21-Days Study Plan (Day 2)

1. Which of the following is a bio diesel plant?
A. Jatropha   B. Rose
C. Pepper   D. Noni
Ans. A
Sol. **Jatropha,** the **wonder plant** produces seeds with an oil content of **37%.** The oil can be combusted as fuel without being refined. It burns with a clear **smoke-free flame**, tested successfully as **fuel** for simple diesel engine.

2. Who has been appointed as the Managing Director (MD) of the State Bank of India (SBI) on 20 January 2020?
A. Devendra Chandra Sinha   B. Challa Sreenivasulu Setty
C. Rahul Bhatnagar   D. Satyendra Mohan Rawat
Ans. B
Sol.
● **Challa Sreenivasulu Setty** has been appointed as the Managing Director (MD) of the State Bank of India (SBI) on 20 January 2020.
● He is appointed for a period of three years.
● He is currently serving as the deputy managing director (DMD) of the SBI.
● In **1988**, he joined as a Probationary **Officer** in SBI's Ahmedabad Circle.

3. Napoleon Bonaparte was a _____ military and political leader.
A. American   B. British
C. German   D. French
Ans. D
Sol. **Napoleon Bonaparte** was a **French** military and political leader who rose to prominence during the **French Revolution** and led several successful campaigns during the Revolutionary Wars.

4. Which Indian contemporary artist was awarded the 7th Joan Miro Prize 2019?
A. Nalini Malani   B. Atul Dodiya
C. Arpita Singh   D. Vivan Sundaram
Ans. A
Sol.
• **Artist Nalini Malani** has won the seventh edition of the Joan Miro Prize.
• **Joan Miro Prize** is an international award that comes with a 70,000-Euro ($78,000) cash prize.
• It is considered one of the most prestigious art awards in the world.
• The Joan Miro prize is granted by the Joan Miro Foundation and the La Caixa Foundation.

5. The kidneys in human beings are a part of the which of the following system?
A. Circulation   B. Respiration
C. Excretion   D. Transportation
Ans. C
Sol.
   • Excretion is the process by which waste products of metabolism and other non-useful materials are eliminated from an organism.
   • In vertebrates, this is primarily carried out by the lungs, kidneys and skin.

6. Which country hosted the 13th COP of the Convention on the Conservation of Migratory Species of Wild Animals (CMS)?
A. India   B. Switzerland
C. Japan   D. South Africa

Ans. A
Sol.
• India hosted the 13th Conference of Parties (COP) of the Convention on the Conservation of Migratory Species of Wild Animals (CMS).
• The conference was held during 17-22 February 2020 at Gandhinagar in Gujarat.
• The theme of CMS COP13 is "Migratory species connect the planet and we welcome them home".
• This conference was inaugurated by the Prime Minister Narendra Modi on February 17, 2020.

7. Who was the Finance Minister of India during the New Economic Policy (1991)?
A. Manmohan Singh   B. Uma Kapila
C. Pranab Mukherjee   D. Jaswant Singh
Ans. A
Sol.
Manmohan Singh was the Finance Minister of India during the New Economic Policy (1991). He was also the Prime Minister of India during 2004 to 2014.

8. Ajatasatru was son of_____.
A. Bimbisara   B. Udayin
C. Shisunaga   D. None of above
Ans. A
Sol.
• Ajatashatru was a king of the Haryanka dynasty of Magadha in North India. He was the son of King **Bimbisara** and was a contemporary of both Mahavira and Gautama Buddha.
• He forcefully took over the kingdom of Magadha from his father and imprisoned him.

9. What is the name of ceremony held at DefenceExpo, 2020 on 7 feb, for signing Mou, major announcements etc.?
A. Sath   B. Bandhan
C. Hathiyar   D. Kutumb
Ans. B
Sol.
On 7 feb, 2020 Bandhan ceremony was held.
● The ceremony aimed at signing MOUs, important announcements, launch of products etc.
● In this ceremony DRDO handed over 15 licenses for Transfer of Technology to 17 industries on DRDO developed technologies.
● It was presided over by Defence Minister Rajnath Singh.
● In this Defexpo, DRDO signs a technology development contract with Rosoboronexport Russia.

