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**TEST BOOKLET**

**Test Booklet Series**

**T.B.C: P-SIA-A-GS**

**GENERAL STUDIES - PAPER - II**

**Serial: GSP11-2025AIMT2**

**CSAT**

**ALL INDIA MOCK TEST - II**

**EXPLANATION**

**B**

**Time Allowed: Two Hours**

**Maximum Marks: 200**

**I N S T R U C T I O N S**

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET DOES *NOT* HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS, ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. ENCODE CLEARLY THE TEST BOOK SERIES **A, B, C or D** AS THE CASE MAY BE IN THE APPROPRIATE PLACE IN THE ANSWER SHEET.
3. You have to enter your Roll Number on the Test Booklet in the Box.  
Provided alongside. *DO NOT* write anything else on the Test Booklet.
4. This Test Booklet contains **80 items** (questions). Each item is printed in **English**. Each item comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each item.
5. You have to mark all your responses **ONLY** on the separate Answer Sheet provided. See directions in the Answer Sheet.
6. All items carry equal marks.
7. Sooner than you proceed to mark in the Answer Sheet the response to various items in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per instructions sent to you with your Admission Certificate.
8. After you have completed filling in all your responses on the Answer Sheet and the examination has concluded, you should hand over to the Invigilator *only the Answer Sheet*. You are permitted to take away with you the Test Booklet.
9. Sheets for rough work are appended in the Test Booklet at the end.
10. Penalty **for Wrong Answers**.

THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY A CANDIDATE IN THE OBJECTIVE TYPE QUESTION PAPERS.

- (i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, **one-third (0.83)** of the marks assigned to that question will be deducted as penalty.
- (ii) If a candidate gives more than one answer, it will be treated as a **wrong answer** even if one of the given answers happens to be correct and there will be same penalty as above to that question.
- (iii) If a question is left blank, i.e., no answer is given by the candidate, there will be **no penalty** for that question.

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**S.(1) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 1**

Social capital analysis provides valuable insights into the evolution of renewable energy communities, revealing that civic norms within households, social trust and structural interactions within neighbourhoods constitute the social contexts in which these communities develop and thrive.

1. Which one of the following statements best reflects what is implied by the passage?
  - (a) Renewable energy communities thrive primarily when neighbourhoods are structured around shared economic benefits, symbiotic relationships, and mutual trust.
  - (b) The growth of renewable energy communities is primarily driven by structural changes, progressive actions, and continued participation in community programs and initiatives.
  - (c) The emergence of renewable energy communities is shaped by everyday social interactions, trust, and household civic values.**
  - (d) Building strong renewable energy communities requires a harmonious balance of external support and internal neighbourhood engagement.

**EXPLANATION:**

The option (c) directly aligns with the key elements mentioned in the passage, focusing on social trust, civic norms within households, and social interactions within neighbourhoods, which are the main factors driving the development of renewable energy communities according to the passage.

**S.(2) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 2**

India's economic liberalization marked a dramatic shift from a socialist developmental model to a market-driven paradigm. Yet this transition did not unfold evenly—it produced islands of affluence amid oceans of precarity. Urban spectacle coexists with rural distress; digital India with manual scavenging. Indian modernity thus reveals itself as uneven, hybrid, and morally conflicted—a modernity without full emancipation, development without uniform dignity.”

2. Which of the following best shows the paradox presented in the passage?
  1. Economic growth in India has disproportionately benefited those already positioned to capitalize on liberalization, leaving marginalized communities behind.
  2. India's policy focus has always been rural-centric, but the liberalization model has shifted attention away from the villages to the global economy.
  3. Urbanization and technological advancement inevitably cause temporary disparities that will normalize over time through trickle-down effects.
  4. India's cultural diversity prevents uniform implementation of economic and social policies, causing uneven patterns of development.

Choose the correct answer:

- (a) Only 1**
- (b) Only 1 and 3

- (c) Only 2 and 4  
(d) All of the above

**EXPLANATION:**

**Statement 1: Correct and directly addresses the paradox.** It explains the **coexistence of affluence and precarity** by highlighting how **economic liberalization benefited only certain sectors or groups**, resulting in **uneven development**. This aligns with the passage's emphasis on **hybrid modernity** and **moral conflict**.

**Statement 2: Not sufficient** to resolve the paradox. While it may reflect a partial truth, it doesn't explain the **moral contradiction** of high-tech advancement alongside manual scavenging. Also, the passage doesn't support the idea that India's policy has remained rural-centric.

**Statement 3: Contradicts the tone** of the passage. The author does not suggest that disparities are **temporary** or part of a healthy process. Instead, the tone is critical and morally concerned.

**Statement 4: Too generic and diverts** from the economic critique to a cultural explanation, which the passage doesn't explore. The paradox lies in **economic transformation without social uplift**, not in cultural diversity.

**S.(3) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 3**

Developing affordable and sustainable cooling solutions in urban areas could help low-income families mitigate the impacts of climate change on sleep. Similarly, community-based initiatives designed to enhance security and reduce stress might alleviate safety-related sleep disruptions in high-crime areas.

3. Based on the above passage, the following assumptions have been made:
1. The urban heat island effect seems to create a serious health impact on the urban population, regardless of their economic background.
  2. Access to reliable and affordable power seems like a perennial challenge low-income urban family.
  3. Poor sleep caused by fear or danger in high-crime areas can affect people's health.
  4. The physical environment and social environment interact to affect the sleep pattern of urban populations.

Which of the statements given above is/are valid?

- (a) 1 and 2 only  
(b) 3 and 4 only  
(c) 2 and 3 only  
**(d) 4 only**

**EXPLANATION:**

Assumption 4 is valid because the passage links both physical factors (heat) and social factors (security) to sleep disruptions, showing their combined influence. It logically infers that these environments interact to affect urban sleep patterns. Assumption 1 is invalid. The passage talks about climate change affecting sleep for low-income families, not directly about urban heat island effect or its health impact on all economic groups. Assumption 2 is invalid. The passage discusses cooling solutions, but it doesn't mention power access or its reliability as a specific problem. Assumption 3 is invalid. While fear may

disrupt sleep, the passage does not explicitly state that it causes health issues. It only links insecurity to sleep disruption, not health outcomes.

**S.(4) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 4**

Few human creatures would consent to be changed into any of the lower animals, for a promise of the fullest allowance of a beast's pleasures; no intelligent human being would consent to be a fool, no instructed person would be an ignoramus, even though they should be persuaded that the fool, the dunce, or the rascal is better satisfied with his lot than they are with theirs. They would not resign what they possess more than he for the most complete satisfaction of all the desires which they have in common with him. If they ever fancy, they would, it is only in cases of unhappiness so extreme, that to escape from it they would exchange their lot for almost any other, however undesirable in their own eyes. A being of higher faculties requires more to make him happy, is capable probably of more acute suffering, and certainly accessible to it at more points, than one of an inferior type; but in spite of these liabilities, he can never really wish to sink into what he feels to be a lower grade of existence.

4. Which of the following is emphatically conveyed by the author of the passage?
- (a) At times, individuals may gravitate toward a simpler life if its pleasures outweigh the burdens of their current way of life.
  - (b) In certain circumstances, humans may unwittingly seek a life of lesser meaning if it serves as an escape from the depths of intense despair.
  - (c) Even in the face of adversity, humans endowed with higher mental faculties prefer to persist along their chosen path rather than retreat into a simpler existence.
  - (d) People with lower mental faculties might experience a greater sense of contentment, unknowingly preferring a simpler existence over a more complex one.**

**EXPLANATION:**

Option (d) is the correct answer because it accurately captures the passage's main idea. The author explains that individuals with higher mental faculties, despite the potential for greater suffering, would not willingly regress to a simpler existence, even for greater pleasures.

5. Aman can complete a work in 48 hours. Bhuvan can complete the same work in 24 hours. Suman can complete the same work in 72 hours. All three of them start working together, but Suman takes a break for 1 hour after every 3 hours. What is the total time taken by them to complete the work?
- (a)  $12\frac{3}{7}$  hours
  - (b)  $13\frac{3}{11}$  hours
  - (c)  $13\frac{7}{11}$  hours**
  - (d)  $14\frac{4}{11}$  hours

**EXPLANATION:**

(Using L.C.M method):

L.C.M of (48, 24, 72) = 144

Assume that there are 144 units of work.

Quantity of work done by Aman in 1 hour =  $144/48 = 3$  units of work.

Quantity of work done by Bhuvan in 1 hour =  $144/24 = 6$  units of work.

Quantity of work done by Suman in 1 hour =  $144/72 = 2$  units of work.

Aman, Bhuvan and Suman work for 3 hours, and then Suman takes a break for 1 hour.

During Suman's break, Aman and Bhuvan were working. From 5<sup>th</sup> hour, the cycle resumes. A cycle comprises of four hours.

Total quantity of work done in four hours =  $4*(3+6)+3*2 = 42$  units of work.

A multiple of 42 just less than 144 is 126.

Time taken to complete 126 units of work =  $(126/42)*4 = 12$  hours.

Quantity of work remaining =  $144-126 = 18$  units.

Quantity of work completed at the end of 13<sup>th</sup> hour =  $126+(3+6+2) = 137$

Quantity of work remaining after 13<sup>th</sup> hour =  $144-137 = 7$  units.

On 14<sup>th</sup> hour, all three of them work and complete 11 units of work. Time taken to complete 7 units of work =  $7/11$  hours.

Total time taken to complete the work =  $13$  hours +  $7/11$  hours  
=  $13 (7/11)$  hours.

6. Consider the following statements

**Statement 1:** When all the numbers from 100 to 200 (both inclusive) are multiplied, 28 zeros can be found after the right-most non-zero digit of the product

**Statement 2:** There are four numbers that are greater than 10, leaving a remainder 4 when they are used to divided by 211.

Which of the above statement(s) is/are incorrect?

(a) Statement I only

(b) Statement II only

(c) Both Statements I and II

(d) Neither Statement I nor II

**EXPLANATION:**

**Statement 1**

Product of 100 to 200 =  $\frac{200!}{99!}$

Number of trailing 0s in 200!:

Quotient of  $(200/5) = 40$

Quotient of  $(40/5) = 8$

Quotient of  $(8/5) = 1$

Number of trailing 0s in 200! =  $40+8+1 = 49$

Number of trailing 0s in 99!:

Quotient of  $(99/5) = 19$

Quotient of  $(19/5) = 3$

Number of trailing 0s in  $99! = 19+3 = 22$

Number of trailing 0s in product of numbers from 100 to 200 =  $49-22 = 27$ .

Hence, statement 1 is incorrect.

**Statement 2**

$211-4 = 207$

Factors of 207 are:

207, 69, 23, 9, 3 and 1.

Among these factors, the number of factors that are greater than 10 are 3 (207, 69 and 23).

Hence statement II is incorrect.

7. A, B and C are three distinct natural numbers with exactly three factors.

**Statement 1:**  $\sqrt{A \times B \times C}$  must be an odd number.

**Statement 2:**  $\sqrt{A} + \sqrt{B} + \sqrt{C}$  must be an even number.

Which of the given statement(s) is/are true?

- (a) Only statement 1 is true
- (b) Only statement 2 is true
- (c) Both the statements are true

**(d) Neither statement is true**

**EXPLANATION:**

Numbers with exactly 3 factors are the squares of prime numbers.

**Statement 1:**

Assume that  $A = 4$ ,  $B = 9$ , and  $C = 25$

$\sqrt{4 \times 9 \times 25} = 2 \times 3 \times 5 = 30$ , which is an even number. Statement 1 is false.

**Statement 2:**

Assume that  $A = 4$ ,  $B = 9$ , and  $C = 25$

$\sqrt{4} + \sqrt{9} + \sqrt{25} = 2 + 3 + 5 = 10$

Assume that  $A = 9$ ,  $B = 25$ , and  $C = 49$

$\sqrt{9} + \sqrt{25} + \sqrt{49} = 3 + 5 + 7 = 15$ .

Statement 2 is false.

**Directions for Questions 8 to 11:** Read the following information carefully and answer the questions that follows:

Read the following information carefully and answer the questions that follow.

A certain number of people are seated in a straight row, all facing north. The exact number of people is not initially known, and the individuals mentioned are not seated adjacent to one another.

There are exactly five people seated between R and T. U is seated four places to the right of T. Exactly two people sit between R and W. The count of people between W and T is one less than the number of people between U and Y. K is seated fifth to the right of L and is placed exactly midway between L and R. The number of people between K and R is twice the number between D and E. There is one more person between Y and D than between D and E. There are more than five people between E and U. The number of people between L and W is twice the number of people seated to the right of E. H is seated second to the right of B. Exactly three people are seated between E and B.

