the **Ministry of Shipping to promote port-led development in the country.**
- It aims to capitalise on India's 7,500-kilometer-long coastline, 14,500-kilometer-long potential navigable waterways, and strategic location along key international maritime trade routes.
- The central vision of the Programme is to **reduce logistics costs for both domestic and EXIM cargo with minimal infrastructure investment.**

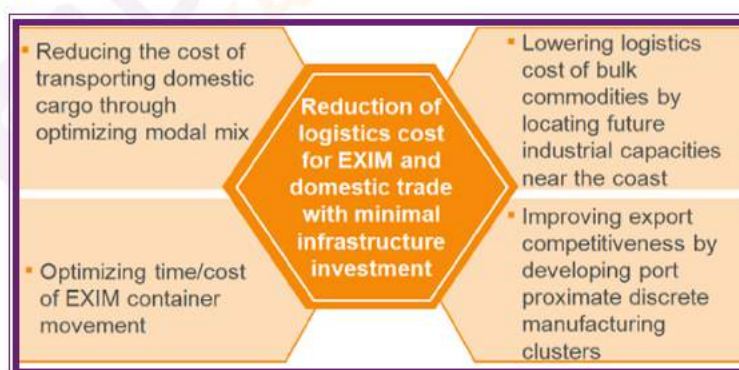


Figure: Aim of Sagarmala initiative

Source: Yojana

● The five components:

- **Port modernization and development of new ports:** Debottlenecking and capacity expansion of existing ports, as well as the construction of new greenfield ports.
- **Port-led industrialisation:** Creating port-proximate industrial clusters and Coastal Economic Zones to reduce EXIM and domestic cargo logistics costs and time.
- **Port connectivity enhancement:** Enhancing the connectivity of the ports to the hinterland, optimizing cost and time of cargo movement through multi-modal logistics solutions including domestic waterways (inland water transport and coastal shipping).
- **Coastal community development:** Promoting sustainable coastal community development through skill development and livelihood generation activities, fisheries development, coastal tourism, and so on.

- The programme is implemented through Public Private Partnership (PPP) thereby reducing the burden on the exchequer.
- Financial assistance is given to State Governments and other agencies for port infrastructure projects, Road & Rail projects, coastal berth projects, fishing harbours, skill development projects, Coastal community development, cruise terminal etc.

Achievements of Sagarmala Programme:

- **Improve ports efficiency and improved Quality service delivery:** The Sagarmala programme has decreased container turnaround times and increased cargo volumes at Indian ports, making them more effective.
- **Port connectivity and Port development:**
 - Under the programme, 802 projects worth Rs. 5.48 lakh crore are expected to be completed by 2035.
 - 29 projects have been completed successfully using the PPP model, thereby reducing government spending.
 - **80 projects currently underway to improve Port connectivity**, including infrastructure projects, freight-friendly expressways and the development of strategic inland waterways.
 - **14 Coastal Economic Zones (CEZs)** have been established along the coastline to boost industrial and export growth from coastal areas.
 - A new deep draught port is being established at Vadhavan which can house even Ultra Large Container Vessels (UCLVs).
 - Several **technology missions**, such as Logistics Data Bank Services, RFID Solutions, and Port Community Systems, have been launched to help major ports transition to smart ports.
- **Coastal community development:**
 - **Centre of Excellence in Maritime and Shipbuilding (CEMS)**, a skill development initiative, has trained over 5000 candidates in the maritime and shipbuilding sector.
- **Promoting Tourism:** Various schemes and programmes have been initiated under Sagarmala to promote tourism in collaboration with the Ministry of Tourism. Some of the programmes are

8. Vizhinjam port project

Syllabus: Infrastructure: Ports

Prelims: About Vizhinjam port

Mains: Controversy surrounding the Vizhinjam port project

Context: The fisherfolk and their families have been protesting at the under-construction Vizhinjam port for the past several months.

Significance of the Vizhinjam port project



Source: Vizhinjam Seaport Limited

- Vizhinjam port is situated on the southern tip of the Indian Peninsula in the Thiruvananthapuram district of Kerala.
- The port is about 10 nautical miles from the major international sea routes and the east-west shipping axis.
- The port has a natural water depth of more than 20m within a nautical mile from the coast and would be of significant importance in the maritime development of the country as well as the state of Kerala.
- Vizhinjam port is expected to provide impetus to the growth of minor ports in Kerala and other regional ports and also help generate significant employment opportunities.
- The port is currently being developed by Adani Ports Private Limited in a landlord model with a Public Private Partnership (PPP) component on a design, build, finance, operate and transfer (DBFOT) basis.

Concerns of coastal erosion

- As per the fisherfolk protesting against the Vizhinjam port project, the development work has increased coastal erosion along the coast of Thiruvananthapuram.
- Close to 300 families and households living along the coastline have shifted to relief camps as their houses were destroyed due to high-intensity coastal erosion.
- Although coastal erosion has been an issue in all the coastal districts of Kerala, it has been more severe along the coastline of Thiruvananthapuram.
- As per a study undertaken by the National Centre for Sustainable Coastal Management, Society of Integrated Coastal Management, and the Ministry of Environment and Forest, erosion was minimum at Thrissur (1.5%) and maximum at Thiruvananthapuram (23%), even before the start of the construction of the port.
- In Kerala, the seasonal shoreline changes are more severe during the monsoon months as the high-energy short storm waves hit the coast in a perpendicular position causing erosion.

The government's stand

- The Kerala Government has held that the coastal erosion taking place closer to the port is because of climate change and the demand for blocking the construction cannot be conceded.
 - The recent report by the expert committee appointed by the National Green Tribunal and Shoreline Monitoring Cell has said that erosion in many places has remained the same as before and even after the start of the construction of the port. However, during the October 2020-September 2021 period, a few areas close to the port witnessed erosion.
 - The high number of cyclones formed over the Arabian sea post the cyclone Ockhi in 2017 is cited as the key reason for the recent erosion and accretion and the impact of the port activity on either side of the coast has been less significant, said the report.
- Further, government officials say that the port is being built inside a natural sediment cell which is a pocket-like area wherein disruptions to the movement of sand along the coast do not affect the adjacent coastline.

Demands of the protesters

- Protesters have demanded a comprehensive rehabilitation package for the fisherfolk in the region.
- Compensation to households of those who lose their lives in fishing accidents.
- Effective measures to mitigate coastal erosion.
- Further, the fisherfolk of the region have demanded an assured minimum wage when the sea turns rough due to severe weather conditions and subsidised kerosene for boats.

Nut graf: The development of Vizhinjam port has been controversial as it has not just attracted protests from the fishermen communities in the region but has also faced questions about its financial feasibility. In this regard, the government has to intervene and address all the concerns associated with the port project for it to become successful.

9. What is causing delays and chaos at Delhi airport?

Syllabus: Infrastructure-Airports.

Mains: Increasing issues in Delhi Airport.

Context: Delays and long queues at the Indira Gandhi International Airport in New Delhi.

Details:

- There have been delays and long queues at the Indira Gandhi International Airport in New Delhi in the past few weeks.
- To address the issue and look into the matter closely a parliamentary panel summoned the CEO of Delhi International Airport Limited (DIAL.) The Airports Authority of India has also issued a notice to investigate the "service quality requirements".

Service Quality Requirement:

- Schedule 3 of the Operations Management Development Agreement of 2006 prescribes "service quality requirements".
 - Under the Operations Management Development Agreement of 2006, some functions at Delhi airport were privatised and handed to DIAL.
 - DIAL has to submit quarterly report on "service quality requirements".
 - The agreement specifies 13 different types of services and the minimum time within which they should be provided.
- Some of the service parameters are:
 - Maximum queuing time: Within a span of two years of the agreement, the airport should ensure that maximum waiting time for check-in is 5 minutes for business class and 20 minutes for economy.
 - Security and customs, immigration and quarantine: It is suggested that atleast 95% of passengers should be cleared within 10 minutes.

- Baggage delivery: It is prescribed that the first bag should arrive on the conveyor belt within 10 minutes.
- Other service parameters include time taken to find parking space, maximum waiting time for taxis, and response to customer complaints.
- If the airport operator fails to conform to the prescribed standards, it is liable to pay 0.5% of the monthly revenue for every month that the standards are below the prescribed condition.

Reasons for Overcrowding at Delhi Airport:

- A record number of passengers are witnessed at the airport since the COVID-19 outbreak. The highest number of passengers was seen on December 11, 2022 when airlines carried approximately 4.27 lakh domestic passengers.
- The number of flights and passengers at Delhi airport have grown exponentially, whereas similar growth was not observed in terms of infrastructure.
 - It should be noted that equipment like X-ray machines and door frame metal detectors is the responsibility of the airport under its capital expenditure. Whereas, the CISF provides personnel and their cost is met through the aviation security fee component of airfare (paid by passengers).
- The passenger traffic dropped to 56% (to 6.3 crore) in 2020 due to COVID-19. But as the fear of Omicron subsided, the passenger numbers grew steadily since March 2022.
- The infrastructure expansion plans at various airports were not implemented due to the impact of COVID-19 on revenue, availability of manpower and material. The development of airports of Delhi, Mumbai and Chennai is far behind the growth curve.
- Furthermore, despite the government granting in-principle approval to 21 greenfield airport projects, construction has only begun in 9 of them.

Possible solutions to the problem of overcrowding

- The Bureau of Civil Aviation Security (BCAS), is coming up with new technical norms which will pave the way for airports to adopt modern equipment to screen bags without removing electronic devices thereby reducing the long queues of air travellers.
- An official from the Central Industrial Security Force (CISF) said that the airports in India require the advancement of the machines deployed for screening of cabin bags and the adoption of modern technologies like dual x-ray, computer tomography and neutron beam technology.
- The conventional X-ray machines which are currently in use produce a 2-D image, whereas modern technologies such as computer tomography produce a 3-D image with a higher resolution, and have better automated detection of explosives.
- Further, these technologies have a low rate of false alarms, which can often lead to unwanted physical inspection of a bag resulting in delays.

Nut Graf: The recent chaos and delays at the Delhi Airport signifies that the infrastructure growth has not kept pace with the increasing number of passengers and flights. The upgradation of the infrastructure is the need of the hour along with maintaining quality services.

10. India's Slowing Exports

Syllabus: Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment.

Mains: Recent trends in Exports across the Globe

Context: India's exports declined about 16.7% in October compared with the year-earlier period.

Introduction:

- Merchandise exports declined 16.7% on year in October 2022, the first drop in 20 months and the worst slide since May 2020 when a nationwide lockdown was imposed to contain the Covid outbreak.
- As per the official data, exports dropped below the \$30-billion mark for the first time since March 2021 to hit \$29.8 billion. Imports, however, rose 5.7%, to \$56.7 billion.
- Consequently, the trade deficit increased to \$26.9 billion in October from \$25.7 billion in September.
- The increase in imports is most likely because of softening commodity prices worldwide.
- The World Trade Organisation (WTO) recently warned of a darkened 2023 and projected that global trade growth will drop to only 1% next year from 3.5% in 2022.

Performance of export sector:

- Export of engineering goods in India has slid 21% mainly due to the slowdown to high inflation in developed regions, falling demand in China, the slowdown in the EU and the U.S. and the Russia-Ukraine war.
- A decline of \$2 billion worth of exports in steel and allied products is attributed to export duty on these products to help increase local availability.
- Increased leave of absence during the month of Diwali has also impacted the output.

- Vietnam, an export-dominated country, recorded a 4.5% growth in exports from a year earlier to \$29.18 billion amid 'sustained foreign demand'.
- Similarly, exports by the Philippines grew 20% in October.

Domestic Demand Scenario:

- The monthly Finance Ministry review for October states that the global slowdown is driven by a 'confluence of stubbornly high inflation, rising borrowing costs and geopolitical tensions', but cites local demand as being 'resilient'.
- It also expects a 're-invigorated' investment cycle which will spur growth and job creation in future.
- Inflation due to local factors, including higher food prices, is set to dampen due to easing international commodity prices and the arrival of the Kharif crop.
- Increasing private sector capital expenditure is also one of the positive signals for the economy.
- Private capex typically depends on credit, or loans, from the banking system which has seen healthy growth in the recent past touching a high of 18% in November 2022.
- India's foreign exchange reserves stood at about \$561 billion which is about 9-10 months' worth of import cover.
 - This decrease in import cover is seen as unhealthy as compared to the 14-to-15-month cover India had during the pandemic.

Nut Graf: India's slowing exports have become a cause for concern as we have around 9-10 months' worth of import cover. However, the government is optimistic that domestic demand will counter the effects of declining exports and the forex reserves have been rising in recent weeks signalling hope for the future.

11. The rise of rural manufacturing

Syllabus: Industrial growth.

Mains: Shift of manufacturing sector to rural India.

Details:

- Various studies and evidence suggest that India is experiencing a shift in manufacturing activity and employment from bigger cities to smaller towns and rural areas.
- The movement of manufacturing away from urban areas was first highlighted in a World Bank report in 2012. The study investigated the urbanization of the Indian manufacturing sector by combining enterprise data from both formal and informal sectors. It was found that:
 - Manufacturing plants in the formal sector are moving away from urban areas to rural areas.
 - Whereas the informal sector is moving from rural to urban locations.
 - This is a consequence of higher urban-rural cost ratios.
- Similarly, data from the Annual Survey of Industries 2019-20, highlights that the rural segment is a crucial contributor to the manufacturing sector's output. It was reported that 42% of factories and 62% of fixed capital are in rural areas. This is the outcome of consistent investments in rural locations for almost two decades.
- Moreover, in the context of output and value addition, rural factories contributed nearly half of the total sector whereas in terms of employment, rural areas accounted for 44% share. However, it had a share of only 41% of the total wages of the sector.

Causes for the rise of rural manufacturing:

- Rural areas have lower wages, land, and property costs than most metropolitan areas which attract manufacturing firms.
- **Increased capital intensity of production:**
 - One of the major explanations for the shift is the factory floorspace supply constraints. As these locations get more urbanized and congested, the space constraints become greater.
 - However, the driving force behind the shift is the continuing displacement of labour by the machinery of new production technology. Thus factories cannot be expanded beyond a limit in cities.
- **Production Cost Differentials:**
 - Many firms experience substantially higher operating costs in urban areas that have repercussions on the profitability and competitiveness of the firm.
- **Possibility of capital restructuring:**
 - Capital restructuring is an approach favoured by radical and Marxist geographers.
 - According to this approach, there is a tendency for increasing capital accumulation and centralization by large corporations. Large firms purposely shift production from urban areas to take advantage of the availability of less skilled, less unionized, and less costly labour.

Consequences of the Shift of the Manufacturing sector to rural areas:

- The shift has helped in maintaining the significance of manufacturing as a source of livelihood diversification in rural India.
- It has further helped in making up for the loss of employment in some traditional rural industries.

- Furthermore, the growth of rural manufacturing provides an economic base for the transition out of agriculture by generating employment.
- It could transform the rural economy and ensure better growth.

Challenges Ahead:

- Though firms benefit from lower costs via lower rents, the cost of capital seems to be higher for firms operating in rural areas. For instance, the rural segment accounted for only 35% of the total rent paid, whereas it had 60% of the total interest payments. Thus, it was observed that benefits reaped from one source seem to be offset by the other front.
- There is a major issue of “skills shortage” in rural areas. The manufacturing sector requires highly skilled workers for newer technologies.
 - The solution to this issue is better education and skilling for rural workers. This would ensure higher reliability and productivity and expedite the process of the movement out of agriculture to higher-earning livelihoods.

Nut Graf: There is an increasing trend of the shift of the manufacturing sector from urban areas to rural areas. It has the potential to transform the rural economy. However, some challenges exist in this trend which can be tackled by education and skilling of the rural population.

12. Contract workers

Syllabus: Indian Economy and issues relating to growth, development, and employment

Mains: Significance and Issues of contractual laborers.

Prelims: Contract workers and associated trends.

Background Details:

- As per the Periodic Labour Force Survey (PLFS) 2021, India has about 100 million casual workers and 50 million salaried workers without a written job contract. This amounts to about 150 million contract workers or around 30% of the total labour force in the country.
- The overall share of contract employment in industrial employment expanded from 24% in 2004 to 38% in 2017, as highlighted by the Annual Survey of Industries. These non-payroll contract workers are technicians, drivers, housekeeping staff in offices/commercial complexes, or simply unskilled labour in factories.
- As outsourcing increased, many manpower supplier firms sprouted in the country.
- Even the public sector enterprises outsourced many vacancies post-2001. The Public Enterprises Survey 2021 showed that the share of casual/contract workers in public sector units (PSUs) gradually increased from 17.1% in 2011-12, 19% in 2015-16 to nearly 37.2% in 2020-21.
- There were approximately 4,81,395 contractual workers in central Public Sector Enterprises (CPSEs) in 2021 whereas, in 2011, it was around 2,68,815. This indicates the conversion of many permanent jobs into contractual work.

Significance of Contractual Jobs:

- The cost to the company (CTC) is relatively lower for contract employment when compared to permanent employment.
- The reduced CTC improves profits for India Inc. It also attracts foreign investment, thereby benefitting the economy.
- It should be noted that there are five human resource costs namely hiring costs, induction costs, career progression costs, severance, and superannuation costs. Hiring cost for the public sector is very high due to the scale of conducting the examination. This makes hiring through manpower suppliers both cost and time efficient.
- Furthermore, as contract labour requires minimal training, CTC is further reduced.
- Contract labours are not entitled to generous paid leave like permanent employees, thus making it more attractive for the management to hire them.
- Moreover, there is no commitment to promotion or post-retirement benefits for contractual workers.
- The flexibility of firing contractual workers is considered to be positively impacting labour productivity.

Disadvantages of Contractual Labour:

- The contractors pay less than minimum wages to labour. This implies that a majority of the 150 million contractual workers are underpaid.
- Several platforms and tech companies have devised innovative measures like designating employees as business partners (in the case of online cab booking and food delivery companies) and segmenting core activity as tech business (in the case of most of the service aggregators) to get around the legal provisions of labour acts.
- The overall economy tends to lose on account of reduced consumption and saving due to low wages.
- Due to low investment in the skilling and upskilling of contractual workers, the overall productivity of the economy is impacted.
- Furthermore, cost cuts in hiring and training result in a deterioration of service quality, which causes second-order losses, and sometimes accidents. Poor quality of the product and services impacts the export competitiveness of the economy.

- As underpaid workers cannot afford quality health care for themselves and their families, the country's overall human capital declines.
 - It was observed in a study by The Lancet that an annual increase in outsourced spending of 1% in the National Health Service in England is associated with a rise in treatable mortality of 0.38%.
- The exploitative nature of contract employment has a detrimental distributional impact which suppresses the wages of permanent employees also.

Way forward

- Substituting permanent jobs with contract employment impacts the country's economy as millions of workers are underpaid and vulnerable to health hazards.
- The public sector should instead focus on reforming its appraisal mechanism to reward the efficiency of permanent workers.
- The private sector should realize that outsourcing's cost to the country is much more than the cost to the company in the long run.

Nut Graf: Outsourcing vacancies in employment appears to be beneficial for both the public and private sectors, but it impacts the quality of service, productivity of labour, and overall economy of the country in the long run. Thus, the appraisal and hiring mechanism should be reformed in both the public and private sectors.

13. India favoring Foreign Trade Agreements (FTAs)

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

Prelims: About Free Trade Agreement (FTA)

Mains: Issues associated with FTAs for India and the way forward

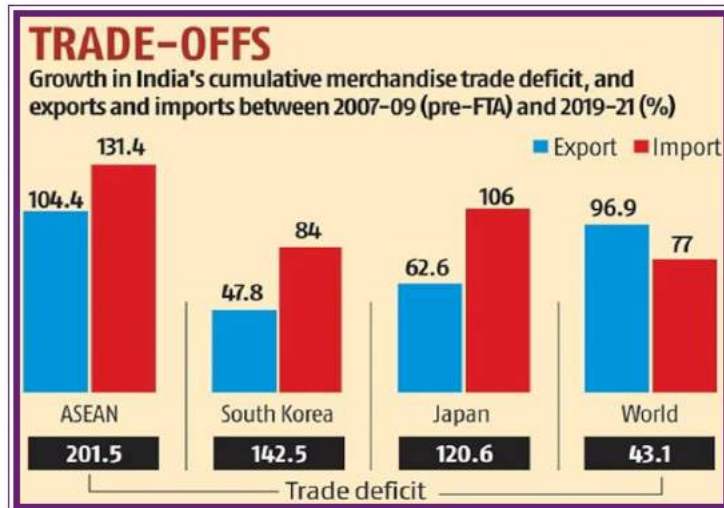
Context: India's balance of trade has worsened with countries with which it has signed free trade agreements (FTAs).

About Free Trade Agreement (FTA):

- A Free Trade Agreement (FTA) is an arrangement or a treaty between two or more countries to remove trade barriers and facilitate trade between them.
- These agreements deal with the determination of the tariffs and duties that are imposed by the countries on imports and to reduce trade barriers.
- **With FTA, goods and services can be exchanged across international borders with limited or no government tariffs, quotas, or subsidies.**
- The idea of FTA is the **opposite of the concept of trade protectionism** or economic isolationism.
- At present **India has signed 13 free trade agreements (FTAs)**. Important ones are Japan, South Korea and the ASEAN (Association of Southeast Asian Nations) group.
- Since the start of the year 2022, India has signed two trade agreements with the United Arab Emirates (UAE) in a record 88 days and another one with a developed nation, Australia. The agreement with the UAE started in March, while the Australia FTA is scheduled for December 29.

Issues with FTAs for India:

- **The Global Trade Research Initiative (GTRI) report shows a comparison of the data from pre FTA and post FTA period of 2007-09 and 2019-21.**
- **The first FTA was signed in 2010.**
 - During this period, India's merchandise trade deficit with these three key FTA partners Japan, South Korea and ASEAN increased at a faster pace than its global trade deficit.
 - Highest ASEAN - 201.5 percent
 - South Korea - 142.5 percent
 - Japan - 120.6 percent.
 - Whereas, **India's overall trade deficit grew only by 43.1 percent during this period.**
- **MFN (Most Favoured Nation status) duties were zero or low in most partner countries:**
 - As high import duties in India came down post-FTA, India's FTAs have provided immediate and sharp price advantages to partner country firms exporting to India, over their competitors.
 - **But Indian firms exporting to partner countries had no such luxury, as MFN duties were zero or low in most partner countries. This led to a high trade deficit.**
 - **Thus FTAs serve partner countries and not our interests.**
- **Poor utilization of the existing FTAs:**
 - **Reasons are:**
 - Cumbersome process of getting a certificate of origin and the related manual verification process.
 - Low awareness about FTAs in the industry.
 - Non-tariff barriers like difficulty in following certain standards in the partner country.



Source: business-standard

Why is India entering into FTAs now?

- Global trade has taken a hit.
- **India is not part of any local or regional arrangement like RCEP.** FTAs can also help India achieve an ambitious target of exporting goods and services worth \$2 trillion by 2030.
- The major economies are **fearing recession.**
- Many countries are **increasing the non-tariff barriers.**
- **To reduce the dependence on China.**
- **Strategic consideration now:** According to experts FTAs are of strategic consideration now.
 - Partnerships with countries like UAE and Australia are a win-win on both sides. India will be able to make manufacturing exports competitive by importing duty-free raw materials and intermediate goods from these sources, and get greater market access by exporting value-added products to these countries because they are not producing the same items in sizable numbers

The benefits from these agreements may be limited:

- The new agreements are with smaller economies.
- Out of the total trade done, the trade under FTAs is very small.

Way forward:

- Enter into FTAs with larger economies like the EU.
- **Reforms within domestic market:**
 - Skilled labor
 - Land reforms
 - Availability of cheaper credit
 - Reducing the cost of logistics etc.
- **India needs to focus outside the FTAs as well.**
- Trade deals should be comprehensive with export markets.

14. Interest rates on several small savings plans

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

Prelims: Various small savings schemes

Mains: Government's move to increase the interest rates on small savings schemes and its associated concerns

Context: The Union government has increased the interest rates on multiple small savings schemes.

Details:

- The government has raised the interest rates by 20 to 110 basis points for the January-to-March quarter FY 2022-23 for eight out of the 12 small savings schemes.
 - 100 basis points are equal to one percentage point.
- Small savings schemes are savings instruments managed by the government to encourage its citizens to save regularly.
- This is the second successive quarter that the Union government has made increases in the interest rates of small savings schemes.

- The returns on time deposits for one, two and three years, have been accorded the highest increase of 110 basis points which has increased the returns to 6.6%, 6.8% and 6.9%, respectively.
- The interest rates on small savings schemes are to be reviewed every quarter by the Union Government.
- The formula to fix the interest rates of small savings schemes was provided by the **Shyamala Gopinath Committee**.
 - The committee had recommended that the interest rates of different schemes must be about 25 to 100 basis points more than that of the yields of the government bonds of similar maturity.
- For the ongoing quarter (October to December), the interest rates were increased for the first time since January 2019 by a marginal of 10 to 30 basis points for five out of the 12 small savings schemes.

Key concerns

- As per the calculation of the Reserve Bank of India (RBI), the current rate of interest on various small savings was found to be about 44 to 77 basis points less than their formula-implied rates for nine out of the 12 schemes in the ongoing quarter (October to December).
 - Example: The return on Public Provident Fund (PPF) according to the formula, should have been 7.72% instead, the existing rate for October to December quarter was 7.1%.
 - Similarly, the returns on the Sukanya Samriddhi account should have been 8.22% instead of the existing rate of 7.6%.
- Economists feel that the increases made in interest rates were less than expected considering the rising interest rates and increasing inflation.
 - The returns on schemes such as Kisan Vikas Patra (KVP) and the National Savings Certificate were raised by only 20 bps each.
- Further, the interest rates on the Public Provident Fund (PPF), which is one of the most popular schemes, were kept unchanged at 7.1% for the 11th quarter in a row.
 - The interest rate on the Sukanya Samriddhi Account scheme was also kept unchanged at 7.6% which has been the same since April 2020.

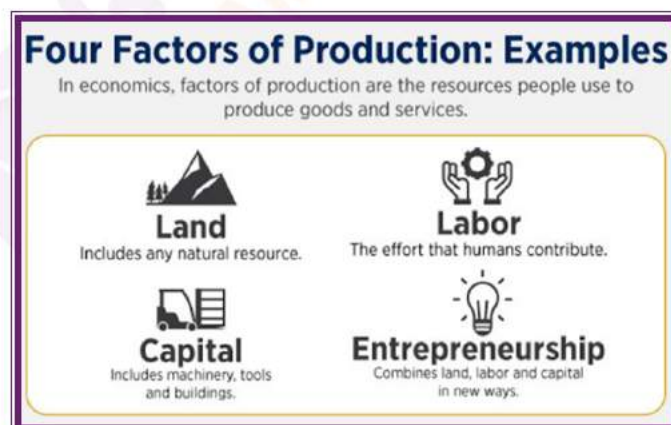
Nut graf: The government has hiked interest rates on various small savings schemes for the January-to-March quarter of FY 2023. However, economists feel that the size of the increase in interest rates is smaller than what was anticipated considering the high inflation in recent times.

15. Factors of production

Syllabus: GS-3; Economy; Important terminologies

Prelims: Factors of production

Factors of production



Source: www.stlouisfed.org

- Factors of production refer to those resources which are considered to be the basic building blocks of production in an economy.
- The resources which are considered factors of production are those resources that are absolutely necessary for the production of any good or service.
- Land, labour, capital and entrepreneurship are widely considered the key factors of production.
 - The mixing of land, labour, and capital is seen at various stages of the production process of any good in the modern economy.
 - In recent times, entrepreneurship is also seen as the fourth factor of production that brings together all the other three factors.
- Individuals who control these factors of production usually enjoy the greatest wealth in society.

- The ownership of these factors of production has been a matter of debate among various economic thinkers.
 - Marxist economists believe that these factors of production must be collectively owned by the state as the private ownership of these factors can lead to the exploitation and mismanagement of resources.
 - Free market school economists argue for the private ownership of the factors of production because of the incentives it offers to resource owners.

16. DGTR proposes anti-dumping levy on Indonesian viscose fibre

- The Directorate General of Trade Remedies (DGTR) which is an apex national agency responsible for administering all the trade remedial measures has recommended the imposition of anti-dumping duty on viscose staple fibre imported from Indonesia.
 - Viscose staple fibre is a natural biodegradable fibre obtained from wood pulp or cotton pulp with characteristics similar to that of cotton and is used to make apparel, home textiles, dress materials, knitwear, etc.
- The anti-dumping duty is a protectionist tariff that a domestic government imposes on foreign imports to reduce the distortive effects of dumping.
 - Dumping is a process wherein a company exports a product at a price that is significantly lower than the price it normally charges in the domestic market.
- The Union government had withdrawn the anti-dumping duty on imports of viscose staple fibre in August 2021 based on the recommendations of the DGTR and the data suggest that imports from Indonesia were increasing significantly after the expiry of the duty in August 2021.
- The DGTR examined the possibility of the continuation of dumping which affects the domestic industry and has hence recommended the continuation of anti-dumping duty on imports of the viscose staple fibre from Indonesia.
- Besides viscose staple fibre from Indonesia, India has also imposed anti-dumping duty on stainless steel tube imports from China.



Mentorship

- Dedicated mentorship helpline for **mentoring**
- Aspirants can speak directly to **subject matter experts and clear doubts.**
- **Get personalised strategy for preparation** – Personalised Mentor Support

INTERNATIONAL RELATIONS

1. Russian Oil Price Cap

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

Mains: Impact of Russian Oil Price Cap on India

Context: EU to impose a price cap on Russian crude.

Key Details:

- The European Union is joining G-7 countries in imposing a \$60-per-barrel price cap on Russian oil ahead of an EU embargo on imports by sea.
- Poland had delayed approving the adoption of the plan while it pushed for a lower price ceiling and tough new sanctions to punish Russia for its war against Ukraine and starve its military of funds.
- The European Union presidency, currently held by the Czech Republic, confirmed that member state ambassadors had reached agreement on the price cap and that the decision would enter into force when published in the EU official journal.
- In an effort to punish Russia for invading Ukraine and limiting the profits accruing to Russia from oil exports, western countries have imposed the price cap. However, they also want to keep some Russian oil flowing in the global market so that supply is not drastically impacted and the energy prices are not further pushed.
- The oil price cap will run alongside the EU's ban on imports of Russian oil.

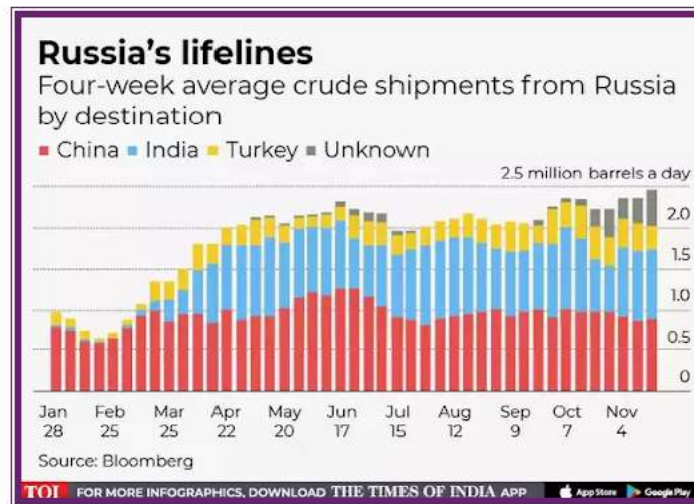
Potential impact of the price cap on Russian oil:

- There is no consensus regarding the cap that should be imposed because of internal disputes in the European Union(EU).
- It is going to create a dual-price market with an official price and a discounted price.
- Initially, it will result in serious repercussions on the market as the traders and the tanker owners would find it difficult.
- There might be a drop in exports and some shock in the production of necessary commodities. However, it will settle eventually and a way out might be adopted by the Russian government.
- There will be significant uncertainties in the global energy market.
- The short-term and mid-term impacts may result in cutting down production by almost seventy percent while establishing alternative supply chains bypassing the EU.
- Whereas in the longer term, Russia might tap the potential of China to fill the gap.
- The worry is about the roll-out of this policy, especially at a time when the world is already reeling under pressure and this may cause further exacerbation of the oil markets.
 - Countries all over the world will have to bear the spillover effects of the cap. The effect will be more pronounced for developing countries.
- The insurance and finance sector would be impacted.
- It will also hamper maritime services.
- There will be great fluctuations in the crude oil market.
- There would be a disruption of the Russian gas supply to the European market.
- The European nation is already feeling the pinch of energy prices, but when the ban will be expanded to other petroleum products, there would be further pressure.

Russia's Response:

- Russia initially responded by saying that the impact of the price cap on its output would be minimal.
- However, later it was reported by Russian media that a mechanism was being worked in Russia to ban oil exports to countries that are supporting price cap and would be implemented by the end of 2022.
- It was further reported that Russian oil would always be demanded for global consumption and economic growth. Though the supply chain might change.
- Moreover, Russia is also considering a floor price against the price cap.
 - A floor price intends to ensure that it did not sell below the price cap level.
 - This contrasting approach of both blocs would put Russian oil buyers, who want European insurance and other services to continue, in a serious bind.
- The Russian President has further warned that Western plans to introduce oil price caps could have grave consequences for energy markets.

Russia's Output in the year 2022:



Source: Times of India

- According to global media reports, Russia's oil production increased by 2% to approximately 488 million tonnes between January to November 2022.
- India and China are the countries that bought discounted oil. It should also be noted that France and the major oil producer nation, Saudi Arabia also purchased oil from Russia.
 - Saudi Arabia used the discounted price to buy oil to operate its power plants and sold its own costlier variant to the world.
- Furthermore, India's External Affairs Minister highlighted that the European Union's oil imports from Russia were six times that of India between February 24 and November 17.
- India's Russian oil import was only around 0.2% of total oil imports in 2021-2022. However, Russia served as India's top oil supplier in October and November. It was reported that in November, India bought 53% or nearly 3.7 million tonnes of all the seaborne Urals crude that Russia exported.

Behaviour of Global oil prices:

- According to oilprice.com, Urals crude reached nearly \$53 in contrast to \$73 per barrel on November 8.
- Oil prices are fluctuating due to different global pulls. The prices settled in early December in the backdrop of hope that China would ease restrictions in response to protests and help spur the oil demand.
- Whereas ships carrying Kazakh oil are gathering in large numbers for passage through Turkish ports as Turkey has been insisting on proof of insurance from freighters, which takes time for verification, resulting in long queues.

Nut Graf: After months of deliberations, Western countries have imposed a price cap on Russian oil. Russia has also responded to the move by working on a mechanism to counter the western sanctions. Various global pulls are significantly impacting the oil market and resulting in fluctuations in oil prices.

2. India's foreign policy

Syllabus: GS2, Effect of Policies & Politics of Developed & Developing Countries on India's Interests

Mains: Changing dimensions of India's foreign policy

Context: This article talks about India's policy on various global issues.

Introduction:

- 2022 was a challenging year for geopolitics and diplomacy, particularly in the wake of Russia's invasion of Ukraine in February.
- Given its historical ties with Russia and its strategic alliances with the United States and Europe, India's choices become increasingly challenging.
- The Indian government also continues to take criticism over its China policy and the stand-off at the Line of Actual Control.

India's stand on the Ukraine war:

- India called for “a peaceful resolution of the situation through sustained diplomatic efforts for long-term peace and stability in the region and beyond”.
- India's position is largely rooted in neutrality and has adapted itself to the post-2014 status quo on Ukraine.
- India also refused to accept western sanctions and increased its military and oil trade with Russia, and sought rupee-based payment mechanisms to facilitate them.
- Guided by its national interests, India chose to abstain several resolutions at the UNSC, UNGA, IAEA, Human Rights Commission and other multilateral platforms seeking to censure Russia for the invasion and humanitarian crisis.

India's ties with its neighbours:

- As part of ‘Neighbourhood First’ policy, India has extended multi-pronged assistance to Sri Lanka over the last 12 months to help the country tide over its worst economic and humanitarian crisis.
- India also entered regional trade and energy agreements with Bangladesh, Bhutan and Nepal that could see a South Asian energy grid emerge.
- India has also strengthened ties with Central Asian countries on connectivity.
- India is also engaging with Taliban by providing humanitarian assistance, exploring a joint counterterrorism effort with other partners.
- The government also kept channels open with Myanmar Junta by sending the foreign secretary to Nay Pyi Taw.
- In December 2022, India also abstained on a UNSC vote calling for Myanmar to end violence and release political prisoners.

Progress on LAC stand-off:

- India-China tensions at the Line of Actual Control remained high. A crisis in the Indo-China border began in April 2020, with PLA transgressions in Ladakh, in the western sector of the boundary.
- Indian and Chinese troops faced off at the Yangtse area near Tawang, Arunachal Pradesh in the eastern sector of the Indo-China border on December 09, 2022.
- India is due to host Mr. Xi twice in 2023, at the G-20 and SCO summits, which could create opportunities for talks to end the stand-off.

Other highlights:

- India assumed the presidency of the G20 grouping on December 1, 2022. The 18th G20 summit will be held in India in 2023.
 - At the G-20, India is expected to highlight climate change transitions, “women-led” development and multilateral reform, among other key issues
- India also took over as chair of Shanghai Cooperation Organisation and it will host the next summit as the chairman of the organisation in 2023.
- In 2022, India signed trade agreements with the UAE and Australia.

Nut Graf: India at its 75th year of Independence is keen to show the world its capacity for global leadership. Meanwhile, the international order is changing rapidly and the challenges are compounding for India, making it clear that the road to the global centre stage will be rough.

3. Connecting India's East with the Indo-Pacific

Syllabus: India and its neighbourhood- relations.

Mains: The role and significance of Northeastern and eastern parts of India in the Indo-Pacific centred policies and strategies of the country.

Context: This article talks about the importance of connecting and extending the role of Northeastern and eastern parts of India with its Indo-Pacific strategies.

Background

- There has been a shift in India's diplomatic strategy with the introduction of “Look East” and “Act East” policies that have increased the focus on the Indo-Pacific region.
- However, the interpretation of “Indo-Pacific” among the diplomatic circles of India is different from the perceptions of this policy in Northeastern and eastern India.
- Therefore, an effective way to work for a “free, open, inclusive, peaceful and prosperous” Indo-Pacific is by addressing the differences in perception between officials and those living in the eastern regions of the country.

Key requirements of the Northeastern areas of the country

- The Northeast states of India which are famously regarded as “seven sisters” (Arunachal Pradesh, Assam, Meghalaya, Manipur, Mizoram, Nagaland and Tripura) and “one brother” (Sikkim) are experiencing transformation towards enhanced security and development.
- In the Northeastern and eastern regions of India more important issues are the need for adequate security, ramping up economic development, and better connectivity with the rest of India and other South Asian and Southeast Asian countries.
- Recent participation in policy conversations in Imphal (Manipur), interactions with the intelligentsia in Kolkata, and the two Indo-Pacific conclaves hosted by a think tank leading in the study of India’s Northeast have helped in providing clarity about local needs and priorities.
- As per these studies, the security conditions in the region have improved significantly in recent years but traditional and fundamental core issues such as insurgency have remained unresolved.
- Further, these interactions helped to highlight a notable contrast in security assessments of the authorities and the local communities.
 - The perspective of authorities and officials was that the antisocial activities such as smuggling, drug trafficking, transnational border crime, insurgency, and the refugee influx represented serious non-traditional threats to the region and China was seen as a key player behind these activities.
 - This perception has led to an increase in vigilance and strict action by the Assam Rifles and other security agencies.
 - However, representatives of the local communities have raised concerns regarding the insensitive handling of those engaged in lawful exchanges with the neighbouring countries and that there was a scope for more effective and people-sensitive border management in the future.

Development as priority

- The Northeastern region is on the path towards significant economic development and still has very high potential with the development of infrastructure and connectivity,
- The construction of roads linking northeastern towns will help create jobs for several graduates produced by local universities.
- Manipur’s rich research and development facilities must be leveraged and the state should be promoted as the hub of medical tourism for other Indian States and neighbouring countries such as Myanmar.
- Further, in order to accelerate development in the region, investments by Indian corporates and foreign investors should be increased and managed better.
- The Chief Minister of Manipur has urged the strategic and business community to contribute towards developing a concrete foundation for leveraging opportunities with respect to commerce, connectivity, and human capital development.

Connecting India’s East with the Indo-Pacific

- Various intellectuals and performers in the cultural fields from India, Japan, the U.S., Thailand, Bangladesh and Sri Lanka recently reflected on the Indo-Pacific construct’s cultural dimensions and underscored the significance of the region’s “unity in diversity” through music, dance, drama, and cuisine.
- The former Foreign Secretary of India had stressed that the “shared culture, history and mutual social threads that tie the region with India [are] also an important component towards fostering regional cooperation”.
- Former Foreign Secretary of Bangladesh opines that the neighbouring countries must focus more on the geo-cultural dimensions along with the geopolitical and geo-economic aspects of the Indo-Pacific.
- Experts believe that expanding people-related cooperation would result in a wider acceptance of the Indo-Pacific and consolidation to face future challenges.
- It is important that the policy makers acknowledge the growing significance of the Bay of Bengal region and the concept of the Indo-Pacific must be perceived as the immediate neighbour of the Bay of Bengal and its littoral countries.
- After acknowledging the significance of Bay of Bengal, the member-states must invest more in the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) to improve its effectiveness.
- Further, while implementing India’s Indo-Pacific strategy it is important to accept and consider the concerns of Northeast and eastern regions of the country.

Nut graf: Apart from the “Look East and Act East” policies, there have to be compounded efforts to promote the “Think and Relate East” policy within India as increased cultural diplomacy and people-to-people contact in the form of educational exchanges, tourism, and trade would help fortify India’s historical and geographic ties with the Indo-Pacific region.

4. Europe's concerns about the U.S. IRA

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

Mains: The new Inflation Reduction Act of the U.S. and its associated concerns

Context: The U.S. in August 2022 introduced its landmark new Inflation Reduction Act (IRA) which acts as a basis for federal spending.

Inflation Reduction Act (IRA) of the U.S.

- IRA is a \$430 billion package of federal spending, tax breaks, credits, and levies that aims to combat climate change, rationalise healthcare spending, and mandate larger firms to pay their fair share in taxes.
- IRA is also said to be a scaled-down version of the U.S.'s ambitious Build Back Better plan which failed to get the approval of the Senate in 2021.
- Apart from addressing the issue of inflation, IRA also encompasses one of the biggest climate action packages in U.S. history.
 - The Act earmarks \$370 billion for climate-related funding and investments which are aimed at reducing the emissions by about 40% below 2005 levels by 2030.
 - Further, the Act integrates climate action goals with industrial policy to bring about a shift towards cleaner energy by encouraging domestic manufacturing of clean energy components.

Key features of the IRA

- The Act aims to reduce the dependence of the U.S. on China for materials and components for the clean energy industry.
- To provide momentum to the clean energy development in the U.S., the Act extends various consumer and industry-side incentives.
- In order to encourage the use of electric vehicles (EVs) and secure the domestic supply chains for EV manufacturing, there has been a change in the federal tax incentive policy for EVs.
 - As per the Act, only passenger EVs that are assembled in North America are eligible for a \$7,500 tax credit incentive.
 - Further, the buyers of used EVs would be eligible for a \$4,000 tax credit if at least 40% of the critical minerals used in the car batteries are extracted, processed and recycled in North America or a country having a Free Trade Agreement (FTA) with the US.
- The IRA also offers a \$10 billion investment tax credit to develop clean technology manufacturing facilities, \$2 billion in grants for redeveloping and reconstructing existing auto manufacturing facilities to make zero-emission vehicles, and close to \$20 billion in loans to develop new EV manufacturing facilities across the country.
- Additionally, the Act also offers billions in federal procurement to American-made clean technologies.