10. What is the name given to the common currency of the European Union ?
A. Rupee   B. Rouble
C. Franc   D. Euro
Ans. D
Sol.
• The currency,Euro, is officially used by the institutions of the European Union and four other **European countries.**

- The European Union is a political and economic union of 27 member states that are located primarily in Europe. Its members have a combined area of 4,233,255.3 km² and an estimated total population of about 447 million.

11. **Read the following passage and fill in each blank with words chosen from options given.**

In traditional Chinese culture, qi or chi is believed to be a vital force forming part of any living _____ (###Q1###). There is widespread belief in the reality of qi, with believers describing it as a vital energy whose flow must be _____ (###Q2###) for health. Qi is a non-scientific, _____ (###Q3###) concept, which has never been directly observed, and is unrelated to the concept of energy used in science. Qi is the central underlying _____ (###Q4###) in Chinese traditional medicine and in Chinese martial arts. Qi is a _____ (###Q5###) word. The unabridged Chinese dictionary lists 23 similar meanings for it.

Select the most appropriate option to fill in blank No.1

A. syndicate   B. organization
C. quintessence   D. entity

Ans. D

Sol. The passage implies that Qi is vital for any living organism. 'Syndicate' is used to refer to a group of individuals or organizations combined to promote a common interest. It is usually used in the context of 'institutions' than in 'living organisms'. 'Organization' is an organized group of people with a particular purpose, such as a business or government department. It can be eliminated on a similar line of reasoning. 'Quintessence' is the most perfect or typical example of a quality or class. It is the 'best of the batch'. Hence, it also does not cater to the requirement of representing generic living organisms. 'Entity' is used to refer to the existence of a thing or an organism. When 'entity' is preceded with 'living', it refers to every living organism, as required by the passage. Therefore, option D is the required answer.

12. **Select the most appropriate option to fill in blank No.2**

A. imperative   B. balanced
C. impeded   D. sundered

Ans. B

Sol. The passage talks about the relation between the energy flow and health of the organism. 'Imperative' is used to refer to something which is of vital importance; crucial. The word does not structurally fits in the sentence. It should have been 'is imperative', instead of 'must be imperative'. 'Impede' is to delay or prevent (someone or something) by obstructing them. This goes against the flow of the sentence. The passage aims to imply the importance of the energy flow (and not undermine it). With similar reasoning, 'Sunder', which is used to imply that something has split apart, can also be eliminated. 'Balance' is keeping or showing a balance; in good proportions. Using it in the passage would imply that in order to be healthy, the flow of energy must be balanced, which is what the passage hints at. Therefore, option B is the correct answer.

13. **Select the most appropriate option to fill in blank No.3**

A. consequential   B. authenticated
C. unverified   D. unspecified

Ans. C

Sol. The passage mentions the lack of scientific base of the concept of 'Qi'. It mentions the absence of scientific background. 'Authenticate' is to prove or show something to be true, genuine, or valid. It is completely against the meaning implied by the passage, and hence can be eliminated. 'Consequential' is something which follows as a result or effect. As the passage mentions that the concept is not scientific, it implies that there is no

causation link established between the concept and the actual results. 'Unspecified' is something which is not stated clearly or exactly. It is not apt to use 'unspecified' in the blank, as it would imply that the concept is itself unknown. What the passage rather implies, is that the concept is specified, but not backed by any observation. 'Unverified' is something which is not having been proven to be true, accurate, or justified. It fits the blank, as using it in the blank would support the passage's claim that the theory is not backed by science. Therefore, option C is the correct answer.