8. How many persons are sitting in between L and W in the row?
- (a) 16  
(b) 15  
**(c) 12**  
(d) 10

**EXPLANATION:**

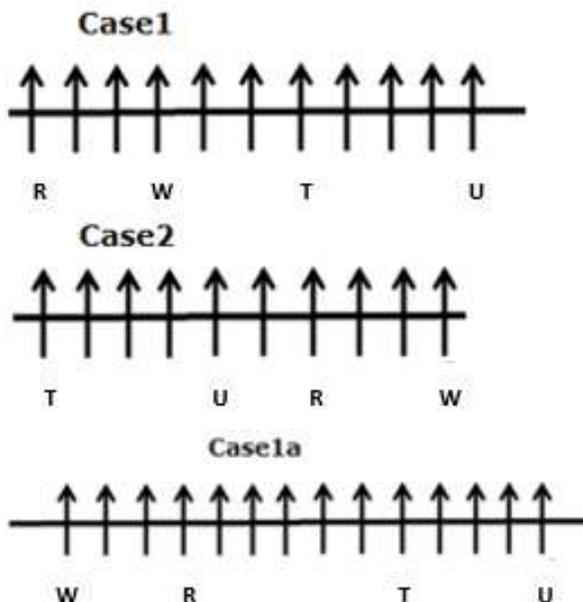
We have,

Only five persons sit between R and T.

U sits fourth to the right of T.

Only two persons sit between R and W.

From the above condition, there are three possibilities.



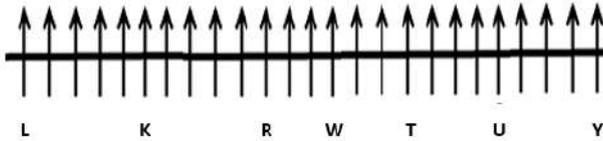
Again, we have

The number of persons sit between W and T is one less than the number of persons sit between U and Y.

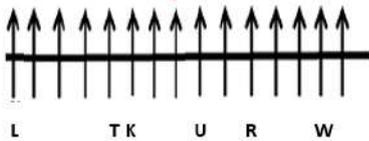
K sits fifth to the right of L and sits exactly in the middle of L and R.

From the above condition, Case2 gets eliminated because known persons are sitting together in case2.

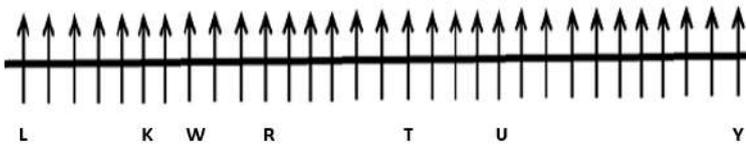
Case 1



~~Case 2~~



Case1a

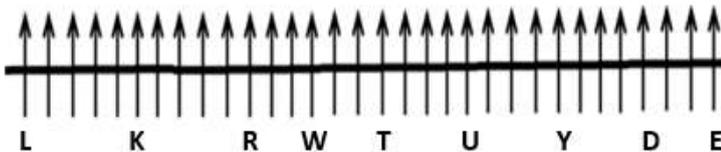


Again, we have

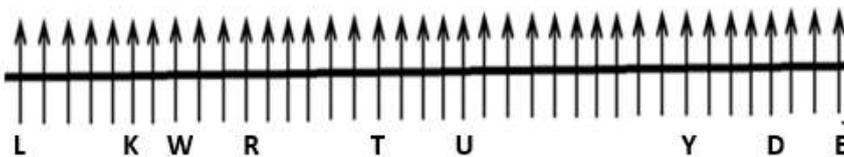
The number of persons sit between K and R is twice the number of persons sit between D and E. The number of persons sit between Y and D is one more than the number of persons sit between D and E.

More than five persons sit between E and U.

Case1



Case1a

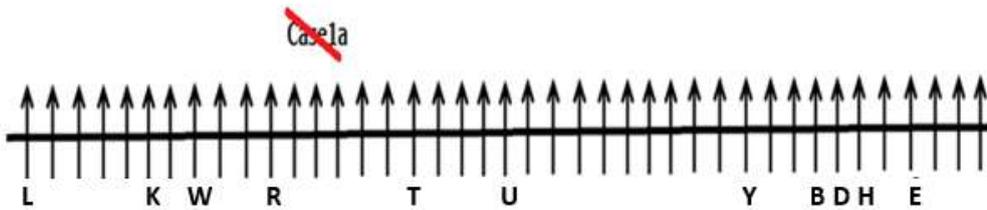
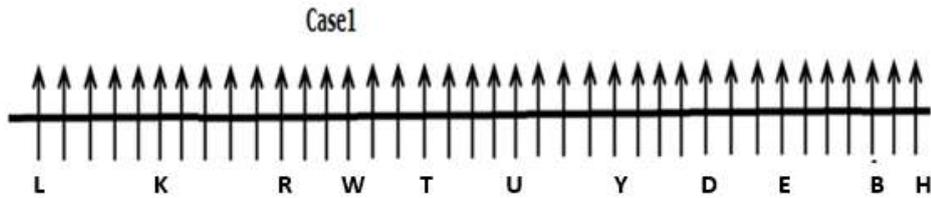


Again, we have

The number of persons sit between L and W is twice the number of persons sit to the right of E. H sits second to the right of B.

Only three persons sit between E and B. From the above condition and note, the known persons are sitting together in case 1a so it gets eliminated. Case 1 shows the final arrangement

Final diagram:



9. Who among the following person sits tenth from the right end?
- (a) B  
(b) The one who sits fifth to the right of U  
**(c) The one who sits fourth to the right of Y**  
(d) R

**EXPLANATION:**

D is a person sit tenth from right end. And D is person who sit fourth to right of Y.

10. Four of the following shares a common feature. Which one is the exception?
- (a) RW**  
(b) TU  
(c) UY  
(d) YD

**EXPLANATION:**

There are two person in between R and W.

There three person in between TU, UY & YD.

11. What is the position of E with respect to U?
- (a) Ninth to the right  
(b) Tenth to the right  
(c) Twelfth to the right



(d) **Eleventh to the right**

**EXPLANATION:**

E is eleventh to the right of U.

12. The price of 3 bags is the same as that of 5 boxes. Also, 4 boxes cost the same as 5 books, and 2 books are equal in cost to 3 journals. One journal cost ₹240. What is the combined cost of 2 bags, 2 boxes, 2 books, and 2 journals?

(a) ₹3600

(b) ₹2400

(c) ₹1800

(d) ₹900

**EXPLANATION:**

Total cost of 3 journals =  $240 \times 3 = 720$ .

Cost of two books = 720

Cost of 1 book =  $720/2 = 360$

Cost of 5 books =  $360 \times 5 = 1800$

Cost of 4 boxes = 1800

Cost of 1 box =  $1800/4 = 450$

Cost of 5 boxes =  $450 \times 5 = 2250$

Cost of 3 bags = 2250

Cost of 1 bag =  $2250/3 = 750$

Total cost of 2 bags, 2 boxes, 2 books and 2 journals =  $2 \times (750 + 450 + 360 + 240)$

= ₹3600.

**S.(13) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 1**

Stereotypes are not always negative, but they are often narrow and misleading as they ignore the variability that exists within social groups and the overlap of characteristics across social groups. It is important to realise that even positive stereotypes can be damaging, as they have the potential to place unrealistic expectations on individuals or to patronise members from specific groups. Early years practitioners and teachers should not feel guilty about having stereotypes, for it is part of human nature. However, it is imperative for them to be sociologically mindful; to recognise bias and stereotypical assumptions and take steps to eliminate them.

13. Which of the following statements best reflect the most logical and rational inferences that can be made from the passage?

(a) Stereotypes generalize social groups, ignoring their diversity and shared traits, leading to misleading perceptions, which can be damaging even when positive. Teachers should recognize this and work to prevent it.

- (b) Positive stereotypes can create unrealistic expectations or condescend, so educators must recognize them without guilt and take steps to eliminate bias, ensuring fairness.
- (c) While stereotypes are natural, teachers must recognize and address their biases to ensure fairness and avoid harmful assumptions.
- (d) **Stereotypes can be damaging, even when positive, by setting unrealistic expectations. Teachers should recognize their biases and take steps to prevent them, ensuring fairness and inclusivity.**

**EXPLANATION:**

Option (d) reflects the core message of the passage, emphasizing the potential harm of both positive and negative stereotypes, and the importance of teachers addressing and eliminating biases to foster fairness and inclusivity.

**S.(14) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 2**

The Orient was almost a European invention, and had been since antiquity a place of romance, exotic beings, haunting memories and landscapes, remarkable experiences. Yet none of this Orient is merely imaginative. The Orient is an integral part of European material civilization and culture.

14. Which of the following can be inferred from the passage?

1. European engagement with the Orient has always been romantic and imaginative.
2. The Orient has been conceptualized to serve Europe's ideological and material interests.
3. The Orient was historically isolated from European material culture.
4. Europe's cultural and economic identity is partly shaped by its constructed image of the Orient.

Options:

- (a) 1 and 2 only  
**(b) 2 and 4 only**  
(c) 3 and 4 only  
(d) 1 and 3 only

**EXPLANATION:**

2: The term “invention” and its role in European culture points to instrumentalization—a conceptual creation to serve power/culture.

4: “Integral part of European material civilization” shows how the Orient helped shape Europe's self-image and prosperity.

1 is tempting but ignores the material aspect; 3 contradicts the passage directly.

**S.(15) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 3**

The idea of India is not homogeneity, but the coexistence of linguistic, religious, and ethnic multiplicities without erasure. It is a mosaic rather than a melting pot—a federation of diversities negotiating coexistence through constitutional liberalism and social imagination. Yet, cultural pluralism is not a static achievement; it is a fragile, ongoing act of democratic renewal, threatened by homogenizing ideologies that mistake majoritarian dominance for cultural integrity.”

15. Which of the following best captures the main idea of the passage?

1. India’s identity is rooted in a dynamic pluralism that must be constantly protected from the pressures of majoritarianism.
2. True cultural integrity in India lies in its ability to unify diverse identities into a common national culture.
3. The Indian Constitution imposes liberal frameworks that struggle to contain the country’s deep social divisions.
4. Cultural pluralism in India has historically thrived due to its foundation in shared religious values.

Choose the correct answer:

- (a) Only 1  
(b) Only 2  
(c) Only 3  
(d) Only 4

**EXPLANATION:**

**Statement 1:** Accurately reflects the main idea. The passage emphasizes coexistence of multiplicities, the mosaic metaphor, and most importantly, the warning that pluralism is fragile and under threat from homogenizing ideologies. This captures the essence of the author’s argument.

**Statement 2:** Incorrect. The passage argues against a unifying, melting-pot model and warns about majoritarian dominance, which this statement promotes in a subtle form.

**Statement 3:** Misleading. The passage presents constitutional liberalism as a positive framework enabling coexistence—not as something that’s failing or inadequate.

**Statement 4:** Unsupported. The passage does not attribute India’s pluralism to **shared religious values**, but to a **constitutional and imaginative negotiation of diversity**.

16. ABCD and PQRS are two different four-digit numbers formed using distinct non-zero digits. The digits A, B, C, D, P, Q, R, and S are all unique and non-zero. The sum of ABCD and PQRS equals 9999. How many possible values can the number ABCD take?

- (a) 336  
(b) 384  
(c) 432  
(d) 448

**EXPLANATION:**

0 cannot be any of the digits. Since 0 cannot be used, 9 cannot be used as well since only when 9 is added to 0, we get 9.

$$A+P = 9$$

The number of ways of selecting a digit from 1 to 8 for A =  ${}^8C_1 = 8$

Whichever number is selected for A, the complementary number that will add up to 9 along with A cannot be selected for B, C or D.

The number of ways of selecting a digit from the remaining 6 digits for B =  ${}^6C_1 = 6$

Whichever number is selected for B, the complementary number that will add up to 9 along with B cannot be selected for C or D.

The number of ways of selecting a digit from the remaining 4 digits for C =  ${}^4C_1 = 4$

Whichever number is selected for C, the complementary number that will add up to 9 along with C cannot be selected for D.

The number of ways of selecting a digit from the remaining 2 digits for D =  ${}^2C_1 = 2$

Total number of ways of making the four-digit number ABCD =  $8*6*4*2 = 384$

17. A question is followed by two statements I and II. Consider the question and the statements.

**Question:**

What is the time taken by A and B to complete the work when they work together?

**Statement-I:**

A is three times as efficient as B.

**Statement-II:**

To complete 25% of the work, B alone takes 4 days more than the time taken by A alone for the same work.

Which of the following is correct in respect of the above Question and the Statements?

- (a) The Question can be answered by using one of the Statement alone, but cannot be answered using the other Statement alone
- (b) The Question can be answered by using either statement alone
- (c) The Question can be answered by using both the Statements together, but cannot be answered using either Statement alone**
- (d) The Question cannot be answered even by using both the Statements together

**EXPLANATION:**

**Statement-I:**

Only using the efficiencies and without the time taken by everyone, it is not possible to find the time taken by them to complete the work when they work together. Statement-I alone is insufficient to answer the Question.

**Statement-II:**

To complete 100% of the work, time taken by B is 16 days more than the time taken by A. Without knowing the time taken by A alone or time taken by B alone, we cannot determine the time taken by the other person to complete the work. Hence, Statement-II is insufficient to answer the question.

**Combining the statements:**

B takes 16 days more than A to complete the work.

Assume that the time taken by A alone is x days.

Time taken by B alone is x+16 days.

Efficiency of A is three times the efficiency of B. Hence, time taken by A is one-third of time taken by B.

$$x = (1/3)*(x+16)$$

$$3x = x+16$$

$$x = 8 \text{ days.}$$

A alone completes the work in 8 days.