Europe's concerns

- The countries of the European Union (EU) have expressed concerns about the IRA tax credits and subsidies to EVs and other green products manufactured in North America and FTA partner countries at a time of a prevailing energy crisis on account of the Russia-Ukraine war.
- The European countries believe that the Act puts the European companies at a disadvantageous position and can force these companies to shift the critical processes of their supply chains to America.
- The new green plan "Fit for 55" of the EU also aims to reduce the CO₂ emissions from cars by 55% and vans by 50% by 2030 and all emissions from cars by 2035 and this would require a significant increase in the uptake of EVs.
 - As per the International Energy Agency (IEA), 9 out of the top 10 countries by share of EVs in the total car stock are in Europe.
 - The EU will benefit from the increased uptake of EVs as it would help local automakers to ramp up manufacturing. However, the introduction of the IRA has given rise to fears of automakers shifting to the U.S. and other American countries.
- Experts believe that the concerns of Europe are genuine as various automakers, battery makers and energy-based firms have already announced or shown interest in expanding their presence in America.
 - Example: A Swedish battery maker named Northvolt which was all set to establish a lithium-ion battery factory in Germany, has now said that after the IRA, it could get close to 800 million euros in U.S. state subsidies, which was about four times what the German government was offering.
- Further, the French President has described the IRA as "super aggressive" toward European companies and had hosted the leader of various European companies and had tried to convince them to not shift their manufacturing to America.
- Apart from the European countries, countries such as South Korea and Japan have also raised similar concerns.

U.S.'s stand

- At a recent joint press conference with the French President, the President of the US said that there was room for improvement of the IRA to ensure that European countries also participate and also said that the US “never intended” to exclude cooperating countries.
- However, the President of the US clarified that the “U.S. makes no apology” for promoting and ramping up domestic American manufacturing and would continue to create jobs for its people.

Nut graf: In the wake of the Russia-Ukraine war and the harsh winter, Europe's high energy dependence on Russia has resulted in severe energy shocks causing energy shortages and skyrocketing power prices. The introduction of the IRA by the U.S. at this moment has aggravated the concerns of the European countries as they believe that the clean energy subsidies under the IRA are discriminatory to non-American companies.

5. BIMSTEC for South Asian regional order

Syllabus: Bilateral, Regional & Global Groupings & Agreements Involving India and/or Affecting India's Interests

Prelims: About SAARC and BIMSTEC

Mains: Significance of BIMSTEC to India

Context: The failure of SAARC in recent years has shifted the focus on BIMSTEC for better cooperation in South Asia.

South Asian Association for Regional Cooperation (SAARC)

- SAARC was set up with the signing of the SAARC Charter in Dhaka in 1985.
- **Headquarters:** Kathmandu, Nepal
- **Member States:** Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.
- **Observer States:** Australia, China, the European Union, Iran, Japan, the Republic of Korea, Mauritius, Myanmar, and the United States of America.

Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)

- BIMSTEC is a regional organization that was established in 1997 with the signing of the Bangkok Declaration.
- **Member States:** Bangladesh, India, Sri Lanka, Thailand, Myanmar, Bhutan, and Nepal
- **Headquarters:** Dhaka, Bangladesh

Failure of SAARC:

- The South Asian Association for Regional Cooperation (SAARC), an intergovernmental organisation, was established to promote economic growth in South Asia.
- However, SAARC has failed abjectly in accomplishing most of its objectives.
- South Asia continues to be an extremely poor and least integrated region in the world.
- The intraregional trade and investment in South Asia are very low when compared to other regions such as the Association of South East Asian Nations (ASEAN) and Sub-Saharan Africa.
- Pakistan has adopted an obstructionist attitude within SAARC by repeatedly blocking several vital initiatives such as the motor vehicles agreement, aimed at bolstering regional connectivity.
- Deepening hostility between India and Pakistan has made matters worse. Since 2014, no SAARC summit has taken place leaving the organisation rudderless, and practically dead.
- A weakened SAARC means heightened instability in other promising regional institutions such as the South Asian University (SAU), which is critical to buttressing India's soft power in the region.

The BIMSTEC promise:

- The inability of SAARC to foster regional cooperation and make progress has resulted in a shift of focus from SAARC to the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC).
- In recent years, India has moved its diplomatic energy away from SAARC to BIMSTEC which resulted in BIMSTEC adopting its Charter in its 5th summit in March 2022.
- The BIMSTEC Charter is significantly better than the SAARC Charter in various ways.
 - For instance, Article 6 of the BIMSTEC Charter talks about the 'Admission of new members' to the group.
 - This paves the way for the admission of countries such as the Maldives.
- The BIMSTEC Charter formalises the grouping into an organisation made up of member states that are littoral to and reliant on the Bay of Bengal.
- The summit also saw the adoption of the 'Master Plan for Transport Connectivity,' which lays out a guidance framework for connectivity-related activities in the region in the future.
- However, the BIMSTEC Charter does not contain a flexible participation scheme similar to the ASEAN Charter.
 - This flexible scheme, also known as the 'ASEAN Minus X' formula, allows two or more ASEAN members to initiate negotiations for economic commitments.

- Thus, no country enjoys veto power to thwart economic integration between willing countries.
- A flexible 'BIMSTEC Minus X' formula will allow India and Bangladesh or India and Thailand to conduct their ongoing bilateral free trade agreement (FTA) negotiations under the broader BIMSTEC umbrella.
- A high-quality FTA offering deep economic integration would be an ideal step to strengthen BIMSTEC.

Nut Graf: *Considering the advantages and benefits that BIMSTEC can offer, its Charter should be amended to address various gaps to create a new South Asian regional order based on incrementalism and flexibility, ushering in prosperity and peace in the region.*

6. Focus on Africa, the heart of the Global South

Syllabus: GS-2, Bilateral, regional, and global groupings and agreements involving India's interests.

Mains: G20 Presidency and India-Africa relations.

Details:

- India is willing to be remembered as the voice of the Global South, during its G20 presidency.
- It should be noted that the heart of Global South is Africa with the majority of the 54 countries being either developing or least developed.
- It is thus important to grasp the mood and changes in Africa, especially in its external partnerships.

Details about Washington Summit:

- The second U.S.-Africa summit was organized in Washington from 13 to 15 December 2022. The summit was attended by the leaders of 49 countries and the chair of the African Union (AU).
- U.S. President Joe Biden discussed several aspects of political, security, and economic cooperation. Other deliberations were held on issues like the ways to mitigate the impact of COVID-19 and future pandemics, climate crisis, food security, and diasporic ties.
- It was declared during the summit that African voices, leadership, and innovation are crucial to addressing the global challenge and realizing the vision of a free, open, prosperous, and secure world.
- The U.S. President stressed that the US is "all in on Africa and all in with Africa".
- **Important decisions taken during the summit are:**
 - The U.S. declared its support for the AU to join the G20 as a permanent member.
 - It was further highlighted by the U.S. that it "fully supports" reforming the UN Security Council (UNSC) to include permanent representation for Africa.
 - It has also been promised that the president and the vice president of the U.S. would visit Africa shortly. It should be noted that no U.S. president visited Africa since 2015.
 - The U.S. has also announced new investments comprising:
 - \$21 billion to the International Monetary Fund for providing the necessary funding to low-and middle-income countries
 - \$10 million for a pilot programme to boost the security capacity in Africa
 - The U.S. administration is planning to invest \$55 billion in Africa over the next three years.
- It is analyzed that the first assurance would be implementable once both the U.S. and India overcome the likely resistance from the ASEAN and European Union. However, UNSC reform is still a distant future.

China Challenge:

- China became the largest trading partner and the fourth largest investor in the African continent, ahead of the U.S., due to its consistent diplomacy and extensive economic engagement.
- The U.S.-Africa trade stood at \$44.9 billion in 2021, whereas China-Africa trade exchanges were somewhere near \$254 billion. Moreover, the U.S. investment stock in Sub-Saharan Africa was \$30.31 billion in contrast to China's total investment of \$43.4 billion in 2020.
- The Forum on China-Africa Cooperation (FOCAC) was set up in October 2000.
 - The FOCAC is composed of ministers/leaders from both Africa and China who meet once in three years. The Chinese president participates either in person or digitally.
 - China has established a full-fledged inter-ministerial mechanism to ensure the timely implementation of FOCAC decisions.
 - The last meeting of the forum was held in Dakar in 2021, where support was extended for the Chinese agenda of the One-China Principle, the Global Development Initiative, the Belt and Road Initiative, and the vision of "a community with a shared future."
 - Moreover, for years, the Chinese foreign minister begins his annual series of foreign visits by travelling to Africa.
- Just before the Washington summit, the U.S. Deputy Commerce Secretary highlighted that the U.S. had fallen behind China in terms of trade with Africa.
- African leaders have reiterated multiple times that they don't want to choose and are willing to work with the U.S., China, and all other partners.

India-Africa Relations:

- India has worked hard in the last two decades to strengthen its political and economic partnership with Africa at the continental, regional and bilateral levels.
- A special momentum was created by organizing high-level exchanges and forging cooperation initiatives during the period of 2015-19.
- However several factors like COVID-19, the economic downturn, the war in Ukraine, and the border conflict with China have resulted in a slowdown.
- The G20 presidency is a unique opportunity for India to ensure that the AU becomes a permanent member of this grouping and to reflect Africa's Agenda 2063 for development.
- Additionally, India and the U.S. should collaborate in Africa.
- The fourth India-Africa Forum Summit should also be organized in early 2024 as the third summit was held long back in 2015.

Nut Graf: The African continent plays the most crucial role in the Global South. The United States and China are already cooperating with African countries through several initiatives, and India should also use the opportunity of the G20 presidency to set its mark on the continent.

7. India-China face off in Tawang

Syllabus: GS-2, India and its Neighbourhood – Relations

Mains: Various issues in India-China Relations

Context: Indian and Chinese troops faced off at the Yangtse area near Tawang, Arunachal Pradesh in the eastern sector of the Indo-China border.

Details:

- According to the statement by the Indian Army, on December 09, 2022, Indian and Chinese troops faced off near Tawang which led to minor injuries to a few personnel from both sides.
- As per the Indian Army, the crisis at the face-off site was defused with commanders holding a flag meeting to restore peace and tranquillity.
- Both sides are reported to have over 50,000 soldiers each deployed along the Himalayan frontier in Ladakh.



Source: Hindustan Times

Background:

- China and India share a disputed 3,440km long de facto border called the Line of Actual Control (LAC).
- The border is poorly demarcated. The presence of rivers, lakes and snowcaps means the line can shift.
- The soldiers on either side have come face to face at many points.
- A crisis in the Indo-China border began in April 2020, with PLA transgressions in Ladakh, in the western sector of the boundary.
- Another face-off in January 2021 left troops on both sides injured. It took place along the border between China and India in Sikkim.

- In September 2022, both countries agreed to disengage from a disputed area along a remote western Himalayan border area, with both sides beginning troop withdrawals.
- The crisis has now appeared to have widened to the eastern sector of the Indo-China border in Arunachal Pradesh.

Reasons for the Standoff between India and China:

- **Difference in perception of LAC:** According to the military statement, there are areas of differing perception along the LAC in the Tawang sector, where both sides patrol the area up to respective claim lines. This has resulted in more standoffs between Indian and Chinese troops.
- **Operation Yudh Abhyas:** The Tawan sector clash occurred just days after China objected to the India-US joint military exercise Operation Yudh Abhyas, claiming it violated border agreements signed in 1993 and 1996.
- **Revocation of Article 370:** The growing military tensions along the 3,000-kilometer-long Line of Control (LAC) follow the Jammu and Kashmir reorganization act and India's strong official claim about Aksai Chin, which has been under Chinese control.

Areas of contention between India and China



Source: Aljazeera

- **In the Western sector:**
 - In the Western Sector, India shares a 2,152 km long border with China, and there are territorial disputes over the Aksai Chin region of Jammu and Kashmir, with both countries claiming ownership.
 - The most recent conflict has occurred on the northern bank of Pangong Tso Lake, Demchok, and the Galwan Valley.
- **In the Central sector:**
 - In the central sector, India and China share a 625-kilometer-long border, with a few minor disagreements over Tibet.
- **In the Eastern Sector:**
 - In the Eastern Sector, India and China share a 1,140 km long boundary, and the main points of contention here are the Tawang Valley of Arunachal Pradesh, Chumbi Valley (Doklam Tri-Junction), which India shares with Bhutan.

Implications of raising tension:

- This growing tension involves the risk of escalation which can be devastating given both sides are established nuclear powers.
- There would also be economic fallout as China is one of India's biggest trading partners.
- The military stand-off is mirrored by growing political tension, which has strained ties between both countries.
- The recent disputes have also had broader regional implications, as they have highlighted increasing Indian and American convergence followed by a strengthening of China's alliance with Pakistan.
- The continuing military tensions at different points along the 3,000 km-LAC come as New Delhi kicked off a series of events as part of its presidency of the G20.

What India is doing to counter Chinese incursions?

- The Indian Army has increased monitoring along the LAC and in the eastern sector by using satellites, long-range unmanned aerial vehicles, cutting-edge intelligence, surveillance, and reconnaissance (ISR) equipment, a superior radar network, and advanced night vision systems.
- The Indian Army has carried out an overarching reorientation of its troops to intensify its focus on LAC. They have introduced new weapons and systems, as well as capability development and a major infrastructure drive, to tackle problems along the Chinese border.
- Construction of helipads along border areas for operating Chinook helicopters capable of transporting the army's newest US-origin M777 howitzers to forward sites.
- Following the Galwan incident, the Indian and Chinese soldiers had 16 rounds of talks in the Eastern Ladakh region for peaceful disengagement in the sector.

Way Forward:

- Addressing this military and political challenge will require transparency by taking the opposition and public along.
- A resumption of high-level political dialogue will allow India to convey its concerns at the highest level.
- Both countries should seek diplomatic opportunities to promote restraint and remove obstacles to the peaceful resolution of disputes.

Nut Graf: The recent attempted transgression by the Chinese military in the eastern section of the India-China boundary has served as a reminder of the delicate state of affairs along the Line of Actual Control (LAC). Both sides should engage diplomatically and avoid an escalation of the situation which can be detrimental to the region's security.

8. China's moves in the Indian Ocean

Syllabus: India and its neighborhood relations.

Mains: China's initiatives in the Indian Ocean Region.

Prelims: China-Indian Ocean Region Forum.

Context: First China-Indian Ocean Region Forum was convened in Kunming, China.

Details

- China's top development aid agency - China International Development Cooperation Agency (CIDCA) convened the first "China-Indian Ocean Region Forum".
- It is a Chinese initiative that focuses on the Indian Ocean Region (IOR), highlighting China's growing strategic interests in the region.
- China-Indian Ocean Region Forum is described as the first high-level official development cooperation forum jointly held by China and countries in the Indian Ocean Region.
- A Joint Press Statement was released by the forum that said China proposed to establish a marine disaster prevention and mitigation cooperation mechanism between China and other countries in IOR. It further noted that all parties agreed to "strengthen policy coordination, enhance development cooperation, improve disaster resilience, and boost economic benefits through marine resources like fisheries, tourism, renewable energy, and shipping in a sustainable manner.
- It was reported that the forum was attended by representatives of nineteen countries: Afghanistan, Bangladesh, Nepal, Pakistan, Indonesia, Myanmar, Sri Lanka, Maldives, Iran, Oman, South Africa, Kenya, Mozambique, Tanzania, Seychelles, Madagascar, Mauritius, Djibouti, and Australia.
- However, Australia and Maldives subsequently released statements emphasizing that their participation was not official.

India's stand

- The official spokesperson of the forum said that India is a major country in the Indian Ocean region and was invited to the forum. He further said that China is looking forward to meeting India at the next forum.
- However, India views China's recent moves (including the recent visit of Yuang 5 to Sri Lanka) in the region cautiously.
- Furthermore, India supports the Indian Ocean Rim Association (IORA) as an already established platform for the region. IORA has 23 members with 10 dialogue partners including China, Japan, Russia, the U.K., and the U.S.

China's plan for Indian Ocean Region

- China has long tried to register its influence in these regions and enhance its strategic ambition by limiting India's influence, military power, and status and sustaining its energy supply and economic growth.
- China's outreach in South Asia increased considerably in the early 2000s. It began to extend its strategic ends in the region through loans, incentives, and mega-infrastructure projects. These efforts became more institutionalized with the introduction of the Belt and Road Initiative (BRI) in 2013. As a result, China's accessibility to the Indian Ocean increased.

- The stepped-up regional diplomacy comes at a time when China is enhancing its military presence in the waters of the IOR.
 - China's first overseas military facility was established in Djibouti (near the Horn of Africa).
- China's tracking vessels, military ships, and submarines are visiting ports in the IOR with much greater frequency.
- It was also reported in the past that the PLA Navy would deploy six aircraft carriers to secure China's maritime interests and that two of them will be based in the IOR.

Measures by India and Quad:

- India has re-energized its diplomatic efforts in its neighborhood. For instance:
 - India is reciprocating Maldives 'India First' policy through massive economic assistance, grants, and infrastructure projects. Both countries are also cooperating on maritime security.
 - Nepal has attempted to improve its overall bilateral relations with India.
 - In a span of one year, India provided economic and humanitarian assistance and investments worth \$4 billion to crisis-hit Sri Lanka.
- India's efforts in the region have also attracted other Quad members. Some of the examples are:
 - All the members of Quad (Australia, Japan, and the United States) are closely cooperating to push China by offering alternatives to BRI. They also assisted Sri Lanka throughout the crisis.
 - Japan is in the final talks with Sri Lanka on account of debt restructuring.
 - Australia and the U.S. have committed to opening their embassies and new areas of cooperation in Maldives. Furthermore, the U.S. signed a defence and security framework with the Maldives in 2020.
 - Earlier in 2022, Nepal also ratified the U.S.'s Millennium Challenge Cooperation (Nepal Compact) which was against China's interest.

Emerging Challenges:

- It should be noted that India and its partners' efforts are unlikely to deter China, especially with rising tensions against India, and the Quad making inroads in South Asia.
- The Chinese surveillance vessel Yuan Wang-5 (docked in Sri Lanka in August 2022), re-entered the Indian Ocean in early December.
- A similar incident occurred in November, when another vessel of the Yuan Wang series entered the Indian Ocean, coinciding with the test flight of the Agni-series missile.
- China also hosted its first-ever China-Indian Ocean Region Forum, to institutionalize its presence in the region and challenge initiatives like the Quad and the Colombo Security Conclave.
- Countries in South Asia are facing economic and political turmoil. For example,
 - Nepal, the Maldives and Bhutan are struggling with depleting forex reserves.
 - Bangladesh reached a bailout agreement of \$4.5 billion with the International Monetary Fund.
 - Sri Lanka is also reeling under the economic crisis.
 - These countries are also facing issues like energy shortages, inflation, and negative or slow economic growth.
- As 2023 marks an election year for a large part of South Asia, these economic grievances combined with political opportunism will likely fuel more instability in the region. For example, protests in Bangladesh.

Nut Graf: *China-Indian Ocean Region Forum is the recent initiative of China that reflects its growing interest in the Indian Ocean region. India on the other hand is quite apprehensive of the initiative and instead supports the already-established Indian Ocean Rim Association.*

9. The role of the 'China Test' in India's grand strategy

Syllabus: India and its neighborhood relations.

Mains: India-China relations.

Concept of Principal Contradiction:

- The concept of a principal contradiction is defined as a useful method of optimizing and prioritizing strategic decision-making.
- It poses an extreme challenge to an individual/organization and has the potential to shape future choices and associated consequences.
- In the present scenario, India's principal strategic contradiction is China. Whereas challenges like Pakistan, internal insurgencies, and difficulties in relations with neighboring countries are secondary contradictions.
- It should be noted that secondary contradictions are also important and can add to the primary contradiction.

China Test:

- India's major strategic decisions should pass the China test by asking and answering a direct question: "Does a particular development/decision/relationship help tackle the China challenge?"
- This test would help prioritize strategic decision-making in the long run with potential policy utility.
- The test involves 3 distinct elements from an operational point of view:
 - An assessment of certain Indian decisions or regional developments and their association with Chinese regional strategy/interests.
 - An assessment of the need for modifications at the secondary contradiction level in case of India's certain decisions or developments.
 - An assessment of requirements of any major policy changes internally.

Examples highlighting utility of the China Test:● **INDIA-U.S. RELATIONS:**

- India had a complicated relationship with the U.S. which is getting normalized and interest-driven gradually. For instance, the U.S. is looking forward to re-engaging southern Asia – Pakistan, South Asia, the Indo-Pacific, and even the Taliban, despite its withdrawal from the region.
- It was observed that the standoff with China along the Line of Actual Control in 2020 was the outcome of India's growing proximity to Washington.
- As per the 'China test' of India-U.S. relations, it is clearly not in China's interest to see an American re-engagement of the region or growing India-U.S. proximity. The test further suggests that India should not give in to the short-term temptation of not being on the wrong side of China given its consequences in the long term.

● **INDIA-PAKISTAN RELATION:**

- According to the China test, making peace with Pakistan would help deal with China in a better way.
- It is strategically sensible for India to have a course correction with Pakistan because if India is vigorously preoccupied with Pakistan then Beijing would get the opportunity to displace Indian primacy in South Asia.
- Similarly, India should not oppose the American engagement of Pakistan as it would help in preventing Pakistan from going into the China camp completely. It should be noted that Pakistan's engagement with the U.S. and the West is much better for India.

● **INDIA-RUSSIA RELATION:**

- Applying the China test to the India-Russia relation does not provide a simple and straightforward answer as the U.S. and its allies want India to stop engaging with Moscow and condemn Russia's aggression against Ukraine. This in turn would help in greater accommodation of Indian diplomatic and political interests against China's aggression.
- Moreover, the proximity between China and Russia is expanding which reduces the robustness of India-Russia relations.
- The China test suggests that even though the relation between New Delhi and Moscow is on the wane, India should expand its relations with Russia because:
 1. In the absence of an India-Russia relationship, Sino-Russian relations would further strengthen, and India will be cut out of the continental space to its north and west.
 2. India gets several benefits like discounted energy, cheaper defence equipment, support at the United Nations Security Council, etc.
 3. Furthermore, Russia better understands India's 'political sensitivities' in comparison to the western partners.
 4. The discontinuation of the relationship might also push Russia towards Pakistan.
 5. It should also be noted that Moscow does not want China to dominate the strategic space around it and has been keen to balance the growing influence of China in Central Asia with partners like New Delhi.

Nut Graf: *There is great importance of the 'China test' in India's strategic planning and decision-making as that would help in smart balancing China in Southern Asia and eventually the geopolitics of the world.*

10. India and Taliban

Syllabus: GS2, India and its Neighborhood – Relations

Mains: India-Afghanistan Relations

Context: Female students in Afghanistan were suspended from tertiary education by the Taliban.

Introduction:

- The Taliban regime has announced a ban on female students studying in universities.
- The Taliban has passed several decrees including banning Afghan schoolgirls from studying above grade six, job restrictions and a ban on women at gyms and public parks, with public floggings for those travelling without male relatives chaperoning them.
- These decrees are against promises made to the international community by the Taliban during the Doha talks, including establishing an "inclusive" government.

India's approach to the Taliban regime:

- During the first Taliban regime (1996-2001) India neither extended its recognition nor had a diplomatic presence in Afghanistan.
- India did not engage Taliban officials. It also supported the anti-Taliban resistance at the time.
- After the Taliban's ouster from power, India supported successive governments in Kabul and extended massive aid toward the country's socioeconomic development.
- India provided training to Afghan security forces, police, civilian officials, and teachers. Reflecting its large role in Afghanistan was its sizable diplomatic presence; in addition to an embassy in Kabul, India had consulates in Herat, Kandahar, Jalalabad, and Mazar-e-Sharif.
- India shut down its consulates and embassy and evacuated its officials and nationals from Afghanistan during the present Taliban 2.0 regime.
- While no country recognises the Taliban officially, many openly engage with the regime leaders. Many countries, including India, have diplomatic missions.

Implications of India's Policy:

- India's policies have made it more comfortable for the Taliban to continue to rule, while giving shelter to terrorist organisations, including those that target India.
- India's decision to cancel all visas to Afghans, hurt female students seeking an education in India the most.
- Extending aid and developing trade and diplomatic ties with the Taliban regime are seen as ways to prevent it from acting against Indian interests.
- Indian officials have clarified that a diplomatic presence in Kabul does not mean recognition of the regime.

Way Forward:

- The international community must review its current policy towards the Taliban 2.0 regime considering the ongoing repressive decrees by the Taliban.
- Countries can also create platforms outside Afghanistan for non-Taliban Afghan leaders, particularly women who had been elected in the past, to regroup, organise and voice an alternative vision to the current regime.
 - Countries can also curtail engagement with the Taliban, which depends on external assistance to run its government structures.
- India, as a regional leader, must review its "hands-off" approach to the people of Afghanistan who have suffered many deprivations in the past year.

Nut Graf: *The Taliban's decision to bar women from higher education drew condemnation from foreign governments and the United Nations. The global community must acknowledge that women's rights are at the core of the issue with the Taliban, and review its current policy towards the Taliban 2.0 regime.*

11. Developments in India-Maldives Relations

Syllabus: India and its Neighborhood – Relations

Mains: Political Developments in Maldives and its impact on India

Context: On December 25, 2022, the Maldives criminal court sentenced former president Abdulla Yameen to 11 years in prison.

Introduction:

- The Maldives criminal court sentenced former president Abdulla Yameen to 11 years in prison and fined him \$5 million after finding him guilty of corruption and money laundering charges related to receiving kickbacks from a private company.
- Mr. Yameen is the opposition Progressive Party of Maldives (PPM) candidate for the next election due in 2023.
 - The Maldives Constitution disqualifies any candidate convicted of criminal charges and sentenced to a term of more than a year unless they are later acquitted or a three-year period has elapsed since their release.
- Previously, he was sentenced to five years in jail and fined \$5 million in 2019 for embezzling \$1 million in state funds, which the prosecution said was acquired through the lease of resort development rights.
 - After his sentencing, Yameen was shifted to house arrest in 2020 and was freed months later.

Implications for India:

- Situated close to strategic shipping lanes in the Indian Ocean, the Maldives is a focal point for competition between India and China over influence in the region.
- India's infrastructure aid, credit lines, loans and commissioning of various projects (Greater Male Connectivity Project, Hanimaadhoo airport, Hulhumale cricket stadium, Gulhifalhu port) and high-level military exchanges since 2018 have raised speculation that India eyes a strong foothold in the Maldives.
- Mr. Yameen has had a rough relationship with India during his presidential term after he declared an emergency in the island state.

- He led the “India Out” campaign as the opposition leader, and he has continued to blame India for his imprisonment notwithstanding the most recent ruling.
 - The PPM also alleged that India had “directly interfered” with the judicial process during the trial of Mr. Yameen.
- India’s major concern has been the impact of political instability in the neighbourhood on its security and development.
 - The incarceration of Mr. Yameen might make space for even more radical elements in the opposition in the Maldives against India.

Nut Graf: Recent sentencing by Maldives criminal court jailing former president Abdulla Yameen has its implications on India. India needs to tread carefully and actively project the image of a friendly and helpful neighbour without explicitly seeking to sway next year’s election in any direction.

Optional Subject Coaching

for Political Science and International
Relations, and Sociology



Video Lectures

Online video lectures covering both Paper 1 and Paper 2 of the optional subject.



Test Series

Test Series to improve your answer writing skills and boost your confidence.



Mentorship Assistance

Mentorship assistance on a real-time basis to clear all your doubts and queries.

ART AND CULTURE

1. Forging a connect along the Ghats

Syllabus: Indian Heritage and Culture.

Mains: Kashi Tamil Sangamam – Bond between Kashi and Tamil Nadu.

Context: The Kashi Tamil Sangamam.

Details:

- The Union government's Thirty-day Kashi Tamil Sangamam programme intends to celebrate the bond between Kashi (the ancient name of Varanasi) and Tamil Nadu under the Ek Bharat, Shreshtha Bharat.
 - Ek Bharat Shreshtha Bharat aims to enhance interactions between people of different States/Union Territories.
- Under Kashi Tamil Sangamam, people travel from Varanasi to Sarnath, Ayodhya, and Prayagraj in six days.
- The period of the programme was chosen from November 16 to December 19, as it coincides with the Hindu month of Karthigai and would have enabled guests from the south to finish their journey before the coldest months of north India.
- The event linked the two oldest and most important centres of traditional knowledge systems in India.

Historical links between the two cities:

- Several ancient philosophers from Tamil Nadu such as Ramunajacharya visited Kashi to expand their spiritual learnings.
- Furthermore, the Tenkasi and Sivakasi temples in Tamil Nadu drew inspiration from Varanasi's Kashi Vishwanath temple after the Pandya king, Adhiveera Rama Pandiyan, went on a pilgrimage to Varanasi.
- There is a popular practice in Tamil Brahmin weddings where the groom embarks on a Kashi Yatra before he is called back to marry the bride.
- There are also multiple references to Kashi in Tamil texts like Kalittokai and Thiruppugazh.

Background Details:

- The Kashi Tamil Sangamam was proposed by the High-Powered Committee for the Promotion of Indian Languages (Bharatiya Bhasha Samiti) appointed by the Ministry of Education.
- According to the website for the event, the objective of the programme is to ensure a "holistic" approach to education and integration of the "wealth of Indian knowledge systems", as prescribed in the National Education Policy (NEP) of 2020. The holistic approach includes 4 interrelated domains namely art, culture, knowledge, and language.
- During the inauguration of the Kashi Tamil Sangamam, Prime Minister Shri Narendra Modi released the translation of the Thirukkural in 13 languages. He further announced that a chair dedicated to the Tamil poet Subramania Bharati, or Bharatiyar, would be established at Banaras Hindu University (BHU).
- The different batches arriving in Varanasi belong to 12 different categories: artisans, students, businessmen, literature, teacher, heritage, temples, spirituality, entrepreneurs, professionals, rural, and culture.
- The Indian Institute of Technology Madras (IIT Madras) is providing IT support for the event and has launched a dedicated website to register participants.
- Some examples of the themes for the academic session of the participants are:
 - Literature Group: Bharatiyar's Kashi connect.
 - Spiritual Group: Vaishnavite and Shaivite mutts and temples in the two cities and lectures on Lord Shiva.
 - Teachers Group: Ancient pedagogical methods and the need to integrate ancient storytelling forms in modern education.
 - Heritage Group: Participants from this group would learn about the Kallanai dam which runs across the Cauvery river and was built during the reign of the Chola king, Karikalan.

Nut Graf: *The Kashi Tamil Sangamam, a month-long programme celebrates the ancient bond between Varanasi and Tamil Nadu. The intermingling of visitors from Tamil Nadu with the locals of Varanasi reveals the innate oneness as well as the mutual affection between the diverse population of India.*

2. Geographical Indication (GI) Tag

Syllabus: Indian Heritage and Culture.

Prelims: Geographical Indications – India

Contains: Nine new products have been granted Geographical Indication (GI) status.

Details:

- Nine new items, including gamocha of Assam, Tandur red gram of Telangana, Raktsey Karpo apricot of Ladakh, and Alibag white onion of Maharashtra, have been given the GI tag.
 - Gamosa of Assam is a traditional textile having great significance for the people of Assam in all rituals related to puja and 'nam prasang'.
 - The Tandur Red gram is a traditional crop in the rain-fed tract of the Telangana region. It contains about 22-24% protein, which is almost three times that of cereals.
- Kerala has been awarded five GI tags for its agricultural produce.
 - Attappady Attukombu Avara (beans), Attappady Thuvara (red gram), Onattukara Ellu (sesame), Kanthalloor-Vattavada Veluthulli (garlic), and Kodungalloor Pottuvellari (snap melon) are given GI tag from Kerala.
 - The Attappady Thuvara is an important traditional woody shrub, generally grown as an annual crop. The Kerala government has formulated a special scheme under the Attappady Millet Village programme to conserve the traditional crops of the area for securing the livelihood of tribal people.
- With this, the total number of GI tags in India comes to 432.
 - Out of these, 401 are Indian-origin products and 31 are of foreign-origin.
- Karnataka and Tamil Nadu are states with the highest number of GI tags, followed by Kerala, Uttar Pradesh, and Maharashtra.
- The unique features of the products, imparted by the agro-climatic conditions of the geographical area of their production, are the basis for getting the Geographical Indication tag.

3. Dokra metalcraft

Syllabus: Indian Art and Culture

Prelims: About Dokra metalcraft

Context: Lalbazar in Kolkata has emerged as a hub for Dokra metal crafts in recent years.

Dokra metalcraft



Image Source: The Hindu

- Dokra metal craft is an ancient tradition with a documented history of about 5,000 years.
- Dokra is an ancient metal craft practised by the Ojha metal smiths of Jharkhand, Odisha, Chhattisgarh, West Bengal and Telangana.
 - In West Bengal, two places are famous for Dokra work namely Bikna in Bankura and Dariyapur in Bardhaman.
- It is a 4,000-year-old craft tradition whose earliest and most well-known example is the Dancing Girl of Mohenjodaro.
- Dokra is a non-ferrous metal casting made using the lost-wax casting technique.
- The metals used in Dokra art include copper and its alloys such as brass and bronze.
- It is also known as bell metal craft since the parts are crafted entirely of brass and have no joints.

- Dokra art is a complex process with each figurine taking over a month to be made as it involves multiple many processes which require about seven or eight varieties of clay apart from other raw materials such as metal.
- The Dokra work depicts everyday scenes from rural life, such as women at work, singers, fishermen, ceremonies, folk deities, birds, animals, and the environment.
- Dokra metal crafts are in great demand both in domestic as well as foreign markets because of their primitive simplicity, attractive folk motifs and forms.
- Particularly, Dhokra horses, elephants, peacocks, owls, religious images, measuring bowls, and lamp caskets have attracted huge demand.

4. Three more sites added to tentative list of UNESCO

Syllabus: GS-1; Indian HERitage and Culture

Prelims: About UNESCO World Heritage Sites in India

Context

- Three more sites added to the tentative list of UNESCO World Heritage Sites.
- With the addition of three more sites, India at present has 52 sites on the UNESCO Tentative List which highlights the richness of cultural and natural wealth of India.
- The three newly added sites are:
 - Vadnagar town in Gujarat
 - Sun Temple at Modhera in Gujarat
 - Rock cut sculptures of Unakoti in Tripura

Vadnagar:

- It is a city with deep historical roots in Gujarat's Mehsana district.
 - **Vadnagar, also known as Chamatkarpur, Anandpur, Snehpur, and Vimalpur, was mentioned in the Puranas.**
- Vadnagar is famous for its **torans, a pair of 40-foot-tall Solanki-era columns built in red and yellow sandstone to commemorate a war victory in the 12th century.**
- Hiuen Tsang, a Chinese Buddhist traveller, visited the city in 640 AD and is said to have mentioned it in his travelogue.
- In Vadnagar, ruins of a Buddhist monastery were discovered during excavations in 2008-09.
- Tanariri Performing Arts College is located in Vadnagar and was named after the bravery of two sisters, Tana and Riri, who sacrificed their lives when Akbar asked them to sing in his court, which was against their custom.



Source: firstpost

Modhera Sun Temple:

Figure: deccanherald

- The Modhera Sun Temple is situated on the left bank of the river Pushpavati, a tributary of the river Rupan, in the Becharaji taluka of Mehsana district.
- This temple faces east and is made of bright yellow sandstone.
- According to the temple's description, it was built in the Maru-gurjara architectural style and consists of the main temple shrine (garbhagriha), a hall (gadhamandapa), an outer hall or assembly hall (Sabha Mandapa or ranga mantapa), and a sacred pool (Surya Kunda), which is now known as Ramakunda.
- **Ramakunda is a massive rectangular stepped tank** that is possibly India's grandest temple tank.
- Every year, at the equinoxes, the sun shines directly into the temple's central shrine.

Rock-cut Sculptures of Unakoti:

Figure: Times of India

- It is a Shaivite pilgrimage that dates back to the seventh or ninth centuries, if not earlier.
- **Unakoti means "one less than a crore," and it is said that many rock cut carvings can be found here.**
- According to Hindu mythology, when Lord Shiva was travelling to Kashi with one crore gods and goddesses, he stopped for the night at this location.
 - He summoned all the gods and goddesses to rise before the sun and travel to Kashi.
 - It is said that no one else could get up in the morning except Shiva, so Lord Shiva set out for Kashi himself, cursing the others to become stone images.
 - As a result, Unakoti now has less than a crore stone images and carvings.
- The images found at Unakoti are of two types, namely rock-carved figures and stone images.
 - **The central Shiva head and massive Ganesha figures stand out among the rock cut carvings.**
 - Unakotiswara Kal Bhairava is the name given to the central Shiva head.
 - On each side of the central Shiva's headdress, there are two full-size female figures, one of Durga standing on a lion and another on the other side.
 - In addition, three massive images of Nandi Bull have been discovered half buried in the ground.
- Every year a big fair popularly known as 'Ashokastami Mela' is held in the month of April which is visited by thousands of pilgrims.

5. Joynagar Moa

Prelims: About Joynagar Moa

Context: The number of registered manufacturers of Joynagar Moa is increasing significantly with the extension of its Geographical Indication for 10 more years.

Joynagar Moa



Source: The Hindu

- Joynagar Moa is a popular Bengal sweetmeat.
- The making of Moa sweet dates back to 1904.
- Moa is made of aromatic Khoi (popped-rice ball) which is held together with fresh date-palm jaggery, extracted from the beginning of December till the end of February.
 - The making of Moa also includes sugar, cashew nuts and raisins.
- Thus moa sweet is available only during the colder months of the year.
- Joynagar Moa was accorded the Geographical Indication (GI) tag in 2015.
- The Joynagar Moa is known to have a very short shelf life (only about five days without refrigeration) and the high perishability of Moa has hindered its exports.

6. Srimukhalingam temple



Source: The Hans India

- The chief priest of Srimukhalingam temple in Andhra Pradesh, has urged the Archaeological Survey of India (ASI) to get the temple included on UNESCO's list of World Heritage Sites.
- The temple was built in the Kalinga architectural style and is located by the Vamsadhara River.
- It is dedicated to lord Srimukha Lingeswara.
- It was Constructed in the 9th century CE by kings of the Eastern Ganga Dynasty.
- The main temple of Srimukhalingam was built by Eastern Ganga Dynasty King Kamaranava deva II, great-grandfather of Anantavarman Chodaganga Deva of Kalinga.
 - Later in the 17th century, the Maharaja of Paralakhemundi Estate Renovated this temple.

7. PRASAD Project

Syllabus: Indian Art and Culture

Prelims: About PRASAD Project

Context

The President of India, Droupadi Murmu inaugurated the “PRASAD project” in the pilgrim town of Srisailem in Andhra Pradesh.

PRASAD project

- The “National Mission on Pilgrimage Rejuvenation And Spiritual Augmentation Drive” or the PRASAD scheme was launched by the Ministry of Tourism, Government of India.
- The scheme was launched in the year 2014-2015.
- The key objective of the scheme is to focus on identifying and developing pilgrimage sites across India in an integrated manner for enriching the religious tourism experience.
- The Scheme aims to integrate pilgrimage destinations in a prioritised, planned and sustainable manner to provide a comprehensive religious tourism experience as the growth of domestic tourism is significantly dependent on pilgrimage tourism.
- The Scheme also aimed at developing important infrastructure such as entry points (Road, Rail and Water Transport), last-mile connectivity, basic tourism facilities like Information Centres, money exchange such as ATMs, eco-friendly modes of transport, illumination with renewable sources of energy, drinking water, toilets, craft bazaars/haats, telecom facilities, internet connectivity, etc.

SCIENCE AND TECHNOLOGY

1. Private Sector In India's Space Program

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

Prelims: Vikram-S Rocket

Mains: Significance of Private Sector participation in Indian Space Program and various initiatives undertaken

Context: India's first privately developed launch vehicle, Vikram-S, blasted off on its maiden flight from the Indian Space Research Organisation's (ISRO's) Sriharikota spaceport on Friday (November 18)

About Vikram S rocket:

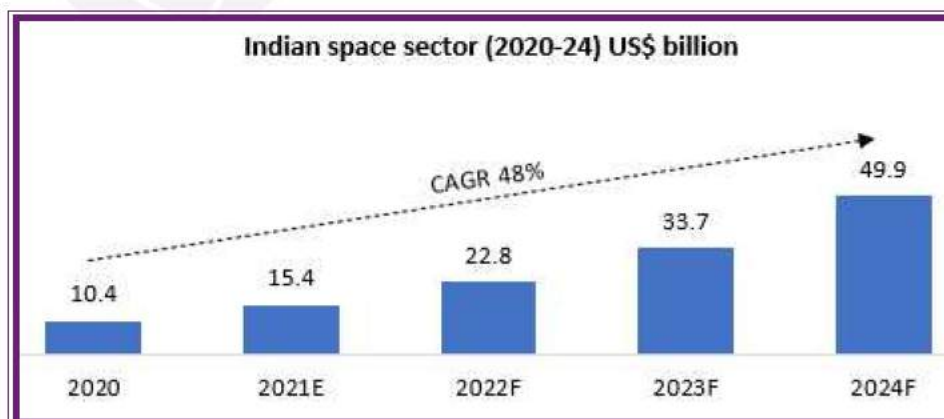
- The Vikram-S rocket is a **single-stage solid fuelled, sub-orbital rocket** developed by incorporating advanced technologies including **carbon composite structures** and **3D-printed components**.
- The rocket has been **developed by Hyderabad-based Skyroot Aerospace**, a company that was started in 2018. It is called Vikram-S, named after Vikram Sarabhai, the founder of India's space programme.
- The **engine used in the launch vehicle is 'Kalam-80'**, named after former president Dr A P J Abdul Kalam.
- The Vikram rockets **will be able to carry between 290 kg and 560 kg payloads into sun-synchronous polar orbits**. In comparison, PSLV can carry up to 1,750 kg and Small Satellite Launch Vehicle (SSLV) can carry up to 300 kg of payload to sun-synchronous orbit.
- It was developed as a technology demonstration flight to help validate the technologies that will be used in the subsequent Vikram-1 orbital vehicle of Skyroot.

About Agnikul:

- Agnikul Cosmos, a Chennai-based space tech business, has opened **India's first private launchpad and mission control center** at the Satish Dhawan Space Centre (SDSC) in Sriharikota.
- The launchpad, according to Agnikul, was built to **accommodate and enable liquid stage-controlled launches**.
- **Agnibaan** is a **two-stage launch vehicle capable of delivering payloads weighing up to 100 kilograms to a low-Earth orbit** 700 kilometres above the Earth's surface.
- The Agnibaan rocket will be **propelled by 3D-printed Agnilet engines** developed by the company.
- The **Agnilet rocket** is a "semi-cryogenic" engine that propels itself using a **mixture of liquid kerosene and super cold liquid oxygen**.

Initiatives taken for Private Sector participation in Indian Space Program:

- **India currently accounts for roughly 2 to 3% of the global space economy** and is predicted to increase its contribution to 10% by 2030.
- As of 2021, **India has the sixth-largest space industry internationally** with 3.6% of the world's space-tech companies.
- In 2019, the **Indian space industry was estimated to be worth \$7 billion**, and by **2024, it hopes to reach \$50 billion**.



Source: Ibef

- In June 2020, the Government has approved the participation of private enterprises across all phases of space activities. Until then, private sector participation was limited to providing components to ISRO.

- **Indian National Space Promotion and Authorisation Centre (IN-SPACe):** IN-SPACe was founded as the **autonomous nodal agency of Department of Space (DOS) to enhance the private space sector economy in India**
 - IN-SPACe has granted five licenses to private companies to conduct space operations in India.
 - To date, IN-SPACe has received more than 150 applications from Space non-governmental organisations for Authorization, Facilitation, and Promotion.
- **Draft Space Activities Bill:** The Government has introduced the Draft Space Activities Bill to encourage the engagement of non-governmental and private sector organisations while promoting and regulating India's space operations.
 - It has completed Public and Legal consultations and will be processed for inter-ministerial consultations.
- **Foreign Direct Investment:** Currently, 100% FDI is only permitted for satellite development and operation via the government method.
 - The Department of Space (DOS) is updating existing space rules, and the new Foreign Direct Investment (FDI) policy for the space sector would allow foreign corporations to put up infrastructure in accordance with Indian guidelines.
- **Indian Space Association (ISpA):** It is a premier industry association of space and satellite companies that will assist private players in conducting independent space activities, facilitate the use of ISRO services and technology in the private sector, provide regulatory and policy inputs, and support MSMEs, start-ups, and academia.