14. **Select the most appropriate option to fill in blank No.4**
A. theorem
B. principle
C. principal
D. deduction
Ans. B
Sol. The passage mentions the importance of the concept of "Qi" in Chinese medicine and martial arts. 'Deduction' is the inference of particular instances by reference to a general law or principle. As the passage has already mentioned that the concept has no scientific base, 'deduction' can be eliminated. On similar reasoning, 'theorem', which is a general proposition not self-evident but proved by a chain of reasoning, can be eliminated as well. 'Principal' is something which is first in order of importance. It does not fits structurally in the blank. It could've replaced 'central underlying', but is does not fits in the blank. 'Principle' is a fundamental source or basis of something. Using it in the blank would imply that the concept of 'Qi' is starting point over which medicine and martial arts are based, as is hinted by the passage. Therefore, option B is the correct answer.

15. **Select the most appropriate option to fill in blank No.5**
A. homonymy
B. ambiguous
C. monosemous
D. polysemous
Ans. D
Sol. The passage talks about the fact that there are various definitions of the word 'Qi'. 'Ambiguous' is something which is not having one obvious meaning. It could've fit the blank, but as it begins with a vowel, and the blank is preceded with the article 'a', hence, 'ambiguous' can be eliminated. 'Monosemous' is used to describe words that have only one meaning. It is completely opposite to what the passage hints at. Amongst the remaining two options, 'Homonymy' are words which sound alike or are spelled alike, but have different meanings, while 'Polysemous' is the capacity for a word, phrase, or symbol to have multiple meanings, which are usually related. In the case of 'Homonymy', it is an accidental similarity as two distinct meanings arise from the same word, while 'polysemy' is not accidental. As the passage mention that the meanings are related to one another, therefore option D is the required answer.

16. **Read the following passage and fill in each blank with words chosen from options given.**
An ocean current is a seasonal directed movement of seawater generated by forces acting upon it, like wind, the Coriolis effect, _____ (###Q1###) waves on the surface, temperature differences, while tides are caused by the gravitational pull of the Sun and Moon. Depth _____ (###Q2###), shoreline configurations, and interactions with other currents influence a current's direction and strength. Ocean currents are _____ (###Q3###) horizontal water movements, and because they flow for great distances, they create the global conveyor belt which plays a _____ (###Q4###) role in determining the climate of many regions. For example, warm currents travelling along temperate coasts increase the _____ (###Q5###) of the area.

Select the most appropriate option to fill in blank No.1

A. tidal   B. underwater

C. breaking   D. electromagnetic

Ans. C

Sol. The passage talks about the causes of ocean currents. As the clause mentions that the waves are on the surface, 'underground' can be eliminated. Further, the passage mentions that 'tidal waves are caused by gravitational pull of the Sun and Moon'. The connector used to join the two phenomenon is 'while', which is used to express a mild contrast. Therefore, 'tidal' can be eliminated as well. 'Electromagnetic' waves refer to the waves of the electromagnetic field, carrying electromagnetic radiant energy. It is not used in the context of 'ocean waves'. 'Breaking' waves are waves whose amplitude reaches a critical level at which simple physical models that describe wave dynamics often become invalid, and waves tend to acquire huge kinetic energies. It is phenomenon majorly occurring on ocean surface and can hence affect ocean currents. Therefore, option C is the correct answer.

17. **Select the most appropriate option to fill in blank No.2**

A. contours   B. silhouette

C. acreage   D. delimit

Ans. A

Sol. The passage talks about the factors which influences an ocean current's strength and direction. 'Silhouette' is the image of a person, animal, object or scene represented as a solid shape of a single color, usually black. It is seldom used in the context of ocean and ocean waves. 'Acreage' is an area of land, typically when used for agricultural purposes. It can be eliminated too. 'Contour' is an outline representing the shape or form of something. 'Depth contour' would, hence imply, the outline of seabed or the variations of the ocean depth. 'Delimit' is to determine the limits or boundaries of something. Although both mean essentially the same thing, contour is used as a noun, while delimit is a verb, As per the context of the blank, a noun is required to fill the blank. Hence, option A is the correct answer.