B alone completes the work in 8+16 = 24 days.

Time taken by them to complete the work when they work together =  $(8*24)/(8+24) = 6$  days.

The question can be answered by combining the statements.

18. Three items, X, Y, and Z, are such that the price of X is 40% higher than that of Y, and Y costs 50% less than Z. If the average price of the three items is Rs. 6600, what is the difference in price between X and Z?

(a) Rs. 2700

(b) Rs. 2400

(c) Rs. 2100

(d) Rs. 1800

**EXPLANATION:**

Assume that the price of Z is P.

$$\text{Price of Y} = 0.5P$$

$$\text{Price of X} = 0.5P * 1.4 = 0.7P$$

$$\text{Total price of X, Y and Z} = 0.7P + 0.5P + P = 2.2P$$

$$\text{Average price of X, Y and Z} = 2.2P/3$$

$$2.2P/3 = 6600$$

$$P = 6600 * 3 / 2.2$$

$$P = 9000$$

$$\text{Price of Z} = 9000$$

$$\text{Price of X} = 0.7 * 9000 = 6300$$

$$\text{Required difference} = 9000 - 6300 = 2700.$$

19. A, B and C are three distinct numbers such that A is more than twice of B, and B is more than half of C.

Which of the following statement(s) is/are always true?

Statement 1:  $((200\% \text{ of B}) + (100\% \text{ of C})) > A$ .

Statement 2: (25% of B) < (50% of C)

Statement 3: (40% of A) > (35% of C)

- (a) Only statement 1
- (b) Only statement 2
- (c) Only statement 3**
- (d) All three statements

**EXPLANATION:**

Assume that B is 100.

Hence, A is more than 200, and C is any number less than 200.

Even if one scenario proves a statement wrong, then the statement can be declared as wrong statement.

**Statement 1:**

$$((200\% \text{ of } B) + (100\% \text{ of } C)) > A$$

If C = 0 (C can be any number less than 200),

$$\frac{200}{100} \times 100 + \frac{100}{100} \times 0 = 200$$

200 is not greater than A, since A is greater than 200. Statement 1 is true only when C is greater than 1.

Statement 1 is not always true.

**Statement 2:**

If C is less than 50, for example when C is 40,

$$\frac{25}{100} \times 100 = 25$$

$$\frac{50}{100} \times 40 = 20$$

Statement 2 is false. Statement 2 is true only if C is greater than 50. Statement 2 is not always true.

**Statement 3:**

When B is 100, A is greater than 200 and C is less than 200. Hence, 40% of A is always greater than 35% of C. Statement 3 is always true.

20. The average weight of 40 men on boat P is 75 kg. The average weight of 50 men on boat Q is 75 kg. A group of 12 men from boat P, with a total weight of 960 kg, is selected and marked as Group A. Another group of 12 men from boat Q, with a total weight of 840 kg, is selected and marked as Group B. Group A is sent to boat Q, and Group B is sent to boat P.

Which of the following statement(s) is/are incorrect?

**Statement 1:** The average weight of the men on boat P is less than 75 kg after the swap.

**Statement 2:** The average weight of the men on boat Q is more than 75 kg after the swap.

- (a) Only statement 1
- (b) Only statement 2
- (c) Both statement 1 and statement 2

**(d) Neither statement 1 nor statement 2**

**EXPLANATION:**

Average weight of the 12 men who were transferred from boat P to boat Q =  $960/12 = 80$  kg

Average weight of the 12 men who were transferred from boat Q to boat P =  $840/12 = 70$  kg

Boat P received people with an average weight less than its previous average. Hence, the average weight of men in boat P after the swap is less than the initial average weight.

Boat Q received people with an average weight more than its previous average. Hence, the average weight of men in boat Q after the swap is more than the initial average weight.

Both statements are correct. Hence, neither of the statements are incorrect.

**Directions for Questions 21 to 23:** Read the following information carefully and answer the questions that follows:

Nine individuals live in a nine-floor building, with floors numbered 1 to 9 from bottom to top. Each person resides on a different floor and has a unique profession. The set of professions includes Actor, Actress, Scientist, HR, Cricketer, and Police. Some professions are held by more than one person, but no more than twice. Specifically, the roles of Scientist, Cricketer, and HR are each associated with two different individuals. Further details are as follows:

Persons with matching professions are not immediate neighbors. Only certain professions - specifically, those that appear more than once (except HR) - are found exclusively on even-numbered floors. The ground and top floors are occupied by individuals from the performing arts industry.

Three floors are between the floors of Alex and Brian. Two floors are between the floors of Charlie and David, where David lives immediately above Brian. 3 floor are in between Actor and police. Ian is live above Cricketer. Both HR are located just below square number floor and cube number floor. Emma lives immediately above Alex. George lives immediately above Frank. There is one floor between the floors of Harry and Ian, where Ian lives above Harry. There are 3 floors between two Scientist. Female professional live above floor 5.

21. Who lives on the 1st floor?

- (a) Emma
- (b) Harry**
- (c) Ian
- (d) Alex

22. Which of the following combinations of Person–Profession is correct?

- (a) George – Cricketer
- (b) Alex – Scientist**
- (c) Ian – Actor
- (d) Charlie – HR

23. What is the profession in between Scientist and Cricketer

- (a) Police
- (b) HR**

(c) Actor

**(d) Cannot be determine.**

**EXPLANATION:**

9	Emma	Actress
8	Alex	Scientist
7	George	HR
6	Frank	Cricketer
5	David	Police
4	Brian	Scientist
3	Ian	HR
2	Charlie	Cricketer
1	Harry	Actor

**S.(24) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 1**

There is a growing need to move beyond an ideological perspective to embrace a problem-solving approach that presents sustainability not as the enemy of progress, but as its enabler. Key pillars of this transformation include stakeholder engagement, behavioural nudges and sustainable education to foster a shift in societal values and communication. In this context, it is not only the circulation of resources that is needed, but also innovative ideas that challenge narratives promoting war or totalitarian behaviour.

24. Which of the following statements best reflect the most logical and rational inferences that can be made from the passage?

- (a) Global media should actively choose to challenge divisive narratives and foster a more inclusive approach to promoting sustainability in society.
- (b) Lasting sustainability requires both systemic change and a cultural shift driven by inclusive dialogue, innovation, and value reorientation.**
- (c) Sustainability can only be successfully implemented by combining collective endorsement, new behavioural practices, and streamlined education to drive a shift in societal values.
- (d) Progress today depends on moving past rigid ideologies and embracing sustainability as a catalyst for growth, driven equally by resource efficiency and fresh ideas.

**EXPLANATION:**

Option (b) most accurately reflects the central message of the passage — that lasting sustainability involves not just systemic shifts (like stakeholder engagement and resource flow), but also a cultural transformation through inclusive communication, innovation, and rethinking values.

**S.(25) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 2**

What if, however, the very gesture of assuming responsibility for the other's trauma reproduces the structure of power, keeping the other in the position of victim in need of help? What if this gesture is part of a deeper ideological mechanism, masking the systemic violence of the very social conditions that generate such trauma in the first place?

25. Which assumptions does the author question in this passage?

1. Compassionate gestures always reinforce existing hierarchies.
2. Power structures can disguise themselves through moral posturing.
3. Systemic violence is often concealed by seemingly unethical acts.
4. Structural violence can be perpetuated even through well-meaning interventions.

Options:

- (a) 1 and 2 only  
**(b) 2 and 4 only**  
(c) 3 and 4 only  
(d) 1 and 3 only

**EXPLANATION:**

- 2: The author critiques how power structures may reproduce themselves through moral gestures.  
4: The suggestion is that well-intentioned help may sustain systemic issues.  
1 and 3 are the assumptions being questioned.

**S.(26) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 3**

“When the rate of return on capital exceeds the rate of growth of output and income, as it did in the nineteenth century and seems likely to do again in the twenty-first, capitalism automatically generates arbitrary and unsustainable inequalities that radically undermine the meritocratic values on which democratic societies are based.”

26. Which of the following most logically follows from the argument presented in the passage above?

- (a) If the rate of economic growth surpasses the return on capital, democratic societies may better uphold their meritocratic values.**
- (b) Capitalism is inherently incompatible with the democratic ideals of equality and fairness, regardless of economic conditions.
- (c) Reducing inequality in a capitalist society requires increasing the rate of return on capital relative to income and output growth.
- (d) Historical evidence proves that democracy cannot survive when there is a persistent growth in capital accumulation.

**EXPLANATION:**

Option A perfectly takes the position of the given passage. If the rate of economic growth surpasses the return on capital, democratic societies may better uphold their meritocratic values. All other options negate it.

27. Karthik travels daily by train from Mylapore to Tambaram and back, with each journey typically taking 50 minutes. One day, the train left Mylapore 16 minutes late but still reached Tambaram on time. However, on the return journey, it reached Mylapore 20 minutes late due to a problem. If the average speed of the train on that day was 52 km/h, what is the usual average speed of the train?

(a) 58.3km/h

**(b) 54.08 km/h**

(c) 50.67 km/h

(d) 48.62 km /h

**EXPLANATION:**

Usual time for each journey = 50 minutes

Total usual time = 50 (to Tambaram) + 50 (back to Mylapore) = 100 minutes

On a particular day:

Train left 16 minutes late but reached Tambaram on time → it gained 16 minutes

On return, it reached Mylapore 20 minutes late → it lost 20 minutes

Net extra time = 20 (lost) - 16 (gained) = +4 minutes

Actual time taken = 100 + 4 = 104 minutes = 104/60

Average speed on that day = 52 km/h.

Step 1: Calculate Total Distance

$$\text{Distance} = \text{Speed} \times \text{Time} = 52 \times \frac{104}{60} = \frac{5408}{60} \text{ km}$$

Let usual speed = x km/h

Usual time = 100 minutes

$$X \times \frac{100}{60} = \frac{5408}{60}$$

$$100x = 5408$$

$$X = 54.08 \text{ km/h.}$$

28. The average number of chocolates that a group of boys has is **252**, while the average number of chocolates that a group of girls has is **186**. After each boy **gives away 15 chocolates** to random students, the average number of chocolates among all students becomes **210**. If the ratio of boys to girls was originally **unknown**, what percentage of the total students are boys?

(a) 40%

(b) 36.33%

**(c) 47.06%**

(d) 52%

**EXPLANATION:**

Step 1: The total chocolates initially is  $252b + 186g$  (where  $b$  = number of boys,  $g$  = number of girls)

Step 2: After each boy gives away 15 chocolates:

Each boy now has 237 chocolates ( $252 - 15$ )

Total chocolates with boys =  $237b$

Total chocolates with girls =  $186g$

Step 3: Since the average for all students becomes 210, we can write:  $(237b + 186g)/(b + g) = 210$

Step 4: Multiplying both sides by  $(b + g)$ :  $237b + 186g = 210b + 210g$

Step 5: Simplifying to find the ratio:  $237b - 210b = 210g - 186g$

$$27b = 24g$$

$$b/g = 24/27 = 8/9$$

Step 6: Finding the percentage of boys:

If  $b:g = 8:9$ , then out of 17 total students, 8 are boys

$$\text{Percentage of boys} = (8/17) \times 100\% = 47.06\%$$

29. A government dairy farm is monitoring milk purity in its supply chain. A milk container initially contained 50% pure milk, and the rest was water. A supplier was found to have removed some quantity from the container and replaced it with another liquid that contained only 20% pure milk. As a result, the final mixture in the container had only 25% pure milk.

What fraction of the original container's content was replaced?

(a)  $\frac{1}{2}$

(b)  $\frac{1}{3}$

**(c)  $\frac{5}{6}$**

(d)  $\frac{2}{3}$

**EXPLANATION:**

Define Variables:

Let the total volume of the container =  $V$ .

Let  $x$  = fraction of the container replaced.

Initial Composition:

Pure milk =  $0.5V$ , Water =  $0.5V$ .

After Replacement:

Milk removed:  $0.5xV$ .

Milk added:  $0.2xV$ .

Remaining milk:

$$0.5V - 0.5xV + 0.2xV = 0.5V - 0.3xV.$$

Final Concentration Equation:

$$0.5V - 0.3xV = 0.25V \Rightarrow 0.5 - 0.3x = 0.25.$$

Solve for x:

$$0.3x = 0.25 \Rightarrow x = \frac{0.25}{0.3} = \frac{5}{6}.$$

The fraction of the original container replaced is  $\frac{5}{6}$ .

**Directions for Questions 30 to 32:** Read the following information carefully and answer the questions that follows:

In every family, one parent is exactly 25 years older than their child. Siblings always have an age difference of exactly 3 years, with the elder sibling first. G is the mother of F, who is married to D. M is the daughter of D, who is the only brother of C. The oldest person alive is 80, and the youngest is 27. All individuals have unique ages—no duplicates.

E is the son of G, who is married to H. A is the niece of C, and D has no brothers.

T is 5 years older than O. D is 15 years older than F, and E is older than F.

T is the father of D. V is the sister of F. The age gap between V and M is 16 years, and V is older than E. C is older than D, and M is the granddaughter of O.

H is 8 years younger than T, and their ages are in a 9:10 ratio.

30. What is age of M?

(a) 30

(b) 27

(c) 33

(b) 35

**EXPLANATION:**

H is younger than T by 8 years. If their ages are in the respective ratio of 9 : 10.