Benefits of Private sector in the Space programme:

- **Innovation & Competition:** Increased private player engagement will allow ISRO to focus more on creating new technologies, exploratory missions and human spaceflight programmes.
 - Commercialisation will also allow the integration of many other technologies like artificial intelligence into space exploration activities.
 - It will boost competition among commercial participants and reduce the overall cost of space exploration.
- **Will help tap the growing global market:** The demand for space-based services is increasing, and **private sector participation is vital to make India a global space hub.**
- **Management of Space Debris:** According to the ministry, 60-odd start-ups that had registered with the Indian Space Research Organisation (ISRO), a majority of them were engaging with initiatives linked to space debris control.
 - Bringing in private players in these fields would help in managing space junk.
- **Tackle the challenges of Disaster management and climate change:** Enhancing private participation in space technology would benefit connectivity and combating climate-related concerns in a more secure and effective manner.
- **Impact on a variety of industries:** Development in aerospace, IT hardware, and telecom sectors is required for the development of the space sector.
 - It is thus argued that investment in this industry would have a favourable spillover impact on other sectors.

2. Science and Technology in Agriculture

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

Prelims: About various initiatives to promote Science and Technology in Agriculture

Mains: The scope and significance of adoption of Science and Technology in the field of Agriculture

Context: The government's emphasis on new digital technology innovations and research and development in agriculture has not only increased farmers' income but also ensured that the country remains self-sufficient in most agricultural commodities.

How do Science and Technology help in Agriculture?

The Ashok Dalwai Committee on Doubling Farmers' Income in its report noted that digital technology can play a transformative role in modernising and organising how rural India performs agricultural activities.

- **Increases agriculture productivity:** The use of high-yield and high-quality seeds, the application of mechanization, adaptation to climate changes and implementation of advanced irrigation methods can improve agriculture productivity.
- **Prevents soil degradation:** Precision farming can be used to deliver precise amounts of fertiliser and other inputs to increase agricultural productivity, prevent soil degradation, and make efficient use of water resources.
- **Educating the farmers:** Various initiatives such as the Kisan Suvidha portal, Soil health cards, Kisan Call centre, and others help to disseminate modern farm practices that could improve the quality and quantity of production while lowering production costs.
- **Reduces burden on the government:** With the use of direct benefit transfer neem-coated urea, precision farming etc. government saves a considerable amount on the subsidies provided.

Importance of the Agricultural sector in India

- In India, between 55 and 60 per cent of rural households depend on agriculture and related industries for their livelihood.
- Proportion of the Indian population depends directly or indirectly on agriculture for employment opportunities more than that any other sector.
- According to the agriculture census (2015-16), 82% of farmers belong to small and marginal categories, with less than one acre of land each.
- Agriculture accounts for 18.8 per cent of the country's Gross Value Added (GA) (2021-22), with a growth of 3.6% in 2020-21 and 3.9% in 2021-22.

Various initiatives to promote Science and Technology in Agriculture:

- **India Digital Ecosystem of Agriculture (IDEA):** It is a federated farmers' database that will serve as a foundation for developing innovative agri-focused solutions that will leverage emerging technologies to effectively contribute to the creation of a better Agriculture Ecosystem in India.
- **National e-Governance Plan in Agriculture (NeGP-A):** The NeGP-A provides funds to states and union territories for projects involving the use of modern technologies such as artificial intelligence, machine learning, robotics, drones, and so on.
- **Submission on Agricultural Mechanisation:** It aims to bring together small and marginal farmers and provide the benefits of farm mechanisation by promoting Custom Hiring Centers (CHCs), creating hubs for hi-tech and high-value farm equipment, distribution of various agricultural equipment etc..
- **e-NAM: Online Marketplace:** e-NAM is a pan-India electronic trading portal that connects the existing Agricultural Produce Market Committee (APMC) mandis to create a unified national agricultural commodities market.
 - It promotes better price discovery, transparency, and competition, allowing farmers to receive better remuneration for their produce and promotes a "One Nation, One Market" policy.
- **PM KISAN:** The PM KISAN scheme employs Direct Benefit Transfer to transfer Rs.6,000 annually in three instalments directly to the bank accounts of eligible farmers. The PM-KISAN mobile app was launched to expand the scheme's reach.
- **Agriculture Infrastructure Fund:** Under the scheme, financial assistance is provided digitally in the form of Interest Subvention and Credit Guarantee to beneficiaries such as Farmers, Primary Agricultural Credit Societies (PACS), Farmer Producers Organizations, and so on for the establishment of post-harvest management infrastructure.
- **Usage of Drones in Agriculture:** The Department of Agriculture and Farmers Welfare has published Standard Operating Procedures for using drones to apply pesticides and nutrients.
 - To promote the usage of drones, the sub-mission on Agricultural Mechanisation provides financial assistance covering the entire cost of the drone (up to Rs. 10 lakhs per drone) as well as contingent expenditure.
- **Thrust on Genetic Improvement:** Indian Council for Agricultural Research (ICAR) during 2021-22 developed and released 309 varieties of high-yield and high-quality crops including 35 varieties with special traits.
- **Other Digital Initiatives** include Kisan Call Centres, AGMARK Portal, Kisan Suvidha App, Soil Health Card (SHC) Portal, etc.

Nut Graf: *Technology can help farmers increase productivity and improve their overall standard of living. In terms of adopting modern farming practices enabled by technology, India has a long way to go. Agriculture technology has the potential to truly transform India into "Atmanirbhar Bharat" in all aspects, with less reliance on external factors.*

3. Deepfake technology: how and why China is planning to regulate it

Syllabus: Awareness in the field of Science and Technology.

Mains: Deepfake Technology and policies to tackle it.

Prelims: Deepfake Technology.

Context: China is planning to regulate deepfake technology.

Details:

- The Cyberspace Administration of China will be rolling out new regulations to curb the use of deep synthesis technology and check disinformation.
- Deep synthesis is defined as the use of technologies, including deep learning and augmented reality, to generate text, images, audio, and video to create virtual scenes.
- As per the guidelines of China's new rules, companies/platforms using the technology should first receive consent from individuals before editing their image or voice.

Deepfake:

- Deepfakes is defined as a compilation of artificial images and audio that are put together using machine-learning algorithms to spread misinformation and replace real person's appearance, voice, etc.
- Deepfake is the most notorious application of deep synthesis where synthetic media is used to swap the face or voice of one person for another. It is employed to generate porn videos, produce fake news, and commit financial fraud.
- The term originated in the year 2017 when an anonymous Reddit user under the name "Deepfakes" manipulated Google's open-source, deep-learning technology to create and post pornographic videos.
- The technology is now being used for scams and hoaxes, celebrity pornography, election manipulation, social engineering, automated disinformation attacks, identity theft, and financial fraud.

China's new policy to curb Deepfakes:

- China's Cyberspace Administration raised the concern that unchecked development and use of deep synthesis could lead to its use in criminal activities.
- The policy aims to curb risks that arise from activities provided by platforms that use deep learning or virtual reality to alter any online content.
- Various Provisions of the policy:
 - The policy necessitates deep synthesis service providers and users to ensure that any doctored content is explicitly labeled and can be traced back to its source.
 - Mandates people using the technology to edit someone's image or voice, to notify and take consent from that particular individual.
 - In the case of reposting news made through technology, the source should be strictly from the government-approved list of news outlets.
 - Deep synthesis service providers should abide by local laws, respect ethics, and maintain the correct political direction and public opinion orientation.

Other Countries' efforts to combat Deepfakes:

- **European Union (EU):**
 - EU introduced the Code of practice on Disinformation in 2018.
 - It was signed by online platforms like Facebook, Google, Twitter, Mozilla (2018), Microsoft(2019), and TikTok(2020). It was also signed by advertisers and other players in the advertising industry.
 - However, the assessment of the Code revealed certain loopholes. The code was thus updated and strengthened by the Commission. The Code's revision process was completed in June 2022.
 - The revised Code mandates tech companies to take desired measures in countering deepfakes and fake accounts on their platforms.
 - Companies are given six months to implement these measures. In the case of non-compliance, companies would face fines of as much as 6% of their annual global turnover.
- **United States:**
 - The U.S. brought the bipartisan Deepfake Task Force Act to assist the Department of Homeland Security (DHS) in countering deepfake technology.
 - According to the prescribed measures, the DHS should conduct an annual study of deepfakes, assess the technology, track its usage by foreign and domestic entities, and suggest countermeasures.
 - Some States in the United States like California and Texas have passed laws that criminalize the publishing and distributing of deepfake videos that tend to influence the election results.
 - Similarly, the law in Virginia imposes criminal penalties on the distribution of nonconsensual deepfake pornography.
- **India:**
 - No legal provisions are in place against using deepfake technology in India.
 - However, certain laws like Copyright Violation, Defamation, and cyber felonies can be used to tackle misuse of technology.
- **Canada:**
 - Canada does not have any regulations regarding deepfakes but it is in a unique position to lead the initiative against deepfakes.
 - The government of Canada has employed cutting-edge Artificial Intelligence(AI) research with a number of domestic and foreign actors.
 - Moreover, Canada is an active member and leader in many related multilateral initiatives like the Paris Call for Trust and Security in Cyberspace, the NATO Cooperative Cyber Defence Centre of Excellence, and the Global Partnership on Artificial Intelligence.

Nut Graf: Deepfake technology poses serious threats in cyberspace. China is aiming to regulate the use of deepfakes like the European Union and the United States. India, however, does not have any such laws and should formulate one in near future to tackle the menace of misinformation, pornography and financial fraud.

4. Scramjet engine

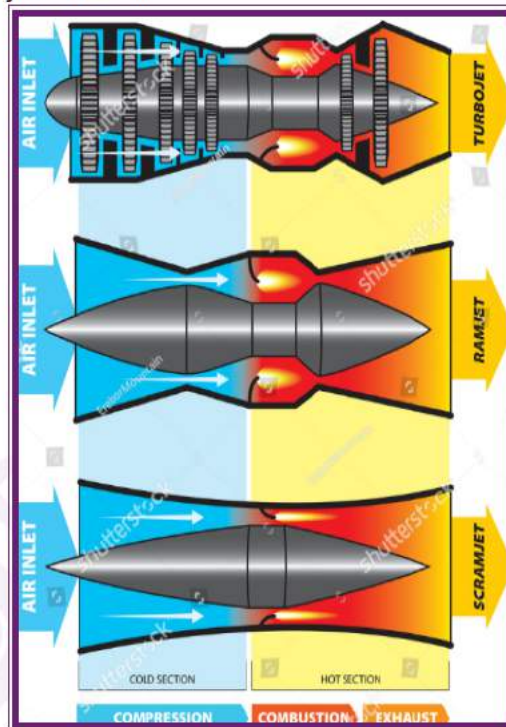
Syllabus: GS-3; Science and Technology; Awareness in the field of Space

Prelims: Scramjet engine

Context: The Indian Space Research Organisation conducted a hot test of a Scramjet engine.

Scramjet engine

- A scramjet is a supersonic-combustion ramjet engine in which the airflow through the engine remains supersonic (greater than the speed of sound).
 - A ramjet engine operates by the combustion of fuel in a stream of air compressed by the forward speed of the aircraft itself, as compared to normal jet engines where the compressor section compresses the air.
 - The airflow through a ramjet engine is at a subsonic speed (less than the speed of sound).
 - Ramjet engines can operate from Mach 3 to Mach 6.
 - Mach number is the ratio of the speed of an aircraft (vehicle) to the speed of sound.
- Scramjet-powered vehicles can operate at speeds up to Mach 15.
- Scramjet engines facilitate supersonic combustion by breathing oxygen from the atmosphere during flight.
- It then allows the oxygen to mix with hydrogen already stored in the vehicle, triggering combustion, and producing the required thrust to lift the satellite to its designated orbit.
- Such engines that can breathe oxygen from the atmosphere play a significant role in space technologies as they help reduce the need for propellants by about 70%.



Source: Shutterstock

5. ChatGPT

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

Prelims: ChatGPT

Context

Recently a tool called ChatGPT was released on the internet which has been regarded as a milestone development in the field of Artificial Intelligence (AI).

ChatGPT

- ChatGPT is developed by **OpenAI**, which is a research institute and company that focuses on developing AI technology in a responsible and safe way.
 - OpenAI was set up in 2015 by a group of entrepreneurs and researchers such as Elon Musk, Sam Altman, and Greg Brockman.
- ChatGPT is said to be a chatbot tool that knows every topic under the sun.
- ChatGPT tool can answer various questions or queries and also carry on a conversation.

- Due to its various functions and abilities, ChatGPT is regarded as a “Language Model” rather than just a chatbot.
 - A language model is software that prints out a sequence of words as output that are related to some words given as input with appropriate semantic relation.
- The tool also uses natural language processing (NLP) applications, such as speech recognition, automatic translation, and text generation.
- ChatGPT is a part of a generation of language models that have been released by OpenAI since 2018.
 - In 2018, OpenAI released the Generative Pre-Training (GPT) language model and updated versions such as GPT-2, GPT-3, and GPT-3.5 have also been released.
- ChatGPT is said to be the most powerful NLP tool at present.

6. The challenges of quantum computing

Syllabus: Awareness in the field of computers.

Mains: Quantum Computing and associated concerns.

Prelims: Quantum computing.

Details:

- Quantum computers (QC) have the ability to take the advantage of quantum physics to solve problems that are extremely complex for conventional computers.
- QCs have wide-ranging applications and requires high amount of investment.
- Several initiatives taken in India in this regard are:
 - The government of India launched a mission in 2021 with allocation of ₹8,000 crore to study quantum technologies.
 - Indian army opened a quantum research facility in Madhya Pradesh.
 - Another facility was co-launched by the Department of Science and Technology in Pune.

Quantum Physics:

- Quantum physics describes the reality of objects at the subatomic scale. These objects are particles like electrons.
- In reality the macroscopic object (Eg. Ball, person, table) can be at one particular location at a time and can be easily predicted. However, in case of subatomic particles the location can't be predicted with such accuracy. For instance, the location of an electron can't be pinpointed. It will be present in some volume of space, with a probability attached to each point in the volume: say, 10% at point A and 5% at point B on repeated probing.
- **Erwin Schrödinger description:**
 - In a famous thought-experiment in 1935, Erwin Schrödinger described one interpretation of the laws. There's a cat in a closed box with a bowl of poison. The cat is said to exist in a superposition of two states: alive and dead (until the box is opened). When the box is opened, the superposition will collapse to a single state. The state to which it collapses depends on the probability of each state.
- Another phenomenon of Quantum Physics is entanglement. When two particles are entangled and separated by arbitrary distance (more than 1000 km) causing the superposition of one particle to collapse, the superposition of the other particle would also instantaneously collapse.

Use of superposition in computers:

- The fundamental computational unit of a conventional computer, bit can be 0 or 1 at a time depending on the corresponding transistor state – on or off.
- The fundamental unit of a QC is qubit. It could be a particle like an electron.
- Some information can be directly encoded on the qubit. For instance, if the electron's spin is pointing up, it means 1 and if it is pointing down, it implies 0. But instead of being simply 1 or 0, the information is encoded in a superposition like 45% 0 plus 55% 1. This is a third type of state.
- The qubits are entangled for working together. If one qubit is examined to reveal its state, the states of all entangled qubits will also be revealed. The computer's final output is the state to which all the qubits have collapsed.
- It should be noted that one qubit can encode two states, so a computer with N qubits can encode 2^N states.
- A computer (transistor-based) with N transistors can only encode 2^N states whereas a qubit-based computer can access more states. Therefore a QC can access more computational pathways and find solutions to more complex problems.

Challenges in using Quantum Computers:

- Researchers have employed QCs to model the binding energy of hydrogen bonds and simulate a wormhole model. However, in case of more practical problems such as detecting the shape of an undiscovered drug or in exploring space several challenges exist.
- Engineering-related challenge: An actual QC requires at least 1,000 qubits whereas the present biggest quantum processor has only 433 qubits.
- Disturbances in systems: Qubits exist in superposition in specific conditions, often including very low temperature (~ 0.01 K), with radiation-shielding and protection against physical shock. Material or electromagnetic defects in the

circuitry have the potential to 'corrupt' their states and cause bias in the eventual result.

- Error Correction: Rectification of error is tricky in QCs. A reliable error-correction would require each qubit to be attached to thousands of physical qubits.
- Informational Noise: Addition of qubits would result in amplification of errors which will further increase the informational noise.
- Infrastructural challenges: Quantum computers require superconducting circuits along with lakhs of qubits, firmware, circuit optimisation, compilers and algorithms.

Nut Graf: *Quantum computers have the ability to solve complex problems that a conventional computer can not solve. However, Quantum Computing has several challenges in itself that require immediate attention.*

7. The uncontrolled re-entries of satellites

Syllabus: Awareness in the fields of Space

Mains: The consequences of uncontrolled re-entries of rocket parts and satellites and the possible solutions.

Context: Hundreds of experts have signed an open letter published by the Outer Space Institute (OSI) which has urged for national and multilateral efforts to limit the instances of uncontrolled re-entries.

Background

- The first-ever artificial satellite was launched by the Soviet Union in 1957 and at present, there are over 6,000 satellites in orbit, most of them in low-earth and geostationary orbits, placed with the help of over 5,000 launches.
- Rockets that are used as launch vehicles have multiple stages and the rocket sheds these stages once it has reached certain altitudes and velocities.
 - A few rockets shed all their larger stages before reaching the destination orbit with only a smaller engine with the payload reaching the final orbit.
 - A few other rockets carry the payload to the final orbit and then initiate a deorbit manoeuvre in order to descend.
- In both such cases, rocket stages enter back to the earth's surface in a controlled or uncontrolled manner.

What are uncontrolled re-entries?

- Uncontrolled re-entries refer to instances where the rocket parts come back to the earth's surface in an unguided manner after the completion of their missions.
- During an uncontrolled re-entry, the stages of a rocket fall down to earth and its path is determined by the angle of descent, shape, air currents and other such aspects.
- Further, the parts of the rocket disintegrate as they fall with the smaller pieces spreading out and increasing the potential radius of impact on the earth's surface.
- A few of the pieces burn up completely while others don't and due to the high speeds at which the pieces travel the debris formed can be deadly.

Potential consequences of uncontrolled re-entries

- According to the 2021 report of the International Space Safety Foundation, the collision of an airliner with debris of mass of more than 300 grams would lead to a catastrophic failure, which could result in the death of all the people on board.
- Most of the time, the rocket parts have fallen into the oceans as the earth's surface has more water than land. However, the falling rocket part can also fall on land which could impact human settlements.
- The letter published by OSI has made references to the instances of a Russian rocket in 2018 and China's Long March 5B rockets in 2020 and 2022 where the falling parts of these rockets struck a few places in Indonesia, Peru, India, the Ivory Coast, etc.
 - Various reports highlight the Chinese transgressions in recent times, but the U.S. has been the worst offender historically.
- Further, the re-entering stages of rockets still containing fuel or propellant pose a significant risk of atmospheric and terrestrial chemical contamination.
 - In 2016, the parts of a SpaceX Falcon 9 fell down in Indonesia and these included two fuel tanks that were the size of a refrigerator.
- The OSI letter also notes that the casualty risk from such uncontrolled re-entries of rocket parts could be in the order of 10% in the coming decade and that the nations of the "Global South" face a higher risk of casualties.

Cause of concern

- The Orbital Debris Mitigation Standard Practices (ODMSP) of the U.S. mandate that all launches must keep the chance of a casualty from a re-entering body to be below 0.01%.
 - However, this condition has been waived by the U.S. Air Force and NASA in various instances.
 - Additionally, a study conducted by researchers in Canada indicated that such thresholds adopted by countries are arbitrary and find little relevance at a time when there are technologies that facilitate controlled re-entries.

- Also, there is no international binding agreement in place at the moment which ensures controlled re-entries of rocket stages.
 - The Liability Convention of 1972 mandates all countries to pay for damages, but not prevent them.

Recommendations

- The OSI letter recommends that space agencies aim for an ocean in order to avoid human casualties during re-entries.
- The OSI letter recommends increased research on futuristic solutions to tackle the impacts of satellite re-entering as well.
- The improvements in electronics and fabrication have facilitated the development of smaller satellites which are not only easy to build and launch in large numbers but they are also more likely to burn up during re-entry.
- Further, there has to be a binding agreement on the use of the technologies that perform controlled re-entries.
 - Such technologies include wing-like attachments, de-orbiting brakes, and design changes that reduce the chances of debris formation.

Case study of RISAT-2

- India's 300-kg RISAT-2 satellite which was launched by the PSLV-C12 in 2009 made an uncontrolled re-entry into the Earth's atmosphere recently.
- However, the Indian System for Safe and Sustainable Space Operations Management (IS4OM) facility in ISTRAC, Bengaluru, continuously monitored the re-entry of the satellite and analysis was carried out continuously through the analysis software.
- The path of re-entry was also tracked one month beforehand using the Multi Object Tracking Radar (MOTR) at Sriharikota.
- The RISAT-2 eventually fell into the Indian Ocean near Jakarta, Indonesia on October 30th 2022.

Nut graf: Uncontrolled re-entries of rocket parts or satellites not just pose the risk of human casualties but could also cause significant damage to some of the most crucial ecosystems of the earth. International efforts are to be undertaken to perform more controlled re-entries by using various modern technologies in order to address the issues of uncontrolled re-entries.


8. Bharat Biotech's nasal COVID vaccine

Syllabus: GS-3; Science and Technology; Achievements of Indians in science & technology and developing new technology.

Prelims: About iNOVACC

Context: Bharat Biotech's nasal COVID vaccine is now made available as a booster dose.

iNOVACC



Nasal route

Bharat Biotech's intranasal COVID-19 vaccine — branded as iNOVACC — is now available for public use

- It is the world's first intranasal vaccine approved for use
- The nasal vaccine — BBV154 — had received approval in November for restricted use
- It is a recombinant replication deficient adenovirus vectored vaccine with a pre-fusion stabilised spike protein. This candidate was evaluated in phase I, II and III clinical trials with successful results

Source: The Hindu

- iNOVACC is Bharat Biotech's intranasal COVID-19 vaccine.
- iNOVACC has been co-developed by Bharat Biotech and the Washington University of the U.S.
- An intranasal vaccine works by stimulating a broad immune response that neutralises the Immunoglobulin G (IgG), mucosal Immunoglobulin A (IgA), and T-cell responses.
- The non-invasive and needle-free nasal route of administering the vaccine has shown excellent potential due to the organised immune systems of the nasal mucosa.
- iNOVACC is the first-ever intranasal vaccine approved for use in the world.
- iNOVACC vaccine is approved both as a primary dose and a heterologous booster.

- iNCOVACC is an adenovirus-vectored vaccine with a prefusion stabilised spike protein, unlike Covaxin, which is an inactivated coronavirus injected along with an adjuvant.
- Advantages of nasal vaccines include ease of administration as it is non-invasive and needle-free, elimination of needle-associated risks and scalable manufacturing.
- Further, the immune responses at the nasal mucosa which is said to be the site of infection will play a crucial role in blocking both infection and transmission of COVID-19.

9. Patriot Missiles

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

Prelims: About Patriot Missiles

Mains: Implications of Russia-Ukraine war

Context: The U.S. is sending Patriot missile batteries to Ukraine.

Introduction:

- The U.S. mobilised the West under its leadership against Russia in the ongoing Ukraine war and imposed tight sanctions on Moscow, besides sending ammunition to Ukraine.
- The U.S. sent medium-range rocket systems such as HIMARS (High Mobility Artillery Rocket Systems) and MLRS (multiple launch rocket systems) to Ukraine to gain battlefield momentum after initial setbacks.
- Honouring Ukraine's requests for advanced defence systems the U.S. is sending Patriot missile batteries to Ukraine.

About Patriot Missiles:

- Patriot (MIM-104) is a surface-to-air, long-range, all-altitude, all-weather air-guided missile system that was first deployed in the 1980s to counter tactical ballistic missiles, cruise missiles and advanced aircraft.
 - The system was tested in combat for the first time in the First Gulf war (1990-91.)
- It is produced by Raytheon in Massachusetts and Lockheed Martin Missiles.
- The U.S. Army describes the Patriot, which consists of multiple parts including a radar, a control station and up to eight launchers as its "most advanced air defence system."
 - These missiles were used by the US military in the Persian Gulf War, the Iraq war, the 2014 Israel – Gaza conflict, the Syrian civil war, Yemen civil war, the Saudi Arabian-led intervention in Yemen, Saudi Arabian – Yemeni border conflict.
- Each Patriot battery consists of a truck-mounted launching system with eight launchers that can hold up to four missile interceptors each, a ground radar, a control station and a generator.
- According to NATO, the Patriot system's radar has a range of over 150 km and it can track over 50 potential targets at the same time.
- Patriot is in service with the US and allied countries including Germany, Greece, Israel, Japan, Kuwait, the Netherlands, Saudi Arabia, South Korea, Poland, Sweden, Qatar, the United Arab Emirates, Romania, Spain, and Taiwan.

Impact of Patriot Missiles on Ongoing war:

- Russia has expressed concerns that delivery of such a sophisticated surface-to-air missile battery would be viewed as provocative and that the system and any troops accompanying it would be a valid target for Moscow's military.
- The Patriot is being supplied, according to the U.S., not to escalate the situation but to fortify Ukraine's defences.
- The approach might improve Ukraine's defences, but it won't exactly transform the situation in Ukraine's favour as the full deployment of the Patriot takes time and high cost per missile and the relatively small number of missiles in a battery makes it difficult for Ukraine to use the missiles irresponsibly.
 - A key hurdle will be training. U.S. troops will have to train Ukrainian forces on how to use and maintain the system.

Nut Graf: The recent decision of the U.S. to send Patriot missile batteries to Ukraine further expands the role of the US in the ongoing conflict. There are concerns that deployment of the system would provoke Russia, or risk that a missile fired could end up hitting inside Russia, which could further escalate the conflict.

10. Gene Therapy

Syllabus: GS03-Science and Technology

Prelims: CRISPR-cas9 system

Context: Scientists in the United Kingdom are testing a new form of cancer therapy.

Key Details:

- A 13-year-old girl Alyssia in the UK who has T-cell acute lymphoblastic leukaemia received experimental gene therapy that relied on a new technique called 'base editing.' She now has no detectable cancer cells.
- In T-cell acute lymphoblastic leukaemia, or T-ALL, the T-cells, which are a class of white blood cells, equipped to hunt and neutralise threats to the body, turn against the body and end up destroying healthy cells that normally help with immunity.
 - The disease is rapid and progressive and is usually treated by chemotherapy and radiation therapy.
- The objective of the therapy in the case of T-cell leukaemia was to fix her immune system in a way that it stops making cancerous T-cells.

What is 'base editing'?

- A person's genetic code is several permutations of four bases: Adenine (A), Guanine (G), cytosine (C) and thymine (T).
 - Sequences of these bases spell out genes that are instructions to produce the wide array of proteins necessary for the body's functions.
- In Alyssia's case, her T-cells had become cancerous because of a mis-arrangement in the sequence of bases.
- Correcting this mis-arrangement could mean a healthier immune system. The most popular approach to allow genes to be altered and errors fixed has been the CRISPR-cas9 system.
 - The CRISPR-cas9 system is believed to be the fast, most versatile system to effect such gene editing.
- The CRISPR-cas 9 system consists of an enzyme that acts like molecular scissors. It can be made to cut a piece of DNA at a precise location and a guide RNA can be used to insert a changed genetic code at the sites of the incision.
- David Liu of the Broad Institute, Massachusetts has improvised on the CRISPR-cas9 system to be able to directly change certain bases: thus, a C can be changed into a G and T into an A.
- Base editing is reportedly more effective at treating blood disorders which are caused by single point mutations, or when a change in a single base pair can cause terminal disease.

11. "Dark Patterns" on the Internet

Syllabus: Awareness in Different Fields- IT & Computers

Mains: Privacy issues with digital platforms and big tech companies

Context: This article discusses the deceptive tactics deployed by tech firms called "dark patterns".

What are dark patterns?

- The term "dark patterns" was first coined by UI/UX (user interface/user experience) specialist Harry Brignull to describe the ways in which software can subtly trick users into doing things they didn't mean to do, or discouraging behaviour that's bad for the company.
- Such patterns are unethical user interface designs that deliberately make your Internet experience harder or even exploit you.
- They are designed to benefit the company or platform employing the designs.

How do companies use dark patterns?

- Different Big Tech companies, like Apple, Amazon, Skype, Facebook, LinkedIn, Microsoft, and Google, employ dark patterns to downgrade the user experience for their own benefit.
 - For Instance, when you want to unsubscribe from a mailing list, the company makes the "Unsubscribe" button tiny, low-contrast, and buried in paragraphs of text at the bottom of an email putting up subtle roadblocks between you and cancellation.
 - Amazon came under fire in the European Union for its confusing, multi-step cancelling process for Amazon Prime subscriptions. After communicating with consumer regulators, Amazon this year made its cancellation process easier for online customers in European countries.
 - The last few seconds of a video are obscured by thumbnails of other videos as YouTube nags users to sign up for YouTube Premium, interfering with user experience.
- In the U.S., the Federal Trade Commission [FTC] has taken note of dark patterns and the risks they pose. It listed over 30 dark patterns which are standard practice across social media platforms and e-commerce sites.
 - These include "baseless" countdowns for online deals, conditions in fine print that add on to costs, making cancellation buttons hard to see or click, making ads appear as news reports or celebrity endorsements, auto-

playing videos, forcing users to create accounts to finish a transaction, silently charging credit cards after free trials end, and using dull colours to hide information that users should know about.

- In one instance, the FTC report took legal action against Amazon in 2014, for a supposedly “free” children’s app that fooled its young users into making in-app purchases that their parents had to pay for.

How do dark patterns affect user experience?

- Dark patterns jeopardise Internet users’ experiences and increase their susceptibility to data and financial exploitation by Big Tech companies.
- Dark patterns trick consumers, present online barriers, lengthen the completion of routine tasks, get them to sign up for undesirable services or products, and coerce them into paying more money or disclosing more personal information than they had originally meant.
- According to the FTC, dark patterns will likely follow augmented reality (AR) and virtual reality (VR) platforms and devices as they grow in usage.

Nut Graf: *By using dark patterns, digital platforms take away a user’s right to full information about the services they are using and their control over their browsing experience. Internet users who are able to identify and recognise dark patterns in their daily lives can choose more user-friendly platforms that will respect their right to choose and privacy.*

12. ISRO inks MoU to establish SpaceTech Innovation Network

- The Indian Space Research Organisation (ISRO) has signed a memorandum of understanding (MoU) with Social Alpha which is a multistage innovation venture development platform for science and technology start-ups.
- The MoU is to launch the **SpaceTech Innovation Network (SpIN)**.
 - The SpIN is the first-ever dedicated platform in the country for innovation, curation, and venture development for the expanding space entrepreneurial ecosystem.
- According to ISRO, this tie-up is a one-of-a-kind public-private collaboration for start-ups and SMEs in the space industry and is a significant step towards providing stimulus to India’s space reform policies.
- The SpIN will mainly focus on facilitating space tech entrepreneurs in three innovation categories namely,
 - Geospatial Technologies and Downstream Applications
 - Enabling Technologies for Space & Mobility
 - Aerospace Materials, Sensors, and Avionics
- These innovative technologies are expected to induce a paradigm shift in utilising space applications and maximising their economic, social, and environmental potential for the larger benefit of society.

13. B-21 Raider



Source: northropgrumman

- The US Air force recently unveiled its most advanced military aircraft – the B-21 Raider.
- It is developed by US defense major Northrop Grumman.
- B-21 Raider is being promoted by the company as a ‘digital bomber’.
 - Through the integration of cloud computing, and advanced integration of data, sensors and weapons, the B-21 raider has been developed using agile software.
- It is the first new American bomber aircraft in more than 30 years. Almost every aspect of the program is classified.
- When delivered to the US Air Force, Northrop Grumman’s B-21 stealth bomber will join the US nuclear triad and will provide the USAF with long-range mission survivability.
- It can hit enemy targets with conventional missiles as well as nuclear warheads.

14. Lunar Mission by Japan

- Spacecraft from a Japanese startup called 'ispace' was launched to the Moon on December 11, 2022.
- It is Japan's first-ever lunar mission and the first of its kind by a private company.
- The spacecraft is carrying a 10 kg UAE-built rover called 'Rashid' as a payload.
- The Rashid Rover was built by Dubai's Mohammed bin Rashid Space Centre (MBRSC), in the United Arab Emirates (UAE), and is being delivered by the HAKUTO-R lander, engineered by ispace.
- If the landing is successful, HAKUTO-R will also become the first commercial spacecraft ever to make a controlled landing on the moon.
- The launch was carried out by SpaceX aboard a Falcon 9 rocket in the U.S..
- Only the US, Russia and China have succeeded in successfully putting a robot on the moon so far.
- The mission is the first edition of the Hakuto-R programme meaning "white rabbit" in Japanese.
 - The mission is called white rabbit because the spacecraft is expected to reach the Moon's surface in 2023, which is the year of the rabbit in Japanese.
- ispace has stated that it wants to expand the spectrum of human existence into space and build a sustainable planet by offering high-frequency, economical space transportation services.

IAS टेबलेट कार्यक्रम

सर्वोत्तम व्याख्यान की
कहीं भी और कभी भी उपलब्धता

500 से अधिक घंटों का प्रारंभिक और मुख्य परीक्षा के पाठ्यक्रम को आवृत्त करता हुआ व्याख्यान



हमारे मार्गदर्शकों द्वारा प्रत्येक छात्र हेतु मार्गदर्शन और व्यक्तिगत प्रतिपुष्टि



मानक पुस्तकों सहित समय और अद्यतन अध्ययन सामग्री



पुनरीक्षण नोट्स के साथ चर्चित मुद्दों पर सप्ताह में दो बार लाइव वेबिनार व्याख्यान



साप्ताहिक वेबिनार, चर्चित मुद्दे, समसामयिकी पत्र/पत्रिका और प्रैक्टिस सेट का छात्र पोर्टल उपलब्ध

DEFENCE AND INTERNAL SECURITY

1. Ransomware attacks

Syllabus: Challenges to internal security through communication networks and the basics of cyber security

Prelims: About ransomware and other types of cyber attacks and Intelligence Fusion and Strategic Operations (IFSO)

Mains: Details about ransomware and other types of cyber attacks and the agencies that deal with cybercrimes in India

Context: The e-services at the All-India Institute of Medical Sciences (AIIMS) were recently affected by a suspected ransomware attack.

Details

- AIIMS has a Local Area Network (LAN) which consists of over 6,500 computers and supports the institute, hospital, centres and other departments.
- Due to the cyber attacks, most of the servers stopped working and also the eHospital network which is managed by the National Informatics Centre (NIC).
- The Delhi Police's Intelligence Fusion and Strategic Operations (IFSO) have initiated investigations and due to the pending sanitisation of the LAN and its nodes, all the critical hospital services are at present being executed manually.
- Unofficial reports suggest that cyber criminals have demanded about ₹200 crores in cryptocurrency as ransom.

Ransomware attacks

- Ransomware is a category of malicious cyber attack software, used by cybercriminals.
- This malicious software first infects a computer system by blocking access to the stored data by encrypting the files and later demands a ransom amount from the owner in exchange for the decryption key.
- These types of malware usually are injected remotely by manipulating the user into downloading it upon clicking a link sent through email or other means.
- The ransomware malware has the ability to spread throughout the network by exploiting existing network vulnerabilities.
- Ransomware attacks can also facilitate the theft of sensitive and confidential data for evil motives.

Other Types of Cyber Attacks

- **Malware:** Malware is a form of application that performs nefarious activities and can be designed to create access to networks, spy on credentials and to cause disruption.
- **Phishing:** In Phishing, an attacker tricks an unsuspecting target into handing over valuable information, such as passwords, credit card details, etc.
- **Man-in-the-middle attack (MITM):** MITM consists of a message interception between two parties in an attempt to spy on the targets.
- **Distributed Denial-of-Service (DDoS) attack:** In a DDoS attack, an attacker floods a target server with traffic that will disrupt it. Since most servers cannot handle it, it may lead to services slowing down on the website and if it eventually crashes.
- **Zero-day exploit:** When cyber-criminals learn of a vulnerability in a frequently used software application they target users and organizations using the software to exploit it until a fix is available. This is called a Zero-day exploit.
- **DNS Tunnelling:** A DNS Tunnelling provides attackers with a stable and consistent line of communication to the given target. The malware used will gather information as long as the DNS tunnelling is active.
- **Business Email Compromise (BEC):** In a BEC attack, hackers target employees who have specific authority to finalize business transactions. They trick them into transferring money into an account belonging to the hacker.
- **Cryptojacking:** Cryptojacking is used to target a computer in order to mine cryptocurrencies such as bitcoin.
- **Drive-by Attack:** A website is loaded with malware, and when a visitor happens to come across such a website their device is infected with the malware which can be used to steal valuable data or crash the system.

Instances of ransomware attacks and their threat

- Analysis of the cyber attacks on AIIMS networks reveals that about five of the AIIMS' servers that hosted data of over three crore patients were compromised.
- Similar attacks were carried out in May 2022 on Spicejet which led to the cancellation and delays of several flights.
- The public sector undertaking Oil India (OIL) was targeted in April 2022 in Assam and the attackers demanded ₹57 crores as ransom.
- IT firm Tech Mahindra was also impacted by a ransomware attack that targeted multiple servers of the Pimpri Chinchwad Smart City project and caused losses of about ₹ 5 crores in 2021.
- Cybercriminals used RobinHood ransomware to attack the systems of power distribution companies in Telangana and Andhra Pradesh in 2019. This attack endangered the data of over 3.5 lakh individuals.

- Cybersecurity firm Trellix, in its report, has said that there are about 25 major types of ransomware in circulation.
- As per Interpol's first-ever Global Crime Trend report presented at its 90th General Assembly meeting held in Delhi recently, ransomware at 66% was ranked as the second highest threat after money laundering and is also expected to increase the most.

Agencies that deal with cyber-crimes in India

- The **Indian Computer Emergency Response Team (CERT-In)** is the national-level nodal agency that collects, analyses and circulates inputs on cyber-attacks.
 - CERT-In is further tasked with issuing guidelines, recommending preventive measures, forecasting, alerting and extending training.
 - CERT-In is also responsible for undertaking measures to handle any significant cyber security event.
- The **National Cyber Security Coordinator (NCSC)** under the National Security Council Secretariat, coordinates with various agencies at the national level on cybersecurity issues.
- The **National Critical Information Infrastructure Protection Centre (NCIIPC)** which has been established under Section 70A of the Information Technology Act, 2000 is entrusted with the protection of the critical information infrastructure of the country.
- The **Cyber Swachhta Kendra (Botnet Cleaning and Malware Analysis Centre)** has been set up for the detection of malicious software programmes and to provide free tools to address the issues of malicious software.
- The **National Cyber Coordination Centre** is tasked with creating awareness about existing and potential threats.
- The **Intelligence Fusion and Strategic Operations (IFSO)** is the cybercrime unit of the Delhi Police that is specialised in managing complex and sensitive cybercrime cases. IFSO has been involved in some of the most sensitive cybercrime cases such as the Bulli Bai case and the Sulli deal app case.

Way forward

- The recent instances of cyber attacks have made it important to implement the National Cyber Security Strategy which has been conceptualised by the Data Security Council of India. This strategy will ensure that adequate preparedness is in place to deal with cyber attacks.
- Adequate budgets must be allocated to various ministries to enhance their cyber security systems.
- Capacity enhancement of all the agencies that deal with cyber crimes in India have to be undertaken at the earliest.
- Further, it is important for India to garner international cooperation and support for countering cyber-attacks.

Nut graf: With instances of ransomware attacks and cyber attacks increasing significantly in recent years due to an accelerating rate of digitalisation, it has become essential to ensure that all necessary safety protocols are in place and measures are to be undertaken immediately in order to thwart any such attack in the future.

2. End-to-End Encryption

Syllabus: Challenges to internal security through communication networks and basics of cyber security

Mains: End to End Encryption technology and Issues associated with it

Context: Apple, on December 07,2022 announced the introduction of end-to-end encryption for most of the data on iCloud by early 2023.

Introduction:

- Apple announced that it will be increasing the number of data points protected by end-to-end encryption on iCloud from 14 to 23 categories.
- The company claimed that with end-to-end encryption, user data will be protected even in case data is breached in the cloud.
- Similarly, Elon Musk, CEO of Twitter recently pushed for Twitter directing messaging's (DMs) to be encrypted.
- Many popular messaging service providers use end-to-end encryption, including Facebook, WhatsApp and Zoom.
- Several government agencies are not happy with the recent development.
- The Federal Bureau of Investigation, the lead federal agency for investigating cyber attacks and intrusions in the U.S expressed concerns with the threat that end-to-end encryption and user-only access pose.
 - The agency insisted they hinder its ability to protect Americans from cyber-attacks, violence against children, and terrorism

What is end-to-end encryption?

- End-to-end encryption (E2EE) is a method of secure communication that prevents third parties from accessing data while it's transferred from one end system or device to another.
- It prevents third parties like cloud service providers, internet service providers (ISPs) and cybercriminals from accessing data while it is being transferred.
- End-to-end encryption uses an algorithm to convert plain text into an unintelligible format. Exclusively individuals having the decryption keys, which are only kept on endpoints and not with any other parties like service providers,

can decode and read this format.

- When sending corporate documents, financial information, legal documents, and private discussions, end-to-end encryption has long been employed. Additionally, it may be used to manage user authorization for access to stored data.
- End-to-end encryption is used to secure communications in instant messaging and also used to secure passwords, protect stored data and safeguard data on cloud storage.

Significance of End to End Encryption:

- The total number of data breaches more than tripled between 2013 and 2021.
- According to Apple, data of 1.1 billion personal records were exposed in 2021 alone and that it is trying to address this rising threat by implementing end-to-end encryption.
- Extra layer of protection would be valuable to targets of hacking attacks launched by well-funded groups.
- End-to-end encryption promotes data protection and prevents unauthorised access to personal data.
- End-to-end encryption is also viewed as a technology that protects user data from government snooping, making it a desired feature by political opponents, journalists, and activists.

Government agencies standpoint:

- Attempts by government agencies across the globe, in the past, to access encrypted data hosted and stored by tech companies have met with strong resistance.
- Encrypted messages can be used by terrorists and other non state elements that can threaten sovereignty and integrity of nation.
- In 2019, the U. S., the U. K., and Australia planned to pressure Facebook to create a backdoor into its encrypted messaging apps to allow governments to access the contents of private communications.
- In 2018, Australia passed legislation that would force tech companies and service providers to build capabilities allowing law enforcement secret access to messages on platforms like WhatsApp and Facebook.
- It becomes more challenging to censor social media trolls, hate speech, and child pornography.
- End-to-end encryption does not protect metadata, which includes information like when a file was created, the date when a message is sent and the endpoints between which data was shared.

Nut Graf: Several tech companies are pushing for end to end encryption to secure communications and to protect data amidst rising data breaches. Law enforcement agencies of various countries are against strong end-to-end encryption which could compromise the sovereignty and integrity of a nation.

3. The INS Mormugao and its capabilities

Prelims: Facts about INS Mormugao and Project 15B

Mains: Key features and strategic significance of INS Mormugao

Context: INS Mormugao has been officially commissioned into the Indian Navy.

INS Mormugao



Source: The Hindu

- The warship named after the port city of Mormugao in Goa was commissioned on December 18th, 2022 which is a day before the Goa Liberation Day celebrations.
- INS Mormugao is a stealth-guided missile destroyer built by Mazagon Dock Shipbuilders Limited (MDSL).
- It is the second of the four Visakhapatnam-class destroyers being built under the Project 15B (P15B) of the Indian Navy.

Project 15B (P15B)

- Project 15 was initiated during the 1990s with the aim to develop guided missile destroyers for the Indian Naval fleet. The project was titled the “Delhi class” and it was followed by
 - Project 15A (Kolkata class): It focused mainly on advanced technology and equipment on surface ships.
 - Project 15B (Visakhapatnam class): It is a follow-on class of weapon-intensive Project 15A destroyers.
- Project 15B took off in January 2011 with an aim to incorporate advanced design technologies such as state-of-the-art weapons and sensors, modern stealth features and a high degree of automation in order to improve the survivability, manoeuvrability, sea keeping and stealth capabilities of Indian warships.
- The lead ship of Project 15B and the first of the class INS Visakhapatnam was commissioned into the Navy on 21st November 2021.
- INS Mormugao is the second of the Visakhapatnam-class destroyers.
- The other two destroyers of a similar class, INS Imphal and INS Surat are expected to be commissioned between 2023 and 2025.