18. **Select the most appropriate option to fill in blank No.3**

A. inheritedly   B. tropically

C. acumen   D. primarily

Ans. D

Sol. The passage talks about the relation between ocean current and horizontal water movements. 'Acumen' is the ability to make good judgements and take quick decisions. It is out of context, and hence can be eliminated. 'Tropical' is used to refer to the region close to the equator. As the passage has already mentioned that the currents are global, 'tropical' could be eliminated as well. 'Inherited' is to derive qualities or characteristics from one's parents or ancestors. Using it in the passage would again be out of context, inheritance is a field unrelated to ocean currents. Further, if a connection even exists, the passage does not hints at any. Therefore, it can be eliminated. 'Primarily' means something to be essentially be associated with something else. Using it in the passage would mean that 'Ocean currents' mainly consist of horizontal waves, which is what the passage hints at too. Hence, option D is the correct answer.

19. **Select the most appropriate option to fill in blank No.4**

A. trifling   B. dominant

C. picayune   D. indispensable

Ans. B

Sol. The passage talks about the ocean currents and how they influence the climate of the regions that they pass through. The fact that it finds its mention in the passage, implies that the ocean currents are consequential in determining the climate of the regions. 'Picayune' is something of little value or significance, and it can hence be eliminated. The passage further mentions the currents impact on the temperate regions. As 'Trifling' is referred to something which is unimportant or trivial, it can be eliminated using the above mentioned reasoning. Amongst the remaining two options, 'Indispensable' is something which is absolutely necessary, while 'Dominant' is something having power and influence over other things. Both imply that currents have a major role in determining the climate, which is what the passage hints at too. As 'indispensable' starts from a vowel, it must be preceded with the article 'an'. As the blank is preceded with 'a', 'dominant' is the required answer. Therefore, option B is the correct answer.

20. **Select the most appropriate option to fill in blank No.5**

A. weather

B. climate

C. temperature

D. clime

Ans. C

Sol. The passage talks about how the currents affect the region they flow through. It is evident from the passage that the currents play an important role in influencing the climate those regions. 'Weather' is the state of the atmosphere at a particular place and time, while 'climate' is the weather conditions prevailing in an area in general or over a long period. Both these are qualitative in nature. They are used to describe the state of atmosphere, but no numerical value can be ascertained with them. It is obvious from the structure of the sentence that a quantitative measure would be used to fill the blank. 'Clime' is a region considered with reference to its climate. As it is used to refer to an area instead of the climate of the area, it can be eliminated as well. 'Temperature' is the degree or intensity of heat present in a substance or its surroundings. As temperature is a quantitative measure, 'increase in temperature' makes perfect logical and contextual sense. Hence, option C is the correct answer.

21. Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follows(s) from the statements.

Statements:

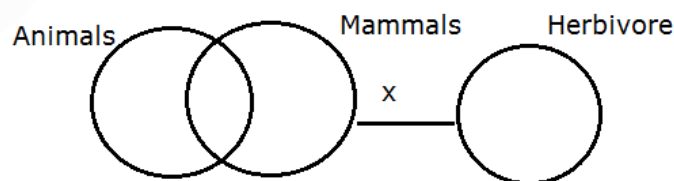Some animals are mammals.

No mammal is herbivore.

Conclusions:

I. No herbivore is mammal.

II. Some mammals are animals.

III. No animal is herbivore.

A. Only conclusions I and II follow.

B. Only conclusions II and III follow.

C. None of the conclusions follows.

D. Only conclusions I and III follow.

Ans. A

Sol.

The least possible Venn-diagram is-

Conclusions:
I. No herbivore is mammal - (It follows as its obvious from the above diagram.)
II. Some mammals are animals - (It also follows as its obvious from the above diagram.)
III. No animal is herbivore - (It does not follows as some parts of animal is mammal and no mammal is herbivore.)
So, only conclusions I and II follow.
Hence, option (A) is the correct response.

22. Consider the following statement to be true even if they seem to be at variance from commonly known facts and decide which of the conclusions logically follows from the statements.
Statements:
All roads are vehicles.
Some vehicles are trees.
Conclusions:
I. Some trees are roads.
II. All vehicle are trees.