Let's assume their ages are:

$$H = 9x, T = 10x$$

$$T - H = 8$$

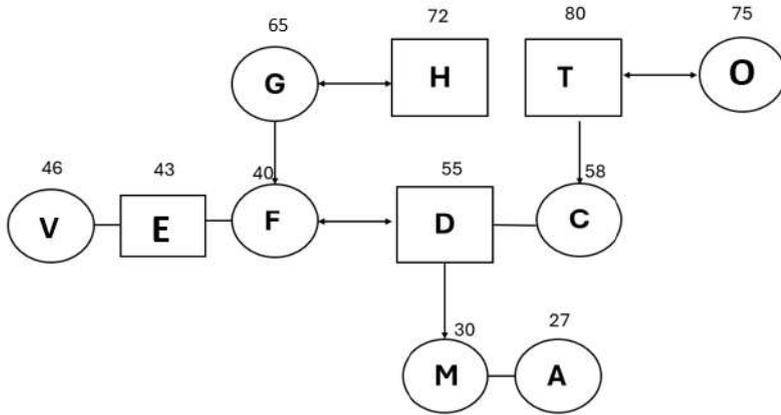
$$10x - 9x = 8$$

$$X = 8$$

$$Hx = 9 \times 8 = 72$$

$$Tx = 10 \times 8 = 80$$

$$\text{So, } H = 72, T = 80.$$



31. How is A's mother's brother's father related to V?

- (a) Father
- (b) Daughter
- (c) Granddaughter
- (d) Mother

**EXPLANATION:**

According to diagram A's mother's brother's father is H.  
Now, H is father of V.

32. **Statement I:** V age is 46. V is the Grandson of G

**Statement II:** Both H and T belong to the first generation.

**Statement III:** The age difference between H and F is 25.

Which of the following statement(s) is/are correct?

- (a) I only
- (b) Either II or III
- (c) Neither all
- (d) Only II

**EXPLANATION:**

In statement I, the age is incorrect because V's age is 46. But V is the daughter of G

Statement II is correct. Both H and T belong to the first generation.

The age difference between H and F is not 25, it is 32. Statement III is also incorrect.

33. Rahul and Karan started a business by investing certain sums of money. At the end of one year, the total profit earned was ₹1200. Out of this, Rahul received ₹480, which is ₹30 more than what he would have received had he invested ₹2000 less and Karan invested ₹1000 less.

What would be Karan's share of the profit if Rahul had invested ₹3000 more and Karan had invested ₹3000 less, assuming the total profit remains the same in all cases?

- (a) ₹582  
(b) ₹600  
**(c) ₹617.14**  
(d) ₹625

**EXPLANATION:**

**Initial Investments and Profit Sharing:**

Total profit = ₹1200.

Rahul's share = ₹480 ⇒ Karan's share = ₹720.

Profit ratio = 480:720=2:3, implying their investments are in the ratio 2:3.

Let Rahul's investment = 2x, Karan's investment = 3x.

**According to the given statements investment Change (Rahul: -₹2000, Karan: -₹1000):**

New investments: (2x-2000): (3x-1000).

New profit ratio = 450:750 = 3:5 (since Rahul's new share = 480-30 = 450).

Set up the proportion:  $\frac{2x-2000}{3x-1000} = \frac{3}{5}$

Solve for x:

$$5(2x - 2000) = 3(3x - 1000) \Rightarrow 10x - 10,000 = 9x - 3,000 \Rightarrow x = 7,000.$$

Original investments:

Rahul = 2x = ₹14,000, Karan = 3x = ₹21,000.

**New Investment (Rahul: +₹3000, Karan: -₹3000):**

Rahul's new investment = 14,000 + 3,000 = ₹17,000

Karan's new investment = 21,000 - 3,000 = ₹18,000.

New investment ratio = 17:18.

**Calculate Karan's Share:**

Total profit = ₹1200.

$$\text{Karan share} = \frac{18}{17+18} \times 1200 = \frac{18}{35} \times 1200 = 617.14.$$

**Directions for Question 34:** Study the following information given below to answer this question.

In the question below there are given some statements followed by some conclusions. You must take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows/follow from the given statements, disregarding commonly known facts.

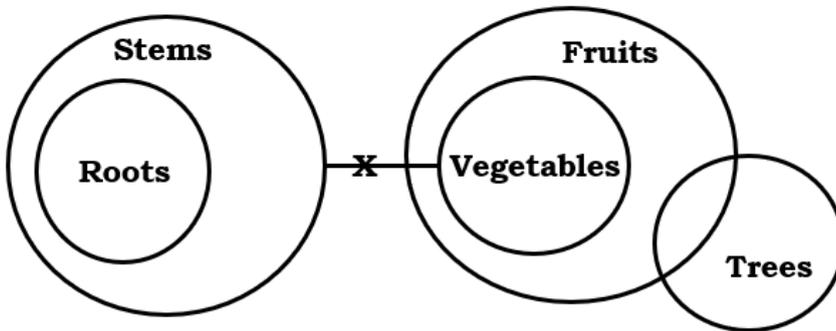
**34. Statements:**

- All Roots are Stems
- No Stem is a Vegetable
- All vegetables are Fruits
- Some fruits are Trees

**Conclusions:**

- (I) Some Vegetables are trees
  - (II) Some Fruits are not vegetables
  - (III) Some Trees are Stems
- (a) I and II only
  - (b) II and III only
  - (c) I and III only
  - (d) None of the above**

**EXPLANATION:**



**S.(35) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 1**

35. "An ideal romantic relationship starts with friendship, reaches cafe, gets intense at candle light dinner and sealed with a physical intimacy."

Which of the following assumptions underlies the author's view?

- (a) The success of a romantic relationship depends on ritualistic milestones.
- (b) Social activities like dining contribute to emotional bonding.**
- (c) Every friendship naturally culminates in romance.
- (d) Romantic relationships are primarily based on physical attraction.

**EXPLANATION:**

The passage assumes that casual outings (cafe) and more intimate settings (candlelight dinner) help deepen a relationship. Option (a) is tempting but focuses too much on "ritual" (the passage is not emphasizing formal rituals), (c) is wrong — not all friendships become romance, and (d) oversimplifies the depth of progression described.

**S.(36) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 2**

Statelessness is the same as having no civil rights. According to the neoliberal right, services like public welfare, which should only be managed by the state, can be managed properly without the state. The concept

of state sovereignty has always been a barrier to the rise of the individual, whereas non-state institutions can serve and promote the public interest.

36. Which one of the following statements best reflects the crux of the above passage?

- (a) **The lack of citizenship strips people of official identity and fundamental rights, exposing them to neglect, exclusion, and lack of protection from any state authority.**
- (b) Non-state actors like private firms or NGOs can run welfare services more efficiently than governments, but this often risks excluding the most vulnerable from equal access and protection.
- (c) Absence of legal status denies civil rights, while some believe private entities can more effectively oversee public services and enhance personal autonomy, challenging government control.
- (d) Government control can limit personal autonomy, whereas independent organizations are better positioned to support personal growth and address societal needs.

**EXPLANATION:**

Option (a) is correct because it directly relates to the idea in the passage that statelessness leads to the loss of civil rights, leaving individuals without state protection, identity, or access to basic services. It captures the essence of being unprotected and excluded due to lack of legal status.

**S.(37) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 3**

“Reason is, and ought only to be the slave of the passions, and can never pretend to any other office than to serve and obey them. It is not contrary to reason to prefer the destruction of the whole world to the scratching of my finger.

37. What are the key ideas conveyed in this passage?

- 1. Reason is incapable of evaluating moral decisions independently.
  - 2. Emotional instincts have primacy over logical deliberation in human behavior.
  - 3. Moral responsibility emerges solely from rational consideration.
  - 4. There is no intrinsic contradiction in irrational or selfish preferences.
- (a) 1 and 2 only
  - (b) 1 and 4 only**
  - (c) 3 and 4 only
  - (d) 1 and 3 only

**EXPLANATION:**

Option 1 is accurate as it asserts that reason functions in the service of emotion rather than governing it. Option 4 effectively reflects the idea conveyed in the line about preferring destruction to even a scratch, illustrating how reason fails to override selfish passion. Option 2 is somewhat close but lacks the necessary abstraction—it focuses on the evaluative role of reason in behavior rather than its deeper philosophical function. In contrast, Option 3 directly contradicts the overall message and cannot be considered valid.

**S.(38-39) Directions for the following 2 (Two) items:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 4**

In a culture increasingly obsessed with optimization, the concept of rest is no longer celebrated as rejuvenation but tolerated only when it serves utility. Even leisure has been conscripted into the service of self-improvement—books must be ‘productive,’ hobbies must ‘add value,’ and even sleep is tracked to maximize output. This quiet colonization of time reflects a deeper anxiety: that worth is no longer intrinsic but tied to measurable performance. But what is lost when moments are lived not for their own sake, but for their potential to be capitalized?

38. Which one of the following can be most reasonably inferred from the passage?

- (a) **Modern culture prioritizes performance metrics over personal experiences.**
- (b) Rest has become redundant in a hyper-productive society.
- (c) The idea of productivity has been redefined to include even unconscious states like sleep.
- (d) People today willingly sacrifice rest due to their love for achievement.

**EXPLANATION:**

While all options seem plausible, **A** is a broader inference drawn from multiple points in the passage: rest becoming utilitarian, sleep being optimized, and time being capitalized. **B** is extreme ("redundant"), and **D** introduces an unsupported claim about "love for achievement." **C** is specific but not a core inference—it's an example, not the takeaway.

39. The author's critique of time's "quiet colonization" rests primarily on which of the following assumptions?

- (a) **Human value should not be determined by measurable output.**
- (b) Utility and self-improvement are inherently harmful ideas.
- (c) Technological interventions are driving people to overwork.
- (d) People are unaware of how they spend their leisure time.

**EXPLANATION:**

The argument critiques utility-oriented living by suggesting something essential is lost when value is tied only to output. **A** is the **hidden premise** underlying this critique. **B** misrepresents the argument (the issue is not with the ideas themselves but their unchecked dominance). **C** is not stated, and **D** isn't discussed.

40. A sports tournament is scheduled over 5 days, and the probability of a match being postponed due to rain on any given day is 40%. What is the probability percentage that exactly 2 out of the 5 matches get postponed due to rain?

- (a) 12%
- (b) 22.43%
- (c) 29%
- (d) **34.56%**

**EXPLANATION:**

Out of 5 matches, 2 matches must be postponed due to rain, and 3 matches must not be postponed. The probability of rain on any specific day is 0.4, and the probability of no rain on any specific day is 0.6. We need to calculate the probability of exactly 2 days of rain and 3 days of no rain, in any order over 5 days. Since any 2 days out of 5 can have rain, we first calculate the number of ways to choose 2 days for rain:

$${}^5C_2 = \frac{5!}{2! \times 3!} = 10$$

**Probability of a Specific Case:** The probability of 2 rainy days occurring is  $(0.4 \times 0.4)$ .

The probability of 3 dry days occurring is  $(0.6 \times 0.6 \times 0.6)$ .

Thus, for any one specific combination of 2 rainy days and 3 dry days, the probability is:

$$0.4 \times 0.4 \times 0.6 \times 0.6 \times 0.6 = 0.03456.$$

Since any of the 10 possible combinations of 2 rainy days can occur, the final probability is:

$$10 \times 0.03456 = 0.345610$$

Convert to percentage = 34.56%.

41. In a physics experiment, there are three train models kept in such a way that it goes through two gates, the station entry and the service entry. The three trains travel at the speed of 219 m/s, 292 m/s and 438 m/s respectively. All the trains take same time go from service entry to station entry. If track is of the length 1.752 kms, how much time the trains would take together to go from service entry to service entry?
- (a) 0.4 minutes  
(b) 0.6 minutes  
**(c) 0.8 minutes**  
(d) 0.9 minutes

**EXPLANATION:**

Converting Distance from Kms to Meters = 1752 meters.

Time taken by Train 1 =  $1752/219 = 8$  seconds

Time taken by Train 2 =  $1752/292 = 6$  seconds

Time taken by Train 3 =  $1752/438 = 4$  seconds.

Time taken for trains to go from Station Entry to Service Entry

= LCM (4, 6, 8) = 24 seconds

Total Time taken for trains to go from Service Entry to Service Entry

=  $24 + 24 = 48$  seconds or 0.8 minutes (Since time taken to reach both Entries are same).

42. Smriti is playing the game of "Select to Win" in Star Utsav with her family members. The rules of the game are as follows: She must pick a number from 1 to 6 and the game master rolls three dice. If the number she picked appears on all three dice, the game master pays her ten thousand; if it appears on two dice, she is paid 5000; and if it appears on just one die, she is paid 3000. Only if the number she

picked does not appear at all in any dice, she pays the game master 3000. The probability that Smriti will win money playing in this game is:

- (a) 0.52
- (b) 0.753
- (c) 0.42**
- (d) None of these

**EXPLANATION:**

There are 3 ways to win money in the game.

The number you picked can come up in one dice, 2 dice or 3 dice.