Capabilities of INS Mormugao

- INS Mormugao is 163 metres long, and 17 metres wide and displaces 7,400 tonnes when fully loaded. It can accommodate around 300 personnel.
- The destroyer is propelled by four gas turbines in a combined gas and gas (COGAG) configuration.
 - This propulsion mechanism helps the ship to achieve speeds of more than 30 knots (50km/h) and a maximum range of 4,000 nautical miles.
- INS Mormugao destroyer has multi-dimensional combat capabilities such as surface-to-surface missiles, surface-to-air missiles and advanced surveillance radar.
 - The enhanced stealth capabilities ensure a reduced Radar Cross Section or radar signature.
- INS Mormugao’s firepower consists of BrahMos surface-to-surface missiles, Barak-8 surface-to-air (SAM) missiles for a long range of shore and sea-based targets and a 76mm super rapid gun mount.
- The destroyer is also equipped with RBU-6000 anti-submarine rocket launchers and 533mm torpedo launchers.
- The ship is also designed to carry and operate multi-role helicopters.
- The ship has been designed with various automated features with complex digital networks such as the Automatic Power Management System (APMS), Combat Management System (CMS), Gigabyte Ethernet-based Ship Data Network (GESDN), Integrated Platform Management System (IPMS) and Ship Data Network (SDN).
 - CMS is used to undertake threat evaluation and resource allocation.
 - APMS controls the power management systems.
 - IPMS helps control and monitor machinery and auxiliaries.
 - SDN acts as the information highway for data from sensors and weapons.
- Additionally, the warship has been designed to include various battle damage control systems, fire zones, distributional power systems which help during emergencies and a total atmospheric control system which helps safeguard the crew against biological, chemical as well as nuclear threats.

Strategic significance of INS Mormugao

- INS Mormugao has been developed with more than 75% indigenous content which is in line with India’s AatmaNirbhar Bharat initiative and is important for the 15-year Indian Naval Indigenisation Plan (INIP) 2015-2030 and overall plans to make India self-reliant in defence technologies.
- With China expanding its naval presence in the Indian Ocean Region, bolstering India’s maritime capabilities to counter the potential threat has become extremely significant.
- The adoption of advanced technologies into stealth warships will provide a strategic edge to India and adds to the combat capabilities of the armed forces.
- Further, advanced stealth warships not just help in surface operations, but are also capable of engaging in anti-aircraft and anti-submarine warfare.

Nut graf: Modern-day destroyers are regarded as key assets in naval operations especially during emergencies because of their advanced capabilities. The induction of INS Mormugao into the Indian Navy with similar capabilities is expected to bolster the naval force and provide a strategic advantage to India.

4. Countering terror

Syllabus: Security challenges and their management.

Mains: Counter-terrorism efforts of India.

Context: UNSC special briefing on 'Global Counterterrorism Approach'.

Details:

- According to India's External Affairs Minister S. Jaishankar, the four major areas that need urgent attention while dealing with terrorism are:
 - State support for financing terror.
 - Multilateral mechanisms that are opaque and agenda-driven.
 - Double standards and politicization of countering terrorism.
 - The use of emerging technologies like drones and virtual currency by terrorists that was referred to as the "next frontier".
- A special briefing of the UNSC on the 'Global Counterterrorism Approach' was convened by India. It was a well-timed deliberation as the "Global War on Terrorism" and the sanctions regimes launched post 9/11 are in disarray. For example, in their haste to exit Afghanistan in 2021, the U.S. and the U.K. (UNSC's permanent members) derailed the sanctions regime by holding talks with the Taliban, easing their path to power in Afghanistan and letting their handlers in Pakistan off the hook.
- Furthermore, it was highlighted that a P-5 country (China) constantly blocks the designations of Pakistan-based terrorists, including five named this year from the LeT and the JeM.
- Concerns were raised that instead of uniting to accept India's proposal, of 1996, of a Comprehensive Convention on International Terror, the P-5 countries are divided and polarized on the Russia-Ukraine conflict.
- In this direction, India is rightly highlighting the issues during its two-year UNSC tenure and holding several briefings like the UN Counter-Terrorism Committee meeting, the No Money For Terror conference, and an Interpol conference.
- **Unfortunate Happening:**
 - The briefing has been overshadowed by heated arguments between the Indian External Affairs Minister and his Pakistani counterpart outside the Council.
 - In response to Pakistan being described as the "epicentre of terrorism", a personal tirade was launched against the Indian Prime Minister.
- The Government should ignore the comments, and instead re-invigorate the global agenda and counter-terrorism architecture by stressing the need for unity on the issue.
- All countries should cooperate and provide resources to the battle against those driven by a radical ideology that threatens civilian populations worldwide.

Nut Graf: India has convened several special briefings against terrorism and has highlighted the need for global cooperation against groups targetting civilians. More such efforts will be required on India's part in the coming future, as the counter-terrorism efforts across the world seem to be derailed.

5. United Liberation Front of Asom (Independent)

Syllabus: Threats from Non-State Actors

Prelims: About United Liberation Front of Asom (ULFA)

Mains: Various issues with Insurgency in North East

Context: This article talks about the United Liberation Front of Asom (ULFA).

About ULFA:

- ULFA was formed in April 1979 as an offshoot of the Assam Agitation that sought to free the State from foreigners.
- The outfit split into the larger pro-talks group and the Paresh Baruah-headed anti-talks faction, which renamed itself the ULFA(I) in 2013.
- It seeks to establish an independent sovereign nation state of Assam for the indigenous Assamese people through an armed struggle in the Assam conflict.
- The Government of India banned the organisation in 1990 citing it as a terrorist organisation, while the United States Department of State lists it under "other groups of concern."

Online recruitment:

- Outfit uses social media to recruit cadres. Sub-nationalist Assamese poems and similar content on social Media are used to convince youth to take up armed revolution against the “Indian colonialists” represented by the armed forces.
- Several spotters of the extremist group are assigned to recruit fresh faces from villages in Assam.
- In February 2022, the ULFA(l) refuted the “theories” that it undertakes recruitment drives through social media platforms and blamed the Assam police and the Army for creating fake Facebook accounts in the name of the outfit to discredit ULFA(l).
- But in April 2022, Chief Minister of Assam insisted that the outfit had used Facebook, YouTube and other platforms to lure and induct at least 47 boys and girls into its ranks within a few days.

Eroding Support Base:

- Information gathered from surrendered extremists points to the outfit finding fewer takers than in the past.
- The Indian Army is pre-training teenagers to improve their chances of recruitment in the security forces.
- The Indian Army is also organising vocational courses and coaching classes to prepare local youth from underprivileged families for admission to top colleges across the country. This outreach is also usually done through social media platforms.
- Once they join the organisation, the outfit forbids the use of mobile phones. This meant that they had to cut ties with the very social media channels that had initially drawn them to the ULFA(l). This is making youth quit the outfit.
- Improved connectivity including telecom and roads has ensured rapid development of the villages which further makes the recruitment difficult for the outfit.

Nut Graf: Recruitment to United Liberation Front of Asom is usually done through social media platforms. However, cadre strength of the outfit has been dwindling due to various reasons. The outfit is finding the “mobile phone” generation harder to control than those in the past due to its ban on use of mobile phones in the organisation.

6. AGNI-V Missile

Prelims: About AGNI-V Missile

Context: Recently India successfully test-launched the nuclear-capable AGNI-V Missile that can strike targets at ranges beyond 5,000 kilometers with a very high degree of accuracy.

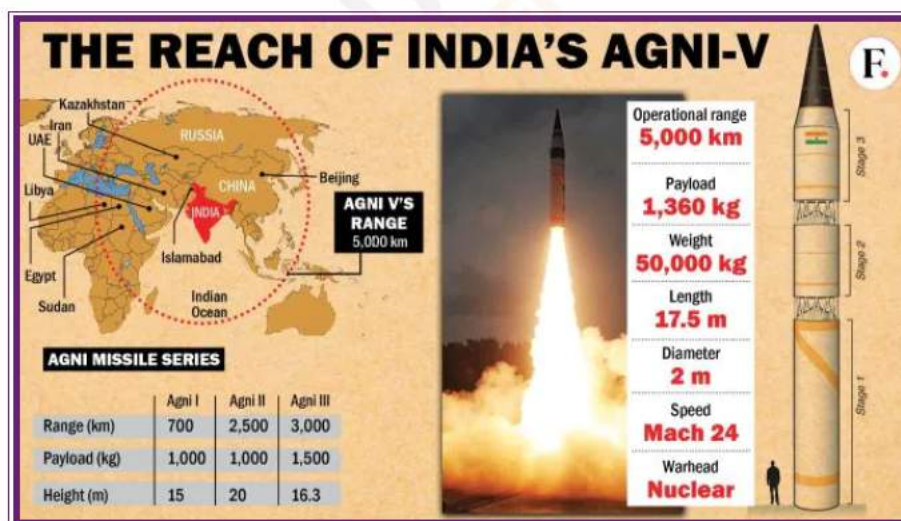


Figure: AGNI-V Missile
Source: firstpost.com

About AGNI-V Missile:

- The Agni-V Missile is the **fifth variant** of India's long-range surface-to-surface ballistic missile developed under the **Integrated Guided Missile Development Programme**.
- The **Agni-V** is a nuclear-capable missile with a range of 5,000 kilometers and a maximum payload of about 1,360 kilogrammes.
- It was developed by the **Defence Research and Development Organisation (DRDO)** and is powered by a three-stage solid-fuelled engine.
- It is also India's first **Intercontinental Ballistic Missile (ICBM)**, capable of reaching countries on other continents, including parts of Africa and Europe, as well as **practically all of China**.

- Intercontinental Ballistic Missiles (ICBMs) are significantly faster and have a wider range than other types of ballistic missiles.
 - The ICBM uses a parabolic trajectory, which means it rises and then falls in a high arc at a significantly higher, farther, and quicker rate.
- AGNI V is a canisterised missile, which can be launched from underground missile silos, submarines, heavy trucks, or mobile launchers on rails, making it easier to deploy and launch at a faster rate.
 - The canisters are encapsulated systems in which the missile is stored and launched, which also gives the missile an extended shelf life, protecting it from harsh climatic conditions.
- The Strategic Forces Command (SFC), which operates the Agni-5, also manages and administers all the tactical and strategic assets of India and is under the control of India's Nuclear Command Authority.

7. Vagir

Syllabus: GS-3; Defence and Security

Prelims: About Vagir, Scorpene-class submarines and the submarine fleet of the Indian Navy

Context

- The fifth Scorpene-class submarine, Vagir, was delivered to the Navy by the Mazagon Dock Shipbuilders Ltd.
- The Vagir submarine was launched into the water in 2020 and had started its sea trials in February 2022.

Details

- Six Scorpene-class submarines are being constructed under Project-75 by Mazagon Dock Shipbuilders Ltd with the help of technology transfer from the Naval Group of France under a \$3.75-billion deal signed in October 2005.
 - The first submarine, INS Kalvari, was commissioned in December 2017
 - The second INS Khanderi in September 2019
 - The third INS Karanj in March 2021
 - The fourth INS Vela in November 2021.
 - The fifth is INS Vagir which is scheduled to be commissioned into service in January 2023.
 - The sixth is INS Vagsheer which will also be commissioned into the Indian Navy soon.
- The Indian Navy at present has 15 conventional and one nuclear submarine in service. The Naval fleet of submarines includes
 - Seven Russian Kilo-class submarines
 - Four German HDW submarines
 - Four Scorpene-class submarines
 - The indigenous nuclear ballistic missile submarine INS Arihant

ENVIRONMENT AND ECOLOGY

1. Kunming-Montreal Global Biodiversity Framework (GBF)

Syllabus: Conservation, environmental pollution and degradation

Prelims: UN Convention on Biological Diversity (UNCBD) and Kunming-Montreal Agreement

Mains: Critical evaluation of the Kunming-Montreal Agreement


Context

The 15th Conference of Parties (COP15) to the UN Convention on Biological Diversity (UNCBD) being held in Montreal, Canada adopted the Kunming-Montreal Agreement.

About Convention on UN Biological Diversity (UNCBD):

- It is an international **legally-binding treaty** with three main goals:
 - Conservation of biodiversity;
 - Sustainable use of biodiversity;
 - Fair and equitable sharing of the benefits arising from the use of genetic resources.
- **The governing body meets every two years to review the outcomes.**
- It was signed at the Earth Summit in Rio De Janeiro in 1992. It comes under the United Nations Environment Programme (UNEP).
- **196 countries are a party to the CBD which includes India.**
- **India ratified it in 1994.**
- The Conference of Parties (COP) is the governing body of the convention. It consists of the countries that have ratified the treaty.
- Its Secretariat is in Montreal, Canada.

UPSC Prelims Facts - UNCBD



Name: United Nations
Convention on Biological
Diversity (UNCBD)


Informal name: Biodiversity
Convention

Adopted: 1992

Entered into force: 1993

Sector: Biodiversity,
Environment

Has India ratified? Yes



Biodiversity and its significance

- Biodiversity refers to the variety of species present on earth, which are all connected and play a key role in sustaining the balance of ecosystems, and helping humans to coexist.
- Biodiversity is often regarded as “the web of life”.
- According to UNCBD, only around 1.75 million species have been identified so far and it is estimated that there may be around 13 million species existing on earth.
- Biodiversity plays a crucial role in rendering various ecosystem services to humans such as providing food, air, fuel, shelter, building materials, water purification, stabilisation of climate, pollination of plants, and mitigating the adverse impacts of calamities like floods, drought, and extreme weather conditions.

Kunming-Montreal Agreement Global Biodiversity Framework (GBF)

- The Kunming-Montreal agreement contains 23 targets that countries across the world must achieve by 2030.
- The China-brokered deal aims to protect and reverse dangerous loss to global biodiversity as well as safeguard the lands, oceans and species from pollution, degradation and climate change.
- The deal is regarded by several experts as a landmark plan to restrict global warming to 1.5°C under the Paris Agreement.

Key targets set by the Kunming-Montreal Agreement

- **“30 by 30 goal”:** This goal is said to be the most important target set by the agreement which aims to protect 30% of Earth’s lands, oceans, coastal areas, and inland waters by 2030.
- **Finance:** Mobilize a minimum of \$200 billion/year in domestic and international biodiversity-related funding from all sources including public and private by 2030.
 - Increased financial flows from developed to developing and least developed countries to at least \$20 billion/year by 2025 and to at least \$30 billion/year by 2030.
- **Indigenous rights:** The deal in its statement has made reference to indigenous peoples and local communities multiple times and talks about respecting their cultures and their rights over lands, territories, resources, and traditional knowledge.
- **Conservation of critical ecosystems:** The agreement aims to reduce to near zero the loss of areas of high biodiversity importance and ecosystems of high ecological integrity.
- **Responsibilities to big companies:** The deal mandates large and multinational companies to monitor, assess and disclose the risks, dependencies and impacts on biodiversity due to their operations.
- **Harmful subsidies:** The agreement talks about phasing out or reforming the subsidies that affect biodiversity by at least \$500 billion/year by 2030 and ramping up positive incentives for biodiversity conservation and sustainable use.
- **Invasive species:** Prevent the introduction of invasive alien species, and reduce by at least half the introduction of other potential invasive alien species.
- **Hazardous chemicals:** One of the key targets of the deal is to reduce excess nutrients and the risk posed by pesticides and highly hazardous chemicals by at least 50%.

Arguments in favour of the agreement

- The Union Environment Minister of India said that the agreement was largely positive with respect to India and said that the goals set by such agreements must be ambitious, as well as realistic and practical.
- The Environment Minister of Canada also said that the world has made tremendous progress by agreeing on a deal that aims to halt and reverse biodiversity loss, work towards restoration, and reduce the use of pesticides.
- A Minister representing France also called it a historical deal and it contains very precise and quantified objectives.
- The United Nations Development Programme (UNDP) has also welcomed the agreement by saying that the agreement will help the world hope for real progress to halt and mitigate biodiversity loss.

Arguments against the agreement

- Extending the finance package to help support conservation efforts globally was one of the most contentious issues as several developing countries wanted the creation of a new fund for biodiversity.
 - Congo opposed the deal when it was about to be passed as the deal failed to set up a special biodiversity fund that would provide developing countries with \$100 billion by 2030.
- Further, various wildlife conservation societies and other environmental experts feel that the timeline is not ambitious enough and have raised concerns that the agreement puts off the goals of preventing the extinction of species and preserving ecosystems until 2050.
- A few experts also believe that the agreement should have included stringent provisions on harmful subsidies that make food and fuel cheap in several countries.
- Critics also opine that the agreement has failed to advance beyond the targets that were set 10 years ago in terms of mitigating biodiversity loss in sectors such as agriculture, fisheries, and infrastructure.

Challenge to Developing nations:

- Inadequate funds allocated
- Disproportionate cost involved for poor countries
- Issues of subsidies will emerge as a major sticking point for countries like India
- Not much real progress as compared to the Aichi goals 2020

Nut graf: With several reports such as the Living Planet Report (LPR) 2022 indicating that the biodiversity across the world has experienced a devastating drop since the 1970s, the adoption of the Kunming-Montreal Agreement is considered a historical and landmark effort to protect biodiversity.

2. Wildlife (Protection) Amendment Bill

Syllabus: Biodiversity and Environment- Conservation

Prelims: Wildlife Protection Act, 1972 and Wildlife (Protection) Amendment Bill

Context: The Rajya Sabha passed the Wildlife (Protection) Amendment Bill in the winter session.

Wildlife (Protection) Act, 1972

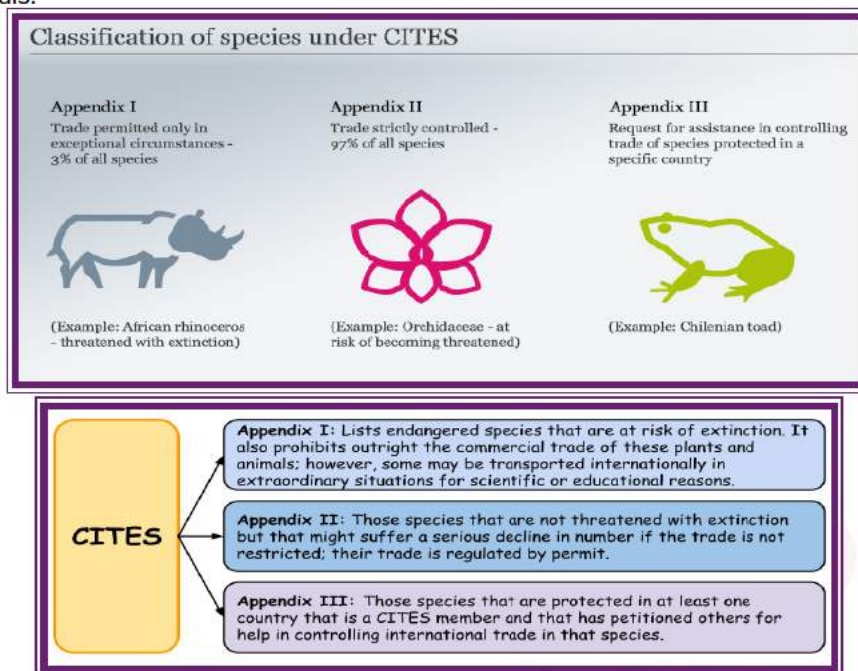
- Wildlife Protection Act 1972 was introduced by the Parliament in order to safeguard wild animals, birds, and plants, with an aim to ensure the ecological and environmental security of India.
- The Act mandates the prohibition of hunting of wild animals in general while the hunting of wild animals is permitted in certain cases for the purpose of education and scientific research.
- The Act provides for the declaration and protection of protected areas such as Wildlife Sanctuaries and National Parks.
- The Act also provides for the establishment of Central Zoo Authority (CZA), National Tiger Conservation Authority (NTCA), National Board for Wild Life (NBWL) and Wildlife Crime Control Bureau (WCCB).
- There are six schedules provided in the Wildlife Protection Act. They are:
 - **Schedule I:** This Schedule covers endangered species and the Species under this Schedule are prohibited to be hunted throughout India, except under threat to human life.
 - **Schedule II:** Animals under this list are also accorded high protection, their trade is prohibited and cannot be hunted except under threat to human life
 - **Schedule III:** This includes a list of protected species but the penalty for any violation is less than the first two schedules.
 - **Schedule IV:** Species included are not endangered but hunting is prohibited.
 - **Schedule V:** This schedule contains vermin species that can be hunted
 - **Schedule VI:** This list contains plants that are forbidden from cultivation.

Wildlife (Protection) Amendment Bill

- The Lok Sabha had passed the Wildlife (Protection) Amendment Bill in August during the Monsoon Session (2022).
- The Bill aims to conserve and protect wildlife through better management of protected areas.
- The Bill seeks to rationalise schedules that list out species under the Wildlife (Protection) Act, 1972.
- The Bill also aims for better management of protected areas and permits activities such as grazing or movement of livestock and bonafide use of drinking and household water by local communities.
- The Bill further inserts a **new schedule to Wildlife (Protection) Act, 1972 for specimens listed in the Appendices under CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora)**.
 - **Section 6** has been amended to **constitute a Standing Committee** to exercise such powers and duties as may be delegated to it by the State Board for Wildlife.
 - **Section 43** of the act amended which permitted the use of elephants for 'religious or any other purposes'.
- The Bill **empowers the Union government to regulate/prohibit the import, possession or trade of invasive alien species**.
- The Bill empowers the Union to **notify a conservation reserve** for protecting flora and fauna, and their habitat.
 - Earlier, under the Act, only state governments could declare areas adjacent to national parks and sanctuaries as conservation reserves.
- As per the provisions of the Bill, the Union government can **designate a management authority** to grant export or import permits for the trade of specimens and the Scientific Authority to advise on aspects related to the impact on the survival of the specimens being traded.
- The Bill increases the fines for violating the provisions of the Act.
 - For 'General violations' maximum fine is increased to 1 lakh from Rs. 25,000 earlier.
 - For Specially protected animals the minimum fine has been increased to Rs. 25,000 from Rs. 10,000 earlier.

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):

- CITES is an international agreement between governments.
- It tries to ensure that international trade in wild animals and plants does not threaten their survival.
- It is **legally binding** on state parties to the convention, which are obliged to adopt their own domestic legislation to implement its goals.



Source: dw.com

Concerns regarding the amendment Bill

- **The exemption given to 'live elephants' for commercial trade:** Parliamentary Standing Committee headed by Jairam Ramesh objected to the blanket exemption, recommending to limit it only to temple elephants kept for religious purposes.
- **Centre's hold over 'vermin' declaration continues:** Last year, Kerala's requests for declaring wild boars as vermin have been turned down repeatedly by the Environment ministry.
- The bill severely curtailed the ability to graze across pastoral spaces in the conservation areas; this might impact tribals who are depending on cattle grazing.

Nut Graf: The Wildlife (Protection) Amendment bill has been passed by both the Lok Sabha and Rajya Sabha. However, there are apprehensions regarding the regressive policing allowed by the proposed Bill and other forest laws that hinder the full and beneficial scope of the Forest. Any new amendments should consider all aspects with appropriate evaluation of existing policies and their outcomes.

3. Forest rights and heritage conservation**Syllabus:** Biodiversity conservation**Mains:** Issues with Forest Rights Act**Context:** This article discusses various issues faced by forest dwellers in protected areas.**Introduction:**

- Before recognising areas as world heritage sites, UNESCO seeks the opinion of the inhabitants on the implication of the possible declaration on their lives and livelihoods.
- A recent interaction with different stakeholders in the gram panchayats located close to the world heritage sites in Karnataka shows that an overwhelming majority of the stakeholders were not aware of the process that leads to the declaration of UNESCO heritage sites.
- The primary stakeholders were Scheduled Tribes (STs). Other traditional forest dwellers include Scheduled Castes (SCs), Other Backward Classes, minorities and the general category.

Forest Rights Act:

- The Forest Rights Act or the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act deals with the rights of the communities that dwell in the forests (including Scheduled Tribes), over land and other resources, which have been denied to them over the years because of the continuation of forest laws from the colonial era in the country.

Issues with the Forest Rights Act:

- The majority of the forest dwellers claimed land measuring not more than one acre which is nowhere close to the ceiling of four hectares permitted under the Forest Rights Act (FRA).
- In the case of the STs, the reasons for the rejection of rights under FRA were,
 - Fresh encroachments;
 - The claimants not living on the lands claimed;
 - Claimed lands being on 'paisari bhoomis' (wasteland and forest lands which have not been notified as protected forests or reserved forests) or revenue lands; and
 - Multiple applications made in a single family.
- In the case of other traditional forest dwellers, it was mainly failure to produce evidence of dependency and dwelling on forest land for 75 years.
- Most forest dwellers were deprived of basic facilities and other government benefits extended under various schemes and programmes as they don't possess the 'Records of Rights, Tenancy and Crops' that is required along with the title of the land.

Issues with Protected Areas:

- The people in the villages falling under eco-sensitive zones are experiencing severe restrictions on their entry into the forest.
 - Development activities like road repair have been stopped.
 - Normal Farming is not allowed as the use of fertilisers is banned.
 - The people are prohibited from cutting trees falling on their houses to undertake repair work or move the earth.
- The increasing animal insurgency is causing damage to the crops of the farming forest dwellers.
- Those who don't have recognition over their lands are not given compensation for the loss.
- People refuse to 're-locate' on the grounds of their attachment to the land fearing extinction of their culture and religious roots.

Way forward:

- The government must bring more clarity to the Forest Rights Act to avoid conflicts between the government agencies conserving biodiversity and the people living in the forest for over decades and centuries.
- Forest dwellers willing to live in the forest must be allowed to stay whereas those wanting to experience the fruits of development must be relocated according to their choice of a new place and a suitable package.
- Declaration of a 'protected' area must be done only after consultations with the local population.

Nut Graf: *Democratic and transparent consultations must be done with the relevant stakeholders of the protected areas before the possible declaration of UNESCO heritage sites to achieve the objectives of ensuring the rights of forest dwellers and fulfilling conservation efforts.*

4. Poor soil management will erode food security

Syllabus: Conservation

Prelims: World Soil Day

Mains: Soil degradation and conservation.

Context: December 5 is recognized as World Soil day.

World Soil day

- World Soil Day (WSD) is annually observed on December 5.
- It aims to raise awareness about the importance of maintaining healthy soils, ecosystems, and human well-being through sustainable soil management.
- The theme of WSD 2022 is 'Soils: Where food begins.'

Importance of Healthy soil:

- They are essential for human survival.
- Healthy soil supports healthy plant growth and enhances both nutrition as well as water percolation to maintain groundwater levels.
- Soils also regulate the climate of the planet by storing carbon and are the second largest carbon sink after the oceans.
- Moreover, they maintain a landscape that is more resilient to droughts and floods.
- Soil health is critical for healthy food production as the soil is the basis of food systems.

Soil Degradation and its consequences:

- The major threats to soil are nutrient loss and pollution, which are responsible for undermining food and nutrition security globally.
- The main drivers of soil degradation are agriculture, mining, industrial activities, waste treatment, fossil fuel extraction, and processing and transport emissions.
- The causes of soil nutrient loss are soil erosion, runoff, leaching, and the burning of crop residues.
- Soil degradation directly or indirectly impacts 29% of India's total land area. Consequently, it threatens agricultural productivity, water quality, biodiversity conservation, and the socio-economic well-being of land-dependent communities.
- Approximately 3.7 million hectares of land suffer from nutrient loss in soil (that is depletion of soil organic matter).
- Moreover, uncontrolled fertilizers and pesticide usage and irrigation with contaminated wastewater also add to soil pollution.

Soil Conservation strategy of India:

- A five-pronged strategy has been adopted by the Government of India which involves:
 - Making soil chemical-free
 - Saving the biodiversity of soil
 - Improving Soil Organic Matter(SOM)
 - Sustaining soil moisture
 - Mitigating soil degradation and preventing soil erosion.
- **SOIL HEALTH CARD (SHC):** Indian Government launched the scheme in 2015. SHC helps in assessing the current status of soil health. It also provides soil health indicators and associated descriptive terms to guide farmers to make necessary changes in the soil.
- **PRADHAN MANTRI KRISHI SINCHAYEE YOJANA(PMKSY):** The scheme was launched to prevent soil erosion, regenerate natural vegetation, strengthen rainwater harvesting, and ensure the recharging of the groundwater table.
- Moreover, **National Mission for Sustainable Agriculture (NMSA)** includes several subschemes that promote indigenous practices like organic farming and natural farming, thereby reducing chemical dependency and reducing the monetary burden on small and marginal farmers.

Measures undertaken by the Food and Agriculture Organization (FAO)

The FAO also undertakes various activities to support the Indian government in conserving soil.

- FAO is collaborating with the **National Rainfed Area Authority** and the Ministry of Agriculture and Farmers' Welfare (MoA&FW) to develop forecasting tools using data analytics to help farmers in making informed choices in crop cultivation, especially in rainfed areas.
- The FAO and the Ministry of Rural Development together support the **Deen Dayal Antyodaya Yojana-National Rural Livelihoods Mission's (DAY-NRLM)** Community Resource Persons to increase the adoption of sustainable and resilient practices.
- The FAO works in 8 target States (Chhattisgarh, Madhya Pradesh, Mizoram, Odisha, Rajasthan, Uttarakhand, Punjab, and Haryana) to enhance crop diversification and landscape-level planning.
- The FAO, the Andhra Pradesh government, and the Indian Council of Agricultural Research (ICAR) are working together to support farmers in sustainable transitions to agroecological approaches and organic farming.

Way Ahead:

- Communication links between all the stakeholders should be strengthened for the management and restoration of degraded soil.
- Timely dissemination of evidence-based information is also required.
- Successful conservation practices and clean and sustainable technologies should be provided to all targeted beneficiaries.
- Citizens can contribute by planting trees, developing and maintaining kitchen gardens, and consuming seasonal and locally sourced food.

Nut Graf: Soil degradation can have irreparable impacts on both human and ecosystem health. India has taken several initiatives in this direction which should be sustained and improved to ensure healthy soil and eventually a healthy planet.

5. Coastal Erosion

Syllabus: Environmental pollution and degradation

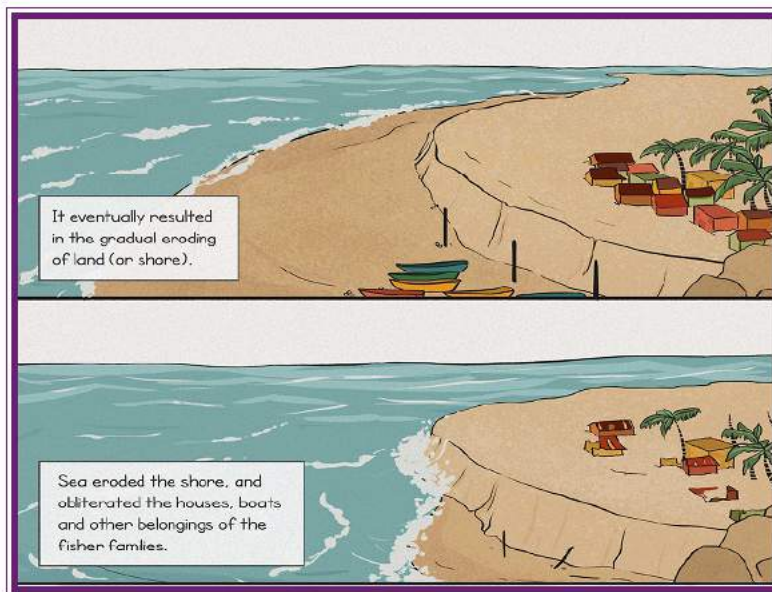
Mains: Reasons for Coastal Erosion, issues associated with it and possible solutions

Context:

- According to the **UNEP** approximately **37% of the world's population lives within 100 km** of the coast and it supports a vast economic activity like international trade and fishing.
- In India coastal cities like Mumbai, Chennai, Kolkata, Kochi etc. are witnessing tremendous growth and expansion.
- However this has given rise to increasing coastal erosion.

Coastal Erosion:

- Coastal Erosion refers to the loss of land due to long-term removal of sediment and rocks along the coastline. The loss of land can be due to action of sea-waves, currents, tides and impacts of storms or cyclones or anthropogenic activities.



Source: WCS-India

Causes of Coastal Erosion:

	Natural Causes	Human-induced Erosion
1	Natural factors like <ul style="list-style-type: none"> ● Waves ● Winds ● Tides ● Shore currents ● Storms ● Sea level rise 	Human activity like building ports or harbors, coastal defence structures, river regulation works, sand mining, oil/gas exploration etc. impact sediment transport in the coastal areas.
2	The natural variation in the supply of sediments to the coastline from the river can affect the erosion of the coastline(due to change in the river course).	Coastal activities can directly or indirectly result in beach erosion for example Building houses through land reclamation or within sand dune areas has a long-term impact on coastal processes and sediment stability
3	Waves and tides maintain the stability of the shoreline. However if the sediment supply to the beach is reduced due to littoral drift, sea-level rise or constant impact of waves, it can cause severe coastal erosion.	The mining of sand/gravel along beaches and in the surf zone will cause erosion by depleting the shore of its sediment resources.

4	Subsidence or sinking of an area of land. It also contributes to coastal erosion, the rate may vary as per the factor causing this subsidence.	Dredging of harbors, navigation channels leads to loss of sand and disturbs sediment supply to the coast. Decrease in mangroves causes exposure of the low-energy shorelines to the increased energy and reduced sediment stability. This further promotes erosion of the coastal zone.
5	An increasing sea level will promote shoreline erosion. Compared to coasts(which have coarser sediments) the coastal erosion is higher in the littoral coasts which have finer sediments.	Coral mining also causes coastal erosion and beach degradation. The production of carbonate sand stops due to the killing of the corals and the protective function of the reef decreases.

Protection Measures for Coastal Erosion:

● Non-structural Measures:

- It aims towards the dissipation of the wave energy by mirroring the natural forces and maintaining the natural topography of the coast.
- These measures are also called soft solutions like
 - Artificial nourishment of beaches.
 - Coastal vegetation like mangrove.
 - Sand bypassing at tidal inlets.
 - Dune reconstruction/rehabilitation.

● Structural Measures:

- The structural measures are called hard structural or engineering measures.
- It uses physical structures built near the coast to restrict water from reaching the damaged areas.
- It helps in reducing the rate of coastal erosion.
- Examples:
 - Seawalls
 - Off-shore breakwaters
 - Offshore reefs
 - Artificial headland.

Issues with these measures:

- Hard solutions are costly and can reduce the site's economic growth.
- Soft solutions are not easy and need time to be successful in the medium to long term.

Combination of the Structural and Non-Structural Measures:

- Combining these two improves efficacy and efficiency and it would create a sustainable and affordable coastal protection system like:
 - Combining beach nourishment with artificial headlands
 - Revegetation with temporary offshore breakwaters/ artificial reefs.
- It helps in trapping the downdrift movement of the sediment and reducing downdrift erosion.

Initiatives to Check Coastal Erosion:

- Shoreline Change Atlas of the Indian Coast project
- The atlas of Coastal Vulnerability Index (CVI) maps prepared by Indian National Centre for Ocean Information Services (INCOIS) for the entire coastline of India.
- Coastal Management Information System (CMIS) - to collect data on coastal processes
- Integrated Coastal Zone Management Plan - for the management of the coast using an integrated approach.
- The Coastal Regulation Zone (CRZ) Notification 1991 by the Ministry of Environment, Forest and Climate Change (MoEFCC) to regulate activities in coastal areas.

Nut graf: To ensure sustainable development coastal ecosystems must be protected. There is a need for detailed analysis of all activities carried out in coastal zones and their relation with each. This integrated and comprehensive plan would ensure long-term development of the coastal areas along with protecting the environment.

6. Marine Plastic Pollution

Syllabus: Environmental pollution and degradation

Mains: Marine plastic pollution in India

Context: Recent studies have shown increased marine plastic pollution in India.

Background:

- According to a 2022 study, in India, Plastic waste production increased by 39.7% since 2017
- Only 15% recycled and 0.6 million tonnes end up in oceans through rivers or surface runoff

Marine Plastic Pollution Problem:

- **IUCN Reports:** 14 million tonnes plastic waste enters oceans annually, mainly from land based sources and Plastic waste forms 80% of marine debris
- **Great Pacific Garbage Patch:** makes up just 3% of ocean plastic pollution
- **Studies related to Plastic Pollution & India:**
 - **COMAPS program by NCCR**
 - Studies ocean debris data for 3 decades
 - Marine debris accumulating along Great Nicobar Coast
 - Due to surface ocean currents which transport solid waste dumped by passing ships/fishing vessels.
 - **Coastal Ocean Monitoring and Prediction System (COMAPS)** programme by the National Centre for Ocean Research(NCCR) of the Ministry of Earth Sciences.
- **Marine Plastic Survey Program of NCCR:**
 - Studies microplastic distribution in Bay of Bengal and Arabian Sea
 - Microplastics found in all open ocean samples upto 100m depth

Case study - Tamil Nadu Coast and Plastic Pollution:

- The Government of Tamil Nadu banned the usage of thin plastic (polymers of thickness below 40 microns).
- Despite this Chennai is the major cause of plastic production in Tamil Nadu as it produces about 898700 tonnes of plastic waste per year of which 57000 tonnes per year are disposed into the ocean.
- The major contributors to the discharge of plastic into the ocean are the Adyar and the Cooum rivers, which run through the heart of the city accounting for 81% and 19% of total riverine discharge from Chennai, respectively.
- Thermocol (30.82%), plastic bags (28.30%), bottles & caps (13.84%), straws (12.83%), and food wrappers (8.97%) comprise the majority of macroplastic debris.

Sources of Plastic Pollution:

- **Land Based** from rivers(67%), surface runoff, coastal waste.
 - Rivers contribute about 67% of the total marine plastic debris in the world.
- **Ocean Based- Shipping industries, fishing etc**
 - **Abandoned, Lost or Discarded Fishing Gear (ALDFG):**
 - It is a serious problem worldwide.
 - Most of these wastes are due to shipping or fishing accidents, bad weather, etc.
 - Many species are killed by these wastes, and since they do not decompose easily, they keep killing various organisms throughout their lifetime.
 - About 20% of all the plastic debris in the oceans is from ALDFG according to UNEP. Globally, it is estimated that about 640000 tons of ghost gear are disposed of into the oceans every year.

Microplastics:

- Plastics are made from nonrenewable resources such as crude oil and hence they are hard to decompose as the polymers are bonded through covalent bonds, a strong bonding force.
- **Microplastic is about 5 mm in diameter and is always disposed of into the environment through anthropogenic sources.**
- They are hard to locate, track and study as they are smaller than what the naked eye can see.
- The majority of the plastic debris (94%) in the oceans disintegrates into microplastic while the remaining 6% remains as microplastic.

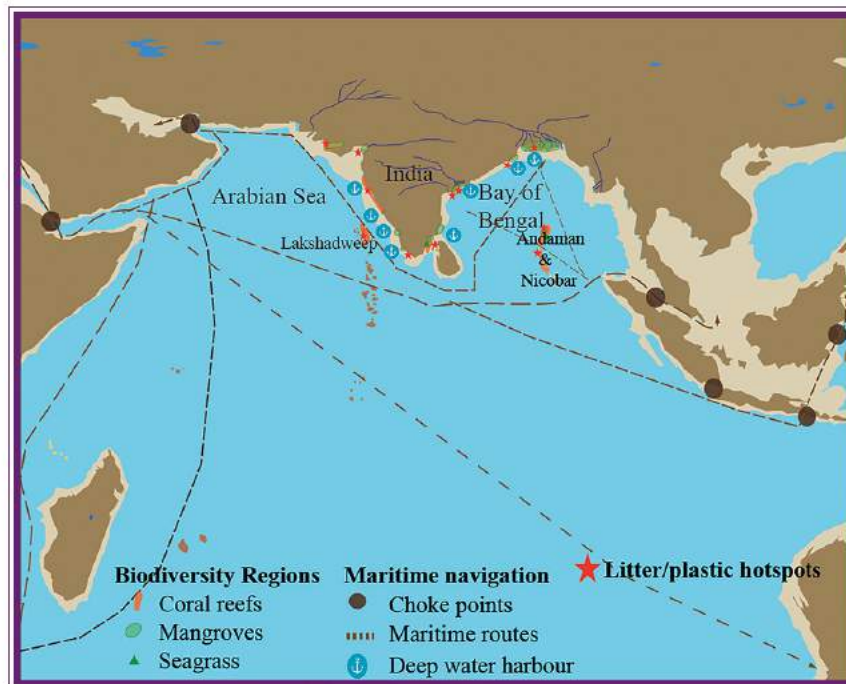
Problems due to Marine Plastic Pollution:

- Effect on marine species
- Effect on Human Health and food security
- Impact on tourism and shipping industry
- Global Warming

- **Microplastics:**
 - Majority marine plastic converts into them overtime
 - Difficult to track and study
 - Can easily enter the food chain
 - Have high affinity towards other intoxicants
- Impact our ability to achieve SDG 14

India's role in Marine Plastic Pollution:

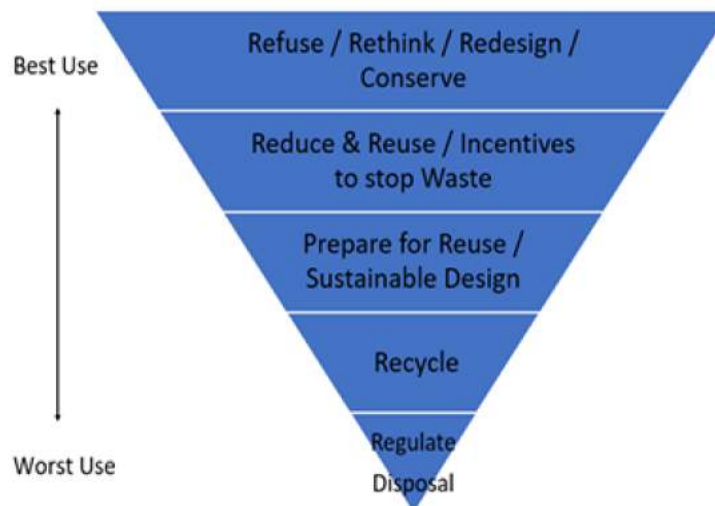
- CPCB Report (2019-20) Annual Plastic Production: 34.7 lakh tonnes, 50% gets recycled, Multi-layer plastics cannot be recycled through traditional means
- 2nd biggest plastic waste producer
- Biggest releaser of plastics in oceans (126.5 million kgs)



Source: frontiers.org

Measures have been taken to protect biodiversity:

- The **International Convention for the Prevention of Pollution from Ships (MARPOL) 1983** is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes.
- Prevention of Marine Pollution in **Merchant Shipping Rules, 2009** framed under the Merchant Shipping Act, 1958.
- **Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (1972) The Oslo Convention**
- **Convention for the Prevention of Marine Pollution from Land Based Sources (1974) The Paris Convention.**
- Global Programme of Action for the Protection of the Marine Environment from Land Based Activities is another initiative and the only global intergovernmental mechanism directly addressing the connectivity between terrestrial, freshwater, coastal and marine ecosystems.
- **Swachh Sagar, Surakshit Sagar:** Commemorating the 75th year of India's independence, a coastal cleanup drive was carried out at 75 beaches across the country for 75 days over a 7500 km long coastline.

Way Forward:

Zero waste hierarchy © Zero Waste International Alliance

Nut graf: Sustainable Development Goal (SDG 14), calls to conserve and sustainably use the oceans, seas and marine resources for sustainable development. In this context, India should expedite its efforts to exploit oceanic resources in the Indian Ocean.

7. What are carbon markets and how do they operate?

Syllabus: Conservation, environmental pollution and degradation

Mains: Key details about the Energy Conservation (Amendment) Bill, 2022 and carbon markets

Context: Despite the opposition and demands for scrutiny by a parliamentary committee, the Energy Conservation (Amendment) Bill, 2022 was passed in Parliament.