A. Both conclusions I and II follow	B. Only conclusion I follows
C. Neither conclusion I nor conclusion II follow	D. Only conclusion II follows

Ans. C
Sol.
The least possible Venn-diagram is-
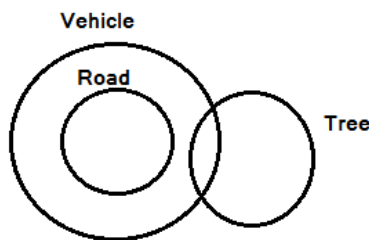
Conclusions:
I. Some trees are roads. (It does not follow as it shows surety.)
II. All vehicle are trees. (It also does not follow as it shows surety.)
So, Neither conclusion I nor conclusion II follow.
Hence, option(C) is the correct response.

23. In the following question, some statements followed by some conclusions are given. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusions logically follows the given statements.
Statements:
All teachers are painters.
Some painters are rich.
Conclusions:
I. All painters are teachers.
II. Some rich are not painters.

A. Neither conclusion I nor II follows	B. Only conclusion I follows
C. Either conclusion I or II follows	D. Only conclusion II follows

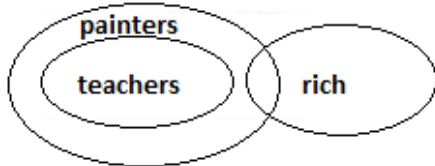Ans. A

Sol.
The least possible Venn diagram is:

Conclusions:
I. All painters are teachers - (false) it is not a definite case.
II. Some rich are not painters - (false) it is not a definite case.
So, neither I nor II follows.
Hence, the correct response is option (A).

24. In the following question, some statements followed by some conclusions are given. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusions logically follows the given statements.
Statements:
Some fruits are vegetable.
All vegetables are plants.
Conclusions:
I. Some plants are vegetables.
II. Some fruits are plants.
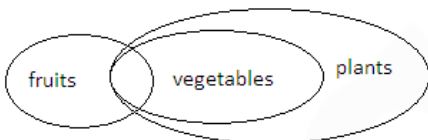A. Only conclusion II follows   B. Both conclusion I & II follows
C. Only conclusion I follows   D. Neither I nor II follows
Ans. B
Sol.
The least possible Venn diagram is:

Conclusions:
I. Some plants are vegetables - True, it is a definite case.
II. Some fruits are plants - True, it is a definite case.
Hence, option (B) is correct.

25. Three statements are given followed by four conclusions numbered I, II, III & IV Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
Statements:
Some rings are phones.
All phones are laptop.
Some laptops are stations.
Conclusions: i. Some stations are rings
ii. Some phones are stations   iii. Some laptops are rings
iv. All rings are stations is a possibility.
A. None follow.
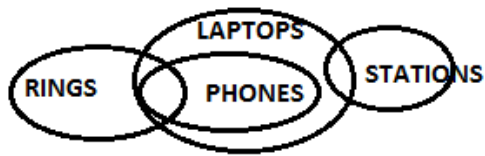B. Only conclusion III & IV follow.
C. Only conclusions I & III follow
D. Only conclusion II and either conclusion I or IV follows.

Ans. B
Sol.

Conclusions:
i. Some stations are rings. – (FALSE) as there is no relation between them.
ii. Some phones are stations. –(false) it is a possibility case not a definite one
iii. Some laptops are rings – (true) it is clearly shown in the diagram.
iv. All rings are station is a possibility.- (True) as there is no definite relation between rings and stations so it might be possible.
Hence, option B is the correct response.

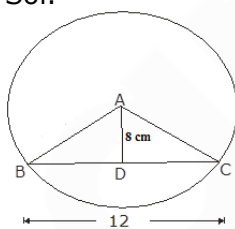26. Find the odd one out from the given figures.

A.

B.

C.

D.

Ans. D
Sol. In option A, B and C the symbols are moving in the clockwise direction. The symbol are in sequence like ' ☆ ', 'μ', 'pie' and '?'
Hence, option D is the correct response.

27. A 8 cm long perpendicular is drawn from the centre of a circle to a 12 cm long chord. The diameter of the circle is
A. 10 cm   B. 12 cm
C. 16 cm   D. 20 cm
Ans. D
Sol.