The probability of the number you picked coming in all three dice

$$= {}^3C_3 * \left(\frac{1}{6}\right) * \left(\frac{1}{6}\right) * \left(\frac{1}{6}\right) = \frac{1}{216}$$

The probability of the number picked coming on 2 dice

$$= {}^3C_2 * \left(\frac{5}{6}\right) * \left(\frac{1}{6}\right) * \left(\frac{1}{6}\right) = \frac{15}{216}$$

The probability of the number picked coming on 1 dice

$$= {}^3C_1 * \left(\frac{5}{6}\right) * \left(\frac{5}{6}\right) * \left(\frac{1}{6}\right) = \frac{75}{216}$$

$$\text{Probability of winning} = \left(\frac{1}{216}\right) + \left(\frac{15}{216}\right) + \left(\frac{75}{216}\right) = \frac{91}{216} = 0.421.$$

Therefore, option C is the right answer.

**Alternate shortcut:**

$$\text{Negative possibility} = 1 - \left(\frac{5}{6}\right)^3$$

$$= 1 - \frac{125}{216}$$

$$= \frac{91}{216} = 0.421.$$

43. Three Drivers who knows Hindi and three Securities who knows Marathi work for the same IAS officer. Each of them knows a secret not known to others. They need to exchange these secrets over person-to-person WhatsApp message so that eventually each person knows all six secrets. None of the Securities knows Hindi, and only one Driver knows Marathi, what is the minimum number of WhatsApp messages needed for the above purpose?

- (a) 5
- (b) 7
- (c) 9**
- (d) 11

**EXPLANATION:**

Consider there are 6 people numbered 1-3 Drivers and 4-6 Securities, let 3 know both Hindi and Marathi.

First message would be between 1-3 then 2-3 such that 3 know secret of all 3 Drivers.

Let 3 message 4

Similarly, there would be message between 4-5 then 4-6 such that 4 know secret of all 3 Securities.

Now 3 would message 4. Such that 3 and 4 would know secret of all 6 members.

Now to let this know to 1,2,5,6 more 4 messages would be required.

Hence, minimum messages required would be 9.

44. An IT company planned to construct a big model of Rubik's cube in their office for an attractive workspace design. The manager of the company proposed to construct a cube model which has the dimension  $15 \times 15 \times 15$  formed using  $1 \times 1 \times 1$  cubes. The civil engineer said that this model would consume a lot of space and so he removed seven layers of  $1 \times 1 \times 1$  cubes and proposed the new dimension. The Chairman of the company being dissatisfied in the dimension, he said that he needs a bigger model only then he added five layers to the model proposed by Engineer. In the last, if the Engineer removed only one layer and it was accepted as the final model by all, what is the number of  $1 \times 1 \times 1$  cubes in the final dimension?

- (a) 1728
- (b) 1331
- (c) 729**
- (d) 512

**EXPLANATION:**

By the general logic, when one layer of  $1 \times 1 \times 1$  cube is removed from any existing cube, example  $5 \times 5 \times 5$ , the new dimension will be  $3 \times 3 \times 3$

In this question, total addition, and removal =  $-7 + 5 - 1 = -3$

So, from  $15 \times 15 \times 15$ , three layers are removed overall.

Number of smaller cubes will be in the dimension  $9 \times 9 \times 9 = 729$  cubes.

45. **Statement I:** A person claims to have worked for 'y' weeks and 'y' days starting on a Monday. If the total number of days worked is 64 days, Saturday is the day of the week he finished his work.

**Statement II:** There are 25 leap years between 2001 and 2101.

Which of the following statement(s) is/are correct?

- (a) Only Statement I is correct.
- (b) Only Statement II is correct.
- (c) Both Statement I and Statement II are correct.
- (d) Neither Statement I nor Statement II is correct.**

**EXPLANATION:**

**Statement I:**

Total days worked = 'y' weeks + 'y' days =  $8y$ .

Given that total days worked is 64, we solve:

$$8y = 64 \Rightarrow y = 8$$

The person worked for 8 weeks (56 days) and 8 additional days.

Starting on Monday, 8 extra days bring the finish to a Tuesday, not a Saturday.

**Statement I is false.**

**Statement II:**

Leap years between 2001 and 2101:

The leap years are 2004, 2008, ..., 2096 (24 leap years).

There are 24 leap years, not 25.

**Statement II is false.**

**Answer:**

**(d) Neither Statement I nor Statement II is correct.**

46. Liam defeats Noah by 300 meters in a 900-meter flat race. Later, they challenge each other on a hill, starting from opposite ends. When they cross paths, Noah has covered 25 meters more than Liam. Liam's uphill speed reduces by  $\frac{200}{7}\%$  of his flat speed, while Noah's downhill speed increases by 25%. Calculate the total length of the hill.

(a) 300 meter

(b) 330 meter

(c) 320 meter

**(d) 325 meter**

**EXPLANATION:**

**Determine Speed Ratios from Flat Race:**

Liam runs 900 meters while Noah runs 600 meters (since Liam wins by 300 meters).

Distance ratio:  $\frac{\text{Liam's distance}}{\text{Noah's distance}} = \frac{900}{600} = \frac{3}{2}$ .

Since, distance and speed are directly proportional speed ratio is 3 : 2.

Let Liam's flat speed =  $3v$ , Noah's flat speed =  $2v$ .

Adjust Speeds for Hill:

Liam's uphill speed: Reduced by  $\frac{200}{7}\%$ :

$$3v - \left(\frac{200}{7}\% \times 3v\right) = 3v - \frac{6v}{7} = \frac{15v}{7} (\approx 2.14v).$$

Noah's downhill speed: Increased by 25%:

$$2v + 25\% \times 2v = 2.5v \text{ (or } \frac{5v}{2}\text{)}.$$

Meeting Point Analysis:

Let Liam travel  $x$  meters uphill. Noah travels  $x + 25$  meters downhill.

Total hill length:  $L = x + (x + 25) = 2x + 25$ .

Equate Time to Meet:

$$\text{Time for Liam: } \frac{x}{\frac{15v}{7}} = \frac{7x}{15v}.$$

$$\text{Time for Noah: } \frac{x+25}{2.5v} = \frac{2(x+25)}{5v}.$$

Solve:

$$\frac{7x}{15v} = \frac{2(x+25)}{5v} \Rightarrow 7x = 6(x+25) \Rightarrow x = 150 \text{ meters.}$$

Calculate Hill Length:

$$L = 2x + 25 = 2(150) + 25 = 325 \text{ meters.}$$

Answer:

325 meters.

**S.(47) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

#### **PASSAGE - 1**

Climate change is no longer a prognosis but a reality faced by all, every day. All scientific predictions show that worse is yet to come. The developed countries find the trade route easier to pursue for their environmental objective, as well as, to use it as a non-tariff barrier against their growing imports. In such circumstances, it is difficult for the developing countries to sustain their old argument that trade policy and the environment policy should be kept in their respective silos. It is, therefore, not surprising that developed countries are likely to adopt measures which will have cross-border implications.

47. Which one of the following can be most logically inferred from the passage?

- (a) **Trade-related environmental measures by developed nations reflect a convergence of economic and ecological priorities that may inadvertently marginalize developing economies.**
- (b) Developing countries will have to align their trade strategies entirely with environmental protocols dictated by developed nations to maintain market access.
- (c) The environmental agenda pursued by developed countries is a pretext to reduce their import dependence on developing nations.
- (d) The assertion that trade and environment are distinct domains is increasingly untenable, especially for countries with vulnerable economies.

#### **EXPLANATION:**

Option A accurately captures the complex dual motive—balancing ecological concern with economic self-interest—that underlies the trade strategies of developed countries. The use of the word “inadvertently” maintains a neutral tone, aligning with the passage’s subtle critique without implying outright malice. Option B is too extreme, as the passage does not suggest that the interests of developed and developing countries are entirely aligned. Option C goes further by introducing a motive of deception; the term “pretext” implies deliberate manipulation, which the passage does not explicitly support. While Option D is somewhat relevant, it is too vague and overlooks the critical nuance of power asymmetry that Option A conveys more precisely.

**S.(48) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

#### **PASSAGE - 2**

It is only by engaging with the distortions in female labour force participation can we begin to truly understand the complex barriers that women face while not only entering but also remaining employed under the presently skewed labour market set-up. The attainment of educational qualifications, though important, is not a sufficient guarantee of women’s increasing participation in the labour market. It needs

to be accompanied by socio-cultural transformation, involving institutional interventions as well as societal and familial support systems in place.

48. Which of the following statements is the logical corollary to the above passage?

1. A reputed national university has launched a women-only leadership program to mentor top-performing female students in science and technology.
2. The government has collaborated with several IT industry bodies to implement an initiative that reserves at least 20% of entry-level jobs for women.
3. The Ministry of Transportation has partnered with leading private city bus operators to increase bus services for women around industrial parks and IT hubs, enabling working women to reach home earlier and better manage their work-life balance.
4. A national campaign has been launched to celebrate successful women entrepreneurs in urban India, with the aim of promoting role models and inspiring young women to pursue business ventures.

Which of the statements given above is/are valid?

- (a) 1 and 2 only  
**(b) 3 and 4 only**  
(c) 2 and 3 only  
(d) 1 and 4 only

**EXPLANATION:**

Statement 2 aligns with the passage as it focuses on institutional support by reserving 20% of entry-level jobs for women, addressing access to employment. Statement 3 addresses societal support by improving transportation for working women, helping them balance work and life, thus removing practical barriers to sustained employment. Both initiatives directly tackle barriers to women's participation and retention in the workforce. Statement 1 is wrong as it focuses only on education, whereas the passage emphasizes broader institutional and societal support. Statement 4 is wrong because it celebrates individual success rather than addressing structural barriers in the workforce.

**S.(49) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 3**

In the 21st century, bilateral relations are increasingly anchored not just in territorial concerns or ideological proximity, but in techno-sovereignty. Access to critical technologies—semiconductors, AI, 5G—has become a geopolitical currency. Consequently, tech diplomacy now shapes bilateral frameworks, often governed by export controls, cybersecurity compacts, and digital alliances. The contest is not merely for control but for normative influence over global digital architecture.”

49. Which of the following can be logically inferred from the passage?

1. States are competing not only for technological access but also to define the rules and values underlying the digital world.
2. Traditional diplomatic considerations like ideology and geography have lost all relevance in modern geopolitics.

3. Control over emerging technologies can redefine a nation's global influence and strategic partnerships.
4. Digital sovereignty has become more important than military alliances in shaping bilateral relationships.

Choose the correct answer:

- (a) Only 1 and 3  
(b) Only 1, 2, and 4  
(c) Only 3 and 4  
(d) All of the above

**EXPLANATION:**

Statement 1: Correct inference. The passage explicitly states the contest is not only for control of technology but for “normative influence over global digital architecture.” This means nations aim to define rules and values, not just possess tech.

Statement 2: Not a valid inference. The passage says territorial and ideological factors are no longer the only basis for bilateral relations—not that they've lost all relevance. This is an overstatement.

**Statement 3: Valid inference.** The passage implies that control of critical technologies has become a “geopolitical currency,” suggesting that it **redefines global influence and strategic relationships.**

Statement 4: Not directly supported. While the passage stresses the importance of digital sovereignty, it does not compare it directly to military alliances, nor suggest it has surpassed them in importance. That would be an extrapolation beyond the text.

**Directions for Question 50:** Study the following information given below to answer this question.

50. Four person A, B, C and D are given with certain numbers to find out LCM such as 2 pair, 3 pair, 4 pair and 5 pair but not necessarily in the same order.

The pair of numbers are

2 pair = (43, 47)

3 pair = (18, 26, 32)

4 pair = (3, 7, 11, 13)

5 pair = (4, 6, 9, 12, 18)

- I. D does not have the least pair of numbers.
- II. A does not have the second highest pair of numbers.
- III. Pair of numbers to find out LCM for B is one less than pair of numbers for C.
- IV. A is having a pair of numbers which consists of only two-digit numbers.
- V. B is having the third highest pair of numbers.

Who among the following is having the second least LCM?

- (a) C  
(b) D  
(c) B

(d) **A**

**EXPLANATION:**

LCM of the given pair of numbers

$$2 \text{ pair} = \text{LCM}(43, 47) = 2021 = \mathbf{A}$$

$$3 \text{ pair} = \text{LCM}(18, 26, 32) = 3744 = \mathbf{B}$$

$$4 \text{ pair} = \text{LCM}(3, 7, 11, 13) = 3003 = \mathbf{C}$$

$$5 \text{ pair} = \text{LCM}(4, 6, 9, 12, 18) = 36 = \mathbf{D}$$

Descending order according to LCM is  $B > C > A > D$

Among them, A is having the second least LCM

Hence the answer is option(d).

**Direction question (51-52):**

A boat starts its journey from point A at 6:00 AM and heads toward point F, passing through intermediate points B, C, D, and E. The boat moves at 4 km/h in still water, and the river current flows at 3 km/h. The direction of the boat's shadow changes during the journey, which helps infer the boat's orientation at various points. The river flows from south to north.

Journey details are as follows:

From A to B (1 hour): The shadow appears on the left side of the boat.

From B to C (10.5 km in 1.5 hours): After a turn, the shadow is now at the back of the boat.

From C to D (2 hours): Another turn occurs; the shadow returns to the left side.

From D to E (17.5 km in 2.5 hours): After turning again, the shadow moves to the front.