Energy Conservation (Amendment) Bill, 2022

- The Bill seeks to amend the Energy Conservation Act, 2001.
- **The Bill aims to:**
 - Increase the scope of the Energy Conservation Building Code.
 - Make changes to the penalty provisions.
 - Increase the number of members in the Governing Council of the Bureau of Energy Efficiency.
 - Empower the State Electricity Regulatory Commissions to make regulations for the smooth discharge of its functions.
- Further, the amendment bill empowers the government to set up carbon markets in India and specify a carbon credit trading scheme.
 - As per the Bill, the Union Government or any authorised agency will be empowered to issue carbon credit certificates that would be tradeable in nature.

What are carbon markets?

- According to Article 6 of the Paris Agreement countries can make use of international carbon markets to fulfil their Nationally Determined Contributions (NDC) that help mitigate global warming under 2°C.
- Carbon markets are basically the key platforms that help put a price on carbon emissions by establishing trading systems where carbon credits can be traded i.e. bought and sold.
 - A carbon credit is nothing but a tradable permit that, according to UN standards, is equal to one tonne of carbon dioxide reduced or sequestered from the atmosphere. Carbon credits are created by various activities which reduce carbon dioxide from the air, such as afforestation.
- Carbon markets are mainly categorised into two types namely:
 - Voluntary markets: These markets are those in which emitters such as corporations, private individuals, and others buy carbon credits to offset the emission of one tonne of CO₂ or equivalent greenhouse gas.
 - In such markets, an emitter compensates for its unavoidable emissions by buying carbon credits from another entity that has engaged itself in projects that reduce emissions.
 - Compliance markets: These markets on the other hand are established by policies at the national, regional, or international levels and are officially regulated.
- According to the United Nations Development Program (UNDP), the interest in carbon markets is increasing across the world as about 83% of NDCs submitted by countries talk about their intent of utilising the international market mechanisms to reduce greenhouse gas emissions.

Key challenges to carbon markets

- The UNDP has highlighted serious concerns pertaining to carbon markets which include:
 - Double counting of greenhouse gas reductions
 - Lack of quality of climate projects that generate credits
 - Lack of authenticity and transparency with respect to the climate projects
- Additionally, there have been concerns about “Greenwashing” wherein entities may buy credits, simply offsetting carbon footprints instead of reducing their overall emissions.

Concerns regarding the Energy Conservation (Amendment) Bill, 2022

- The Opposition members have raised concerns that the Bill fails to provide clarity on the mechanism used for the trading of carbon credit certificates.
- Critics have also raised questions about the Power Ministry formulating such legislation instead of the Environment Ministry as done in other countries.
- Further, the Bill does not specify whether certificates under already existing schemes such as Renewable Energy Certificates (RECs) and Energy Savings Certificates (ESCs) would also be tradeable with carbon credit certificates.

Nut graf: As the Parliament passed the Energy Conservation (Amendment) Bill, the debate on the carbon markets has come into the limelight as experts believe that the lack of clarity on the regulation and implementation of the carbon credit system would act as key impediments to the objectives of the Bill.

8. Freshwater Turtles

Syllabus: Biodiversity

Mains: Prelims: About Freshwater Turtles in India

Context: West Bengal Police seized 270 kg of turtle calipee (a gelatinous layer found in the lower shells of turtles and believed to be used in traditional Chinese medicine).



Figure: Red-crowned roofed turtle
Source: The Hindu

News in detail:

- International trafficking networks have recently reported numerous incidents of smuggling freshwater turtles across multiple states.
 - In November 2022, officials from the Uttar Pradesh Forest Department recovered 789 Indian flap shell turtles and softshell turtles near Amethi.
 - A large consignment of 143 live turtles, meant to be smuggled to Bangladesh, was recovered by the Border Security Force (BSF) in West Bengal in January 2022.
- According to experts, demand for freshwater turtles and their body parts increases every year during the winter when it is easier to transport animals for long periods of time.

About Freshwater turtles in India:

- There are **29 freshwater turtle and tortoise species in India, with more than half of them threatened and 11 protected under Schedule I of the Wildlife Protection Act.**
- **Freshwater turtles are reptiles**, like snakes, crocodiles and lizards.
- **They are ectothermic, or “cold-blooded,”** like other reptiles, meaning that their internal temperature matches that of their surroundings.
- They also **have scaly skin**, which allows them to live outside of water, unlike most amphibians.
- Turtles, like many other reptiles, are **oviparous, which means they lay eggs.**

Issues associated with the trafficking of Turtles:

- According to the TRAFFIC India report, at least 1,11,310 tortoises and freshwater turtles were trafficked between September 2009 and September 2019.
- The primary reasons for the illegal smuggling of turtles are
 - They are traded as **pets**.
 - **For their meat** (within the country).
 - To **extract their calipers** to prepare medicines.
- They are also smuggled and killed to make leather from their skins, as livestock feed, to make potions from their blood and to use as fishing bait.
- Other issues faced by the turtle population are Habitat destruction, Pollution of water bodies and entanglement with fishing gear etc.
- India is said to be a major source and consumer of turtles and tortoises in the world.
- Species such as the **Indian Roofed Turtle**, **Black-Spotted Turtle**, **Red-Crowned Roofed Turtle** and the **Indian star Tortoise** are in huge demand in both the national and international illegal pet trade.
- Species such as the **Indian Flapshell Turtle**, the **Indian softshell Turtle**, other species of the **genus Nilssonina** and the **Indian narrow-headed softshell Turtle** are in demand for their meat.
 - About four Turtle species of the **genus of Nilssonina** and **N. leithii** are endemic to India.
- The **Red-crowned Roofed Turtle** found only within the National Chambal Gharial Wildlife Sanctuary (NCGWS) spread across Rajasthan, Madhya Pradesh and Uttar Pradesh has made it to the list of the 25 most threatened freshwater Turtles in the world, along with **Northern River Terrapin** which is now found only in the Sundarbans.
- The Conference of the Parties (COP) recently accepted India's proposal to transfer two species of freshwater Turtles found in the country namely the **Red-crowned Roofed Turtle** and the **Leith's Softshell Turtle** to Appendix I of Convention on International Trade in Endangered Species of wild fauna and flora (CITES), which lists the most endangered species that need the highest level of protection.
 - The **Indian star tortoise** was transferred to Appendix I of CITES in 2017.

Initiatives taken by the government to control the trafficking of Turtles:

- **Constitutional Provisions (Art 48A, 51(g)):** Article 48A makes it the duty of the state to protect and improve the environment and to safeguard the forests and wildlife of the country while Article 51(g) puts an obligation on part of citizens to protect and improve the natural environment.
- **Wildlife Protection Act:** 11 freshwater turtle and tortoise species in India are protected under Schedule I of the Wildlife Protection Act. A Species under this Schedule is given the highest protection available and is prohibited to be hunted throughout India.
- **Wildlife Crime Control Bureau:** It was established to combat organized wildlife crime in the country.
 - It has launched 'Operation Save Kurma' to prevent poaching, transportation and illegal trade of live turtles and tortoises.
 - Operation Turtshield-I and Operation Turtshield-II were taken up to tackle the illegal trade of live turtles.
- **Deterring and Disrupting Wildlife Trafficking in the Air Transport Sector in India programme:**
 - India is among the top ten countries in terms of using the airline sector for wildlife trafficking,
 - UNEP, TRAFFIC, WWF-India and the Wildlife Crime Control Bureau (WCCB) have joined hands together to launch this programme to crackdown on wildlife trafficking through the Air Transport Sector.
- Organizations such as the Turtle Survival Alliance have been employing ex-situ conservation measures in the rehabilitation of rescued turtles

International Initiatives:

- **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):**
 - The recent Conference of the Parties (COP) of CITES endorsed India's proposal to transfer two species of freshwater turtles, the red-crowned roofed turtle (*Batagur kachuga*) and the Leith's Softshell Turtle (*Nilssonina leithii*), to Appendix I.
- **INTERPOL:** It recognizes wildlife crime as an international security priority and the INTERPOL Wildlife Enforcement team helps to disrupt and dismantle transnational organized criminal networks involved in the illegal wildlife trade.
 - Some of the operations carried out by them are Operation ThunderBird, Operation Predator, Operation Wisdom, and Operation PAWS.
- **CMS (Bonn Convention):** It is the only convention that addresses the capture or harvesting of wild species. It Currently Safeguards 173 migratory species from across the globe.
- **Information, Education & communication activities** carried out by Civil Society Organisations like TRAFFIC (Wildlife Trade Monitoring Network; IUCN & WWF), BirdLife International, UNEP etc.

Success stories:

- The Turtle Survival Alliance, along with the Forest Departments of Uttar Pradesh and Madhya Pradesh has been credited for conserving critically endangered red-crowned roofed turtles in the Chambal landscape.

9. Rhino and Elephant conservation efforts

Syllabus: Environment and species conservation.

Prelims: Status of Rhino and Elephants.

Mains: Rhino and elephant conservation.

Details:

- Greens worldwide known as the Kaziranga National Park became the greatest conservation success story in 2005 as it completed a century.
- The major reason behind the success is the rhino protection force that shoots the alleged poachers at sight. Over 55 armed men have been killed by them within the boundary of the 1,300 sq. km tiger reserve for unauthorized entry since 2012-13.

Current status of Rhino

- Rhinos are poor-sighted herbivores.
- The population of the one-horned rhino was about 12 when Kaziranga was declared a protected area in the year 1905. The situation reversed in a century and became a major success story by 2005.
- As per the State of Rhino Report 2022, the number of Rhinos in Kaziranga is around 2,613. This is more than 65% of its total population of 4,014 across eleven habitats in India and Nepal.
- Several conservationists are of the view that there is too much focus on the rhino. However, this has also benefitted other animals in the region. For instance, the number of tigers in Assam has risen at a rate higher than anywhere else in India. As per an estimate from 2010, Kaziranga has the highest density of tigers in the world, about 32.64 per 100 sq. km.

Significance of anti-poaching measures

- According to an expert, measures like the strengthening of the anti-poaching procedure in India and Nepal with more manpower, capacity-building of frontline staff, and equipping forest guards with better fighting gear have significantly helped in the protection of Rhinos.
- Moreover, local residents' sentiments are also an important factor in the sharp decline in the number of rhinos killed. It has dropped from about 54 in the years 2013 and 2014 to one each in 2021 and 2022.
- There is a constant threat from poachers due to the illegal wildlife trade in neighboring Myanmar and the region beyond Southeast Asia.
- The alien invasive plant species in the major grassland habitats have also emerged as a serious threat to the rhinos in India and Nepal.

Status of elephants:

- India houses approximately 60% Asian elephants and according to the last estimate of the species (2017) the population stood at around 29,964.
- Though the population of elephants in India has expanded in the past few years, Elephants are listed as 'Endangered' both on the IUCN Red List of threatened species and Schedule I of The Wildlife Protection Act.
- The population of elephants is unevenly distributed across India. Southern states of India (Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu) account for almost 44% of its population.
- The total number of elephant reserves in India stands at 32 with the latest addition being the Agasthyamalai Elephant Reserve (2022).

Challenges associated with elephant conservation:

- The two major threats to elephants are poaching and human-animal conflict.
- Though incidents of poaching for ivory have decreased considerably, human-elephant conflict is on a constant rise. For instance, around 500 humans and 100 elephants are killed in India every year due to human-elephant confrontations.
- Habitat fragmentation and construction of railways, roads, and power infrastructure have led to several elephant deaths.
- It should be noted that Project Elephant was launched by the Ministry of Environment, Forest and Climate Change in 1992. The aim of the project was to ensure the long-term survival of elephants in their natural habitats.
- Elephant corridors are very important to secure the habitats of elephants and thereby conserve them.
 - Elephant corridors are linear narrow habitat linkages that allow elephants to move between secure habitats.
 - Around 101 elephant corridors have been identified in India which should be conserved for elephant conservation.

Nut Graf: Due to various efforts of the government and the local community, India has become the home to one of the largest shares of both Rhino and Elephant species. However, some issues like poaching and human-animal conflict still persist and thus require to be addressed in a timely manner.

10. Cheetahs and tigers: the saga of big cats in India

Syllabus: Species Conservation.

Mains: Cheetah relocation in India.

Prelims: Status of Cheetahs and Tigers in India.

Context: Re-introduction of Cheetahs in Kuno National Park.

Background Details:

- Eight Namibian cheetahs were relocated to the Kuno National Park (KNP), Madhya Pradesh, from Namibia on September 17 as part of an ambitious Cheetah reintroduction project.
- A task force was established to implement the programme.
- Five female and three male cheetahs were flown into India under proper medical supervision. A gradual procedure of their release into the wild is being carefully followed so that they have enough time to adapt to Indian conditions. They were initially housed in 6 'bomas' (enclosures) and were provided buffalo meat.
- As per the recent news, three of the animals have been released into a larger enclosure outside of the 'bomas' after two of them (Freddie and Elton) successfully killed chital for prey in November. The third animal (Oban) was also released in mid-November.
- They are radio-collared and their movements are constantly tracked by a dedicated tracking team.
- A team of wildlife scientists, biologists, and a renowned zoologist and founder of the Cheetah Conservation Fund (Laurie Marker) is closely monitoring the initiative.

Reasons for Cheetah Relocation:

- India was home to Cheetahs earlier, however, they became extinct from India in the mid-twentieth century.
- The present population of cheetahs is 8000, which is confined to only Namibia and South Africa.
- Another species- Asiatic cheetah (which existed in India) is only found in Iran.
- In order to ensure their long-term survival young cheetahs are being reared in Namibia as part of conservation efforts and then sent to different parts of the world.
- Several experts have raised concerns that the KNP has limited space for the cheetah to co-exist with other predators like tigers and lions.

Status of Tiger in India:

- According to the latest survey, the tiger population stands at 2,967.
- It was observed that Tigers are increasing at a rate of around 6% per annum, but their habitat has remained stable, at around 89,000 square km since 2014.
- The tiger census is carried out with a sophisticated system involving camera traps and mathematical analysis. It should be noted that in 2006, the tiger population stood at 1,411 tigers. It increased to 1,706 in 2010 and 2,226 in 2014 due to improved conservation efforts and new estimation methods.
- The proper implementation of Project Tiger (since 1973) and anti-poaching measures played a crucial role in the conservation of tigers.
- India has a total of 53 tiger reserves. But it is also observed that increased numbers have meant that around half the tigers are outside the protected zones resulting in increased instances of human-animal conflict.

Nut Graf: Indian government has taken several steps to conserve both cheetahs and tigers in India, including the recent relocation of Cheetahs to Kuno National Park. The tiger population has considerably increased and similar success is expected from the efforts for Cheetah conservation. However, some issues do exist which need timely redressal.

11. Three Himalayan medicinal plants enter IUCN Red List

Syllabus: GS-3; Environment and Biodiversity; Conservation

Prelims: About *Meizotropis pellita*, *Fritillaria cirrhosa* and *Dactylorhiza hatagirea*

Context: Three medicinal plant species found in the Himalayas have made it to the IUCN Red List of Threatened Species.

Details:

- ***Meizotropis pellita***



Source: eFlora of India

- The species is commonly known as Patwa.
- It is a perennial shrub whose distribution is restricted and endemic to Uttarakhand.
- The species is threatened due to deforestation, habitat fragmentation and the occurrence of forest fires.
- The oil extracted from the leaves of this shrub contains strong antioxidants and it can be used as a promising natural substitute for synthetic antioxidants in pharmaceutical industries.
- IUCN Status: **Critically endangered**

- ***Fritillaria cirrhosa***



Source: eFlora of India

- It is a perennial bulbous herb commonly known as Himalayan fritillary.
- The plant is known as a strong cough suppressant and is used for the treatment of bronchial disorders and pneumonia in China.
- The species is experiencing a decline due to its long generation length, poor germination potential, high trade value, extensive harvesting pressure and illegal trade.
- IUCN Status: **Vulnerable**

- **Dactylorhiza hatagirea**



Source: ResearchGate

- The species is commonly known as Salampanja and is a species of orchid generally found in the Himalayas.
- The species is threatened by habitat loss, livestock grazing, deforestation, and climate change.
- The species is extensively used in Ayurveda, Siddha, Unani and other alternative systems of medicine to cure dysentery, gastritis, chronic fever, cough and stomach aches.
- IUCN Status: **Endangered**

12. Koundinya Wildlife Sanctuary

Syllabus: GS-3; Environment and Biodiversity

Prelims: Koundinya Wildlife Sanctuary and Project Elephant

Context: An 18-member herd of female elephants from the forests of Gudiyattam and Pernambattu of Tamil Nadu are currently moving through the Koundinya Wildlife Sanctuary zone.

Koundinya Wildlife Sanctuary

- Kaundinya Wildlife Sanctuary is a wildlife sanctuary and the only elephant reserve present in Andhra Pradesh.
- Kaundinya Wildlife Sanctuary is situated in the Palamaner and Kuppam forest ranges of the Chittoor district of Andhra Pradesh.
- Kaundinya Wildlife Sanctuary is a part of Project Elephant.
- The sanctuary is known for its southern tropical dry deciduous forest vegetation, with patches of thorn, scrub and grassy plains.
- The habitat of the sanctuary is rugged with high hills and deep valleys.
- Kaundinya and Kaigal which are tributaries of River Palar flow through the sanctuary.

13. Badri Cow Breed

- Uttarakhand government is planning for genetic enhancement of Badri Cows to increase its productivity.
- Officials have proposed to opt for the multiple ovulation embryo transfer (MOET) method to produce more cattle of a high genetic stock.
 - The ovum pick-up in vitro fertilisation (IVF) was the other technology that would be used to increase the yield.
- The Animal Husbandry Department has also proposed to use sex-sorted semen technology to improve the stock of the petite Badri cattle.
 - Use of sex-sorted semen curtails unproductive male population and increases the production of quality Badri studs for semen production through the embryo transfer technology.
- At present, Uttarakhand has nearly seven lakh Badri cattle, among which 4.79 lakh are cows.
- The Badri breed derived its name from the holy shrine of Char Dham at Badrinath.
- The cattle breed is small in size with long legs and varied body colours — black, brown, red, white or grey. This breed is comparatively more resistant to diseases, mostly due to its eating habits.
- Badri cows eat herbs that grow in the Himalayas and do not ingest polythene and other harmful things, and are far from toxic pollution.
- Its milk has rich medicinal content and high organic value. Its urine has a high value due to its feeding and habitat. The lactation milk yield ranges from 547 kg to 657 kg, with an average milk fat content of 4%.
- The Badri cow is the first registered cattle breed of Uttarakhand, and has been certified by the National Bureau of Animal Genetic Resources.

14. Lisu wren babbler

- New species of songbird called 'Lisu Wren babbler' was discovered in Mugafi peak, Arunachal Pradesh.
- Birdwatchers in search of the rare and elusive grey-bellied wren babbler recorded this new species of songbird which they named it as Lisu, after the local community.
- Their findings were published by Indian BIRDS, a peer-reviewed journal of South Asian ornithology.
- The grey-bellied wren babbler is mostly found in Myanmar with some birds occurring in adjoining China and Thailand.
- There has been only one previous report of this bird from India when two specimens were collected from Mugafi close to the Myanmar border in 1988.



Source: The Hindu

HEALTH ISSUES

1. Micronutrient malnutrition

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

Mains: Status of Hunger and Malnutrition in India

Context: India's slip in the 2022 ranking of the Global Hunger Index has brought back the focus on India's malnutrition problem.

Malnutrition

- Malnutrition refers to deficiencies, excesses or imbalances in a person's intake of energy and/or nutrients.
- Malnutrition covers two different categories of conditions namely:
 - **Undernutrition:** this category covers stunting (low height for age), wasting (low weight for height), underweight (low weight for age) and micronutrient deficiencies (lack of important minerals)
 - **Others:** This category consists of overweight, obesity, and diet-related non-communicable diseases (such as heart disease and diabetes)

Status of Malnutrition in India

- Malnutrition persists due to depressed economic conditions in large parts of the country, the poor state of agriculture in India, persistent levels of unsafe sanitation practices, etc.
- Malnutrition exacerbates the magnitude of the public health crises we face, and is India's most serious challenge and concern.
- **India's ranking in Global Hunger Index 2022 is 107** (slipped from the 2021 index of 101) out of 121 countries.
 - Barring war-torn Afghanistan, India has performed worse than all the countries in the South Asian region in the Global Hunger Index 2022.
 - The Hunger Index measures countries' performance on four component indicators – undernourishment, child wasting, child stunting and child mortality.
- India's **National Family Health Survey (NFHS-5)** from 2019-21 reported that in children below the age of five years, 35.5% were stunted, 19.3% showed wasting, and 32.1% were underweight and every second Indian woman is anaemic.
- According to the **FAO's Food Security Report** for 2021, India has a 15.3% undernourished population, the highest proportion of stunted children (30%), and wasted children (17.3%).
- The picture from the **Global Nutrition Report 2021** shows that stunting among children in India is significantly higher than the Asian average of 21.8%.
- Iron deficiency anaemia is responsible for 3.6% of disability-adjusted life years (DALYs) i.e. years of life lost due to premature mortality and years lived with disability

Food fortification to tackle malnutrition

- Since the 1920s, developed countries and high-income countries have successfully tackled the issue of malnutrition through food fortification.
- Of late, the low-and middle-income countries, such as India, have pursued food fortification as one of the strategies to tackle micronutrient malnutrition.
- Food fortification is the process of adding nutrients to food. For instance, rice and wheat are fortified with iron, folic acid and vitamin B12, and salt is fortified with iron and iodine.

Fortified Rice to tackle Anaemia

- Rice forms the major staple diet of 65% of the population in India.
- Experiences from the different States on the fortified rice project are similar to the results of global programmes that use fortified food as a cost-effective strategy to tackle anaemia.
- The health benefits because of food fortification have made 80 countries frame laws for the fortification of cereal flour, and 130 countries with iodised salt, where 13 countries have mandated rice fortification.
- Pilot projects on the distribution of fortified rice have been taken up in select States, including Maharashtra as part of a targeted public distribution programme for the masses.
 - The programme has been a success in terms of preventing cases of anaemia — from 58.9% to 29.5% — within a span of two years.
- The Union government has declared its intent to increase the distribution of fortified rice through the existing platform of social safety nets such as the PDS, ICDS and PM-POSHAN.
- According to NITI Aayog, a rice fortification budget of around ₹2,800 crore per year can save 35% of the total or 16.6 million DALYs per year with no known risk of toxicity.
- Rice fortification, which costs less than 1% of the food subsidy bill (2018-19), has the potential to prevent 94.1 million anaemia cases, saving ₹8,098 crore over a five-year period.

Case Study – Noon meal scheme in Gujarat

- In Gujarat, an eight-month-long study on multiple micronutrient-fortified rice intervention for schoolchildren (06-12 years) in 2018-2019, as part of the Midday Meal Scheme, found increased haemoglobin concentration, 10% reduction in anaemia prevalence, and, more importantly, improved average cognitive scores (by 11.3%).

Way Forward

- Excess iron overload from fortified rice has been dangerous for Jharkhand's tribal population suffering from sickle cell anaemia and thalassaemia.
- Food fortification is a cost-effective complementary strategy to address multiple micronutrient deficiencies.
- Given its proven efficacy and cost-effectiveness, food fortification can help India in reducing micronutrient deficiencies and address overall health benefits.

Nut Graf: *Underfunding and underutilisation of key nutrition schemes are among the significant reasons behind India's multi-dimensional nutrition challenge. Various interventions regarding food fortification in India carried out with precautions, are the key to the malnutrition issue the nation continues to grapple with.*

2. Benefits of reducing salt intake

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

Mains: Impact of changing dietary patterns on health

Context: A recent study shows immense benefits of reducing salt intake.

Key Details

- A recent study published in the **Journal of American College of Cardiology** showed a higher incidence of heart attacks, heart failure and strokes with higher frequency of adding salt to one's food.
 - This did not include the salt used for cooking.
- Over 1.76 lakh participants from the U.K. Biobank were followed up for an average of 11.8 years.
- Nearly 7,000 heart attacks and over 2,000 strokes were documented during this period.
- After adjusting for all other risk factors, it was found that adding less salt to food was associated with fewer heart attacks and strokes.

DASH diet

- Reducing salt intake resulting in fewer health issues found to be true even in participants who were following the **DASH diet (Dietary Approaches to Stop Hypertension)**.
- The DASH diet involves eating fruits, vegetables, lean meat, poultry, nuts, whole grains, and reducing the intake of saturated fats, cholesterol, and sugar. It is the best recommended diet to prevent cardiovascular events.

Salt intake in India

- There is a lack of large and reliable studies estimating the daily salt intake in India.
- Existing data shows a consumption of more than 10 gm per day, far exceeding the recommended allowance.
- It could be worse in children since the recommendation is almost half.
- A study conducted by Sapiens health foundation amongst school and college students in Chennai showed a 10% prevalence of hypertension.
- Intake of salt may be worse in Indians since pickles are often introduced early in life.

Sodium Content

- Increasing production of more and more processed food, rapid urbanisation, and changing lifestyles are transforming dietary patterns. Highly processed foods are increasing in availability and becoming more affordable.
- People around the world are consuming more energy-dense foods that are high in saturated fats, trans fats, sugars, and salt.
- Salt is the primary source of sodium and increased consumption of sodium is associated with hypertension and increased risk of heart disease and stroke.
- The majority of labels in packaged foods show sodium content.
 - 1 gm of sodium is 2.5 gm of salt.
- There is a large portion of hidden salt in preserved and packaged foods.

Recommendations for salt reduction

- The World Health Organisation recommends only 5 gm of salt per day.
- WHO Member States have agreed to reduce the global population's intake of salt by a relative 30% by 2025.
- All salt that is consumed should be iodized or "fortified" with iodine, which is essential for healthy brain development in the foetus and young child and optimising people's mental function in general.
- Salt reduction programmes and programmes that promote fortification with micronutrients of salt, condiments can

complement each other.

- Monitoring of population salt intake, sources of salt in the diet and consumer knowledge, attitudes and behaviours relating to salt to inform policy decisions.

Nut Graf: A recent study showed a higher incidence of cardiovascular diseases with higher frequency of adding salt intake. Improving dietary habits is a societal as well as an individual responsibility. It demands a population-based, multisectoral, and culturally relevant approach.

3. Antimicrobial Resistance

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

Prelims: Antimicrobial Resistance

Mains: Antimicrobial Resistance

Context: Global Antimicrobial Resistance and Use Surveillance System (GLASS) report-2022 by World Health Organization (WHO) showed that over 50 per cent of life-threatening bacterial infections are becoming resistant to treatment.

News in detail:

- The report noted that high levels of bacteria resistance, frequently causing life-threatening bloodstream infections in hospitals, such as *Klebsiella pneumoniae* and *Acinetobacter* spp, necessitate treatment with last-resort antibiotics such as carbapenems.
- Over 60% of *Neisseria gonorrhoea* infections, a prevalent sexually transmitted disease, are resistant to ciprofloxacin, a commonly used oral antibacterial.
- Over 20% of *E.coli* isolates, the most prevalent bacteria in urinary tract infections, were resistant to first-line antibiotics ampicillin and co-trimoxazole.

What is Antimicrobial Resistance (AMR)?

- Antimicrobial resistance (AMR) is the ability of microorganisms to persist or grow in the presence of drugs designed to inhibit or kill them.
 - It makes **infections harder to treat** and **increases the risk of disease spread, severe illness and death**.
- Microorganisms that develop antimicrobial resistance are sometimes referred to as “superbugs”.

How Does Antibiotic Resistance Occur?

- When we **use antibiotics on people, animals, and plants**, microorganisms get a chance to develop the ability to withstand the treatments by becoming resistant and reducing the effectiveness of the drugs over time.
- **Standard therapies become unsuccessful** when germs grow resistant to antimicrobials.



Figure: Causes of AMR.
Source: WHO

Threats due to Antimicrobial Resistance:

- According to AMR-WHO, Bacterial resistance to antibiotics is the direct cause of 1.27 million deaths worldwide each year, and it indirectly leads to an additional 4.95 million deaths annually.
- According to a 2017 World Bank assessment, AMR could cause a US\$ 1.2 trillion in increased health expenditure each year by 2050, and push up to 24 million more people, primarily in low-income countries, into extreme poverty by 2030.
- Antimicrobial Resistance can **make common diseases deadly, leading to the emergence of Zombie Viruses** and a **high failure rate in the development of new antimicrobials**.
- India is highly susceptible to antimicrobial resistance due to **Low literacy, low healthcare penetration and Easy availability of antibiotics** leading to misuse and overuse.
- Antimicrobial Resistance adversely affects our efforts towards achieving Sustainable Development Goals:



Source: www.reactgroup.org

Global initiatives taken for reducing AMR:

- **Global Action Plan on Antimicrobial Resistance (GAP):** World Health Assembly adopted a global action plan on antimicrobial resistance in 2015. The 5 strategic objectives are
 - To improve awareness and understanding of AMR.
 - Strengthen the knowledge and evidence base.
 - Reduce the incidence of infection.
 - Optimize the use of antimicrobial medicines in human and animal health.
 - Develop the economic case for sustainable investment.
- **WHO's 4 priority areas for reducing the burden of AMR**
 - Stepping up the leadership
 - Driving Public Health Impact in all countries
 - Research and Development
 - Monitoring AMR burden and response
- **AWaRe Classification of antibiotics:** Developed by WHO in 2017 by, Antibiotics are classified into three groups, Access, Watch and Reserve, taking into account the impact of different antibiotics and antibiotic classes on antimicrobial resistance.

- **One Health Approach:** One Health is a collaborative, multisectoral, and transdisciplinary approach to obtaining optimal health outcomes by recognising the interconnections between humans, animals, plants, and their common environment at the local, regional, national, and global levels.
- **The Global Antimicrobial Resistance and Use Surveillance System (GLASS):** It is the first global collaborative effort to standardize AMR surveillance by WHO.
 - It aims to actively promote capacity building and monitor the state of existing and new national surveillance systems.
 - It provides for a standardized approach to data collection, analysis, interpretation, and exchange among governments.

Indian initiatives to reduce AMR:

- **National Action Plan on Antimicrobial Resistance:** In line with the Global Action Plan of WHO, India released the National action plan on AMR in 2017 focusing on the One Health approach.
 - Kerala and Madhya Pradesh have their own State Action Plans.
- **AMR Surveillance Network:** Indian Council of Medical Research (ICMR) established the AMR surveillance and research network (AMRSN) in 2013,
 - It generates evidence and captures trends and patterns of drug-resistant infections in the country.
- **Antibiotic stewardship program (AMSP):** ICMR initiated the programme on a pilot project basis in 20 tertiary care hospitals across India to control the misuse and overuse of antibiotics in hospital wards and ICUs.
- ICMR worked in collaboration with the Indian Council of Agriculture Research, the Department of Animal Husbandry and the DCGI to **ban the use of Colistin as a growth promoter in animal feed in poultry.**
- **AMR Research & International Collaboration:** ICMR has taken initiatives to develop new drugs /medicines through international collaborations to strengthen medical research in AMR.
 - ICMR and the Research Council of Norway (RCN) initiated a joint call for research in antimicrobial resistance in 2017.
 - ICMR and the Federal Ministry of Education and Research (BMBF), Germany have a joint Indo-German collaboration for research on the AMR.
- The Drugs Controller General of India has **banned 40 fixed-dose combinations (FDCs)** which were found inappropriate.
- National Centre for Disease Control (NCDC) is conducting regular outreach and IEC activities in schools, colleges and Health melas to create awareness about AMR, its containment & prevention and the judicious use of antibiotics among the common public.

Nut Graf: *The relentless rise in antibiotic resistance is a major public health concern and it demands participation and support from all levels; political, medical, veterinary, agricultural, environmental, academic, industry and the general public for effective control.*

4. Need to make cancer drugs affordable

Syllabus: Government Policies & Interventions in Various Sectors-Health

Mains: Patent law and its implications on Drug Prices

Context: The 139th report on “Cancer Care Plan and Management: Prevention, Diagnosis, Research & Affordability of Cancer Treatment” was submitted to the Rajya Sabha chairman on September 12, 2022.

Introduction:

- The parliamentary standing committee on health and family welfare made several recommendations.
- The committee recommended that cancer be declared as a notifiable disease citing several unreported deaths due to cancer in India.
- The committee highlighted the seriousness of problems concerning the treatment of cancer, the estimated incidence of which in India was nearly 1.4 million in 2020.
- Highlighting the implications of the high cost of cancer care, the Committee noted that “about 40% of cancer hospitalisation cases are financed mainly through borrowings, sale of assets and contributions from friends and relatives”.
- This is mainly due to high average ‘out of pocket’ spending on cancer care.
 - Spending on cancer care in private facilities is about three times that of public facilities.

Impact on survival rates:

- High treatment costs have seriously impacted survival rates in developing countries.
- In breast cancer, while the five-year survival rates in India and South Africa are estimated to be 65% and 45%, respectively, in contrast, in high-income countries, it is nearly 90%.
- According to a World Health Organization (WHO) report, the cost of a course of standard treatment for early-stage HER2 (human epidermal growth factor receptor) positive breast cancer would be equivalent to about 10 years of average annual wages in India and South Africa and 1.7 years in the United States.

- A month's treatment for breast cancer using CDK (cyclin-dependent kinase) inhibitors could range between ₹48,000 and ₹95,000 and the patient is expected to take one of these medicines for the rest of her life.
 - Three drugs, Ribociclib, Palbociclib and Abemaciclib, belong to this therapeutic class, which help in slowing the spread of cancer cells in the body.

Justifications by pharma companies:

- Large pharmaceutical companies justify the excessive costs of breast cancer medicines as they spend over \$3 billion in bringing a new molecule to the market, which they must recoup in order to remain in the market for innovation.
- However, as per a WHO report, spending on research and development may bear little or no relationship to how pharmaceutical companies set cancer medicine prices. Companies set prices with an eye to maximising profits, thus denying patients from taking advantage of medical breakthroughs.
- Pharma companies exercise monopoly control over their products due to strong intellectual property protection.
 - Patent evergreening extends their monopoly rights over the medicines even before the generic producers enter the market thus keeping the price high.
 - *Evergreening* is the practice of companies filing for an extension of a patent with minor process or product modifications just before the original patent expires at the end of 20 years.
 - The three breast cancer medicines – Ribociclib, Palbociclib and Abemaciclib are currently under patent protection – implying that Indian companies cannot manufacture these medicines without the consent of the right holders.

Way Forward:

- The lack of access to these critical medicines has created deep financial stress and also jeopardised patients' right to live with dignity, a fundamental right guaranteed under Article 21 of the Indian Constitution.
- Government must authorise Indian companies to domestically produce high-priced cancer medicines by granting compulsory licences (CLs) in keeping with the Patents Act.
 - The CLs override patent rights, enabling domestic companies to manufacture generic alternatives when the prices of patented medicines are high.
- Alternatively, the Government can invoke provisions of Section 100 of the Patents Act, which empowers it to authorise any entity to use a patented invention without the authorisation of the patent holder.
 - Section 100 can be useful if no domestic company shows interest in obtaining a CL for any of the cancer medicines mentioned above.
- In the recently concluded WTO Ministerial conference, there was an agreement that the CLs can be used for increasing domestic production of COVID-19 vaccines and medicines by developing countries.
- The government must also push more pharmacies under its Affordable Medicines and Reliable Implants for Treatment (AMRIT) initiative.
 - It was launched in 2015 to provide affordable life-saving medicines, other drugs and medical disposables for the treatment of cancer and other diseases.

Nut Graf: A recent report submitted to the Rajya Sabha highlights the spiralling costs of cancer medicines and their implications. The report demands that cancer medicines must be provided to the suffering at affordable prices as the 'right to health' in India is interpreted as an extension of the right to life under Article 21.

5. What is the proposal to ban the sale of single cigarettes?

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

Mains: Recommendations of the Parliamentary Committee on restricting tobacco usage in the country

Context: The Parliamentary Standing Committee on Health and Family Welfare has proposed a ban on the sale of single sticks of cigarettes.

Recommendations of the Parliamentary Standing Committee on Health and Family Welfare

- The Standing Committee in its report on cancer management, prevention and diagnosis has recommended various measures to the government to curb the consumption and reduce the accessibility of tobacco products.
- The Committee has recommended the government put in place a ban on the sale of single sticks of cigarettes.
- It also recommends the government remove all the designated smoking areas in various places such as airports, hotels, restaurants, etc. and encourage a smoke-free policy in organisations.
- The Committee, citing that India has the lowest prices for tobacco products, has recommended the government increase taxes on all tobacco products and use the acquired revenue from such taxes for cancer prevention and awareness.
- The report of the Committee makes a reference to the National Health Policy which had aimed to reduce current tobacco use by 30% by 2025 and urges the government to undertake effective actions to restrict the sale of tobacco products.
- Furthermore, the Committee has proposed a ban on gutka and pan masala as well as a ban on their direct and indirect advertisement.

- This comes at a time when over 80% of tobacco consumption in the country is in the form of chewing tobacco and they are marketed as mouth fresheners.

Reasons for the proposed ban on single-stick cigarettes

- According to reports, single sticks are considered more economical as compared to a full pack of cigarettes and this has particularly attracted adolescents and youth into smoking as they generally have limited money.
- Further, single sticks of cigarettes are also preferred by individuals who may want to experiment and have not yet started smoking on a regular basis.
- Thus a ban on the sale of single sticks of cigarettes would force an individual to buy the entire pack, which might not be economical thus reducing the potential experimentation of smoking and the frequency of regular intake.
- Additionally, the potential ban would require the consumer to carry around the cigarette packet which has statutory warnings to consumers whereas loose cigarettes do not carry any such warnings.

The need for encouraging the public to quit smoking

- According to the World Health Organization (WHO), all forms of tobacco are harmful and smoking cigarettes is the most common way of tobacco use across the world.
- The WHO also notes that the nicotine present in tobacco products is highly addictive and without cessation support, only about 4% of its users who attempt to quit would succeed.
- Further, the Lancet journal points out that over 7 million annual deaths would be expected in low and middle-income countries on account of smoking by 2030.

Way forward

- The State Convenor of the Tamil Nadu People's Forum for Tobacco Control (TNPFTC) has recommended the government introduce vendor licensing.
- According to experts, without the presence of a vendor licensing regime, the ban on single sticks of cigarettes would not be effective.
- Experts feel that allowing lakhs of shops to sell tobacco would make it difficult for the government to implement and enforce a ban on the sale of single sticks of cigarettes.

Nut graf: *Considering that the accessibility and affordability of single-stick cigarettes disincentivise individuals to quit smoking, a Parliamentary Committee has recommended the government institute a ban on their sale. The government must also consider instituting a vendor licensing regime in order to ensure effective enforcement of the ban.*

6. Curbing individualism in Public health

Syllabus: Issues related to the development and management of health services.

Mains: Individualism in public health.

Focus is on Individualist solutions rather than holistic solutions

- There is a failure to consider and interpret public health issues from a population perspective. This results in ineffective and unsustainable solutions.
- Individualist solutions like micronutrient supplementation and food fortification have been proposed as solutions to the issue of Undernutrition, instead of more sustainable approaches like strengthening the Public Distribution System(PDS), supplementary nutrition programmes, and health services.
- Similarly, for chronic disease control, the major focus is on early diagnosis and treatment instead of modification of health behaviours through community action.
- This strong tendency of prioritizing individual-oriented interventions over societal-oriented population-based approaches is referred to as individualism in public health.

Case studies of various Public Health Programmes

- **Pradhan Mantri Jan Arogya Yojana (PMJAY):**
 - It is the largest health insurance scheme that covers hospitalization expenses for a family.
 - The objective of the scheme is to ensure free curative care services for all kinds of hospitalization services and reduce the financial burden of the beneficiary.
 - It is an individualistic response to the hospitalization expenditure of the population. This is evident from the 75th round of National Sample Survey Organisation (NSSO) data, which highlights that on average only 3% of the total population in India had an episode of hospitalization in a year.
 - It implies that the Government needs to cater healthcare facilities to only 3%-5% of the population covering their hospitalization needs.
 - In the evaluation of publicly-funded insurance schemes, it was found that only a small percentage of the population benefited from the scheme annually.

● COVID-19 Vaccination:

- Unlike other vaccination, it was clear that a COVID-19 vaccine cannot prevent people from getting the disease but would only reduce hospitalization and deaths.
- It should be noted that only 20% of the total COVID-19-positive cases required medical attention, with nearly 5% requiring hospitalization and around 1%-2% needing ventilator support or intensive care (ICU).
- This was again a promise and assurance to every individual against hospitalization.
- A population-based approach would have focused on primary, secondary, and tertiary healthcare facilities during the time of crisis.

Determinants of Individualism:

There are three major reasons for the dominance of individualism in public health that often works in combination.

They are:

- The dominance of biomedical knowledge and philosophy with a misconception that what is done at an individual level, when done at a larger level of the population becomes public health.
- Another aspect is the 'visibility' of the impacts of health among the general public. It should be remembered that health effects are more visible and convincing at the individual level, whereas improvements at the population level require population-level analysis.
 - The population-level analysis is an important skill that demands expertise and orientation about society among public health practitioners.
 - The public, and public health experts who take individual experiences at face value, will end up misinterpreting the population's characteristics based on individual experiences. This is referred to as the atomistic fallacy in public health.
- The role of the market and the impact of consumerism in public health practice. The market forces would cast a wide net and cover 100% of beneficiaries for a programme. Whereas in reality, the actual beneficiary would be only 5 to 10%.

Way Ahead:

- Curative care provisioning should not be planned at an individual level as epidemiologically, every individual will not require curative care every time.
- For population-level planning, there is a need to consider the population as a single unit.
- All forms of individualistic approaches in public health should be resisted to safeguard its original principles of practice namely population, prevention, and social justice.

Nut Graf: *The dominance of individualism is rising in public health programmes of the country. There is a need for robust population-level analysis and planning for robust public health care.*

7. Ni-kshay Mitras

Syllabus: Health related Issues

Prelims: Tuberculosis and related government policies

Context: Within three months of its launch, more than 52,000 Ni-kshay Mitras have registered.

Details:

- With more focus on nutritional improvement among TB patients, the Union Health Ministry launched the Ni-kshay Poshan Yojana in 2018 as part of National TB Elimination Programme (NTEP) which provides direct cash benefit transfer of ₹500 per month to TB patients on treatment.
- Jan bhagidari (people's participation) forms the core principle of the Pradhan Mantri TB Mukh Bharat Abhiyaan to provide additional support to TB patients.
- Undernutrition and TB form a vicious cycle. Poor nutritional status predisposes an individual to get infected by the disease, or have a dormant disease manifest clinically. TB leads to depletion of nutrient reserves and aggravation of undernutrition.
- Optimum nutritional support to TB patients improves weight gain, adherence to therapy, muscle strength, quality of life, robust recovery and reduced mortality.

The Ni-kshay mitras:

- Under this policy, Ni-kshay Mitras can adopt and care for TB patients.
- Ni-kshay Mitras are volunteers who could be individuals, NGOs, co-operative societies, corporates, and even political parties.
- They commit to help the TB patients through nutritional support, nutritional supplements, additional investigations and vocational support.
- Helping a TB patient could avert ruinous downfall of a family due to wage loss. Humanitarian support from people could save the life of a TB patient.

HISTORY

1. Veer Baal Diwas

Syllabus: Significant personalities.

Prelims: Veer Baal Diwas, Sahibzadas and Guru Gobind Singh

Context: Shiromani Gurdwara Parbandhak Committee (SGPC) on December 25, 2022 asked the Sikh community to observe the martyrdom day of the sons of Guru Gobind Singh as 'Sahibzade Shahadat Diwas' instead of 'Veer Bal Diwas.'

Background:

- Prime Minister Narendra Modi had in January 2022 announced that December 26 will be observed as 'Veer Bal Diwas' to mark the martyrdom of Guru Gobind Singh's two sons Sahibzada Zorawar Singh Ji and Sahibzada Fateh Singh Ji.
- The SGPC too had earlier objected to the name of the day and asked the government to change it to 'Sahibzade Shahadat Diwas'.

Char Sahibzade:

- Guru Gobind Singh had four sons, called the 'Chaar Sahibzade'.
- Ajit Singh, Jujhar Singh, Zorawar Singh and Fateh Singh.
- The Sahibzades were initiated into the Khalsa, an elite warrior group among the Sikhs started by Guru Gobind Singh in 1699.
- All four Sahibzades were executed by Mughal forces before the age of 19.
- Zorawar Singh and Fateh Singh, the two youngest of the Chaar Sahibzade were told by Wazir Khan, the Nawab of Sirhind to be bricked alive on 26th December 1705 because they refused to become Muslims.
- Before the Chaar Sahibzade attained martyrdom, they were captured and kept in a cold tower called "Thanda Burj" with their grandmother Mata Gujari, in the middle of winter.
- The two older Princes, Ajit Singh and Jujhar Singh fought in the Chamkaur battle, and attained martyrdom.