As shown in figure,
Using phythagoras theorem
$BD^2 + AD^2 = AB^2$
$\rightarrow AB^2 = 8^2 + 6^2 = 64 + 36 = 100$
$\rightarrow AB = 10$
Diameter of circle = 2 × AB = 2 × 10 = 20 cm

28. What is the reflection of the point (5, 2) in the line x = - 3?
A. (– 11, 2)   B. (– 11, - 2)
C. (11, - 2)   D. (11, 2)
Ans. A
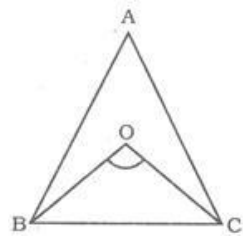Sol. Given points are (5,2)
X = - 3 is a line parallel to y axis
Then the reflected coordinates is (- 5 + 2 × - 3,2) = (- 11,2)

29. The internal bisectors of ∠ABC and ∠ACB of ΔABC meet each other at O. If ∠BOC = 110°, then ∠BAC is equal to
A. 40°   B. 55 °
C. 90°   D. 110 °
Ans. A
Sol.

Let angle BAC = x
BOC is the incentre.
Formula for angle BOC = 90 + angle BAC /2
110 = 90 + x/2
20 = x/2
x = 40

30. A regular hexagon having its side as 15 cm. Calculate the area of hexagon?
A. 536.23 cm^2 B. 570.87 cm^2
C. 510.93 cm^2 D. 584.56 cm^2
Ans. D

Sol. ⇒ We know that Area of regular hexagon = $\dfrac{3\sqrt{3}}{2} a^2$

⇒ ∴ Area of hexagon = $\dfrac{3\sqrt{3}}{2} \times 15^2$

= 584.56 cm^2

31. ΔABC is right angled at B. If m ∠A = 60 °, then what is the value of 1/√3 Cosec C?
A. 2/√3   B. 2/3
C. √2/√3   D. √2/3
Ans. A
Sol. Triangle ABC is a right angle
∠ B = 90 °
∠ A = 60 °
∠ C = 180 - 90 - 60 = 30 °

$$\dfrac{1}{\sqrt{3}} cosec 30° = \dfrac{1}{\sqrt{3}} \times 2 = \dfrac{2}{\sqrt{3}}$$

32. A is 50% more efficient than B. Working together they finished a work in 15 hours. If B will work alone, how long he will take to finish the same work?

A. 24 hrs

B. 36 hrs

C. $37\frac{1}{2}$ hrs

D. $32\frac{1}{4}$ hrs

Ans. C

Sol. Ratio of efficiency

$A:B = 150:100 = 3:2$

Ratio of time taken

$A:B = 2:3$

Efficiency of B

$$= \frac{\frac{1}{15}}{\frac{1}{2}+\frac{1}{3}} \times \frac{1}{3} = \frac{2}{75}$$

Time taken by B

$$= \frac{75}{2} \, hrs = 37\frac{1}{2} \, hrs$$

33. Two cyclists started simultaneously towards each other and meet each other 3 hours 20 minutes later. How much time will it take the slower cyclist to cover the whole distance if the first arrived at the place of departure of the second 5 hours later than the second arrived at the point of departure of the first?

A. 5

B. 8

C. 9

D. 7

Ans. A

Sol.

Since the two cyclist meet after = 200 minutes they cover 0.5% of the distance per minutes and 30% per hour.

This condition is satisfied only if the slower cyclist takes 10 hour. and faster cycle takes 5 hours

34. If the ages of A and C are added to twice the age of B, the total becomes 59. If the ages of B and C are added to thrice the age of A, the total becomes 68 and if the age of A is added to thrice the age of B and thrice and age of C, the total becomes 108. What is the age of A?

A. 18 year

B. 15 years

C. 12 years

D. 20 years

Ans. C

Sol. A+C+2B=59, 3A+B+C=68 and A+3B+3C=108

B+C=68-3A and A+3(B+C)=108

A+3(68-3A)=108

8A=204-108

A=96/8=12 years

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