From E to F (4 hours): the boat is finally turned to towards left.

51. Based on the above information, in which direction is point **F** located with respect to point **A**?

(a) North-East

(b) **North-west**

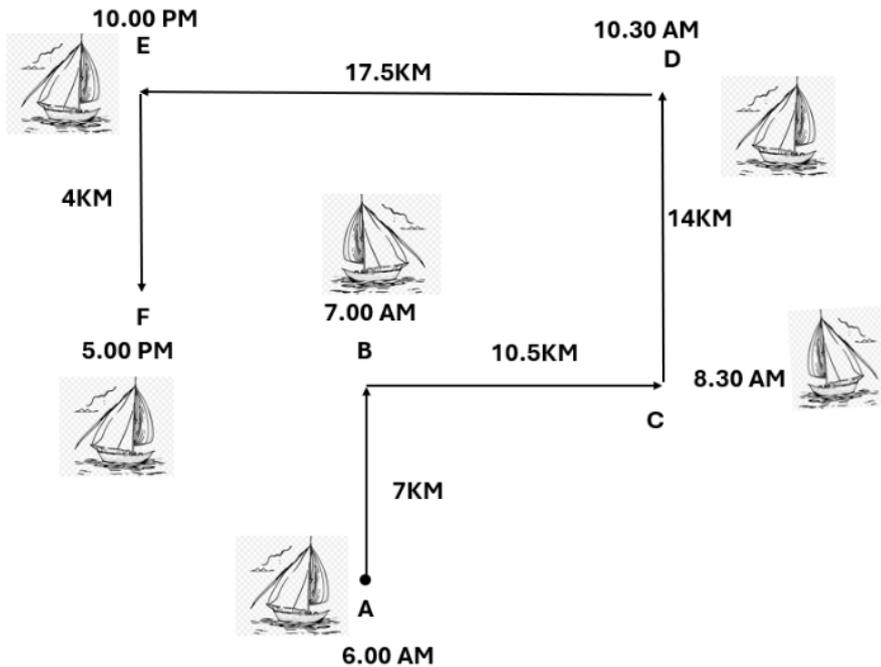
(c) South-East

(d) South-West

**EXPLANATION:**

**Direction Analysis:**

- Left shadow → Northbound (morning sun east)
- Back shadow → Eastbound (noon sun south)
- Right shadow → southbound (late evening sun northwest)



**Final Answer:**

Point F is located northeast of Point A.

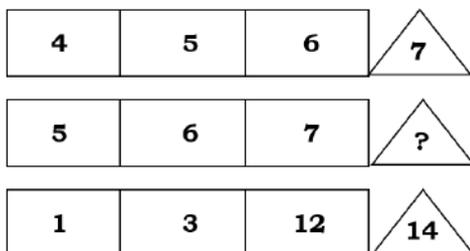
52. What is the shortest distance between B to D?

- (a) 17.5
- (b) 16.4
- (c) 14.5
- (d) 15.3

**EXPLANATION:**

$$h^2 = \sqrt{14^2 + 10.5^2} = 17.5.$$

53. Which one will replace the question mark?



- (a) 8
- (b) 10**
- (c) 11
- (d) 12

**EXPLANATION:**

$$4^2 + 5^2 + 6^2 = (16 + 25 + 36) = 77/11 = 7$$

$$5^2 + 6^2 + 7^2 = (25 + 36 + 49) = 110/11 = 10$$

$$1^2 + 12^2 + 3^2 = (1 + 144 + 9) = 154/11 = 14.$$

54. Sujitha does not remember her iPhone PIN and her iCloud password. In the attempt of remembering her iPhone PIN, she remembers that out of the four digits, all the digits are positive integers and all of them are not same. The fourth digit is the smallest and the first digit does not exceed the number 3. She recalls that if she divides the second digit by the third digit, she gets the first digit. How many different combinations does Sujitha have to try for unlocking her iPhone?

(a) 2

(b) 1

(c) 4

**(d) 3**

**EXPLANATION:**

Let the number be 'abcd' where all digits are positive single-digit distinct integers.

Now, d is the smallest of all the 4 digits while  $a = b/c$ . Also,  $a \leq 3$ .

**Case 1:**  $a = 1$

Not possible since d is the smallest of all the digits.

**Case 2:**  $a = 2 \rightarrow b = 2c$

Also, since d is the smallest of the 4 digits,  $d = 1$

Now, possible values of (b, c) are (2, 1), (4, 2), (6, 3) and (8, 4)

But c cannot be the least of the 4 digits and all digits must be distinct.

Accepted values of (b, c) are (6, 3) and (8, 4) (a, b, c, d) can be (2, 6, 3, 1) or (2, 8, 4, 1)

**Case 3:**  $a = 3 \rightarrow b = 3c$

Also, since d is the smallest of the 4 digits,  $d = 1$  or 2

Now, possible values of (b, c) are (3, 1), (6, 2), (9, 3)

But c cannot be the least of the 4 digits and all digits must be distinct.

Accepted values of (b, c) are (6, 2) (a, b, c, d) can be (3, 6, 2, 1)

Total acceptable values of (a, b, c, d) are (2, 6, 3, 1) or (2, 8, 4, 1) or (3, 6, 2, 1) i.e., 3 values.

Hence, option (d).

55. Amala, Bina, and Gouri invest their money in the ratio 3: 4: 5. They deposit their respective amounts in schemes offering annual interest rates in the ratio 6: 5: 4. Amala invests her amount for 1 year at simple interest. Bina invests for 2 years at simple interest. Gouri invests for 2 years at compound interest, compounded annually. It is found that Bina's total interest exceeds Amala's by Rs 2200. What is the total interest income earned by all three at the end of their respective periods?

(a) Rs 9580

(b) Rs 9680

**(c) Rs 9880**

(d) Rs 10080

**EXPLANATION:**

Let the common factor be x. The investments are:

Amala's investment = 3x, Bina's investment = 4x, Gouri's investment = 5x

Step 1: Amala's Interest

Amala invests for 1 year at 6% simple interest:

$$SI = \frac{3x \times 6x \times 1}{100} = \frac{9x}{50}$$

Step 2: Bina's Interest

Bina invests for 2 years at 5% simple interest:

$$SI = \frac{4x \times 5 \times 2}{100} = \frac{2x}{5}$$

Step 3: Use the Condition

Bina's interest exceeds Amala's by Rs 2200:  $\frac{2x}{5} - \frac{9x}{50} = 2200$

Solve for x, we get x=10000.

Step 4: Gouri's Interest

Gouri invests for 2 years at 4% compound interest:

$$CI_G = 50000 \times (1.04)^2 - 50000 = 4080$$

Step 5: Total Interest

The total interest is: 1800+4000+4080=9880

**Answer: C) Rs 9880.**

56. If a, b, c, d are four positive integers such that a and b are in the ratio 2:3, b and c are in the ratio 1:2, and c and d are in the ratio 4:6, which of the following statement(s) is/are incorrect?

**Statement I:** The result of applying componendo and dividendo to this proportion is 1:1

**Statement II:** The addendo and subtrahendo of this proportion are equal.

**Statement III:** The Geometric mean proportion is 14.42.

(a) Both Statement I and II.

(b) Both statement II and III.

(c) Statement I only

**(d) Statement III only**

**EXPLANATION:**

Given ratios:

a: b = 2:3

b: c = 1:2

c: d = 4:6

Combine the ratios by aligning the common terms:

Final combined ratio: a: b: c: d = 2: 3: 6: 9.

**Statement I (Componendo & Dividendo):**

For the proportion  $a/b = c/d$ , apply componendo and dividendo

$$\frac{(a+b)}{(a-b)} = \frac{(c+d)}{(c-d)} = \frac{2+3}{2-3} = \frac{6+9}{6-9} = \frac{5}{-1} = \frac{15}{-3} = 1:1$$

**Conclusion:** Statement I is **correct**.

**Statement II (Addendo & Subtrahendo):**

**Addendo:**  $\frac{a+c}{b+d} = \frac{2+6}{3+9} = \frac{8}{12} = \frac{2}{3}$

**Subtrahendo:**  $\frac{a-c}{b-d} = \frac{2-6}{3-9} = \frac{-4}{-6} = \frac{2}{3}$

Both results are equal.

**Conclusion:** Statement II is **correct**.

**Statement III (Mean Proportion):**

The geometric mean (mean proportion) of a, b, c, d = 2, 3, 6, 9.

$$\sqrt{2 \times 3 \times 6 \times 9} = \sqrt[4]{3.24} = 4.24$$

Statement III is **incorrect**.

**S.(57) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 1**

“It is not what the man of science believes that distinguishes him, but how and why he believes it. His beliefs are tentative, not dogmatic; they are based on evidence, not on authority or intuition. The scientific temper requires an almost artistic sensitivity to the balance of probabilities, a habit of weighing evidence and judging where certainty ends and probability begins.”

57. Which of the following can be most reasonably inferred from the passage above?

1. A true scientific mindset involves accepting uncertainty as an integral part of knowledge formation.
2. The strength of scientific belief lies more in its method than in the conclusion it reaches.
3. People with scientific temper must reject all authority and intuition as entirely unreliable.
4. Artistic thinking and scientific thinking are similar in their openness to multiple possibilities.

Choose the correct answer(s):

- (a) Only 1 and 2  
**(b) Only 1, 2, and 4**  
 (c) Only 2 and 4  
 (d) All of the above

**EXPLANATION:**

**Statement 1:** Correct. The passage explicitly states that the scientific person weighs probabilities and knows “where certainty ends,” implying a comfort with uncertainty. So, inference 1 is valid.

**Statement 2:** Correct. The emphasis in the passage is on “how and why” the scientist believes, not “what” he believes. This confirms that method matters more than conclusion.

**Statement 3:** Incorrect. The passage says that scientific beliefs are based on evidence, “not on authority or intuition.” However, this doesn’t mean a complete rejection of authority or intuition—only that they should not be the primary basis. Thus, this statement overreaches.

**Statement 4:** Correct. The passage refers to the scientific temper needing “an almost artistic sensitivity,” suggesting a parallel between artistic and scientific approaches to dealing with uncertainty and nuance.

**S.(58) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

#### **PASSAGE - 2**

“Justice is the first virtue of social institutions, as truth is of systems of thought. Each person possesses an inviolability founded on justice that even the welfare of society as a whole cannot override. Therefore, the rights secured by justice are not subject to political bargaining or to the calculus of social interests.

58. What is the central argument of the passage?

- (a) Justice can be compromised to secure the greater good of society.
- (b) Rights rooted in justice are not to be negotiated for collective benefit.**
- (c) Social welfare must be prioritized over individual rights in democracies.
- (d) Institutions must evolve beyond rigid notions of individual justice.

#### **EXPLANATION:**

The author clearly emphasizes that justice is inviolable, even when weighed against collective interest. Option B best captures this principle by highlighting the non-negotiable nature of individual rights. In contrast, Options A, C, and D conflict with the core message, as they prioritize collective outcomes or utilitarian calculations over the sanctity of justice and individual rights.

**S.(59) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

#### **PASSAGE - 3**

Let us examine about the rent-seeking landscapes through the lenses of housing and urban policies, which actively create the material, symbolic and normative conditions for the capture of lived territories by finance. I am talking about neo-liberalism, which among its discourses includes a big lie “State get out of the business and let the market do what is needed!” Yet in truth states, through their public policies, have actively created and reproduced all of the conditions for financial capital to seize cities and the built space. So, we are not talking about having the state in or out but about the specific new role of the state, from a distributive role, where it captures part of surplus capital so as to deliver goods and services to citizens, to one where it is dedicated to open territories being captured by surplus capital.

59. Based on the above passage, the following assumptions have been made:

- 1. Traditional urban housing policies fall short in the context of globalization, and introducing public-private partnerships could help redirect surplus capital towards meaningful development.
- 2. If housing shifts from state control to market forces, under the guise of public policy, it may marginalize weaker sections and cause lasting structural imbalances.

Which of the assumptions given above is/are valid?

- (a) 1 only
- (b) 2 only**
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**EXPLANATION:**

Assumption 1 is invalid because the passage critiques neoliberalism, which promotes private sector involvement in housing. It argues that this approach, rather than fostering meaningful development, allows financial capital to capture cities. The passage advocates for a more active state role in urban development instead. Assumption 2 is valid because the passage highlights how neoliberal policies, by shifting housing from state control to market forces, can marginalize weaker sections of society. It also points out that such policies lead to structural imbalances, as financial capital captures urban spaces, undermining equitable development.

**S.(60) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 4**

Mustard flowers contain both male and female organs and the crop is predominantly self-pollinating. This feature hinders the option of crossing two distant parent lines without specific control mechanisms. A cost-effective and less cumbersome option for hybridisation is the development of male sterility as an effective pollination control mechanism, along with an inbuilt mechanism to restore fertility. At the same time, it is critical to maintain seed purity while multiplying on a large scale for farmers' fields. Therefore, a workable hybridisation technology needs the three components of inducing male sterility, restoring fertility again after crossing, and then maintaining seed purity.