Battle of Chamkaur:

- The Battle was fought in 1704 between the Khalsa group led by Guru Gobind Singh and the coalition forces of Mughals led by Wazir Khan, the Nawab of Sirhind.
- While Guru Gobind Singh was crossing the Sarsa river with his disciples, the Mughals and hill chiefs attacked, marking the start of the battle.
- The battle was fought for three days between 21st to 23rd of December, 1704.
- Guru Gobind Singh lost two of his elder sons in battle.
- The Guru claimed that he was proud that his sons had died fighting in the battle.
- Guru Gobind Singh makes a reference to this battle in his victory letter Zafarnama.

SOCIAL JUSTICE

1. Age of Consent Issue

Syllabus: Issues related to Women & Children

Mains: Age of Consent under POCSO Act and related concerns.

Context: Chief Justice of India D.Y. Chandrachud appealed to the Parliament to have a relook at the issue of age of consent.

Background:

- Chief Justice of India D.Y. Chandrachud appealed to Parliament to have a relook at the issue of age of consent under the Protection of Children from Sexual Offences (POCSO) Act, 2012 as it posed difficulties for judges examining cases of consensual sex involving adolescents.
- The High Court of Karnataka had also said that the Law Commission of India must rethink the age criterion for having consensual sexual intercourse under various laws such as the IPC and the POCSO Act.
 - The Dharwad Bench of the Karnataka High Court had said that the court has been encountering many cases wherein minor girls above the age of 16 and below 18 have eloped with a boy due to fear of opposition from parents.
- The Madras High Court recently said that it was waiting for the legislature to reduce the age of consent under the POCSO Act from the current 18 years.
 - In **Sabari v/s. Inspector of Police case**, the Madras High Court recommended that the age of consent be revised to 16 years.

Existing stringent terms and provisions

- As per the **Protection of Children from Sexual Offences (POCSO) Act, 2012** and various provisions of the **Indian Penal Code (IPC)**, an individual who is found to have committed a penetrative sexual assault on a child i.e. anyone below 18 years of age can be punished with imprisonment of seven years and more, can be extended to imprisonment for life and can also be liable to fine.
- **The most used sections and provisions of these Acts are:**
 - **Section 366 of the IPC:** Deals with kidnapping, abducting, illicit intercourse or inducing a woman to compel her marriage.
 - **Section 6 of the POCSO Act:** This section provides for stringent punishment for individuals who have committed aggravated penetrative sexual assault.
 - **Section 9 of the Prohibition of Child Marriage Act, 2006:** This section also mentions rigorous imprisonment for punishing male adults for marrying a child.
- Further, under the POCSO Act, a girl is considered a “child” even if she is 16 years old and therefore her consent does not matter, and any sexual intercourse is considered and treated as rape thereby attracting strict punishments.

The need for a rethinking of age criterion

- According to various reports, the stringent provisions of these acts and laws have been misused and there have also been many instances in recent years when the courts have dismissed such criminal proceedings after being convinced that the law was being misused to suit one or the other party.
- The Karnataka High Court in its recent order has opined that the effect of such criminal prosecution of minor girls or boys is causing severe distress to all concerned.
- A study titled “Why Girls Run Away To Marry – Adolescent Realities and Socio-Legal Responses in India”, published by the Partners for Law in Development in 2019, recommended lowering the age of consent to lesser than the age of marriage to decriminalise sex among older adolescents in order to protect individuals from the misuse of the law.
- According to the study, parents who intend to exercise control over who their daughters are willing to marry, file cases against boys who are then booked under the stringent provisions of the IPC, POCSO Act or the Prohibition of Child Marriage Act, 2006.
- A study carried out by Enfold Proactive Health Trust, Bengaluru found that 93.8% of “romantic cases” tried under POCSO ended in acquittal after consuming a median time of 1.4 to 2.3 years from the filing of a First Information Report (FIR) to disposal by courts.

Way forward

- In the **Vijaylakshmi v/s State Rep case (2021)**, the Madras High Court, while quashing a POCSO case, held that the definition of 'child' under Section 2(d) of the POCSO Act can be redefined as 16 instead of 18.
- The court also recommended that the age difference in consensual relationships should not be more than five years to ensure that adolescent girls are not taken advantage of by an individual who is much older.
- The Karnataka High Court also pointed out that there have been several instances where these offences under the IPC or POCSO Act, are deemed to have been committed on account of lack of knowledge on the part of the minor girl and the boy.
- This mandates raising awareness among adolescents about the stringent provisions of the existing laws and regulations.
 - Comprehensive sex education should be provided to bridge knowledge gaps and build positive skills and attitudes to enable adolescents to make informed decisions and realize the importance of their health and dignity.
 - Appropriate knowledge and skills should also be imparted to vulnerable groups like children with disabilities or those out of school.
- At a time when courts and activists have recommended amending the existing stringent provisions, a parliamentary committee is looking to increase the minimum age of marriage for women to 21 years through the Prohibition of Child Marriage (Amendment) Bill, 2021.
- Activists believe that increasing the age might complicate the issue rather than help the community.

Nut graf: Acknowledging that there has been an increase in the instances of misuse of stringent provisions of laws such as the POCSO Act and the IPC, the Karnataka High Court has urged the Law Commission of India to consider the ground realities and rethink the age criteria under these laws and has also suggested that adolescents must be made aware of these provisions.

2. 81 cr. people to get free foodgrains for one year

Syllabus: Welfare schemes for vulnerable sections of the population

Prelims: National Food Security Act, Prime Minister Garib Kalyan Anna Yojana (PMGKAY) and Antyodaya Anna Yojana

Mains: The reasons and the significance of merging Prime Minister Garib Kalyan Anna Yojana with the National Food Security Act.

Context: The Union Cabinet announced free foodgrains to all 81 crore beneficiaries covered under the National Food Security Act (NFSA) for one year.

National Food Security Act

- The National Food Security Act (NFSA) was enacted on 5th July 2013.
- The launch of NFSA has marked a paradigm shift in the approach to food security from welfare to a rights-based approach.
- The Act is being implemented throughout the country with over 81.34 crore beneficiaries.
- The NFSA at present covers over 50% of the urban population and 75% of the rural population.
- In order to facilitate women's empowerment, the eldest woman of a household of age 18 years and above is considered the head of the household for the purpose of issuing ration cards under the Act.
- According to NFSA, the Union government is tasked with the job of allocation and transportation of food grains to States and Union Territories (UTs).
 - The administrations of States and UTs are responsible for the effective implementation of the scheme which includes the identification of eligible households and issuing ration cards.
- The NFSA had brought about reforms to the Targeted Public Distribution System by including provisions such as cash transfers via Direct Benefit Transfer (DBT) as the mode for the provisioning of food entitlements.
- Two categories of beneficiary households under the NFSA:
 - Antyoday Anna Yojana (AAY): These beneficiaries are entitled to 35 kg of foodgrains every month irrespective of the number of family members.
 - Priority Households. These households get foodgrains depending on the number of family members i.e. each member 5 kg per month.

FOODGRAIN ALLOCATION UNDER NFSA (FOR FY23, IN LMT)

	Rice	Wheat	Nutri-cereals	Total
Antyoday Anna Yojana	71.07	28.68	0	99.75
Priority Households	272.8	144.76	6.3	423.86
Targeted PDS (tide over)	20.94	5.46	0	26.4
Total under Targeted PDS	364.81	178.9	6.3	550.01

Source: Indian Express

Details:

- The beneficiary households who earlier paid ₹1 for coarse cereals, ₹2 for wheat and ₹3 for rice per kilogram will now be provided 35 kilograms of foodgrains free of cost every month for the next one year.
- Further, other beneficiaries covered under the NFSA will now get five kilograms of food grains free of cost for every month till December 2023.
- According to the Union government estimates, about ₹2 lakh crores will be required additionally to facilitate the scheme and the Union government will bear the entire cost.

Significance of the move

- The move is regarded as a historic decision as it aims to ensure food security to the poor free of cost across the country.
- As per the Union Food Minister, the latest initiative is yet another reflection of the government's pro-poor stand.
- According to the Union Food Minister, a decision has been taken to extend the benefits of the schemes such as Antyodaya Anna Yojana, Prime Minister Garib Kalyan Anna Yojana and the NFSA to more beneficiaries by merging these schemes.
 - Prime Minister Garib Kalyan Anna Yojana (PMGKAY) was started during the initial phases of the COVID lockdown in April 2020.
 - The Scheme had been extended multiple times and was finally scheduled to end on December 31, 2022.
 - The PMGKAY had ensured five kg of food grains for the poor free of cost.
- With the merger of PMGKAY with the NFSA, the entire quantity of 5 kg and 35 kg of food grains would be available free of cost.

WHY PMGKAY, NFSA WERE MERGED

LOWER FOODGRAIN STOCKS

As on Nov 30, combined stock of rice (115.42 lakh metric tonne) and wheat (190.27 LMT) was at 305.69 LMT. This was lower than the figure of 591.56 LMT (rice 213.03 LMT, wheat 378.53 LMT) on Nov 30, 2021.

HIGHER ECONOMIC COST

Economic cost for rice has increased to Rs 3,670.04 per quintal this year from Rs 3,597.17 last year. For wheat, it has gone up to Rs 2,588.70 per quintal from Rs 2,4999.69 per quintal last year.

Source: Indian Express

Nut graf: As the economic situation is coming back to normal post the pandemic and considering the significant depletion of the foodgrains stocks, the government has decided to discontinue PMGKAY and merge it with the NFSA. The move has gained a lot of significance as it ensures both fiscal prudence as well as the extension of a safety net to the vulnerable sections.

3. A retelling of the Indian migrant worker's plight

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

Mains: Migrant labours and associated concerns.

Prelims: International Migrants Day.

Context: International Migrants Day is observed annually on December 18.

Background Details:

- The factors which have resulted in large-scale migration in the past few years are:
 - COVID-19 pandemic
 - Taliban takeover of Afghanistan
 - Russia's invasion of Ukraine
 - Worsening poverty in the sub-Saharan region
 - Climate change

Data on Migration:

- As per the World Migration Report 2022 of the International Organization of Migration (IOM), there were approximately 281 million international migrants globally in 2020, with around two-thirds being labour migrants.
- There were around 169 million labour migrants in 2019 and 164 million in 2020.
- The share of South Asia is 40%. Moreover, the South Asia-Gulf Migratory Corridor is the world's largest migrant corridor.
- The long-term data analysis has shown that migration is not uniform across the world. It is shaped by economic, geographic, and demographic factors, that result in distinct migration patterns.
- It was reported that as a consequence of the "post-pandemic job search" around 300 Indian engineers from Tamil Nadu were trafficked to Myanmar to work for a crypto-scam and about 20 Indian nurses were trafficked to the United Arab Emirates for fake job offers.
- Kerala government data showed that 1.7 million people returned from abroad during the pandemic (between June 2020 and June 2021) and 1.5 million suffered job losses.
- As per a document tabled in the winter session of Parliament, about nine million Indian migrants are working in the Cooperation Council for the Arab States of the Gulf (GCC) countries.

Associated Concerns:

- It is argued that though India is the largest source of migrants and remittance-receiving country, the welfare of Indian migrants abroad is hardly prioritized by policymakers.
- It is also a matter of serious concern that India lacks a tangible and comprehensive migration policy to ensure the safe movement of migrants and decent living.
- India still governs international migration through the four-decades-old Emigration Act of 1983.
- The situation in many GCC countries is worrisome. For instance, the existing exploitative nature of the Kafala system has resulted in the mass retrenchment of the labour force.
 - Kafala system is described as a sponsorship system that regulates the relationship between employers and migrant workers.
- COVID-19 has increased the cases of unemployment, under-employment, reduction in salaries, and, even non-payment of salaries, compensation, and residual dues.
- Other recurring issues faced by migrant labourers are irregular payment, poor working conditions, the negation of labour rights, the absence of proper grievance redress mechanisms, and inaccessibility to a transparent judicial system.

Initiatives for Migrant Issues in Asia:

- Several South Asian countries along with their civil society organizations, scholars, and activists are leading a 'justice for wage theft' campaign for the disbursement of the pending salary benefits and other associated dues of labour.
- Countries like the Philippines have recorded the wage theft of their migrants and are legally working on the issue.

Way Ahead:● **Women Migrants:**

- It should be noted that Indian nurses and caregivers have been working in the most volatile and remote countries like Iraq, Syria, Libya, Yemen, Israel, and Papua New Guinea.
- Moreover, the women migrant workforce is largely limited to GCC countries and also to the Organisation for Economic Co-operation and Development (OECD) countries.
- Indian Government should thus comprehensively assess the situation of migrant women and create women-centric, rights-based policies.
- The Government should revisit its policies in the context of the post-pandemic scenario by engaging all stakeholders and passing the Emigration Bill 2021.
- The policies should be aligned with the United Nations' Global Compact for Safe, Orderly Migration and Regular Migration.
 - It is a non-binding resolution that recognizes the challenges of migrant labour across the world.

Nut Graf: *The COVID-19 pandemic has not only impacted global migration patterns but has also exposed the untold vulnerabilities and miseries of international migrant labour. It is in India's interest that it revisit the existing policies and devise a new migration policy covering all aspects of the present scenario.*

4. A strong case exists for marriage equality

Syllabus: Protection and betterment of Vulnerable section of the population.

Mains: Homosexuality and issues related to the marriage of same-sex couples.

Context: A statement by a Member of Parliament against same-sex marriage.

Details:

- It was stated by a Member of Parliament (MP) that same-sex marriages are against the cultural ethos of India. This has once again flared up the debate on marriage equality.
- A petition for marriage rights of same-sex couples under the ambit of the Special Marriage Act, 1954 is already pending before the apex court of the country.
- One of the major concerns in the case is the legitimacy of the institution. This means whether courts should interfere in marriage rights or leave it to the Parliament.
- However, the Court can urge to intervene on the grounds of the previously decriminalized homosexuality aspect on the basis of the 'right to equality' and not merely the 'right to privacy'.
- An aspect of the LGBTQ community's legal battle has been whether the law criminalizing sexual conduct has been violative of the right to privacy or the right to equality.
 - In the right to privacy aspect, an individual's sexual orientation and choice of a sexual partner were held intrinsic to privacy and personal liberty.
 - And, in the right to equality context, equal treatment of same-sex couples with those of heterosexual couples was considered dominant.
 - As per the lawyer Jonathan Berger, this makes a distinction as a privacy analysis requires a complete 'hands-off' approach from the state where it should not interfere. On the other hand, an equality analysis mandates the state to take positive steps to ensure equal treatment in all spheres of life.
- It is argued that once equal treatment with heterosexual persons is established, it would be easier to seek other associated rights like equalizing the age of consent, prohibiting employment discrimination, rights in marriage, adoption, etc.

Comparison of legal procedures across the world● **EUROPE:**

- The European Court of Human Rights in the *Dudgeon vs UK (1981)* case struck down the offence of buggery in Northern Ireland as violative of Article 8 of the European Convention on Human Rights as it unevenly hampered personal and family life. The court adopted a privacy approach in this case.
- This thus made it difficult for a same-sex couple (in *Oliari vs Italy*) to seek marriage rights in Italy. It was reasoned that the state is not obliged to grant marriage equality.
- Furthermore, many European countries had not yet granted marriage rights.

● **SOUTH AFRICA:**

- The lawyers and activists in South Africa resorted to rights based on 'equality'. This ensured that they can win successive cases like constitutional protection of 'sexual orientation' and judicial recognition of marriage, adoption, etc.
- In *National Coalition for LGBTQ (1998)*, Justice Ackermann compared privacy and equality and suggested that the latter enabled greater protection for homosexual persons.
- In *Fourie (2005)*, it was observed that the exclusion in marriage was antithetical to equality and dignity. Moreover permitting this exclusion would mean that the marriage of a homosexual couple was inferior. This was constitutionally impermissible.

● UNITED STATES:

- The U.S. decriminalized same-sex relations (Lawrence vs Texas 2003) and granted marriage equality (Obergefell 2015).
- Both cases were considered under the due process clause of the Fourteenth Amendment of its Constitution. This prohibits the state from taking away personal liberties without substantive and procedural fairness.
- The U.S. thus focussed on personal liberty.

Decriminalization of Homosexuality:

- In the Navtej Singh case (2018), India employed the South African approach. It ruled on the basis that an unreasonable classification was created for same-sex persons under Article 14, apart from being violative of bodily autonomy under Article 21.
- It was observed that any classification that perpetuated stereotypes was violative of Article 15.
- Even in NALSA's judgment (2014), the importance of sequential rights arising from 'gender identity' (employment, health care, education, equal civil and citizenship rights) was also acknowledged.

Way Ahead:

- The foundation of equal treatment would pave the way for marriage equality in India. It should not be left to the vagaries of the legislature.
- It would also be significant in the Indian context where marriage holds a special cultural and religious value. It should be noted that denial might reinforce the stigma faced by same-sex couples.
- It would also ensure a dignified living thus overcoming prejudices.

Nut Graf: *Different countries have adopted different approaches to dealing with same-sex relationships. Courts across the world have either based their decision on the Right to privacy or the Right to equality. It should be noted that the right-to-equality approach has the potential to solve other consequential issues like marriage, adoption, etc.*

GOVERNANCE

1. TRAI proposing to help callers identify spammers?

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

Prelims: About TRAI

Mains: Details about the Calling Name Presentation (CNAP) feature of TRAI and its significance

Context: The Telecom Regulatory Authority of India (TRAI) recently released a consultation paper for comments with respect to the introduction of a Calling Name Presentation (CNAP) feature.

Telecom Regulatory Authority of India (TRAI)

- The Telecom Regulatory Authority of India (TRAI) was set up in 1997, by an Act of Parliament, called the Telecom Regulatory Authority of India Act, 1997.
- TRAI is a statutory body and regulates the telecommunications sector in the country.
- TRAI was set up in order to have a suitable environment for the growth of the telecommunications industry in the country and be a part of the global information society.
- TRAI is entrusted with the functions of regulating telecom services, fixation/revision of tariffs for telecom services which were earlier vested in the Central Government.

Details

- The Calling Name Presentation (CNAP) feature would help individuals by providing information about the calling party similar to the applications such as “Truecaller” and “Bharat Caller ID & Anti-Spam”.
- The main objective of introducing the CNAP feature is to ensure that telephone subscribers would be able to make informed choices about incoming calls and put a check on harassment by spam callers.

The need for CNAP feature

- As the subscribers are not provided with the name and identity of the caller, individuals sometimes might not answer such calls believing that it could be commercial calls from unregistered telemarketers. This can lead to various instances where even genuine calls are left unanswered.
- Further, concerns have been raised about robocalls (automatic calls made using IT-enabled systems), spam calls and fraudulent calls.
- As per Truecaller’s “2021 Global Spam and Scam Report”, the average number of spam calls per user per month was about 16.8 in India and the total spam volumes received by its users were more than 3.8 billion calls in October alone.
- Users currently rely on in-built features or third-party applications that present the number of the calling entity to identify spam calls.
 - However, TRAI believes that the data from such applications cannot be reliable as they are from crowd-sourced data.

Concerns about privacy

- Experts have raised concerns about how the CNAP feature would balance the caller’s right to remain anonymous which is a key component of the right to privacy.
- The right to remain anonymous becomes essential as individuals might opt to remain anonymous for various reasons such as whistle-blowers or employees being harassed.
- Experts have observed that the customers/users provide their consent only to their operators when completing the prerequisite KYC formalities for a connection and hence it would be ideal that a framework for the feature is developed on similar lines instead of hosting the data on a centralised database operated by a third party which is one of the proposed mechanisms.

Other concerns

- Earlier, telemarketers were mandated to register themselves as promotional numbers, which made it easier to identify and block such numbers. However, telemarketers have now started recruiting people who are “at-home workers” and are not part of the entity.
- These workers are provided SIM cards that are not registered to a particular entity but are registered to the individuals themselves, making it difficult to identify such numbers.
- Experts feel that the feature of presenting the identity would not mean much and the system would have a significant impact only when the mechanism of identifying and marking is completely developed and hundreds of people utilise the system.

Nut graf: With the number of spam, promotional and fraud calls increasing significantly in the country, TRAI is looking to introduce a Calling Name Presentation feature that displays the name of the caller on mobile phones. However, experts feel that the government must also undertake steps to promote digital literacy and digital skilling of the citizens in order to reduce the harassment of consumers from such unwanted calls.

2. The debate around conjugal visits for prisoners

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

Mains: Critical evaluation of the move to provide conjugal visits for prisoners

Context: The State of Punjab has allowed conjugal visits for prison inmates in order to ensure the right to life and personal liberty of prisoners.

Conjugal Rights of Prisoners

- Conjugal rights broadly refer to the rights created by marriage i.e. the right of the husband or the wife to the company of their spouse.
- With respect to prisons, conjugal visits refer to the concept of permitting prisoners to spend time privately with their spouses within the prison premises.
- There have been several arguments about conjugal visits having positive impacts on prisoners in the form of psychological health benefits, preservation of marital ties and, the reduction in the rates of homosexuality and sexual aggression within prisons.
- Further, there are arguments that say that conjugal visits are a fundamental right of the spouses of the prisoners.

Are Conjugal Rights of Prisoners recognised through Law?

- Conventions, treaties and regulations such as the United Nations Standard Minimum Rules for the Treatment of Prisoners, the Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights, etc. have recognised prisoner rights internationally.
 - These treaties and conventions guarantee prisoners the right to life and inherent dignity.
 - The right to maintain family relations including conjugal visits is also included in these treaties.
- The concept of a conjugal visit has been adopted by various countries such as the U.S., Canada, Germany, Brazil, Russia, Spain, Belgium, Spain, Saudi Arabia and Israel.
- Further, most of the Laws and Rules related to prisons across India also acknowledge the importance of maintenance of continuity in family and social relations.

Supreme Court's views on extending conjugal rights to prisoners

- In **Sunil Batra v/s Delhi Administration case, 1979**, the Supreme Court held that the visits by family and friends are solace in isolation to prisoners and only a dehumanised system can deprive prisoners of this humane opportunity.
- In the **Jasvir Singh v/s State of Punjab case** where a couple convicted of murder and on death row had filed a petition to the court to enforce their right to procreate.
 - The key contention before the court was to determine whether the right to conjugality and procreation is a part of the right to life.
 - The High Court in the case had held that the right to conjugality is also available to prisoners under Article 21 which is subjected to reasonable restrictions.
- However, in **Meharaj v/s State case, 2022**, the Madras HC while hearing the argument on whether conjugal rights form part of the right to life and personal liberty (Article 21), said that there should be differential standards in enforcement of Article 21 for law abiders and law violators.
 - Further, the Court had said that even though conjugal visits could not be held as a fundamental right, the prisoner would still be eligible to avail leave for conjugal visits if there are extraordinary reasons such as infertility treatments.

Punjab government's stand

- The State guidelines have clarified that conjugal visits are considered a matter of privilege rather than a right.
- According to the guidelines notified, the average time for conjugal visits would be two hours which would be allowed once every two months.
- Further, the visiting spouse must have proof of marriage and medical certificates which show that the individual is free from HIV or any other sexually transmitted disease (STDs), COVID-19 or any other infectious disease.
- Additionally, such facilities will not be provided to high-risk prisoners such as terrorists, child abuse convicts, death row convicts, sexual offenders, death row convicts, prisoners who suffer from HIV, etc.

Nut graf: A holistic assessment of the possibility of allowing conjugal visits to prisons along with an analysis of its pros and cons should be made considering various psychologists' view that conjugal visits help preserve the psychological health and family bonds of the prisoners.

3. Cooperative Societies Act

Syllabus: Government Policies & Interventions for Development

Mains: Characteristics, merits and limitations of cooperative form of organisation.

Context: The Multi-State Co-operative Societies (Amendment) Bill, 2022, was introduced in the Lok Sabha.

Introduction:

- The Bill to amend the Multi-State Cooperative Societies (MSCS) Act, 2002, was introduced in the Lok Sabha.
- Multi-State cooperatives are societies that have operations in more than one State.
- The amendments have been introduced to improve governance, reform the electoral process, strengthen monitoring mechanisms and enhance transparency and accountability.

What are multi-State cooperatives?

- According to the International Cooperative Alliance (ICA), cooperatives are people-centred enterprises jointly owned and democratically controlled by and for their members to realise common economic, social and cultural needs and aspirations.
- Multi-State cooperatives are societies that have operations in more than one State — for instance, a farmer-producers organisation which procures grains from farmers from multiple States.
- The board of directors, which represents all the States where these collectives do business, is in charge of all administrative and financial decisions.
 - In India, there are around 1,500 MSCSs registered, with Maharashtra having the most.

Key provisions of the Bill:

- Under the Act, elections to the board of a multi-state co-operative society are conducted by its existing board. The Bill amends this to specify that the central government will establish the Co-operative Election Authority to conduct and supervise such elections.
- Further, only active members will be eligible to be elected as a board member or office bearer of the co-operative society.
 - Active members are those who are availing a minimum level of products or services of the society, or attending at least three consecutive general meetings.
- The Union government will appoint one or more Co-operative Ombudsman with territorial jurisdiction to inquire into complaints made by members of co-operative societies.
- The Bill allows co-operative societies (registered under state laws) to merge into an existing multi-state co-operative society.
 - At least two-thirds of the members of the co-operative society present and voting at a general meeting must pass a resolution to allow such a merger.
- The Bill establishes the Co-operative Rehabilitation, Reconstruction and Development Fund for revival of sick multi-state co-operative societies.
 - This fund shall be financed by existing profitable multi-State co-operative societies which will have to deposit either ₹1 crore or 1% of the net profit into the Fund.
- The Bill amends the composition of the board of directors to mandate the inclusion of: (i) one SC/ST member, and (ii) two women members.
 - This will promote equity and facilitate inclusiveness.
 - Further, the co-opted members should have experience in the field of banking, financing, co-operative management or specialisation fields related to the functioning of multi-state co-operative society.

Concerns over the amendment bill:

- Provisions enabling central Co-operative Election Authority appointed by the Centre may lead to the concentration of power of the Centre, which could impact the “autonomy” of MSCSs and create potential for “misuse”.
- The constitutional domain of States in regulating cooperative societies was upheld by the Supreme Court in 2021 when it struck down a part of the 97th Constitution Amendment.
 - In 2021, the Supreme Court in Union of India vs Rajendra Shah and others case had upheld a judgement of the Gujarat High Court which struck down Part IXB on the ground that the amendment was passed without the requisite ratification by the States.
- Creation of a Co-operative Rehabilitation, Reconstruction and Development Fund financed by existing profitable multi-State co-operative societies would put an additional burden on MSCSs.

Issues with the cooperative sector:

- The inclusion of cooperatives in the planning process as development instruments made it an avenue for giving patronage to the supporters of ruling political parties.
- Cooperative societies have to follow certain rules and regulations as imposed on them by the cooperative departments of the state government concerned. These rules include submission and auditing of accounts which results in excessive state control.
- The management of a cooperative society generally comprises part-time or inexperienced people who are not well equipped with the skills required to handle the managerial functions effectively.
- MSCSs are also facing issues regarding trust, which is the very basis of cooperation. This has brought MSCSs under multiple controls from the Centre.
- Central government monitoring takes a top-down approach as opposed to a grassroots one.

Nut Graf: *The independent and autonomous character of cooperative societies was to be crucial in their functioning. To plug the “loopholes” in the MSCS Act, the Union government recently introduced a Bill seeking to amend the 2002 law for more “transparency” and “ease of doing business”.*

4. Working of RTI Act

Syllabus: Important Aspects of Governance, Transparency & Accountability

Mains: Various issues with the Implementation of RTI in India

Context: This article discusses various aspects of the RTI act in the country.

Right to Information (RTI) Act, 2005:

- The Right to Information (RTI) Act was enacted in 2005 to promote transparency and accountability in the working of every public authority.
- This Act provided for the right to information for citizens to secure access to information under the control of the public authority.
- The Act also mandates timely responses to citizen requests for government information.
- The RTI gives the citizens the power to participate in the policymaking process and has played a key role in making public authorities accountable and transparent in their functioning.
- RTI has been extensively used by various activists, lawyers, bureaucrats, researchers, and journalists.
- RTI is a remarkable example of participatory democracy.

Efficacy of RTI:

- RTI empowers the common man by providing access to authentic information which makes people more aware and proactive.
 - It has helped them question the efficiency and rationality behind public policies and improve participatory democracy.
- The Act provides an added layer of scrutiny of public offices with improved transparency & accountability.
- RTI has emerged as a tool to fight corruption in India.
 - For instance, an RTI filed by a non-profit organization, Housing and Land Rights Network, revealed that the Delhi government had diverted Rs 744 crore from funds earmarked for the welfare of the Dalit community to the Commonwealth Games.
- The citizen-centric approach of the Act promotes citizen-government partnership in carrying out the programmes for the welfare of the people.
- The RTI Act came as a result of a very strong grassroots movement, where people demanded legislation to seek information from the government. Filing an RTI application is straightforward and a simple process.
 - Studies have shown that a very large percentage of RTI applications are filed by the poorest and the most marginalised, usually asking for information that relates to their very basic rights and entitlements.

Issues with the implementation:

- According to an estimate, between 40 and 60 lakh RTI applications are filed every year, but less than 3 per cent of Indian citizens have ever filed an RTI plea.
- Of the applications filed, less than 45 per cent received the information they had sought, according to the ‘Report Card of Information Commissions in India, 2018-19’ released by the Satark Nagrik Sangathan (SSN) and the Centre for Equity Studies (CES).
 - But of the 55 per cent who didn’t receive the information, less than 10 per cent filed appeals.
- There is also a lack of adequate infrastructure and a shortage of staff in government offices to deal with RTI applications.
- There is the issue of threats and acts of violence against RTI activists.
 - In the last 15 years, at least 86 people who had filed RTI applications have been killed while 175 others have been attacked.
- The proposed Data Protection Bill will set up a system of amending the RTI law in a manner that all personal information will be exempted.

- The entire proactive disclosure scheme provided for under the RTI Act is going to be completely undermined due to the provisions in the proposed bill.

Nut Graf: RTI is being used to redress individual grievances, access entitlements such as ration cards and pensions, investigate government policies and decisions, and expose corruption and misuse of government resources. The major impediment is the lack of awareness of RTI law and the lack of its widespread adoption.

5. Good governance

Syllabus: Important aspects of governance.

Mains: Good Governance and its significance

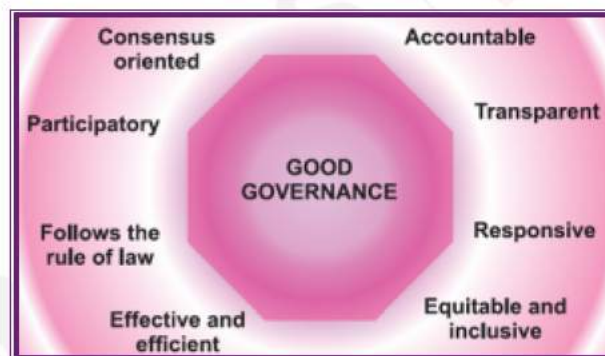
Context: Good governance Week is being observed from 19th December to 25th December 2022.

Good Governance Definition

- According to the **World Bank**, governance is how power is exercised in the management of a country's economic and social resources for development.
- According to a document released by the World Bank in 1992 titled, 'Governance and Development', good governance is an essential complement to sound economic policies and is central to creating and sustaining an environment which fosters strong and equitable development.
- **Components of Good Governance** (according to the World Bank):
 - Capacity and efficiency in public sector management
 - Accountability
 - Legal framework for the development
 - Information and transparency

Good Governance Characteristics

According to the United Nations (UN) there are 8 major characteristics of good governance



Bad governance

- Winston Churchill gave the following definition of (bad) governance: "So, they [the government] go on in strange paradox, decided only to be undecided, resolved to be irresolute, adamant for drift, solid for fluidity, all-powerful for impotency"

Government of India initiatives towards Good Governance:

- **Repeal of various Acts and laws:**
 - Almost 2,000 Acts, statutes and subordinate legislation have been repealed in the last few years.
 - Some of these laws are the Appropriation acts, the Excise Act of 1863, the Foreign Recruiting Act of 1874, the Elephants Preservation Act of 1879, and the Bengal Districts Act, 1836.
 - However, much more can be done in this regard, especially by state governments.
- For almost 30 years (from 1998) any pecuniary benefit to any private parties regardless of whether there was an intent to cause such gains or not, was construed as criminal misconduct by a public servant.
 - For instance, buying a laptop for a department from one vendor and if it was offered by another vendor at a slightly lesser price could result in overhauling of the officer.
 - This provision of the Prevention of Corruption Act was scrapped thus allowing officers to act without fear and ensure Good Governance.
- Another step towards good governance is **DigiLocker**. Along similar lines, both Union and State governments can set up enterprise DigiLockers to store all documents that are required for the smooth functioning of small or large businesses.
- The **use of technology** is crucial for good governance. The government has employed various machine learning techniques and Artificial intelligence approaches for the same.

CASE STUDY OF KARNATAKA:

Karnataka has implemented several initiatives to endure to good governance. Some of the popular examples are:

- **KUTUMBA:** Family beneficiary database
- **FRUITS:** Farmer Registration and Unified beneficiary Information System
- **SVAMITVA:** Drone-based property and land mapping, or Survey of Villages Abadi and Mapping with Improved Technology in Village Areas
- **GramaOne:** Single point assistance centre for citizen-centric activities at panchayat level.

Path Ahead:

- A common portal can be created that lists all the compliances for a particular industry along with the updates to government orders or any court judgment. It should be noted that currently there is no such portal either at the state or central level.
- Good governance is also the responsibility of the citizens of the country and thus they should also contribute to it.

Nut Graf: India has made a lot of progress on good governance, but this journey is endless. It requires the contribution of all the stakeholders including the state governments and even the citizens of the country.

6. What do the J&K Land Grants Rules, 2022 entail?

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

Mains: Details about J&K Land Grant Rules-2022 – their impact and the associated concerns

Context: The Lieutenant Governor of Jammu and Kashmir has notified new land rules under J&K Land Grant Rules-2022 which replaced the J&K Land Grants Rules of 1960.

Background

- J&K Land Grants Rules-1960 dealt with the special rules on the grant of government land on lease in the erstwhile State of J&K.
- Under the J&K Land Grants Rules 1960, prominent locations such as Srinagar, Jammu, Gulmarg and Pahalgam were opened up for the construction of hotels, commercial structures and residential buildings.

J&K Land Grant Rules-2022

- As per the J&K Land Grant Rules-2022, the current leases of landowners will not be extended in case of their expiry.
- According to the new Rules, the “leases, except the subsisting or expired residential leases, expired or determined prior to the coming into force of these rules or issued under these rules shall not be renewed and shall stand determined”.
- The J&K Land Grant Rules-2022 has reduced the lease period to 40 years as compared to 99 years of lease previously.
- An expert committee will be formed which would enlist all properties where the lease had ended and fresh e-auctions would be conducted for the same.

Eligibility for lease rights in J&K

- As per the old land laws which have been repealed, no land could be granted on lease to a person, who is not a permanent resident of the State and provided exemption to the Government to relax the conditions in the interest of industrial or commercial development or in the favour of a registered charitable society.
- The new Rules have opened the bidding to any person legally competent under Section 11 of the Indian Contract Act, 1872.
- However, according to the new rules a person or an entity in default of Government Revenue accrued to the government under J&K Land Grant Act, 1960 or convicted under the Prevention of Money Laundering Act, 2002 would be considered ineligible for participation in the auction.

Key amendments

- The Lieutenant Governor’s administration has diversified the use of land on lease to various sectors such as agriculture, education, healthcare, tourism, and for the development of traditional art, craft, culture and languages.
- Further, the land can also be leased for the construction of hydroelectric projects, stadiums, gymnasiums and other recreational purposes.
- Amendments have also included provisions for leasing the land for self-employment or for housing purposes of ex-servicemen, war widows and the families of martyrs who have sacrificed their lives in the line of duty.
- Also, for the first time ever, the land is allowed to be used for developing facilities for migrant workers and other construction workers.

The immediate impact of the amendments

- The new Rules will facilitate fresh auctions for hundreds of properties where the lease period has expired.
- Further, outsiders to the State can also participate in the auctions for leasing of government land.
- According to experts, the impact of the new rules will be of great significance in tourist hotspots such as Gulmarg, Pahalgam, Srinagar and Jammu's Patnitop as the leases of several hotels have already expired.

Criticism of the amendments

- Critics have said that the new amendments are unfortunate as they are aimed at settling outsiders.
- Critics opine that the first right to lease such properties belongs to individuals who are already settled in the region and preference must be given to such individuals.
- Further, the traders' bodies of Jammu and Kashmir have said that J&K's economy would be severely impacted and come to a grinding halt due to the new amendments and have urged the administration to reconsider the decision.

Nut graf: The Lieutenant Governor's administration of J&K has notified new land rules according to which the leases of current landowners would not be extended in case of their expiry besides allowing outsiders to take part in the new auctions. Various political parties have claimed that the move would disempower the people of the Union Territory and urged the administration to reconsider the move.

7. Bihar's prohibition policy is not working

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

Mains: Law against the consumption of alcohol in Bihar and various issues and concerns associated with it.

Context: Hooch tragedy in Bihar.

Details:

- The latest hooch (illicit liquor) tragedy in Bihar has resulted in over 38 deaths with several people losing their vision and becoming critically ill.
- The Bihar Prohibition and Excise (Amendment) Act was implemented in 2016. However, it is accused that despite the Act, liquor is easily available in the State and can even be delivered at home at a premium cost.
- Furthermore, the poor are forced to rely on country-made liquor, which has often proved fatal for them. For instance, almost 200 people have died in several incidents across the state since 2016.
- In the span of 6 years (2016-2022), nearly 4 lakh cases in violation of the act have been registered by the State Police and Excise Department, and around 4.5 lakh people have been arrested. However, only 1,300 people (less than 1%) have been convicted. The rest were let off because of the "lack of corroborative evidence".

CASE STUDY:

In August 2016, 19 people died after consuming illicit liquor in the Khajurbanni locality of the Gopalganj district. The lower court of Gopalganj convicted all the 13 people accused in the case. But in July 2022, the Patna High Court acquitted all of them citing that "they could not pass the parameters of fair trial envisaged in the laws of the land". The State government has challenged the judgment in the Supreme Court.

Consequences of the Prohibition:

- According to Government records, over 2 crore litres of liquor, including nearly 80,000 litres of country-made liquor, have been seized in about 74,000 raids conducted by enforcement agencies since April 2016 in Bihar.
- Alarmed by the amount of seizure, the law was amended thrice to dilute several provisions like community fines, etc.
- Huge amounts of illegal liquor are brought in through neighbouring States of Uttar Pradesh, Jharkhand, and West Bengal and seized by enforcement agencies. This has resulted in the overcrowding of prisons with traders and consumers of alcohol.
- In December 2021, the then Chief Justice of India, Justice N.V. Ramana, raised concern about the "lack of foresight" of the law which has led to the "clogging of courts in the State".
- The Patna High Court in October 2022 also highlighted that prohibition has led to a new drug culture in the State.
- Several parties in the State Assembly have admitted (privately) that the law has failed due to poor implementation.

Government's Stand:

- The state government is determined to continue with the prohibition policy. Critics point to the following reasons for this continuation:
 - A caste-neutral vote bank of women as they suffer the most due to the drinking habit of the male members of their families.
 - To hold on to an issue that could help in political ambitions at the national level politics.
 - The rollback of the policy is also viewed as a sign of weakness and failure.

Nut Graf: It should be noted that the most impacted section due to the liquor prohibition policy of Bihar is the poor strata of the society. The extent of seizure of illicit liquor, the rising deaths due to consumption of hooch, and poor conviction rates point to the fact that the policy requires a review.

8. Old Pension Scheme (OPS)

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

Prelims: Old pension scheme (OPS) and New pension scheme (NPS)

Mains: Critical evaluation of Old pension scheme (OPS) and New pension scheme (NPS)

Context: Old pension scheme (OPS) versus new pension scheme (NPS) has become a hot debate in recent times as some few governments have announced their plan to implement the old pension scheme (OPS) by replacing the National Pension Scheme (NPS).

Background:

- The state governments of Rajasthan, Chhattisgarh, and Jharkhand have informed the Central government/PFRDA about their decision to restart the old pension scheme (OPS) for their state government employees.
- However, the Centre has no proposal to restore the old pension scheme.

Pension and its need:

- A pension provides people with a monthly income when they are no longer earning.
- **Need for Pension:**
 - One is not as productive in old age as in youth.
 - The rise of the nuclear family – Migration of younger earning members.
 - Rise in cost of living
 - Increased longevity
 - Assured monthly income ensures dignified life in old age

Features of Old Pension Scheme:

- Pension to government employees at the Centre as well as states was fixed at 50 per cent of the last drawn basic pay called the '**Defined Benefit Scheme**'.
 - For example, if a government employee's basic monthly salary at the time of retirement was Rs 10,000, she would be assured of a pension of Rs 5,000.
- **Only government employees are eligible** for receiving a pension after retirement.
- Income under the old pension scheme doesn't attract tax.
- Like the salaries of government employees, the monthly payouts of pensioners also increased with hikes in dearness allowance or DA announced by the government for serving employees.

Issues involved in Old Pension Scheme:

- The financial burden on the government was high.
- The scheme is unsustainable:
 - In 1990-91
 - Centre – ₹ 3,272 Cr
 - States – ₹ 3,131 Cr
 - 2020-21
 - Centre – ₹ 1.90 lakh Cr
 - States – ₹ 3.86 lakh Cr
- The government may be forced to make difficult decisions.
- Issue of inter-generational equity: Today's taxpayers paying for the ever-increasing pensions of retirees, with Pay Commission awards almost taking the pension of old retirees to current levels, means the pension of someone who retired in 1995 may well be the same as that for someone who retires in 2025.
- Shifting back to the old pension scheme will only further increase the burden on the state exchequer. According to RBI, the total pension expenditure of all states put together stood at Rs 3.86 lakh crore in 2020-21 (BE).
- This framework only benefited a tiny portion of the total labour force.

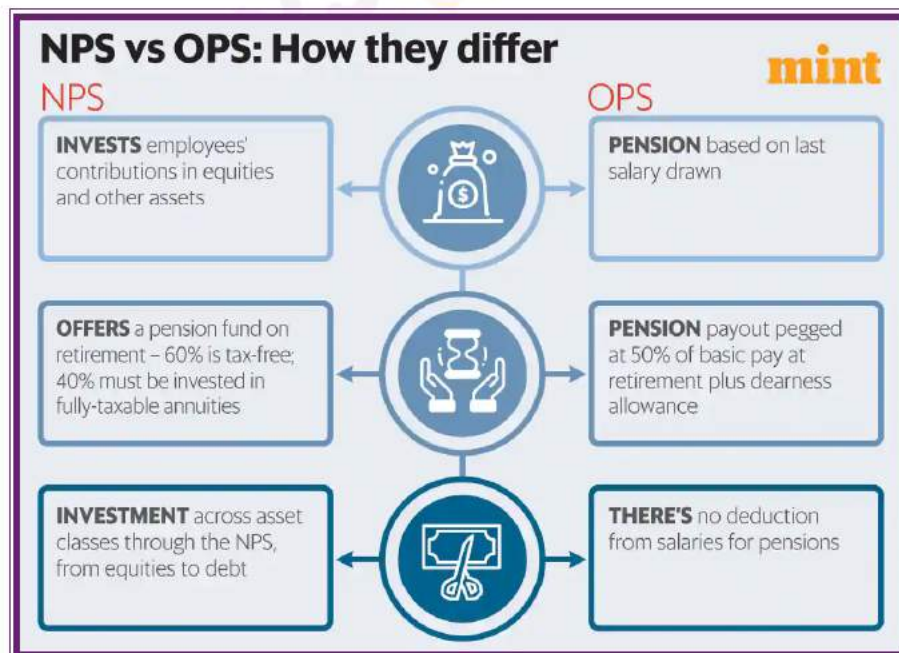
New Pension Scheme (NPS):**Features:**

- NPS is an easily accessible, low cost, tax-efficient, flexible and portable retirement savings account.
- Under the NPS, the individual contributes to his retirement account and his employer can also co-contribute for the social security/welfare of the individual.
- NPS is designed on a Defined contribution basis wherein the subscriber contributes to his account, there is no defined benefit that would be available at the time of exit from the system and the accumulated wealth depends on the contributions made and the income generated from investment of such wealth.
- The greater the value of the contributions made, the greater the investments achieved, the longer the term over which the fund accumulates and the lower the charges deducted, the larger would be the eventual benefit of the accumulated pension wealth likely to be.
- NPS, the pension benefit is determined by factors such as the amount of contribution made, the age of joining, type of investment, and the income drawn from that investment.
- Residents as well as non-resident Indians in the age group of 18-60 years (as on the date of submission of NPS application) can invest.
- Over the last eight years, the NPS has built a robust subscriber base, and its assets under management have increased.
 - As on October 31, 2022, the Central government had 23,32,774 subscribers, and states had 58,99,162 subscribers.
 - The corporate sector had 15,92,134 subscribers, and the unorganized sector 25,45,771.
- **Benefits of NPS**
 - Contribution as per the practice followed in the global market
 - Lower burden on the government
 - Deepen equity market

Regulator for NPS: Pension Fund Regulatory and Development Authority (PFRDA) is an Authority set up by the Government of India through the PFRDA Act 2013 to promote old age income security by establishing, regulating and developing pension funds to protect the interest of subscribers to schemes of pension funds and for matters connected therewith or incidental thereto.

OPS Vs NPS: Basic Difference

- Under the OPS, retired employees received 50 per cent of their last drawn salary as monthly pensions.
- NPS is a contributory pension scheme under which employees contribute 10 per cent of their salary (Basic + Dearness Allowance). The Government contributes 14 per cent towards the employees' NPS accounts.



9. CAG audit report on Assam's NRC?

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

Prelims: Comptroller and Auditor General of India (CAG) and National Register of Citizens (NRC)

Mains: Details about NRC exercise, associated concerns and key recommendations

Context: The Comptroller and Auditor General of India (CAG) in its compliance report of "logistical arrangements for NRC update project in Assam" has found several anomalies in the updating of the National Register of Citizens (NRC) in Assam.

What is the NRC exercise?

- The National Register of Citizens (NRC) was first created in Assam in 1957.
- NRC was created with the aim to identify individuals born in India and migrants from Bangladesh (former East Pakistan).
- In 2013, the Supreme Court directed the Union and the State Governments to undertake an exercise to update the 1951 register in Assam.
- Thus the key objective of the drive was to identify illegal immigrants who had migrated to Assam during the 1971 Bangladesh liberation war.
 - The NRC has only been published once in 1951 and it has not been updated since then.
- The first draft was notified in 2018 and a final list was published in 2019. This register included those who could establish their Indian citizenship by being residents or descendants of people living in Assam before March 25, 1971, which was the cut-off date for deportation of foreigners according to the Assam Accord of August 1985.
- Over 19.06 lakh people out of 3.3 crore applicants were not included in the register due to inadequate documentation in order to prove their citizenship.
- The issue has become controversial as various political parties have dismissed the final list as faulty and the process is now paused because the Registrar General of India (RGI) has not yet released the final list.

Concerns highlighted by the CAG

- **Cost overrun:** When the process to update the NRC was initiated in December 2014 and was to be completed by February 2015, the project cost was estimated to be ₹288.18 crores.
 - However, the CAG report has pointed out a fivefold increase in the cost by March 2022 because of the extended time taken to complete the process.
 - As per the report, the final draft was notified in August 2019 and the project cost had increased to ₹1,602.66 crores.
 - The test check of records has further revealed irregularities in the usage of funds such as excess and inadmissible payments to vendors.
- **Payment of wages:** The CAG in its report has noted that the wages paid to the outsourced staff were about 45% to 64% less than the amount approved by the NRC coordination committee.
 - Further, this difference in wages was used to extend an undue benefit of ₹155.83 crores to the system integrator beyond the 10% reasonable profit margin.
- **Irregularities with the system:** The CAG in its report has pointed out that secure and reliable software was needed to facilitate the NRC exercise, but more than 215 software utilities were added to the core software.
 - Further, this was done without abiding by the due process of software development and vendor selection through the means of tendering.
 - Wipro Limited was one of the prime software installation companies for NRC.

Recommendations of the CAG

- The report of the CAG has recommended strict actions against the State Coordinator of National Registration (SCNR) for excess, irregular and inadmissible payments.
- The CAG report has also recommended holding the SCNR accountable as the principal employer for its failure to comply with the Minimum Wages Act.
- Further, the CAG has also recommended penal actions against Wipro Limited for not complying with the provisions of the Minimum Wages Act as payments to the data operators were made at rates less than the amount prescribed as minimum wages.

Nut graf: The CAG has recommended various actions in order to ensure an error-free NRC after its report revealed that the key objectives of preparing the NRC were not achieved despite incurring excess expenditure and that the haphazard development of software posed a significant risk of data tampering.

10. Jan Vishwas Bill, 2022

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

Prelims: About Jan Vishwas Bill, 2022

Mains: Concerns associated with overcriminalisation and the critical evaluation of the Jan Vishwas Bill, 2022

Context: The Jan Vishwas Bill, 2022, was tabled in Parliament by the Union government.

Jan Vishwas Bill, 2022

- The key objective of the Bill is to reverse the trend of overcriminalisation in India by decriminalising about 183 offences across 42 legislations.
- Through this Bill, the government aims to improve the ease of living and doing business in the country.
- The Bill either removes penal provisions or introduces fines in their place in various existing laws such as the Air Act, Cinematograph Act, Drugs and Cosmetics Act, Environment Protection Act, Forest Act, Patents Act, etc.
- And, in a few other Acts, offences would be decriminalised by imposing a penalty instead of a fine.
- Further, the Bill empowers the Union Government to appoint adjudicating officers for the purpose of determining penalties.

Concerns associated with overcriminalisation

- An unprincipled growth of criminal law has been a significant issue for a long time. This act has been termed “overcriminalisation” by scholars of law.
- Since criminal law has often been used as a political tool, the act of criminalisation has been used by the governments to influence its image rather than using it to punish wrongful conduct.
- According to the National Judicial Data Grid, out of the 4.3 crore cases pending, close to 3.2 crore cases are related to criminal proceedings.
 - Experts opine that the increasing number of pending criminal cases has a direct relation with the number of criminal laws in the country.
- Further, according to the National Crime Records Bureau’s data (2021), about 5.54 lakh prisoners were housed in prisons across the country with a total capacity of only 4.25 lakh.
 - The increase in the prison population can also be attributed to overcriminalisation.
- While introducing the new Bill, the Union Commerce Minister said that the issues of overcriminalisation have impacted the ease of doing business and ease of living in the country and the Bill has been formulated to win back the trust of the people and the business class and therefore it is called “Jan Vishwas (Amendment of Provisions) Bill”.

Key concerns associated with the Bill

- The analysis of the provisions of the Bill indicates that there has been an increased focus on the replacement of imprisonment clauses with fines and experts believe that this alone cannot be termed as “decriminalisation” instead they term it as “quasi-decriminalisation”.
- According to Andrew Ashworth’s seminal piece titled “Is the Criminal Law a Lost Cause?”, the objective of a “tax” is mainly regulatory in nature whereas a “fine” carries an element of censure and stigma with it.
 - This functional difference is being increasingly diluted under the legislative frameworks which use these elements of censure and stigma in regulatory domains.
- According to the report of the Observer Research Foundation titled “Jailed for Doing Business”, there were over 26,134 imprisonment provisions in about 843 economic laws, rules and regulations which regulated economic activities in India.
 - Considering the above numbers, the number of offences deregulated by the new Bill seems to be very few.

Way forward

- The regulatory offences which are considered for “decriminalisation” must not just be prioritised based on the view of ease of doing business, but also by considering the wider views of the issues that hinder the country’s criminal justice system.
- An examination of the Bill indicates that the government’s move to decriminalisation is limited only to the regulatory domains. However, experts suggest that it is now time to shift the focus also towards existing penal offences.
- Acknowledging the controversies and debates surrounding various penal offences in legislations that govern sedition and offences under the Narcotic Drugs and Psychotropic Substances (NDPS) Act, Unlawful Activities (Prevention) Act (UAPA), anti-conversion laws, etc. the government should undertake the assessment of these offences on a priority basis.

Nut graf: The government has come up with a Bill to decriminalise minor offences and address the issues of overcriminalisation in the country. However, critics feel that the Bill merely intends to replace imprisonment with fines and that a more comprehensive exercise is required to reverse the trend of overcriminalisation.

11. 'Right to Repair' Portal

Context: Recently, the Ministry of Consumer Affairs launched the Right to repair Portal.

About Right to repair Portal:

- The Right to repair Portal will have a repository of user manuals of products by original manufacturers.

What is the Right to repair?

- The right to repair for consumer goods refers to the concept of allowing end users, consumers as well as businesses, to repair devices they own or service without any manufacturer or technical restrictions.
- The portal aims to **enable people to self-repair, and have unrestricted access to third-party repair**, rather than depend on the original manufacturers and **reduction in e-waste**.
- Initially, the portal will host details of products such as **mobile phones, electronic displays, farming equipment, consumer durables, data storage components and automobiles**.
- It will be a one-stop point for consumers to get the details of consumer care numbers of the companies and for searching the products of companies by their name and details of their services and warranty periods of products.
- According to the ministry, **It will help in saving consumers' money and contribute to the circular economy** by improving the life span, maintenance, re-use, upgrade, recyclability, and waste handling of appliances.

Is the Right to Repair a Fundamental Right in India?

- There is **no specific law governing the right to repair** in India, **nor does it fall under the fundamental rights** guaranteed by the Indian Constitution.
- The Right to repair is recognised in many countries across the globe, including the United States, the United Kingdom, and the European Union.

DISASTER MANAGEMENT

1. Road safety and environmental sustainability

Syllabus: Disaster Management

Mains: Impact of Road safety on the environment

Impact of Road Safety on the Environment:

- Safer roads have a positive impact on the environment.
- In 2021, India reported 4,03,116 crashes, each of which adversely impacted the environment in various ways and to different degrees.
- Most vehicles contain toxic metals such as lead, mercury, cadmium or hexavalent chromium, which are detrimental to the environment. Vehicle crashes result in these fuel and fluid leaks.
- Severe road crashes lead to automobile wreckage, which becomes a part of unusable end-of-life vehicles. This gives rise to scrappage.
 - India is estimated to have about 22.5 million end-of-life vehicles by 2025.

National Automobile Scrappage Policy:

- The Vehicle Scrapping Policy was announced in March 2021 by the Union government.
- The policy is estimated to cover 51 lakh Light Motor Vehicles (LMVs) that are above 20 years of age and another 34 lakh LMVs above 15 years of age.
- This aids in reducing pollution & would help in India's commitment to the Paris Agreement.
- Despite being one of the largest car and light commercial vehicle markets in the world, the policy is still in its nascent stages.
- Absence of widespread, systematic facilities for proper recycling, old vehicles and vehicles after road crashes are left to rot by the wayside.
 - Some end up at landfills or at informal recycling facilities where rudimentary hand tools are utilised to unscientifically dismantle them.
 - This leads to the leakage of hazardous constituents such as oils, coolants and glass wool resulting in sub-optimal land usage and water and soil pollution for decades.

Speeding limits:

- One of the biggest factors for road crashes is speeding. In 2020 alone, speeding was responsible for 91,239 road crash fatalities, comprising 69.3% of all road crash deaths registered.
 - Speeding has consistently been responsible for over 60% of all road crash fatalities in India in the last five years.
- Simulation exercises in Europe have demonstrated that cutting motorway speed limits even by 10 km/h can deliver 12% to 18% fuel savings for current technology passenger cars, along with a significant reduction in pollutant emissions, particularly Nitrogen Oxides and particulate matter (PM) output, from diesel vehicles.
- Consequently, several governments globally have reduced speed limits to prevent crashes and lower air pollution.
- In India, the Zero-Fatality Corridor solution for road safety by the SaveLIFE Foundation (SLF) focuses on reducing speeding through advanced engineering and enforcement technologies.

Other initiatives:

- All road safety initiatives undertaken and recommended by the SaveLIFE Foundation are designed to be impactful and environment-friendly.
 - The Foundation's Zero-Fatality Corridor (ZFC) programme, which was deployed on the Mumbai-Pune Expressway in 2016, helped bring down road crash fatalities by 52%, as of 2020.
- Similar interventions were introduced in 2018 on the Old Mumbai-Pune Highway and helped reduce the road crash fatalities on this stretch by 61%, as of 2021.
 - Initiatives included guarding natural hard structures such as trees using crash barriers to prevent direct collisions, and installing retro-reflective signage on the trees to make them more visible to commuters.
- The Government of India is building green corridors to go over forests and animal paths as opposed to going through them.
- Missing or inadequate signages are another leading cause of road crashes. Asbestos is used for creating signages along road stretches.
 - Asbestos has an adverse impact on the environment, therefore the ZFC programme opts for Aluminium Composite Panels despite being more expensive than asbestos.
 - Aluminium Composite Panels are free of toxic gas or liquids during the production process and they are recyclable separately as aluminium and plastic, without much value or quality loss.

Nut Graf: Road safety and environmental sustainability are closely intertwined concepts. They are our shared resources and joint responsibility. Safer roads and a sustainable environment can be ensured through the joint efforts of road-owning agencies, enforcement officials and the public. Sustainable interventions will have a deep impact on preserving the environment while ensuring better road connectivity.

GEOGRAPHY

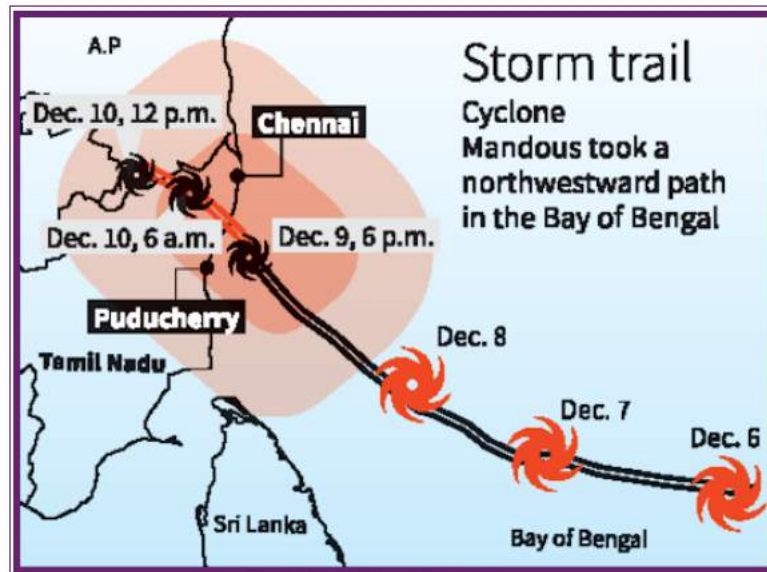
1. Cyclone Mandous

Syllabus: GS-1; Geography; Important Geophysical phenomena: Cyclones

Prelims: Cyclone Mandous

Context: The landfall of Cyclone Mandous has brought about heavy rainfall in several parts of Andhra Pradesh, Tamil Nadu and Karnataka.

Cyclone Mandous



Source: The Hindu

- Cyclone Mandous is a cyclonic storm and was expected to bring heavy rainfall in parts of the county upon landfall by the Indian Meteorological Department (IMD).
- Cyclones are named by the World Meteorological Organisation (WMO), which maintains a list of rotating names.
- According to IMD, the name “Mandous” was proposed by the U.A.E. which is also a member of WMO.
- The term “Mandous” in Arabic means “treasure box”.
- A “Red alert” was declared in various areas and personnel of the National Disaster Response Force (NDRF) and State Disaster Response Force (SDRF) were deployed in vulnerable areas.

Cyclone

- A cyclone is any low-pressure area with winds spiralling inwards.
- Cyclones rotate anti-clockwise in the Northern Hemisphere and rotate clockwise in the Southern Hemisphere.
- Cyclones are addressed by different names in different locations namely **Hurricanes** (in the Atlantic and Eastern Pacific), **Typhoons** (in Southeast Asia) and **Cyclone** (in the Indian Ocean region and Western Pacific)
- There are mainly two types of cyclones depending on the type of prevailing low-pressure system namely the
 - **Tropical cyclone:** Tropical cyclones are regarded as one of the most devastating natural calamities in the world.
 - They originate and intensify over warm tropical oceans.
 - **Extratropical cyclone:** Extra-tropical cyclones also known as Temperate cyclones usually occur outside the tropics with a latitude range between 30° and 60°.
 - These are low-pressure systems associated with cold fronts, warm fronts, and occluded fronts.
- Lists and names of Cyclones are maintained and updated by an international committee of the World Meteorological Organisation (WMO).

2. Kalasa-Banduri drinking water project

Syllabus: Water resources

Prelims: Kalasa-Banduri drinking water project and Mahadayi river

Context: The Union government accepted the detailed project reports (DPRs) for the implementation of the Kalasa-Banduri drinking water project.

Kalasa-Banduri drinking water project

- The Kalasa-Banduri project is undertaken by the Karnataka Government with an aim to enhance the supply of drinking water to the districts of Belagavi, Bagalkot, Dharwad, Gadag, and Hubli.
- The project will be constructed in the inter-State Mahadayi or Mandovi river basin.
- Through the Kalasa-Banduri Project, the Karnataka government aims to divert Mandovi river water from Kalasa and Banduri canals into the Malaprabha river in the state.
- Kalasa-Banduri Project includes the construction of a total of 11 dams on the river Mahadayi or Mandovi.
- The sharing of the waters of the Mahadayi river has been a cause of dispute between the states of Goa and Karnataka since the 1980s.

Mahadayi or Mandovi river

- Mahadayi or Mandovi or Mhadei river originates in the Bhimgad Wildlife Sanctuary located in the Belagavi district of Karnataka.
- Mahadayi is a west-flowing river that enters Goa from Sattari taluk of the North Goa district and it finally joins the Arabian Sea at Panaji.
- The Mandovi river basin falls in the states of Goa, Karnataka and Maharashtra.
- The river is regarded as the “lifeline of Goa”, as most of the rivers of the state contain salt water and Mandovi being a sweet-water source ensures water security and is important for fishing.

INDIAN SOCIETY & SOCIAL ISSUES

1. Indian politics needs a dose of new experimentalism

Syllabus: Social empowerment

Mains: Lack of diversity in India's political landscape and the way forward

Context: This article discusses the issues associated with diversity among lawmakers in India and compares it with the rest of the world.

Global scenario

- **Representation of individuals from the native and tribal background:** In recent years, various democracies across the world have provided opportunities for individuals from native tribal and indigenous movement backgrounds to emerge as leaders.
 - In September 2022, Rep. Mary Peltola, who is a native Alaskan, swore in the United States House of Representatives
 - In 2021, Deb Haaland became the first Native American Cabinet Secretary in the U.S. Department of the Interior.
- **Representation of women:** Also, mature democracies are now looking to increasingly encourage female participation in law making and representation.
 - In 2018, Alexandria Ocasio-Cortez became the youngest woman (29 years) to serve in the United State House of Representatives.
 - Sanna Marin became the youngest Prime Minister (34 years) of Finland in 2019 and also all of her coalition parties had female party leaders.
 - Under the leadership of Justin Trudeau, 50% of the Canadian cabinet was composed of females.
- **Representation of youth:** Democracies around the world are undertaking efforts to engage with youth.
 - Other than the examples of Alexandria Ocasio-Cortez and Sanna Marin, in 2017, Sebastian Kurz was appointed as Chancellor at the age of 31 years in Austria,
 - In 2017, Typhanie Degois, who was a law student, was elected to the Parliament of France at the age of 24.
- **Representation of LGBTQ+ individuals:** Countries are also taking steps towards facilitating a conducive environment that encourages individuals with non-normative sexuality to take up roles in policy making.
 - There have been instances in African countries such as South Africa, Tunisia and Mauritius wherein LGBTQ+ individuals have got elected or nominated to positions such as High Court judge or leaders of political parties.
 - Such examples can also be seen in Iceland, Ireland and Belgium.
 - Sri Lankan Member of Parliament, Mangala Samaraweera and Governor Niluka Ekanayake.
- **Diversity in ideologies:** Developed democracies also boast of greater diversity in ideologies by extending representation to different socio-economic groups such as trade unions, farmers, Libertarians, green politics, etc.
 - Libertarianism philosophy that advocates economic liberty and a small state, with limited regulation, has had extended political influence in countries such as Australia, Brazil, South Korea, and the U.S.
 - Likewise, green politics has been embraced in countries such as the U.S., Germany and other European countries.

Lack of diversity in Indian politics

- Despite having a President who comes from a tribal background, the representation of tribal and indigenous individuals in parliamentary committees is often lacking with less than 59.5% of all SC/ST lawmakers represented mainly in the Social Justice Committee.
 - Further, there have been very few political parties in the country that have SC/ST individuals as a part of their leadership.
 - Additionally, the opportunities to point out injustice against their community are often rare, and linked to the lottery system for the Zero Hour Q&A time.
- Also, in India, political parties are seen nominating only a handful of women candidates to contest in elections.
 - Although women constitute 48% of the Indian population, they make up only about 10% of the total ministerial strength.
 - Out of the 28 states, Ms Mamata Banerjee of West Bengal is currently the only female Chief Minister.
 - The Inter-Parliamentary Union has ranked India 143 out of 192 countries for the percentage of women in the lower House.
 - Much smaller states like Rwanda come out on top with a staggering 60% of seats in its lower house occupied by women.
 - The Women's Reservation Bill was introduced in the Lok Sabha for the first time in 1996 proposes amending the Constitution to reserve one-third of all seats in the Lok Sabha and all state legislative legislatures to women.
 - Despite the fact that 24 years have passed since it was first introduced in the Lok Sabha, it is yet to be passed by the male-dominated houses of Parliament.

- According to various studies, it was seen that, between 1999 and 2019, the average age of Lok Sabha MPs was more than 50 years (rising from 52 in 1999 to 59 in 2014).
 - Most of the political parties are increasingly fielding older candidates in elections and India is increasingly becoming a gerontocracy (a state by old people).
- India has also witnessed a positive change with respect to the representation of LGBTQ+ community individuals in recent years with the examples of Shabnam Mausi and Madhu Bai Kinnar.
 - However, such instances have been very few and atypical sexual orientation is still considered a career stopper in politics.
- With respect to the diversity of ideologies in Indian Politics, most of the Indian political parties are typically centre-left and populist in nature.
 - Further, only about 37.24% of Indian Members of Parliament claim themselves to be “agriculturists” and only 7.15% of them have listed their occupation as “farmers”.

Key recommendations

- Rules and laws such as Anti-defection Law must be revisited as they prevent SC/ST lawmakers from speaking up and taking their personal stand on issues where they have a difference of opinion with their political party.
- The Women’s Reservation Bill that aims to reserve one-third of all seats for women in the Lok Sabha and the state legislative assemblies must come into force.
- Policy measures that encourage youth to participate in politics such as pushing for youth quotas in select seats must be undertaken.
- In this regard, it is also important to make inner-party democracy a mandatory norm in the political ecosystem of the country and steps should be initiated to push for proportional representation.
- The Department of Social Justice and Empowerment must be accorded extended responsibilities to promote the participation of vulnerable and marginalised groups such as women, LGBTQ+ individuals and SC/ST individuals in politics.

Nut graf: *Despite India being the largest democracy in the world, the political ecosystem of the country still continues to be constrained by the lack of diversity, aging individuals and issues such as nepotism. A greater push towards diversity and the inclusion of individuals from varied backgrounds is the need of the hour if not India’s democracy will continue to remain stunted.*

2. Awareness on population control

Syllabus: Population and Associated Issues

Mains: Need for population control measures in India

Context: Two Members of Parliament introduced a private member’s bill for population control in Lok Sabha on December 09 2022.

Introduction:

- Two Members of Parliament introduced a private members’ Bill in Lok Sabha aimed at population control in India.
- As per the statement of objects and reason of the bill, one of India’s most serious social and economic problems is its huge population and rapid growth which argues for an immediate need for population control.
- India was among the first nations to address its population problem as early as 1951, raising awareness about the ills of overpopulation.
- While there has been a significant rise in India’s population, there has also been a sharp decline in India’s total fertility rate (TFR).
- According to ‘The World Population Prospects 2019’ published by the Population Division of the UN Department of Economic and Social Affairs, India is projected to surpass China as the world’s most populous country by 2027.
- As per National Family Health Survey-05, the TFR is 2% compared to 5.9% in 1950.
 - TFR declined sharply after the 1970s, indicating an inversely proportional relationship between economic prosperity and the fertility rate.

Need for Population Control policies:

- In India, population growth creates many problems and climate change makes it more aggravated.
- National Family Health Survey – 5 shows that India’s total fertility rate (TFR) is declining except in some states like Bihar and Uttar Pradesh (UP).
 - UP, Bihar and Assam are the states with TFR above 2 and the total population of these states is 378 million.
- According to the Centre for Monitoring Indian Economy, the unemployment rate in urban areas stands at 10.07% and in rural areas, it is 8.75%. With an increasing population, the rate of unemployment is bound to rise even more.
 - The major problem of unemployment and lack of resources will increase with each birth which would ultimately increase poverty.

- So, the population explosion would also irreversibly impact India's environment and natural resource base and limit the next generation's entitlement and progress.

Ramifications of forced population control:

- The two-child policy has been introduced in Parliament 35 times since independence. If enacted, the law must take into account the rights of divorced couples as well as the Islamic religion.
 - Earlier bills that were introduced lacked these features and were heavily criticised by the general public.
- In 2017, the Assam Assembly passed the "Population and Women's Empowerment Policy of Assam", which stated that candidates with two children would only be eligible for government employment and existing government employees were directed to follow the two-child family norm.
- Similarly, in 2021, Uttar Pradesh's law commission came up with a proposal where any person having more than two children would be barred from getting government subsidies.
- India's TFR at 2%, is lower than the replacement level, signifying a remarkable step in the population control parameters.
- Given the general desire for a male child, coercive population control techniques would promote sex selection and unsafe abortion.
 - As an alternative, women will turn to abortions, endangering their health and escalating illicit activities.
 - In the nations that have used them, most notably China, forced population control tactics have not produced positive outcomes.
 - The one-child policy has proved to be disastrous, causing a demographic imbalance.
 - Due to imposed population control laws, China's population is ageing faster than that of any other developed nation.

Way Forward:

- India needs to adopt population control measures with a focus on strengthening public health infrastructure and raising awareness about the need for population control.
- A coercive and top-bottom policy like China's 2-child norm is harmful in the long run. So, population control measures should be soft and a camp-based approach like the one seen in the 1970s shouldn't be repeated.
 - During the Emergency period (1975-77), coercive measures were used to reduce population growth. There were mass forced sterilisations. This, however, backfired as it discredited the entire family planning programme of the government.
- Any forced control method will impact the rate of ageing. United Nations data show that there is a projected rise in the population of older people and a decline in the young population in many countries.
- It is not sufficient to simply attain replacement-level fertility because the population will continue to grow. Therefore, comprehensive measures must be made to slow the population's accelerating rise.
- More focus needs to be paid to enhancing the quality of life of the present population so that our demographic dividend doesn't turn into a demographic disaster.
- Special focus needs to be on the groups where fertility ratios are beyond the national average.
- Information Education Communication – Behaviour Change Communication (IEC-BCC) should be an important component for a long-lasting attitudinal change via providing incentives to both the targeted person and the intermediary (ASHA workers).

Nut Graf: Population problem is intrinsically linked to poverty, societal norms and cultural preferences. India does not need a law for forced population control, instead, it must focus on measures to take advantage of the demographic dividend of the country so that the population is not a burden but a resource in the rapid economic development of the country.

3. Hattee community

Syllabus: Diversity of India

Prelims: Schedule Tribes of India

Context: Lok Sabha on December 16, 2022, passed the Constitution (Scheduled Tribes) Order (Third Amendment) Bill, 2022.

Hattee community

- Lok Sabha passed the Constitution (Scheduled Tribes) Order (Third Amendment) Bill, 2022 to include the Hattee community in the Trans-Giri region in Himachal Pradesh in the Scheduled Tribes list of the State.
 - The Bill has already been cleared by the Rajya Sabha.
 - The government's move to introduce the Bill came after the Himachal Pradesh government requested the Centre to include the community in the ST list, excluding those communities which are already notified as Scheduled Castes for Himachal Pradesh.

- As per the 2011 Census, there are over 700 recognised Scheduled Tribes in India. However, states/UTs like Punjab, Chandigarh, Haryana, NCT of Delhi, and Puducherry have no listed STs at present.
- The Hattee community with a population of around 3 lakh lives in difficult conditions across the Giri River.
- The Hattee population is spread across four of five segments in Sirmaur district.
- Hattis are a close-knit community and they got their name from their tradition of selling homegrown vegetables, crops, meat and wool etc. at small markets called “haats”.
- The Hatti community men wear a distinctive white headgear during ceremonies
- The Hattis are governed by a traditional council called Khumbli and the Khumbli’s power has continued to remain unchallenged despite the establishment of the panchayati raj system.



Source: Indian Express

MISCELLANEOUS

1. Palm-leaf manuscript museum in Kerala

Context: Kerala Chief Minister will be inaugurating a palm-leaf manuscript museum with modern audio-visual technology at the renovated Central Archives, Fort, in Thiruvananthapuram.

Details

- The palm-leaf manuscript museum has been set up by the Archives Department with a cost of ₹3 crores.
- The museum consists of eight theme-based galleries where select manuscripts from one of the biggest palm-leaf collections in the country will be displayed.
- About 187 old and rare manuscripts currently housed at Central Archives and its regional offices will be displayed in the museum, arranged by the State government's nodal agency for museums Kerala—Museum of History and Heritage.
- The manuscripts in ancient scripts such as Vattezhuthu, Kolezhuthu, Malayanma, and ancient Tamil and Malayalam will help visitors understand the social, political, cultural, and economic history of Kerala.
- The manuscripts will provide an idea about various aspects such as taxation, administration, trade, education, prisons, and festivals of the erstwhile Travancore, Kochi, and Malabar kingdoms/provinces.
- Apart from palm-leaf manuscripts, ancient scrolls, bamboo splints, and copper plates will also be displayed.

2. Beypore Uru

Context: The District Tourism Promotion Council of Kozhikode recently applied for a Geographical Indication (GI) tag for the well-known Beypore Uru (boat).

- The Beypore Urus are a symbol of Kerala's trade relations and friendship with the Gulf countries.

What is Beypore Uru?

- It is a wooden dhow (ship / sailing boat / sailing vessel) handcrafted in Beypore, Kerala by skilled artisans and carpenters.
- **The Beypore Urus are made entirely of premium wood, with no modern techniques used.**
- The wood used to construct the Uru is still sawed in the traditional manner, which necessitates a high level of expertise.
- Each Uru takes **anywhere from 1-4 years to build**, and the entire process is done by hand.
- This traditional handicraft has been around for over 2000 years.



Source: The Hindu

Communities Involved in Uru-making:

The prominent people associated with Uru-making are Odayis and Khalasis.

- **Odayis:** They oversee the technical aspects of ship construction.
 - Their surname is derived from Odam (a small ship that was previously used in interactions/trade between the Malabar coast and Lakshadweep).
- **Khalasis:** They are also known as **Mappila Khalasis** because the majority of them are **Mappila Muslims**.
 - They are famous throughout the world for their skill and expertise in launching the finished Urus into the water using only traditional methods.
 - **The Khalasis are regarded as forefathers of the ship-building industry**, and Arab traders were particularly enamoured of them, becoming among the first major patrons of these vessels.

3. Orans: Sacred Groves of Rajasthan

Context: A unique 'Oran Bachao Yatra' was recently conducted through remote villages and hamlets in western Rajasthan to raise awareness about the need of protecting orans, or sacred groves.

About Oran Sacred Grooves:



Source: news18.com

- Orans are groves of trees, with a wide range of traditional flora and fauna, as well as water bodies that are considered sacred and protected by the people of Rajasthan..
- They derive their name from the Sanskrit word 'aranya' which means 'forest' or 'wilderness'.
- These lands are often set aside, by Rajasthan's feudal lords, for religious purposes.
- Orans are protected in the name of local deities and medieval warriors and are available to the entire community, regardless of caste or creed. They ensure food and fodder for the community and the large herds of camels, sheep and goats in times of famine.
- As per tradition, cutting trees or plants from the orans is prohibited, and only seasonal grazing of livestock is allowed.
- They also provide a natural habitat for the Great Indian Bustard, India's most critically endangered bird (GIB).

What are Sacred Groves?

- Sacred groves are areas of virgin forest that have a religious significance and are traditionally protected by local people. Typically, they are dedicated to local deities or tree spirits.
- Sacred groves are legally protected as "community reserves" under the Wildlife (Protection) Amendment Act of 2002. Hunting and logging are typically restricted in these areas.

What are the Issues associated with Orans?

- Orans are classified as a wasteland in the revenue records of Rajasthan and are being allotted for the construction of renewable energy infrastructure and high-tension power lines. This is causing biodiversity loss and harming the livelihoods of the residents.
- There has been an increase in the number of Great Indian Bustard deaths reported as a result of collisions with electrical lines.
- The government is allocating this land for agriculture and other administrative projects.

4. 'Kasturi'

- The Cotton Textiles Export Promotion Council (Texprocil) and the Cotton Corporation of India had signed an MoU to start branding and labelling Indian cotton under the 'Kasturi' brand from the current season.
- The Union Ministry of Textiles had announced the "Kasturi Cotton India" brand of cotton on the eve of World Cotton Day on 7th October 2020.
 - This provided Indian cotton with a brand and a logo that represents Whiteness, Softness, Purity, Lustre and Indianness.
 - This was done with a focus on building the image of Indian cotton at the Global level, making India Atma Nirbhar and vocal for local in the field of cotton.
- This mechanism will provide complete traceability of Cotton from the origin farm level, QR Code based Certification technology to validate "KASTURI Cotton India" at each stage and will Promote "KASTURI Cotton India" as a premium brand by enhancing international perception & valuation of Indian Cotton.
- This will make Indian cotton a reliable quality product, both in the domestic and global markets thereby facilitating premium pricing.
- This collaboration will benefit cotton farmers to get the actual value of their produce due to brand building and quality assurance.
 - Farmers, traders and spinners could apply to get the cotton tested for 'Kasturi' branding.
- It will also encourage the Industry to work on the principle of self-regulation by owning complete responsibility for the Traceability, Certification and Branding of Indian cotton.

5. Prajwala Challenge

Context: Ministry of Rural Development launches Prajwala Challenge.

Details:

- The Ministry of Rural Development has launched Prajwala Challenge under the Deendayal Antyodaya Yojana – National Rural Livelihoods Mission (DAY-NRLM).
- The aim of the initiative is to invite ideas, solutions, and actions that have the potential to transform the rural economy.
- It will provide a platform where ideas can be invited from individuals, the Private Sector, Social Enterprises, Startups, Civil Society, Community Based Organizations, Academic Institutions, etc.
- The Mission intends to look for ideas and solutions revolving around Innovative Technology, Sustainability, Inclusive Growth, place-based employment, Value Chain Interventions, etc.
- **The broad contours can be categorized into:**
 - Focus on Women and the Marginalized section of the community
 - Localized Models
 - Sustainability
 - Cost Effective solutions
 - Multi-sectoral ideas and solutions
- Mentorship support from an expert panel and incubation support to scale up the proposal will be provided to shortlisted ideas. The top five ideas will be awarded Rs. 2 Lakh each.
- The challenge would also be shared in the Manthan portal by the office of the Principal Scientific Advisor and in the BIMTECH – Atal Innovation Mission Portal.

BYJU'S IAS Website

Daily Updates

-  **Comprehensive news analysis**
-  **Video analysis of "The Hindu"**
-  **PIB summary and analysis**
-  **Topic of the day**
A brief analysis of important topics for the exam
-  **This day in history**
A brief note on a major event that happened in the history of India and the world on this date
-  **AIR Spotlight**
-  **Sansad TV Perspective**

Weekly Updates

-  **Economy this week**
Round-up of business newspapers
-  **Gist of economic and political weekly magazine**
-  **International Relations This Week**
-  **GK and current affairs quiz**

Monthly Updates

-  **BYJU'S current affairs magazine**
Compilation of current affairs
-  **Gist of magazines**
Extracts of articles and points from "YOJANA" and "KURUKSHETRA"

YOJANA DECEMBER 2022 - ARCHITECTURE

1. Restructuring Urban Galaxies

Introduction:

- India has unique characteristics with a hierarchical network of varied sizes urban settlements like metropolises, cities, and towns.
- They appear like 'urban galaxies' - with naturally developed scales between entities, interconnected and located within easy reach.
- These networks have their unique lifestyles, unique pattern of habitat based on local resources, climate, and available characteristics of land.
- The connections and the spread of the developments appear like a 'biological' growth, with adaptation, mutation and replication.

Sustainable development of Indian cities and towns:

- Due to our development focus of concentrating around one place/city, all the institutions and employment opportunities, we are denuding the smaller towns in the region of their small-scale crafts and industries, and encouraging migration and overburdening the mega-cities.
 - Expansion means larger distances, and more time and energy to commute for living, working, or cultivating the mind and the spirit.
- Sustainability ensures long-lasting development without becoming unduly centralised.
- By improving the infrastructure, the functioning of mega cities and metropolises can be greatly improved.
- Organically developed sustainable interdependent habitats will necessarily have characteristics like, empty tracts between entities, shorter movements linked by locally-developed transport systems and few accessible points to heavy motorised traffic.

Important lessons for Planning in traditional lines:

- Planning is not merely about physical growth, but also about spiritual and cultural growth which depends on the availability of resources.
- Several studies reveal that each area had specific culturally-oriented rules which defined their needs and regulated the consumption of resources for that purpose.
- One can notice the unique and virtuous skills of the local population across the country. This is achieved by decentralisation and by allowing self-discovery for the human energy to find particular avenues of exploration within the regional context of resources and values.
- Planning must look at multi-nodal conglomerates, and not the single-large banyan trees that can expand infinitely, absorbing smaller entities on the way and obliterating their strengths.
- Planning must focus on conserving and developing a natural network of important water bodies with a water supply and irrigation systems, forests and animal life.
- Non-motorised transport encourages greener, quieter, and less polluted habitats.
- 'Appropriateness' therefore, has been a virtue that has guided scales and life-fulfilling characteristics of each habitat in India. This is the secret of their survival over centuries, in spite of floods and famine.
- Developing smaller towns of around one lakh population as growth centres and developing them as magnets will give other villages and smaller habitations the chance to learn, earn and develop without sacrificing their time and energy.

2. Central Vista Redevelopment Project

Central Vista redevelopment project:

- Central Vista is a 3.2 kilometre stretch in Delhi which houses Rashtrapati Bhawan, Parliament House, North and South Block, India Gate, National Archives among others.
- The Union Ministry of Housing and Urban Affairs proposed a Central Vista redevelopment project in 2019.
- Central Vista redevelopment project intends to construct a triangular-shaped Parliament building next to the existing one, the construction of Common Central Secretariat, and revamp of the 3 kilometres long Rajpath from Rashtrapati Bhawan to India Gate.
- It also includes the conversion of North and South Blocks into museums and the development of Central Vista Avenue.
- To accommodate the offices of various ministries, 87 storied buildings will be built for the common Central Secretariat.
- The Central Vista Redevelopment Plan is proposed to meet the present and future needs of space for the Parliament, Ministries and Departments, as well as to provide better public facilities, amenities, parking facilities, etc. Citing fire safety, acoustics concern, the dilapidated condition of the century-old construction, the redevelopment project is planned.

Kartavya Path

- The 'Rajpath' which is a two-kilometre stretch from India Gate to Rashtrapati Bhavan in Delhi was renamed 'Kartavya Path' and the statue of Netaji Subhash Chandra Bose under India Gate Canopy was unveiled.
- The British had named it "Kingsway" after King George V, who visited Delhi during the Delhi Durbar of 1911 and shifted the capital from Calcutta to the city.
- The renaming of Rajpath as 'Kartavya Path', or 'Duty Road', symbolises the emphasis on duties over rights.
- Post India's independence in 1947, the Central Vista was chosen as the centre of Delhi and renamed Rajpath.
- A 28 feet tall granite statue of Netaji Subhas Chandra Bose was unveiled by the Prime Minister at India Gate under the Grand Canopy.
 - The Grand canopy was by Edwin Lutyens and added to the India Gate complex in 1936 as a tribute to the then recently deceased Emperor of India, King George V, and housed his 50-foot marble statue.
 - After widespread opposition to King George's statue after independence, it was moved to Coronation Park by the river Yamuna in North Delhi in 1968.

3. Development of Historic City Centres

Background:

- India's monuments are irreplaceable and significant assets for the nation and its people with associated emotional, religious, economical, historic, architectural, and archaeological values amongst others.
- Their conservation efforts require craftsmen using traditional materials, tools, and building techniques and can also become a significant employer.
- India's craft traditions have survived to the present times, and it is recommended an emphasis on a craft-based approach to conservation as well as modern public buildings.

Conservation Approach:

- The Indian approach to conservation allows leveraging our historical assets to improve the socio-economic conditions of residents of our historic cities.
- The residents of our numerous historic city centres can benefit from greater integration of preservation and conservation efforts with public policies and schemes for development measures.
 - **For Example:** The Aga Khan Trust for Culture in partnership with the Archaeological Survey of India, Central Public Works Department and the Municipal Corporation of Delhi have undertaken a 15-year urban renewal project at the Humayun's Tomb—Nizamuddin area in Delhi.
 - Here, conservation efforts have incorporated local area development through employment generation, boosting local crafts and arts, building of infrastructure, environmental conservation, and landscaping.
- The Archaeological Survey of India is taking several steps to ensure long term, sustainable preservation of our nation's heritage in a manner that is based on increased awareness amongst the public of the significance of our heritage and increased involvement of civil society in the preservation effort.
- Conservation efforts have incorporated local area development through employment generation. boosting local crafts and arts, building of infrastructure, environmental conservation, and landscaping.

Community Based Conservation:

- India's monuments are under threat from the pressures of urbanisation.
- To achieve conservation and development objectives, different agencies of the government need to partner with academic institutes/civil society and local communities.
- It has already been demonstrated that any resources invested in such an endeavour leads to multiple returns as well as fulfilling multiple government objectives.
- Several of our monuments stand amidst dense urban inhabitation in our many historic cities. Also, often the communities residing around monuments in these dense urban centres are poor and often deprived of even the most basic urban infrastructure.
- The success of the **Nizamuddin Urban Renewal project** has demonstrated a model approach for community based conservation.
 - Hazrat Nizamuddin Basti underwent conservation and this conservation effort has been coupled with providing education, health services, vocational training to create economic opportunities, landscaping neighbourhood parks and street improvements, revival of a 700-year living culture centred around Sufism and Qawwali.
 - It is hoped that the community of Hazrat Nizamuddin Basti will now play a pivotal role in the preservation of the built heritage that stands amidst their neighbourhood and that conservation/culture can be used as a tool for development in several other similar historic urban areas of India.
- Conservation and development should go hand-in-hand, but conservation interest must remain paramount if any such development is to be sustainable in perpetuity.

4. Brihadeeswara Temple-A Stand Alone Marvel

Brihadeeswara Temple

- The Brihadeeswara Temple (The Big Temple) of Thanjavur is a stunning monument that speaks volumes about the architectural mastery of the Chola era.
- This Shiva temple is home to one of the largest Shiva Lingas of the country. A majestic Nandi (bull) stands guard over the temple. This is the second largest Nandi in India and is carved out of a single stone.
- It is located on the south bank of the Cauvery river in Thanjavur.
- It is also called Dakshina Meru. The temple is a part of the UNESCO World Heritage Site known as the “Great Living Chola Temples”, along with the hola-era Gangaikonda Cholapuram temple and Airavatesvara temple.