60. Which one of the following statements best reflects the crux of the above passage?

- (a) Natural self-pollination in mustard hinders crossbreeding, so inducing male sterility along with a fertility restoration mechanism is essential for effective and practical hybridisation.
- (b) Scaling up mustard cultivation for farmers requires hybridisation technology that controls self-pollination and ensures effective crossbreeding.
- (c) In hybrid mustard cultivation, the presence of unmatched mustard varieties, non-hybrid or wild plant seeds, or foreign seeds (such as weeds) can negatively impact yield, quality, and uniformity in production.
- (d) Effective hybridisation in large-scale mustard cultivation requires integrating male sterility, fertility restoration, and seed purity to ensure controlled pollination and genetic consistency.**

**EXPLANATION:**

Option (d) is correct because it captures all three essential components mentioned in the passage—male sterility, fertility restoration, and seed purity. It also reflects their integration as necessary for effective hybridisation. Importantly, it ties these elements to the goal of large-scale mustard cultivation.

61. Based on the above passage, the following assumptions have been made:

1. Genetic mechanisms for inducing male sterility and restoring fertility can be universally standardized across all mustard varieties.
2. Maintaining seed purity is a purely technical challenge and does not involve regulatory, logistical, or socio-economic factors.

Which of the assumptions given above is/are valid?

- (a) 1 only  
 (b) 2 only  
 (c) Both 1 and 2  
**(d) Neither 1 nor 2**

**EXPLANATION:**

Assumption 1 is invalid. Different mustard varieties may exhibit different genetic characteristics, and what works for one variety might not work for another. Standardizing these mechanisms across all varieties would ignore the complexity of genetic differences, which the passage doesn't address. Assumption 2 is wrong because maintaining seed purity involves not just technical challenges but also regulatory, logistical, and socio-economic factors. These include seed certification, distribution networks, and farmer access to quality seeds. The passage does not imply that seed purity is solely a technical issue.

62. Two friends, A and B, with speeds in the ratio 6:2, are running on track PQ. A starts from P towards Q. When A reaches the midpoint of the track, B starts running from P towards Q. A reaches Q, turns back, and meets B at a distance of 120 meters from Q. What is the total length of the track?

- (a) 220 meters  
**(b) 192 meters**  
 (c) 150 meters  
 (d) 120 meters

**EXPLANATION:**

Speed Ratio Simplification:

The speed ratio of cyclists A and B is 6:2=3:1.

Let A's speed = 3v m/s, B's speed = v m/s.

Time for A to Reach Midpoint:

Total distance PQ=L.

Distance to midpoint =  $\frac{L}{2}$ .

Time taken by A to reach midpoint:  $\frac{\frac{L}{2}}{3v} = \frac{L}{6v}$ .

B Starts Riding:

When A reaches the midpoint, B starts from P.

Time for A to reach Q from midpoint:  $\frac{\frac{L}{2}}{3v} = \frac{L}{6v}$ .

Distance B covers in this time:  $v \times \frac{L}{6v} = \frac{L}{6}$ .

When A reaches Q, B is  $\frac{L}{6}$  meters from P.

Meeting Point Analysis:

After turning back, A and B move towards each other.

Distance between them when A starts returning:  $L - \frac{L}{6} = \frac{5L}{6}$ .

Relative speed =  $3v+v = 4v$ .

Time to meet:  $\frac{\frac{5L}{6}}{4v} = \frac{5L}{24v}$ .

Distance Covered by A After Turning Back:

Distance A travels back towards P:

$$3v \times \frac{5L}{24v} = \frac{15L}{24} = \frac{5L}{8}$$

Given they meet 120 meters from QQ:

$$\frac{5L}{8} = 120 \Rightarrow 5L=960 \Rightarrow L=192 \text{ meters.}$$

63. The inside perimeter of a practice running track with semi-circular ends and straight parallel sides is 272 m. The length of the straight portion of the track is 70 m. If the track has a uniform width of 2 m throughout, find its area.

- (a) 675.25m<sup>2</sup>
- (b) 625.48m<sup>2</sup>
- (c) 524.21m<sup>2</sup>
- (d) 556.95m<sup>2</sup>**

**EXPLANATION:**

Step 1: Find the inner radius

The total inner perimeter consists of:

Two straight parts (each 70 m): total =  $2 \times 70 = 140$  m

Two semicircular ends = 1 full circle: total curved length =  $272 - 140 = 132$  m

So:

Curved portion (inner circle) =  $2\pi r = 132 \Rightarrow r = 132/2 \times \pi = 21$  m

Thus: Inner radius =  $r = 21$ m Outer radius =  $r + 2 = 23$ m

Step 2: Calculate the Area of the Track

The area of the track = area enclosed by outer border – area enclosed by inner border

This includes: The circular parts (difference of two circles). The straight parts (the difference of two rectangles)

a. Area of circular parts (difference of rings):

$$\text{Area circular} = \pi (R^2 - r^2) = \pi (23^2 - 21^2) = \pi (529 - 441) = \pi \times 88 \approx 3.14 \times 88 \approx 276.95 \text{ m}^2$$

b. Area of straight portions:

Outer rectangle:  $70 \times (2 \times 23) = 70 \times 46 = 3220$

Inner rectangle:  $70 \times (2 \times 21) = 70 \times 42 = 2940$

Difference:  $3220 - 2940 = 280 \text{ m}^2$

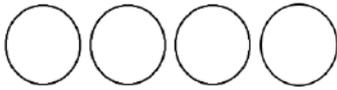
Final Area of the Track:

Total area =  $276.95 + 280 = 556.95 \text{ m}^2$ .

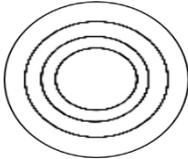
**Directions for Questions 64:** Study the following information given below and answer the questions:

64. Select the figure which establish the correct relationship between Quadrilaterals, Trapezoid, Parallelogram, Rhombus.

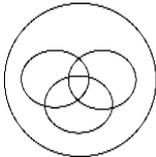
(a)



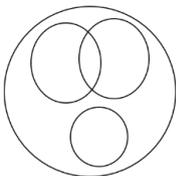
(b)



(c)



(d)



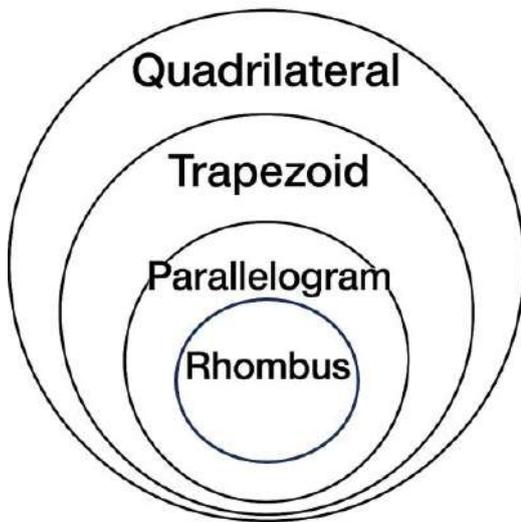
**EXPLANATION:**

**Trapezoid:** No specific connection except being a quadrilateral.

**Parallelogram:** Includes rhombuses and rectangles.

**Rhombus:** A specific type of parallelogram with equal sides.

Every Rhombus is a Parallelogram, and every Parallelogram is a Quadrilateral, but not every trapezoid fits in Parallelogram.



65. A marriage hall is to be laid with square tiles without leaving any gap. If the floor of the marriage hall is 23.87 meters wide and 32.67 meters long, what is the smallest number of identical square tiles that pave the entire floor without breaking any tile for this purpose?

- (a) 64999 tiles
- (b) 66449 tiles
- (c) 64449 tiles**
- (d) 66499 tiles

**EXPLANATION:**

Converting the given values into centimetres,

Length = 3267 cm and Breadth = 2387 cm

We have dimensions: (3267 \* 2387)

HCF (3267, 2387) = 11

Now Area of floor (L x B) = 3267 \* 2387

In order to minimize the number of tiles considering a tile with a dimension equivalent to the HCF, we have the dimension of the tile to  $11 * 11 = 121$  cm.

A total of  $3267 * 2387 / 121 = 64449$  tiles are required.

**S.(66-67) Directions for the following 2 (Two) items:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 1**

The Outer Space Treaty of the United Nations states that the exploration and use of outer space should be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind. This did not stop the nations to use the knowledge gained during these experiments for some defence-related objectives too, like the Global Positioning Systems (GPS). While the general population was permitted to use the spare capacity of the GPS satellites, the move towards 'Space Tourism' that started in 2021 has raised worries about the adverse impacts of this consumerist thrust. The excitement stemmed less from technological achievement and more

from consumerist appeal. It might look like egalitarian gain, but one must not overlook the fact that once a technology enters the societal domain, it proliferates uncontrollably, often with menacing dimensions and directions.

66. With reference to the above passage, the following assumptions have been made. Which of these assumption(s) is/are valid?

- I. Commercialization of space exploration would have legal and regulatory concerns.
- II. Space Tourism is an inevitable consequence of space exploration.

Select the correct answer using the codes given below:

- (a) I only**
- (b) II only
- (c) Both I and II
- (d) Neither I nor II

**EXPLANATION:**

Assumption I is a direct inference of the passage, which opens with the UN legislation and ends with a warning about consequences of unregulated space consumerism. Assumption II is wrong, as the passage is only a critique of the direction headed by the space tourism, but does not assert its inevitability.

67. The author of the passage holds the view that,

- (a) Space Tourism is a double-edged sword and must be approached with caution.**
- (b) Technology has always ended up serving the consumerism fuelled by the financially affluent.
- (c) When it comes to technology, there should be fine distinction between serving the needs of the society on the whole rather than on specific sections.
- (d) Space Tourism is a consequence of the widely-prevalent capitalist drive in almost all the countries.

**EXPLANATION:**

The author refers to developments like GPS and Space Tourism as “egalitarian gains,” but warns that they come with the caveat of *menacing consequences* if there is uncontrollable proliferation. Option (a) captures this essence and is therefore correct. While the passage criticizes the consumerist drive, it neither explicitly blames the “financially affluent,” as mentioned in option (b), nor argues for a distinction between the whole society and specific sections, as stated in option (c). Option (d) is also incorrect, as the term “capitalist drive” is an extrapolation; the passage specifically uses the term “consumerist drive.”

**S.(68) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 2**

Civilizations die from suicide, not by murder. They perish when elites lose the capacity for creative response, when their governing classes cease to adapt and instead cling to static formulas. The challenge-and-response mechanism is not automatic: only societies that forge new traditions in the crucible of crisis can hope to transcend the grave of cultural decay.

68. Which of the following statements best represents a corollary to the author's argument?

- (a) Civilizational renewal depends on external conquest and historical accidents.
- (b) Governing elites must consistently uphold traditional values during crisis.
- (c) Societies that innovate in response to crises are less likely to collapse.**
- (d) Cultural continuity is guaranteed by avoiding all experimentation.

**EXPLANATION:**

The passage highlights **adaptive innovation during crises** as the key to survival.

**C** directly expresses that point.

**A, B,** and **D** contradict the author's emphasis on **internal response and change**.

**S.(69) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 3**

Culture is not only external, as a set of shared practices, but internalized through enculturation, shaping cognition, affect, and perception. Higher mental functions develop first on the social plane and are then internalized, making culture the very scaffold of thought. Even perception is not universal; what one sees, values, or remembers is filtered through cultural lenses, rendering the individual psyche a microcosm of collective meaning.

69. Which of the following assumptions underlie the argument presented in the passage?

- 1. The mind cannot be understood fully without reference to the cultural context it is embedded in.
- 2. Internal psychological processes are shaped by socially mediated interactions.
- 3. There is a universal core of cognition that precedes cultural influence.
- 4. Culture plays a formative, not merely decorative, role in structuring human consciousness.

Choose the correct answer(s):

- (a) Only 1 and 2
- (b) Only 1, 2, and 4**
- (c) Only 2 and 3
- (d) All of the above

**EXPLANATION:**

**Statement 1:** Correct assumption. The passage claims cognition, perception, and even memory are shaped through culture, implying we must understand the mind in its cultural context. This is a foundational assumption.

**Statement 2:** Correct assumption. The idea that "higher mental functions develop first on the social plane" assumes that internal processes are rooted in social interactions, even if this isn't explicitly argued from first principles.

**Statement 3:** Not assumed. The passage *rejects* universality in perception and cognition, instead suggesting that cultural variation is fundamental. Assuming a universal cognitive core would contradict the main argument, not support it.

**Statement 4:** Correct assumption. The passage treats culture as a “scaffold of thought”, not an embellishment. This metaphor relies on the assumption that culture shapes and structures mental activity fundamentally.

70. Six years ago, Felicina was twice as old as Sahana then. 7 years hence, sum of the ages of Felicina and Sahana is 74. Which among the following is necessarily correct?