Source: Indian Express

Thanjavur (Tanjore):

- The ancient city of Thanjavur is the cultural capital of the Kaveri delta region.
- The city and its cultural legacy are the product of three vibrant kingdoms that have ruled this part of Tamil Nadu namely – the Cholas, the Vijayanagar and the Maratta kings.
- The Cholas take credit for identifying the town as a potential political capital when it was captured by Vijayalaya Cholas early in the 9th century.
- Rajaraja-I, who was engaged in several military expeditions, was inspired by the fine temple architecture patronised by the Pallavas, other predecessors and his ancestors, who have been devout Saivites have contributed to the development of many popular temples of Siva.

Architecture of the big temple:

- The Brihadeshwara Temple was built by **Rajaraja I** in 1009 CE for worshipping Lord Shiva.
- The temple complex is placed inside what is referred to as ‘Sivagangai little fort’.
 - This fortification is an addition taken over during the renovation by Sevappa Nayaka around the 17th century.
- There is also a moat (Long wide Channel) running around this fortification which shall be crossed to enter the temple complex.
- There are sub-shrines built in between cloistered halls housing shrines for the ashtadikpalakas (deities guarding the 8 directions), lord Ganesha, and the temple yagasalai.
- On the southwest corner is the shrine of Ganesha, built during the times of Sarabhoji II.
- The shrine built during the times of Rajaraja, mentioned in the inscription as Parivara-Alayattu Pillaiyar was vandalised and hence the Maratta king built a new structure for him.
 - This is an extremely ornate sculptural gallery that houses Subramanya along with his consorts Valli and Devasena.
 - The door guardians of this shrine, sculpted out of a very shining granite stone, and the stone tub installed to collect ablution water are noteworthy for their workmanship.
 - The pillared hall in front of this shrine has portrait paintings of the royal members of the Maratta kings.

The Vimana:**Source: TamilNadu Tourism**

- Inside the temple, there is a temple tower famous as Vimana which has an elevation of 66 metres.
- This vimana is one of the tallest temple towers on the earth.
- The proportioning of the successive tiers of the vimana is the reason behind the visually appealing appearance of the structure.
- The pyramidal vimana is corrugated with appropriate motifs, design features, and sculptures of various deities. The pinnacle is a spherical dome-like shikhara, on which sits the 12-foot tall gold-plated kalasam.
- Epigraphic evidence says that Rajaraja I had presented gold covered finial to be fixed on the vimanam on the two hundred and seventy-fifth day of his twenty-fifth regnal year, ie., 1009-10 CE.
- According to the agamas, the vimanam on top of the sanctum sanctorum is supposed to represent sookhmalinga.
- It is considered a sacred mountain hence Rajaraja describes this vimana as the 'Dakshina Meru', the revered mere mountain of the south.
- The topography of Kailasa has been recreated as a stone bas-relief on the eastern facade, decorated with the daily scene at Kailasa, representing the divine family of Shiva with Devi, Ganesha, Muruga, Nandi, and other celestials.
- The sanctum sanctorum is approached by a series of mandapams from the eastern side.
- The antarala is accessed from a fleet of stairs on the north and south sides. This is where devotees stand to offer their worship in front of Sri Rajarjeshwaram Udaiya Paramaswami, as the deity was called by Rajaraja himself.

Nandi Pavilion:

- An equally interesting feature of the temple is the huge monolithic Nandi.
- The pavilion on which the Nandi sits is by itself a later-period addition.
- The monolithic Nandi from the Nayaka period was brought in to replace the old Nandi installed by Rajaraia.
- The mandapam was also constructed by them and the ceiling of this mandapam was painted with frescos carrying European influences.
- Nandi installed by Cholas is now placed in the south side of the cloistered hall running around

5. Statue of Unity**Key Details:**

- The Statue of Unity is built in honour of Sardar Vallabhbhai Patel.
- It was dedicated to the nation on October 31, 2018 which also marked the 143rd birth anniversary of Sardar Patel.
- It is located on the Sadhu Bet island on the Narmada river, which flows between the Satpura and the Vindhya mountain ranges.
- Sardar Patel is credited with uniting over 560 princely states in pre-independent India to build the Republic of India, hence the name of the statue is christened as 'Statue of Unity'.
- It is the tallest statue in the world with an impressive height of 182 metres and can be seen from space.
- The statue is capable of enduring wind gusts of over 220 km/h while enduring earthquakes 6.5 on the Richter Scale or greater.
- The statue is a three-layered structure. The innermost layer is made of reinforced cement concrete (RCC), comprising two towers 127 metres high that rise till the statue's chest. The second layer is a steel structure and the third an 8 mm bronze cladding on the surface.

6. Universal Public Designs

Introduction:

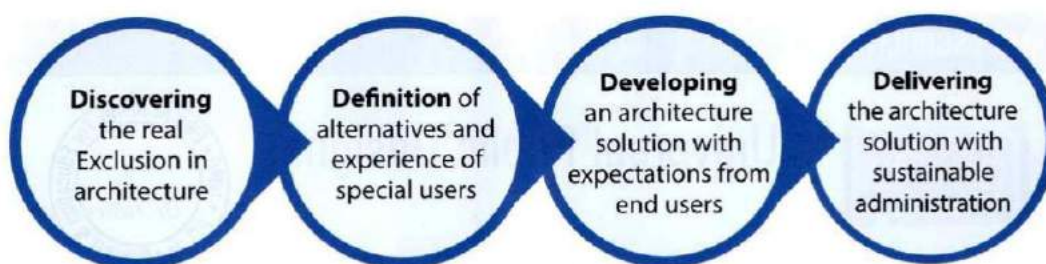
- In a heterogeneous society, the goal of every state is to provide equal access to its citizens. Inclusion stands for giving freedom for access for all and building commonalities.
- Infrastructure for persons with disabilities is a significant dimension of architecture. It has certain implications from the special-need quotient of demography, and disability as an asocial construct.
- India has initiated **Sugamya Bharat Abhiyan** as a credible step towards sustainable goals in universal designs.
- When administrators consider people with all kinds of abilities and their accessibility issues while building public utilities and spaces, it can be coined as universal design.
 - Universal or inclusive design provides for a holistic approach in designing public spaces and utilities
- The **UN Convention on the Rights of Persons with Disabilities (UNCRPD)** inspires and focuses on universal design. It highlights the sovereign government's responsibility to make improvements since accessibility is a right.
 - Member States are responsible for systematically removing obstacles and creating inclusive solutions for everyone, irrespective of their functional capacity, characteristics and preferences.
- Nordic countries for instance and universal design is a good example of vision for inclusive growth.
- There are three crucial aspects of inclusive designs in any situation are:
 - Social responsibility or commitment of the entity that evolves strategies for inclusion.
 - The reward to such organisations which initiate such changes
 - The sustainability of such initiatives.

Challenges:

- A major challenge in implementing such changes is on emphasising the value of such indicatives at the policy level and at the execution level.
- Another challenge in providing for inclusive architecture is construction workers' lack of knowledge about the whole structure, and issues of accessibility fail to bring those minute changes for universal designs.
- Sugamya Bharat has been formulated by considering all possible lacunae. The country with such diverse structure demands a systemic z tackle the existing challenges.

Approaches and Principles:

- A piece of architecture should provide an equitable use for every person irrespective of their differential ability.
- A piece of architecture should possess a quality of flexibility in use
- A piece of architecture must have quality-simple and intuitive use.
- A piece of architecture should have perceptible information and its Layout.
- A piece of architecture should possess the quality of tolerating for errors,if people commit mistakes due to their disability.
- A piece of architecture should possess the quality of usage or access should demand low physical effort.
- A piece of architecture should possess adequate size and space for use.



Basis of Universal Designs

Source: Yojana

Significance:

- In all the domains of public work, an integrated approach by incorporating the end users' feedback can deliver quality of governance to people with differential abilities.
- Accessible physical environment benefits everyone, not just persons with disabilities.
- Accessibility eliminates obstacles and barriers to indoor and outdoor facilities including schools, medical facilities, and workplaces.
- Universal design will also indirectly help the state in soliciting the global community to enjoy the iconic tourist spots in India.

7. Architecture for Health and Well-Being

Introduction:

- People are spending a great amount of time indoors, which is in contrast to the earlier times where the routines were aligned to the rising of the Sun and the circadian rhythms were matched to the Sun's.
- In current lifestyles, people have become dependent on the building amenities and utilities that power them on a day-to-day basis. This includes artificial lighting and artificial means of ventilating space.
- The indoor-based lifestyle should most definitely be optimised to take care of the health and wellbeing.

Perspectives on Holistic Well being:

- According to the World Health Organization, Health is a state of complete physical, mental and social well being and not merely the absence of disease and infirmity.
- Architecture and city planning are closely linked to the reduction in non-communicable diseases if proper thought is put in place.
 - The proximity of spaces for work-out and recreation including parks, integrated with our urban texture, hold the key to a healthy Life.
 - Bicycle tracks, availability of bicycles, no car zones, green spaces, and other measures in cities form the basis of a more active lifestyle.
 - The use of interior products in buildings that are non-carcinogenic in nature like paints, furniture finishes, and upholstery is necessary for the prevention of build of volatile organic compounds which are proven to be carcinogenic on longer exposures.
 - A well-designed building is an antidote to the daily humdrum of office work and a release from stress
- All India Sanitary Conference that was held in Lucknow in 1914 laid the foundation of the current paradigm of building and city planning, by including the concepts of health and wellbeing.
- The concept of having an appropriate light in the streets was introduced and the width of the abutting streets was made in accordance with the light to ensure adequate sunlight supply to the interior spaces of the buildings.
 - This forms the basis of all urban bylaws and city plans made later in India.
 - Sunlight, along with natural ventilation was considered as the remedy against many ills of the time like Tuberculosis.
- Wide spectrum of health encompasses preventive, promotive, curative, rehabilitative and palliative care.
- India has taken steps in this direction under the Ayushman Bharat with the opening of Health and Wellness Centres which shifts the Indian healthcare approach from selective, curative healthcare to the one which includes concepts of well-being embedded into it.
- The victory of the civilisation lies in the provision of good quality housing to the commoners with the same intensity with which buildings of national importance are planned and built.
- A civilisation with great monumental buildings for the government along with world-class housing for the poor will result in a balanced development of a great nation.
 - The Union government's Pradhan Mantri Awas Yojana is an initiative to provide affordable housing to the urban poor.

Way forward

- What is most required is that our pre-existing focus on health and well-being must be given a renewed vigour so as our each and every building is designed for health and well being.
 - This will have a multiplier effect on the overall well-being of the nation as a whole.
- India must incorporate the state-of-the-art building codes and standards that the Bureau of Indian Standards publishes to design buildings for health and well-being.
 - This includes the National Building Code 2016 along with other sub-codes like SP-41 or the Handbook of Functional Requirements of Buildings and the National Lighting Code which deals with visual comfort in spaces.
- Architecture and City Planning are the mainstays and key ingredients of health and well-being for the building inhabitants and city dwellers. This fact must be reinvented with each passing building and each new city plan.

KURUKSHETRA-DECEMBER 2022

(E-GOVERNANCE)

1. Bridging the Digital Divide

Background

- One of the most effective tools for advancement and social change in today's world is technology.
- e-Governance is a process through which public services are made available and accessible to the common citizen through common service delivery outlets.
- e-Governance is ICT-friendly and establishes connections between providers and users of government services.
- e-Governance increases the transparency, efficiency, and reliability of all operational processes.

Digital inequality

- Digital inequality is referred to as differential levels of access to digital resources. It is a serious problem in contemporary society.
- All forms of digital inequality are together called digital disparity.
- Bridging the digital gap requires technological, infrastructure, and socio-economic solutions addressing accessibility, affordability, and digital literacy.

Achieving affordable and inclusive internet for all

The following parameters are significant in achieving affordable and inclusive internet for all:

- **Infrastructure** is crucial for promoting innovation and enhancing development.
- **Pricing** can have a major impact on the accessibility of the internet.
- **Language and Technical illiteracy** are barriers to accessibility to the internet, especially for women and rural people.
- **Information regarding accessibility** is crucial for designing effective policies.

Digital India Programme

- The government of India is implementing the Digital India programme to transform India into a knowledge-based society and economy by ensuring digital access, digital inclusion, and empowerment.
- Digital India has dramatically reduced the distance between the government and citizens.
- It is an umbrella programme covering multiple projects/schemes of various departments/ministries. Some of the significant initiatives are:
 - **E-Kranti**: It aims to revolutionize electronic service delivery.
 - **Common Service Centre(CSC)**: CSCs provide more than 400 digital services to rural citizens through village-level entrepreneurs.
 - **Unified Mobile Application for New-age Governance(UMANG)**: It is a mobile-based service providing accessibility to approximately 22,000 bill payment services and over 1570 government services.
 - **e-District Mission Mode Project (MMP)**: It benefits citizens by delivering various e-services like certificates(birth, death, caste, income, etc.), consumer services, electoral services, etc.
 - **Digilocker**: It provides paperless availability of public documents.
 - **Unified Payment Interface(UPI)**: It is the leading digital payment platform in the world integrated with over 330 banks.
 - **Co-WIN**: It is an open platform for scheduling and management of Covid-19 vaccination.
 - **My-Gov**: It is a citizen engagement platform that is developed to facilitate participatory governance
 - **Meri-Pehchan**: It is a single sign-on platform to provide citizens with ease of access to the government portal.
 - **Direct Benefit Transfer**: 315 schemes across 53 ministries are offering Aadhar-enabled digital benefit transfer and so far approximately 25 lakh crores have been disbursed through it.
 - **Diksha**: It is a national-level educational platform for both students and teachers.

Government initiative in direction of Data Governance

- **OPEN GOVERNMENT DATA**: It is a platform to facilitate data exchange and encourage innovation with regard to non-personal data.
- **API SETU**: It is a platform to make data interchange easier across systems.

Way Ahead

- Local governments should be given special emphasis with regard to digital services as they are the closest to the citizens.
- Government should ensure better internet connectivity along with digital infrastructure, especially in rural areas of the country.
- E-government through local language is highly beneficial for a linguistically diverse country like India.
- It is also essential to improve and upgrade existing effective models on a timely basis.

- To prevent the hazards of new and greater digital divides, scientific information, technology, and know-how produced by the digital era must be carefully managed.
- Government and private sector should participate in research and development. They should jointly solve the broadband connectivity gap.

Conclusion

A paradigm shift in strategic thinking, rules, and regulation is required for the digital revolution. While e-government focuses on creating online services, the future will revolve around how digital government changes governance by harnessing societal creativity and resilience.

2. Technology Integration for Quality Education

Background

- According to UNESCO, “E-governance is the public sector’s use of ICT with the aim of improving information and service delivery, encouraging citizen participation in the decision-making process and making government more accountable, transparent and effective
- It further states that E-governance is a wider concept than e-Government, as it can bring a change in the way citizens relate to the Government ecosystem.
- The objective of e-governance is to engage, enable and empower the citizen.
- Due to the COVID-19 pandemic, the pace of integration of technology in the teaching and learning process has increased exponentially.
- National Education Policy 2020 has also given utmost importance to digital education for improving teaching-learning-evaluation processes, enhancing educational access, and streamlining educational planning, management, and administration, etc.

Interventions in the Governance of education:

- **UDISE+:** In 2012-13, the Ministry of Education initiated the Unified District Information System for Education(UDISE).
 - UDISE+ is an upgraded version of it, which is collecting data since 2018-19. It provides robust, real-time, and credible income for effective evaluation and evidence-based interventions in the school education system.
- **Performance Grading Index(PGI):** It is a tool for evaluating the status of school education and catalyzing transformational change in States/UTs on the basis of performance across several indicators.
 - It grades all states and Union Territories on the basis of 77 indicators and helps in identifying gaps and designing appropriate interventions to address them.
- **Online survey platform for National Curriculum Framework (NCF):** It is being prepared by NCERT to make education more experiential, holistic, inquiry-based, discovery-oriented, learner-centric, and enjoyable.
- **NDEAR (National Digital Education Architecture) and Vidya Samiksha Kendra:** The central idea of NDEAR is to facilitate achieving the goals set by NEP 2020, through a digital infrastructure for innovations in the education ecosystem, ensuring autonomy and participation of all the relevant stakeholders.
 - Vidya Sameeksha Kendra has been established at the national level to leverage data and technology to bring a big leap in learning outcomes.
- **PRABANDH (Project Appraisal, Budgeting Achievements, and Data Handling):** It was launched in 2020 under the ambit of Samagra Shiksha to bring to enhance the efficiency and management of Centrally sponsored integrated schemes.

Government Initiatives for improving Quality of Education

- **PM e-Vidya:** It is a comprehensive initiative that ensures access to digital education through a multi-modal approach.
 - The Ministry of Education(MoE) platform DIKSHA has been declared as ‘One Nation, One Digital Platform’ which can be accessed by learners and teachers across the country. It presently supports 30 languages.
 - DIKSHA hosts nearly 6,500 textbooks and over 3.01 lakh digital content including audio-visual content, interactive courses, practice material, etc.
 - For Children with Special needs, nearly 2970 Indian Sign language-based content, Mukta Vidya Vani(an audio streaming podcast) and Radio Vahini with 24x7 broadcast and talking books for learners with Blindness and Low Vision have also been prepared.
 - Twelve PM eVidya channels for each class delivers class-wise content for each class 24x7.
- **NISHTHA (National Initiative for School Heads’ and Teachers’ Holistic Advancement):** It is an integrated training programme that aims at the holistic development of teachers.

Initiatives announced in the Budget 2022-23

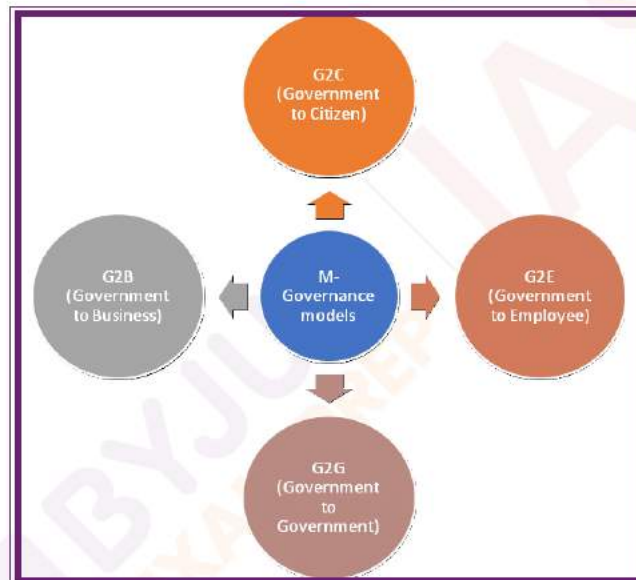
- To overcome pandemic-induced learning gaps and build a resilient mechanism of education delivery, 200 TV channels would be launched.
- Nearly 750 virtual labs for science and mathematics and 75 skilling e-labs would be launched during 2022-23 for providing a quality practical and critical thinking ecosystem.
- High-Quality e-content in all spoken languages will be developed for delivery via the internet, mobile phones, 1V, and radio through Digital Teachers.

Conclusion

- Technology will play a crucial role in developing lifelong learners that have an innate curiosity, drive to explore, and are motivated in the pursuit of knowledge.
- An affordable, equitable, inclusive, and integrated digital ecosystem is required to facilitate and sustain lifelong learning.

3. Mobile Governance**Mobile Governance**

- Mobile Governance or m-governance is the E-governance delivered through mobile devices, particularly smartphones.
- M-governance is a subset of E-governance and has emerged as an effective way to reach out to every doorstep, thereby bridging the gap between the government and citizens.
- Internet-connected mobile devices can deal with challenges like low penetration of personal computers, internet connectivity, power supply challenges, and large rural populations.
- The core objective of m-governance is to provide personalized and localized service/information anywhere and anytime through various types of wireless and mobile technologies.
- India can successfully implement m-governance due to the phenomenal growth of the nationwide mobile ecosystem.
 - India has nearly 1.17 billion telecom connections (as on August 2022). Nearly 98% of these were mobile connections and an estimated 65% of these devices were smartphones.
 - India has a teledensity of more than 85% and over 82.5 crore internet subscribers.
 - The median speed of mobile devices in India is 13.5 megabits per second (Mbps).

**Advantages of M-Governance:**

- Cost efficiency
- Modernization of involved entity/organization
- Convenience and Flexibility
- Easy interaction and better service to the citizen
- Enhanced accessibility

Fintech Revolution and M-Governance

- India has made huge strides in the use of mobile technology in almost all sectors like agriculture, health care, financial services, retail trading, manufacturing, transportation, and services.
- One of the most successful examples of the fintech revolution is the Unified Payment Interface (UPI). It is an instant real-time payment system developed by the National Payments Corporation of India.
- Many IT industries have offered customized services through mobile devices which have registered tremendous success. Some of the popular examples are Paytm, Phonepe, Uber, Bajaj Finserv, etc

Existing Challenges

- There are a large number of independently working applications and services which makes it difficult for a citizen with a limited understanding of technology.
- Other challenges include limited awareness and a lack of necessary skills among the citizens to access the services available. This implies that there is a low level of digital literacy.
- Smartphones are still a luxury for many Indians.
- Making the entire M-Governance model linguistically inclusive and accessible to ensure maximum impact is one of the largest challenges in a linguistically diverse country of India.

4. e-Governance in Health Service Delivery

Introduction

- The government of India has launched several health-related online services such as:
 - **National Health Portal:** It is a single point of access to health-related information for citizens.
 - **e-Hospital Management system:** It tracks the delivery of patient care and diagnostic services.
 - **Mera Aspataal initiative:** It captures patients' feedback for services availed by them.
- Several mobile applications have also been launched like the **Kilkari app**, through which the government delivers messages pertaining to pregnancy and child care between the second trimester of the pregnancy till the child's first birthday.

Government's Initiatives

- Various platforms have been launched for tracking service delivery.
 - **Nikshay Platform:** For tracking TB patients.
 - **Ayushman Bharat- Health and Wellness Centre Portal:** For monitoring the delivery of comprehensive primary healthcare services through Health and Wellness centres across the country.
- **National Health Policy 2017** ushered in a new era of technology-enabled healthcare services that incorporates e-health, m-health, Internet of Things(IoT), etc.
- The launch of the **National Digital Health Mission (NDHM)** was also announced on the 74th Independence day that aims to create a mechanism to:
 - Process digital health data and facilitate its seamless exchange
 - Develop registries of public and private facilities, health service providers, laboratories, pharmacies, etc.
 - Support clinical decision-making
 - Offer services like telemedicine

Challenges with India's healthcare system

- India's healthcare system is an information-intensive sector that has remained largely impermeable to digital technology for a long time.
- Though considerable efforts have been made to leverage technology, there is inadequate interaction between them that leads to disjoint clusters of health information.
- Fragmented information about the patient records restricts interoperability.
 - To tackle this issue NDHM has proposed a single health id and profile for every citizen.
- There are issues like duplication and inconsistency of data.
- An Inadequate number of doctors and healthcare staff is another major challenge in India. Moreover, the quality and productivity of services is also an area of concern.
- The low presence of doctors is more visible in rural and remote areas of the country.

Significance of Technology in Healthcare

- A single dedicated portal for each citizen can minimize the need for repeat investigations and ensure informed decision-making by doctors.
- It can enable population-level data analytics in identifying emerging diseases and treatments.
- It can also facilitate geographical, demographical, and risk factor-based monitoring of health, followed by the design of targeted interventions. It could also give a head start in identifying people with comorbidities and implementing preventive health interventions expeditiously.
- An effective and efficient IT infrastructure can ensure data consistency across systems, eliminate duplication and minimize the reporting burden.
- It will also benefit the researchers in the evaluation of disease and its treatment.
- Digital health is a critical enabler for universal health coverage.
- It is estimated that in the coming decade, an incremental economic value of over USD 200 Billion can be unlocked for the health sector through rigorous and effective implementation of the NDHM.
- Technology can improve operational efficiency by strengthening supply chain performance and enabling the skilling of health professionals.
- Government's teleconsultation services like e-Sanjeevani have enabled diagnosis, treatment, and management of the disease.
- Another trend being observed on the account of digitization is online training and education of medical professionals.

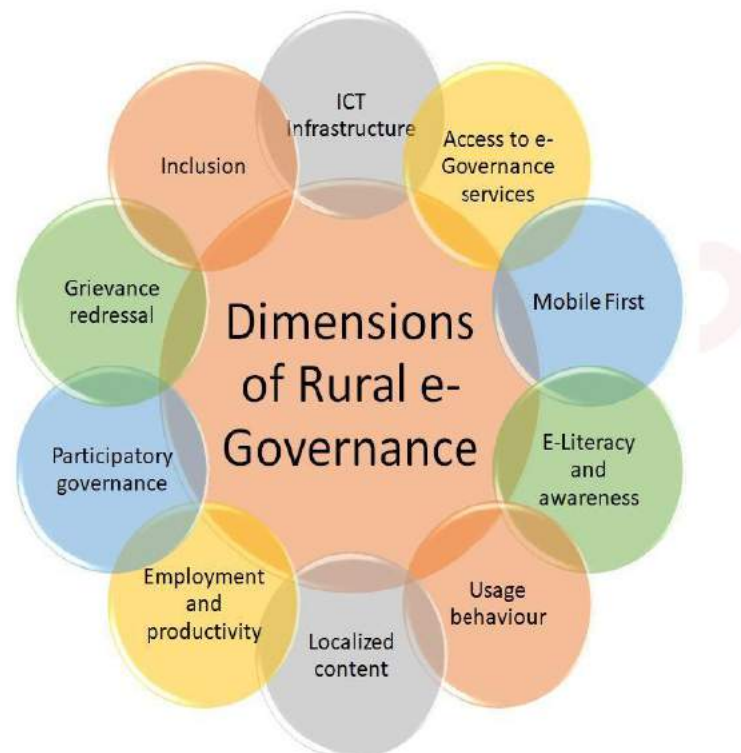
Conclusion

It is clear that India is moving towards the digital transformation of healthcare and looking at a future where connected care becomes the norm. The patients would no longer be constrained by geography due to the roll-out of the latest technologies.

5. Citizen Participation and Rural Well-being

e-Governance and Rural Economy

- In the era of transforming governance landscape and digitalization, the Government of India implemented the National e-Governance Plan in 2006.
 - It was particularly formulated for the rural areas by providing services like birth and death certificates, land registration, employment opportunities, farming and veterinary services, education, etc.
- Special focus is also given to capturing the data about the people below the poverty line.
- Some initiatives that are contributing to the e-Governance model are e-Panchayat, e-Gram, e-Choupal, e-Shakti, Bhoomi, Gyandoot, e-NAM, etc.
- An innovative programme, **MyGov** was also launched to ensure citizens' participation in the decision-making process.
- However, despite several efforts the results are not up to the mark and require more effort.



Source: National Informatics Centre

Citizens' Participation and Governance

- **Citizen as a Customer:** As a consumer of public service, citizen participation and their feedback are crucial in designing policies and ensuring quality service delivery at an affordable cost.
- **Citizen as an Owner:** In a democracy, citizens are the real owners of public service and thus their involvement is very important.
- **Citizen as a co-producer:** Citizens are expected to act as partners in governance.
- **Citizens as a quality evaluator:** Citizens can also evaluate the quality of services and their effectiveness.

Benefits of Citizen Participation

- Citizen participation helps in the smooth formulation and implementation of public policies.
- It helps in enhancing transparency, accountability, and responsibility. It also enhances the efficiency and efficacy of government projects.
- It develops a sense of ownership and belongingness, thereby engaging the public.
- Participation and contribution of various stakeholders reduce conflicts and confusion and make it more coherent.
- It reduces political will-based e-governance and brings more inclusiveness and positive outcomes.
- It helps in improving the political positioning of marginalized and vulnerable groups.
- It helps in developing sustainable and outcome-focused initiatives.
- It helps in community empowerment, leading to better awareness and superior monitoring.

6. New Age Technology

Advantages of adoption of New Age Technology in governance:

- It brings transparency.
- It minimizes the interface between government and citizens.
- It is unbiased.
- Can accelerate service delivery.
- Fixes accountability.
- Improves interaction with business and industry.
- Information accessibility empowers citizens.
- Efficient Management.

e-Kranti

- The e-Kranti programme was approved by the government in 2015. The vision of e-Kranti is “Transforming e-governance for Transforming governance”.
- The portfolio of the Mission Mode Project has increased from 31 to 44 covering several social sector projects like Women and Child Development, Financial inclusion, Urban Governance, etc. Thrust areas of e-Kranti outlined in Digital India are:
 - **Technology for Education:** All schools will be connected to Broadband and free WiFi will be provided for all secondary and higher schools. A programme on Digital literacy will also be taken up at the National level.
 - **Technology for farmers:** This would ensure real-time information and pricing along with cash and relief payments.
 - **Technology for security:** Mobile-based emergency and disaster-related services would be provided on a real-time basis in order to minimize loss of life and property.
 - **Technology for Financial inclusion:** Financial inclusion shall be strengthened using technologies like mobile banking, micro ATMs, etc.
 - **Technology for Justice:** Criminal Justice system will be bolstered with technology like e-courts, e-Police, e-prosecution, etc.
 - **Technology for Security:** National Cyber Security Co-ordination Centre would be established to ensure safe and secure cyber-space in the country.
 - **Technology for Planning:** National GIS Mission Mode Project would be implemented to provide GIS-based decision-making for project planning, conceptualization, design, and development.

New Age Analytics, Machine Learning, and Artificial Intelligence in E-Governance

- Several new dashboards have been developed across departments like Champions of Change Dashboard which are powered by analytics and real-time data.
- Another G2C innovation in the education sector is a career platform that provides training in demand technologies and areas. This platform is powered using Artificial Intelligence.
- The government of Andhra Pradesh in collaboration with Microsoft has deployed a combination of Artificial Intelligence and Machine Learning to predict possible drop-outs in school and provide immediate interventions through counseling and support.
- Blockchain technology has been deployed in Tamil Nadu and Telangana for the digitization of land records.

Conclusion

With the implementation of high-speed and low latency 5G facilities, AR/VR, real-time recognition systems, and IoT there would be transformative implications on healthcare, education, governance, etc. However, there is also a need to put proper governing principles for technologies ensuring that they are equitable, accessible, and fair.

7. E-Governance in Tourism

Background

- E-governance in the aviation sector holds the key to the improvement of the Tourism sector in India.
- In the year 2021, the Ministry of Civil Aviation launched e-Governance for Civil Aviation (e-GCA), with an aim of bringing about ease of doing business, enhancing transparency and automation of the processes as well as functions of the civil aviation regulator in India that is DGCA (Directorate General of Civil Aviation).

Supportive Infrastructure

- Supportive Infrastructure covers all other related activities like transport platforms (road, railway, airport) and utility services.
- The **FASTag initiative** (e-governance measure) was launched by the Government of India in 2016 to reduce traffic at toll booths, enhance time efficiency and increase digital transactions.
- In 1999, the Ministry of Railway launched a vertical titled Indian Railway Catering and Tourism Corporation Ltd (IRCTC) that aimed at providing ICT-based services like ticket booking.

Conclusion

Initiatives of e-governance are acting as catalysts for the growth of the Tourism sector. Overall conditions of tourist destinations are getting improved by ICT interventions like Aadhar, FASTag, IRCTC, etc. The electronic Authorization programme and Passport Seva Programme have created a significant improvement in travel documentation.

SCIENCE REPORTER

1. 5G: The Promise of Zippier Speeds!

- In India, 5G services were launched on 1 October 2022.
- However, all over India to get 5G services, it may take another 12-15 months.
- 5G stands for the global wireless standards or the 5th generation of mobile networks.

Advantage

- Compared to 150-200 MBPS top speed in 4G, top theoretical data speed in 5G is 20 gigabits per second (GBPS).
- It will sharply reduce the current latency of 50-100 milliseconds to 5-20 milliseconds.
- Enable much faster downloads of movies, music and other multimedia files.
- Other revolutionary uses would be ushered in Personal healthcare, Connected ambulance, Education without boundaries and two way connected classrooms etc.
- Similarly, rural revolution can transform the way agriculture and allied activities are done.
- Monitoring soil condition, sowing and harvesting operations, weather, and animal health through wireless networks, market connectivity will be increased.
- The proposed Air Fibres will even do away with the need for a cabled broadband hotspot requirements.
- It will lead to a future when Augmented Reality (AR), Virtual Reality (VR) and the real-time 3-D version of the two known as Metaverse, can be offered on the smallest portable devices.
- Interactive shopping experience- Eliminate queues at checkout and future of shopping may be contactless.
- 5G is expected to shape a new future of work flexibility on hybrid models.

3GPP and 5Gi

- 3GPP is a 3rd Generation Partnership Project which fuels the global 5G standards.
- To enjoy 5G you need a handset that adheres to this standard.
- This involves special hardware and a 4G phone cannot be 'upgraded' to 5G networks. Hence all 5G handsets worldwide adhere to the 3GPP standard.
- 5Gi is a Made-in-India 5G standard jointly created by scientists of IIT Hyderabad and IIT Madras.
- It is also known as Radio Interface Technology or RIT and achieves longer range by going down in frequency from the band suggested in the 3GPP 5G standard, which is 700 MHz to 52GHz.
- The main difference between the 5G and 5Gi is that the 5Gi standard uses what is called Low Mobility Large Cell (LMLC) technology to extend its range by adopting lower frequency bands.

Hence, from home hotspots to healthcare, from metaverse on mobile phones to heightened command and control for military operations, the 5G are poised to become life changers for India.

2. Social Media to Amplify Scientific Research

- Nowadays a large proportion of scientific information too can be accessed on social networks like ResearchGate, LinkedIn, Twitter, Facebook, YouTube, etc.
- Of late, researchers have started to highlight their scientific projects, findings, and achievements for global visibility and substantially increase the impact and citations.
- They are also exploiting it to build online communities, to exchange ideas, pose questions, send enquiries and explore collaboration opportunities.
- Journals around the world are increasingly marking their presence on social media channels.
- Studies published in Nature, PlosOne and researchers from Cornell University showed that journals having social media plugins get significantly higher social media mentions and shares than those that do not provide plugins.

3. Nobel Prize: Chemistry

Click Chemistry

- The Nobel Prize in Chemistry 2022 was awarded jointly to Carolyn R. Bertozzi, Morten Meldal and K. Barry Sharpless "for the development of click chemistry and bioorthogonal chemistry".
- Click chemistry is about making difficult processes easier.
- In this process molecular building blocks snap together quickly and efficiently.
- Carolyn Bertozzi has taken click chemistry to a new dimension and started utilising it in living organisms.
- It opened the floodgates for molecular constructions that were very difficult to master and which were an obstacle for the development of new pharmaceuticals.

Nobel Prize: Physics

Quantum Entanglement

- The Nobel Prize in Physics 2022 was awarded jointly to Alain Aspect, John F. Clauser and Anton Zeilinger “for experiments with entangled photons, establishing the violation of Bell inequalities and pioneering quantum information science”.
- The laureates’ development of experimental tools has laid the foundation for a new era of quantum technology.
- They have conducted groundbreaking experiments using entangled quantum states, where two particles behave like a single unit even when they are separated.
- Their results have cleared the way for new technology based upon quantum information.
- The ineffable effects of quantum mechanics are starting to find applications.
- There is now a large field of research that includes quantum computers, quantum networks and secure quantum encrypted communication.

Nobel Prize: Physiology & Medicine

Paleogenomics

- The Nobel Prize in Physiology or Medicine 2022 was awarded to Svante Pääbo “for his discoveries concerning the genomes of extinct hominins and human evolution”.
- Pääbo’s seminal research gave rise to an entirely new scientific discipline; paleogenomics.
- It provided important information on how the world was populated at the time when Homo sapiens migrated out of Africa and spread to the rest of the world.
- Svante Pääbo accomplished something seemingly impossible: sequencing the genome of the Neanderthal, an extinct relative of present-day humans.
- He also made the sensational discovery of a previously unknown hominin, Denisova.
- Neanderthals lived in the west and Denisovans in the east on the Eurasian continent. Interbreeding occurred when Homo sapiens spread across the continent, leaving traces that remain in our DNA.
- His mission in paleogenomics will help us to write the history of an era that we have never seen.
- It will also help us understand future paths in human evolution and may help us evade the impending geographical and social catastrophes that may come our way.

4. Occupational Health Issues- Preventive Measures Necessary

- As per the International Labor Organization, about 2.3 million people die every year due to occupational accidents or diseases worldwide.
- Occupational health includes diseases like cancer, musculoskeletal diseases, respiratory diseases, hearing loss, stress-related disorders and communicable diseases etc.

There are mainly seven types of occupational hazards:

1. Security hazards: It includes working with heavy and moving machines, great heights, fire and electric shocks etc.
2. Biological hazards: Exposure to biological materials such as animals, microbes, body fluids and other products during work. For example COVID and HIV infection.
3. Physical hazards: For example extreme adverse weather conditions of temperature, sound, dust etc.
4. Ergonomic hazards: Physical posture and working conditions are painful for the body in long term results in this hazard.
5. Chemical hazards: Contact with hazardous chemicals such as cleaning chemicals, paints, acids, solvents, etc.
6. Organization related hazards: These are stressors that cause psychosocial hazards such as tension, anxiety, or strain to workers.
7. Environmental hazards: Continuous changes in climate and temperature also have serious impacts on the physical and mental health of workers.

Therefore the guidelines issued by the govt. Needs to be followed in letter and spirit to avoid occupational hazards and human health issues.

5. Remembering Har Gobind Khorana on his Birth Centenary Year 2022

- The year 2022 was the Birth Centennial of India-born Nobel Laureate biologist Har Gobind Khorana, know as the ‘Interpreter of the language of genetic code’
- He was the first person from India and also the Asian continent to receive the Nobel Prize in Physiology or Medicine in 1968.
- He deduced the language or rule by which information in the molecular sequence of DNA-encoded mRNA is translated into amino acid sequences of proteins.
- Every three nucleotides in mRNA dictate the order of 20 possible amino acids in the polypeptide chain.
- This triplet-nucleotide-based genetic code is common and fundamental to all forms of living organisms that use it to read the information in the DNA.
- Prof. Khorana and his co-researchers for the first time elucidated the chemical synthesis of a functional gene completely from yeast.

DOWN TO EARTH

1. Dunkel Draft: SPLIT ON AGRI-LIBERALISATION

Context: A trail of farmers' protest against agri-liberalization and revolutionary farm laws.

About the Dunkel Draft

- Arthur Dunkel was the Director-General of the GATT during 1980-1993.
- During his time the Uruguay Round of multilateral trade negotiations was launched in September 1986.
- The "Dunkel Draft" in December 1991 was an historic turning point in the negotiations.
- He was responsible for the future essence of the current World Trade Organization.

How did the farmers' respond?

- They are divided on the merits of the General Agreement on Tariffs and Trade (gatt) proposals to patent plants and genes.
- Some of them are concerned about the future policies and think it will destroy agriculture on the lines of the British treatment in the 19th century.
- However, the govt. and some of the farmer organisations support the idea of agri-liberalization as it will lead to diversification and more profit on the investments.

Farm laws and protests

- In 2021, the "world's longest" farmers' protest on the outskirts of Delhi forced the govt. to take back three legislations termed as "transformative" steps to liberalise agri-markets.
- However, the political parties and farmers' unions are also split on the same issues and blame each other as propagandists.

Way forward

As India is a WTO signatory it will have to balance the interests of its farmers' huge poor population at the same time upholding the international commitments. The issues of farm subsidies, buffer stock, food security, increasing farmers' income and agricultural reforms need to be addressed amicably.

2. KYOTO PROTOCOL: GHOST WILL RETURN

Context: Commitments have been made only by the most powerful nations.

The Protocol

- Adopted on December 11, 1997 and entered into force on February 16, 2005.
- It operationalised the United Nations Framework Convention on Climate Change by committing parties to limit and reduce greenhouse gases emissions.

The issues

- The reduction target of 5.2 % over 1990 levels simply means "business as usual" at 1996 levels for industrialized countries.
- Compliance- The commitments have been made only by the most powerful nations of the world like the usa, Japan and the European Union.
- Non-binding- No mechanism of enforcing the targets or putting sanctions on big powers.

Beyond Kyoto

- In 2015 the world replaced the Kyoto Protocol with the Paris Agreement.
- The Paris Agreement encourages voluntary climate commitments.
- It aims at reducing the increase in the global average temperature to well below 2 °C above pre-industrial levels and appeals to the Parties to achieve a 1.5 °C target.

3. VULTURE: FLIGHTS INTO OBLIVION

Context: Environmental crisis behind the steep decline of vulture

- Eight species of vulture face extinction in India and other parts of the world.
- Vulture population declined from 40,000 in 2003 to 18,645 in 2015.
- The diclofenac and hexachloro cyclohexane levels need to drop to below 1% to arrest the decline.
- In 2022, the Bombay Natural History Society recommended banning three non-steroidal anti-inflammatory drugs to arrest the decline.
- The drugs—aclofenac, ketoprofen and nimesulide—were introduced as alternatives to diclofenac, the NSAID India banned in 2006 for animal use.
- In India, absence of baseline data makes assessments difficult.

4. BHOPAL GAS TRAGEDY: SUBTERRANEAN LEAK

Context: The chemicals present in the soil of the factory are leaching into the groundwater and leading to slow and deliberate poisoning of residents.

- The Bhopal gas disaster happened in Union Carbide India Ltd. on the night of 2–3 December 1984.
- Studies have shown the persistent groundwater pollution from the leakages even after decades of plant's closure.
- The Union Carbide used to produce three different kinds of pesticides: Carbaryl (trade name Sevin), Aldicarb (trade name Temik) and a formulation of Carbaryl and gamma-hexachlorocyclohexane (trade name Sevidol).
- It also used heavy metals like mercury and chromium.
- Most of these products and elements are persistent and toxic.
- Their health impacts include damage to the brain and nervous system, chromosomal abnormalities etc.

5. ZONOTIC DISEASES: RISE OF PANDEMICS

Context: There has been a sudden spurt of zoonotic diseases in the past few years.

- There has been a sudden spike of zoonotic diseases in the past few years.
- As per the World Health Organization, 75% of new diseases in the past decade had been caused by pathogens from animals or products of animal origin.
- A famous example is the Nipah outbreak in Kerala which is considered to be better in terms of healthcare across the country.
- Although it was contained in 2018 in Kerala, however, the study shows that viruses do not remain inactive for long.
- The Nipah virus outbreak is part of a clutch of emerging pandemics threatening the world due to global warming and environmental pressure.
- The new threats are serious and require a fresh approach on how to tackle them.

Comprehensive Learning Programs by BYJU'S to Crack IAS



BYJU'S Online Classroom for IAS

A comprehensive IAS program with a combination of live online lectures, self-assessment tests, and exclusive doubt clearing sessions.



BYJU'S IAS Tablet

Prepare at your own convenience, anywhere and anytime with the BYJU'S IAS Tablet.



BYJU'S IAS Classroom Program

Prepare for Prelims and Mains with India's Leading IAS trainers.



Mentor Support

A dedicated mentorship helpline to provide complete guidance throughout the preparation process.



Student Portal

Get access to recorded sessions of the Weekly Webinar, Issues in News, Current Affairs Magazine, Gist of Yojana and Practice Sets.



Current Affairs Webinar

Twice a week live webinar classes to discuss current affairs followed by handouts.



Study Material

In-depth coverage of syllabus which includes the following study material: Indian Polity by M Laxmikanth, India's Ancient Past by R S Sharma, History Of Modern India by Bipan Chandra, Ethics, Integrity and Aptitude by P N Roy Chowdhury and G Subba Rao +15 more titles.



Test Your Knowledge

Perfect your answer writing skills for the Civil Services mains exam by improving your knowledge with modular tests at regular intervals, question paper discussions, answer writing strategies, essay writing strategies and personalised analysis of the answers.



Current Affairs Updates

All the three stages of the Civil Services Exam – Prelims, Mains and the Interview require the aspirants to be up-to-date with the current affairs. Regular and in-depth current affairs updates will help you stay updated.

Additional Features

- Daily Video Analysis of The Hindu
- **YouTube Videos:** International Relations This Week, Economy This Week, Target Prelims etc
- Objective and Descriptive Type Unit Tests
- **Daily Updates on Free IAS Prep Website:** Comprehensive News Analysis, PIB Summary
- Gist of Yojana, Kurukshetra and Economic and Political weekly magazines
- Current Affairs Magazine
- **Test Series** – Prelims and Mains
- Interview Guidance