- (a) Sahana is 24 years old
- (b) Sahana is 12 years younger than Felicina
- (c) **Felicina is 16 years older than Sahana**
- (d) None of these

**EXPLANATION:**

Present age of Felicina = F

Present age of Sam = S

Given,

$$F - 6 = 2(S - 6).$$

$$F - 6 = 2S - 12$$

$$2S - F = 6 \quad \dots (1)$$

$$(F + 7) + (S + 7) = 74$$

$$F + S = 60 \quad \dots (2)$$

Adding the equations (1) & (2), we get

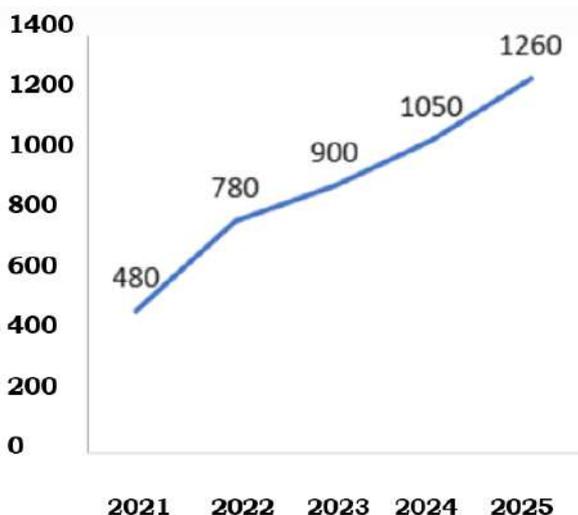
$$3S = 66$$

$$S = 22$$

Then, F = 38.

**Directions 71:** Study the following line and table chart carefully and answer the questions given beside.

The line graph given below gives the information about the total sum of Funds (In Rs. thousand crores) received to Indian States during the five consecutive years. The table given below gives the information is about the ratio between funds from Country A, B and C received during the respective year.





<b>COUNTRY</b> → ↓ <b>YEAR</b>	<b>A</b>	<b>B</b>	<b>C</b>
<b>2021</b>	3	5	4
<b>2022</b>	4	3	6
<b>2023</b>	5	4	6
<b>2024</b>	2	1	4
<b>2025</b>	2	3	4

71. What was the total sum of funds given (in Rs. thousand crore) by country B in the year 2021, 2023, and 2025 together?

- (a) 850
- (b) 720
- (c) 860**
- (d) 750

**EXPLANATION:**

<b>COUNTRY</b> → ↓ <b>YEAR</b>	<b>A</b>	<b>B</b>	<b>C</b>
<b>2021</b>	$(3/12) \times 480 = 120$	$(5/12) \times 480 = 200$	$(4/12) \times 480 = 160$
<b>2022</b>	$(4/13) \times 780 = 240$	$(3/13) \times 780 = 180$	$(6/13) \times 780 = 360$
<b>2023</b>	$(5/15) \times 900 = 300$	$(4/15) \times 900 = 240$	$(6/15) \times 900 = 360$
<b>2024</b>	$(2/7) \times 1050 = 300$	$(1/7) \times 1050 = 150$	$(4/7) \times 1050 = 600$
<b>2025</b>	$(2/9) \times 1260 = 280$	$(3/9) \times 1260 = 420$	$(4/9) \times 1260 = 560$

The required sum =  $200 + 240 + 420 = 860$  thousand crores.

**S.(72) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 1**

Social protection programs are a central component of the citizen-state social contract wherein the government provides economic protection to the citizens against daily risks and vulnerabilities. In mature social democracies, such protections are fundamental constituents of the economic and political life which allows a level playing field between competing class interests of those who own capital and the ones which provide labour. A market-based economy where labour class is conferred a fair share vis-à-vis capital investments by the entrepreneur is considered a common ground where redistributive objectives of the state are supported by greater income growth leading to broad-based prosperity. In developing nations however, the goals of social democracy are affected by the lack of financial resources, perverse political interests, and suppressed civil liberties.

72. Which one of the following statements best reflects the crux of the above passage?

- (a) Systemic imbalances in society will be resolved once adequate social protection programs are put in place.
- (b) A market-based economy is often favoured over welfare-driven social democracy for better balancing the interests of capital owners and labour.
- (c) A developing nation with limited resources cannot achieve significant GDP growth without adopting a market-based economic model.
- (d) **In emerging economies, addressing the needs of marginalized and vulnerable communities can be hindered by institutional constraints and resource limitations.**

**EXPLANATION:**

Option (d) is correct as it highlights the difficulties faced by emerging economies in protecting marginalized communities, due to institutional weaknesses and resource constraints, as discussed in the passage.

**S.(73) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 2**

The development of new educators in India is often hindered by a lack of a strong mentoring system. While they start their careers full of enthusiasm, this is quickly replaced by disillusionment due to ineffective induction processes and lack of institutional support. The gap between their initial training and ongoing professional development makes growth irregular and often unhelpful. Organizations like District Institutes of Education and Training (DIETs) and Block Resource Centres (BRCs), which are meant to support teaching improvement, often become bureaucratic and fail to offer meaningful pedagogy. Workshops intended to build skills often lack focus and depth. As a result, new teachers face the profession with little guidance, limiting their ability to innovate and be effective.

73. Which one of the following statements best reflects what is implied by the passage?

- (a) The present skill level of novice educators may fall short in fostering meaningful learning outcomes among children and youth.
- (b) Inadequate and outdated institutional mechanisms often constrain educators from adopting dynamic and innovative teaching practices.
- (c) A well-structured induction process, supported by seasoned mentors, can help sustain early-career teachers' motivation and improve classroom outcomes.
- (d) **Addressing foundational gaps in teacher training and ensuring sustained professional development are key to nurturing innovative educators.**

**EXPLANATION:**

Option (d) emphasizes the need for both foundational reform in teacher training and regular upgrades in ongoing development to ensure educators are well-equipped. Without strengthening both these phases, the teaching profession remains stagnant, limiting long-term improvements in classroom quality.

**S.(74) Directions for the following 1 (One) item:** Read the following passage and answer the items that follow. Your answer to the items should be based on the passage only.

**PASSAGE - 3**

In a world where relationships, identities, and careers have become liquid—ever-shifting and ephemeral—the individual is compelled to become a perpetual project. Freedoms once assured by stable institutions now yield only precarious autonomy, as the bonds that once anchored life dissolve into transient networks. Anxiety arises not from external constraint but from the endless demand to remake the self.”

74. Which of the following can be most reasonably inferred from the passage?

1. The disappearance of stable institutions has replaced structured freedom with a burden of constant self-reinvention.
2. The shift to fluid networks has empowered individuals with more freedom than ever before.
3. Contemporary anxiety stems primarily from internal pressures rather than external restrictions.
4. Identity formation in modern society is increasingly shaped by instability and impermanence.

Choose the correct answer(s):

**(a) Only 1, 3, and 4**

(b) Only 1 and 4

(c) Only 2 and 3

(d) All of the above

**EXPLANATION:**

**Statement 1:** Correct. The passage contrasts past “freedoms once assured by stable institutions” with today’s “precarious autonomy” and constant need to remake the self. This directly supports the idea that structured freedom has been replaced with the burden of self-reinvention.

**Statement 2:** Incorrect. The passage doesn’t present fluid networks as empowering, but rather destabilizing. It talks about the loss of anchors and the anxiety caused by constant transformation—not greater freedom.

**Statement 3: Correct.** The final sentence explicitly states: “**Anxiety arises not from external constraint but from the endless demand to remake the self.**” This points directly to **internal pressures** as the source of anxiety.

**Statement 4:** Correct. The passage opens with a declaration that relationships, identities, and careers have become liquid, suggesting identity formation is now dominated by instability and change.

**Direction for Question 75:** Study the following information given below to answer this question.

In the question below there are given some statements followed by some conclusions. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows/follow from the given statements, disregarding commonly known facts.

**75. Statements:**

All TV are Radio

No Radio is a Mobile

Some Radio are Camera

Conclusions

(I) Some Cameras are not Mobile

(II) Some TV are not Camera

(III) Some Radio are not TV

(IV) Some Radio are not Mobile

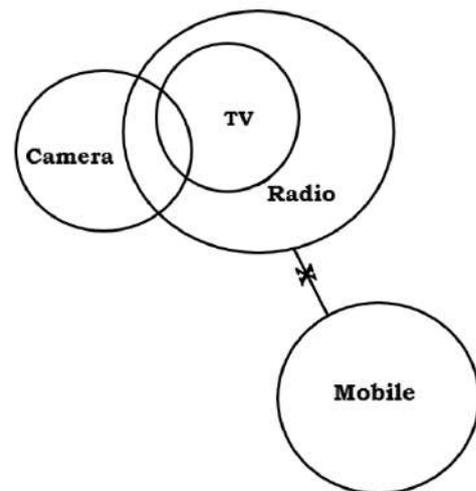
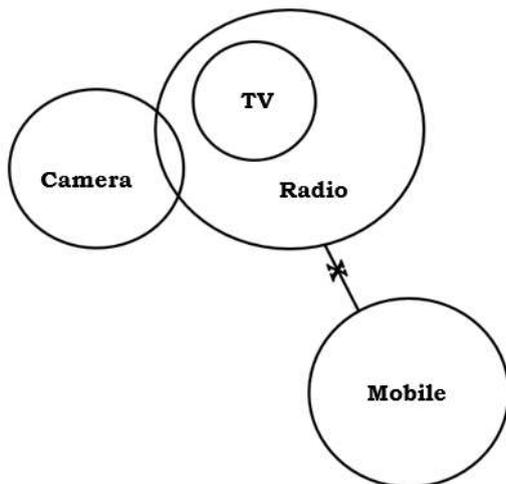
(a) Only IV follows

**(b) Only I and IV follows**

(c) Only II and III follows

(d) Only I, II and III follows

**EXPLANATION:**



76. Between 3:00 PM and 4:00 PM, how many times do the hour and minute hands of a clock form an angle that is an exact positive multiple of 30 degrees?

(a) 4 times

(b) 6 times

**(c) 10 times**

(d) 12 times

**EXPLANATION:**

Except 0 degree and 180 degree, all other angles occur twice between H and (H+1) hours.

30 degree = 2 times (closer to 3:10 and 3:20)

60 degree = 2 times (closer to 3:05 and 3:25)

90 degree = 2 times (exactly and 3:00 and little after 3:30)

120 degree = 1 time (little after 3:35 and exactly at 4:00. 4 pm should not be considered since we count between 3 and 4 pm)

150 degree = 2 times (little before 3:45 and little after 3:55)

180 degree = 1 time (little before 3:50)

210 degree is same as 150 degree. No need to count.

240 degree is same as 120 degree. No need to count.

Same goes for 270, 300 and 330 degrees.

Total count = 2+2+2+1+2+1 = 10 times.

77. Consider the following statements.

**Statement I:** When  $(142956^{7586})^{3124}$  is divided by 9801 then remainder is 1.

**Statement II:**  $27^{45} - 9^{44}$  is divisible only by  $3^{88}$

Which of the statement(s) is/are correct?

(a) Statement I only

(b) Statement II only

**(c) Neither statement I nor statement II**

(d) Both statement I and statement II

**EXPLANATION:**

**Statement I**

142956 is divisible of both 9 and 11. 9 & 11 are the factor of 9801. So, remainder is zero.

Statement I is incorrect.

**Statement II**

$$27^{45} - 9^{44} = 3^{3^{45}} - 3^{2^{44}}$$

$$= 3^{135} - 3^{88}$$

$$= 3^{88} \times (3^{47} - 1)$$

Hence,  $27^{45} - 9^{44}$  is divisible by both  $3^{88}$  and  $3^{47} - 1$ .

Statement II is incorrect.

78. In a certain code, 'QUAESTOR' is coded as '4'. In the same code, 'INCHOATE' will be coded as

(a) 1

**(b) 3**

(c) 5

(d) 7

**EXPLANATION:**

Substituting the respective number codes as follows.

A	B	C	D	E	F	G	H	I	J	K	L	M
1	2	3	4	5	6	7	8	9	10	11	12	13

N	O	P	Q	R	S	T	U	V	W	X	Y	Z
14	15	16	17	18	19	20	21	22	23	24	25	26

QUAESTOR =  $17 + 21 + 1 + 5 + 19 + 20 + 15 + 18 = 116$ .

When it is divided by total number of letters present in the word (8), the remainder is 4

Similarly,

INCHOATE =  $9 + 14 + 3 + 8 + 15 + 1 + 20 + 5 = 75$

When it is divided by total number of letters present in the word (8), the remainder is 3.

79. Find the wrong term in the series.

24, 28.8, 34.56, 41.472, 48.3264

(a) 28.8

(b) 34.56

(c) 41.472

**(d) 48.3264**

**EXPLANATION:**

$24 \times 120\% = 28.8$

$28.8 \times 120\% = 34.56$

$34.56 \times 120\% = 41.472$

$41.472 \times 120\% = 49.76$  (This is the correct answer)

Hence, Option (d) is the wrong term.

80. Let  $X = 4039383736\dots4321$  be a larger number. What will be the remainder when X is divided by 3?

(a) 0

(b) 1

(c) 3

(d) 5

**EXPLANATION:**

X is a number written as 1 to 40 continuously in reverse.

To find the remainder when divided by 3, it is enough to find the sum of the digits of the number and then divide the sum by 3.

Sum of digits of the numbers from 1 to 10 = 46

Sum of digits of the numbers from 11 to 20 = 56

Sum of digits of the numbers from 21 to 30 = 66

Sum of digits of the numbers from 31 to 40 = 76

Thus, total sum of the digits =  $46 + 56 + 66 + 76 = 244$

When 244 is divided by 3, the remainder is 1.

Hence, when X is divided by 3, the remainder is 1.