anubhav-2026
ALL INDIA OPEN MOCK TEST
GENERAL STUDIES PAPER-II
(01st February, 2026)

Answer Key

1. (b)	17. (b)	33. (b)	49. (a)	65. (d)
2. (b)	18. (c)	34. (b)	50. (a)	66. (c)
3. (c)	19. (c)	35. (c)	51. (a)	67. (a)
4. (a)	20. (b)	36. (a)	52. (c)	68. (c)
5. (b)	21. (c)	37. (a)	53. (a)	69. (c)
6. (c)	22. (b)	38. (b)	54. (b)	70. (c)
7. (b)	23. (d)	39. (b)	55. (a)	71. (c)
8. (b)	24. (a)	40. (d)	56. (b)	72. (b)
9. (b)	25. (d)	41. (b)	57. (b)	73. (a)
10. (c)	26. (b)	42. (b)	58. (d)	74. (c)
11. (c)	27. (c)	43. (a)	59. (b)	75. (b)
12. (d)	28. (a)	44. (b)	60. (b)	76. (c)
13. (a)	29. (d)	45. (c)	61. (b)	77. (b)
14. (b)	30. (b)	46. (d)	62. (a)	78. (a)
15. (d)	31. (c)	47. (a)	63. (a)	79. (a)
16. (c)	32. (a)	48. (d)	64. (b)	80. (b)

1. **(b)**

   • (a) Transfer of water governance entirely to the Union Government – Incorrect because the passage highlights coordination challenges, not the need for complete centralization of authority.

   • (b) Promotion of decentralized, basin-level water management institutions – Correct because basin-level institutions enable inter-State coordination while addressing region-specific water variability and governance issues.

   • (c) Expansion of river interlinking projects – Incorrect as the passage focuses on governance and sustainability issues rather than large-scale infrastructural solutions.

   • (d) Increasing dependence on groundwater for irrigation – Incorrect because the passage explicitly notes overextraction and declining groundwater levels as existing problems.

2. **(b)**

   • (a) Incorrect because the passage clearly states that health and cognitive deficits constrain productivity, contradicting the idea that demographic expansion can work independently of health conditions.

   • (b) Correct because the passage directly links early-life health and nutrition to learning outcomes, adult productivity, and long-term economic transformation.

   • (c) Incorrect as the passage does not suggest any sectoral reorientation of the economy, focusing instead on human capital quality across all sectors.

   • (d) Incorrect because the passage emphasizes that disease burden significantly affects cognitive development and productivity over the life cycle.

3. **(c)**

   • (a) Incorrect because the passage explicitly states that autonomous farmer responses are often insufficient to deal with large-scale climatic shocks.

   • (b) Incorrect as the passage argues for a combination of farmer-level responses and public interventions, not replacement of farmer initiatives.

   • (c) Correct because the passage emphasizes that policy-led adaptation succeeds only when farmers recognize climate risks and perceive adaptation as beneficial and feasible.

   • (d) Incorrect since the passage frames adaptation as an institutional and behavioral challenge, not merely a technological one.

4. **(a)**

   Step 1 — Possible (Prateek, Tony) year pairs

   Two-year difference within 1990–1995 and distinct years, with 1992 already used:

   • (1991, 1993) ✓ possible

   • (1993, 1995) ✓ possible

   • (others clash with 1992 or go out of range)

   Step 2 — Analyze both valid cases

   Case 1: Prateek 1991, Tony 1993

   Available years: 1990, 1994, 1995

   • Rohan must be older than Tony (1993) ⇒ only **1990** is available before 1993

   • ⇒ **Rohan = 1990**

   Case 2: Prateek 1993, Tony 1995

   • Satish must be after 1992 ⇒ only **1994** works

   • Remaining years for Rohan and Vikram: 1990, 1991

   • Rohan older than Vikram ⇒ **Rohan = 1990**

(2 – C)

5. (b)

Given: Will buy again = **80%**, Of these, **30%** rate **Good**

Will not buy again = **20%**, Of these, **28%** rate **Good**

Step 1. Percentage rating Good among those who will buy again

0.80×0.30=0.24=24%

Step 2. Percentage rating Good among those who will not buy again

0.20×0.28=0.056=5.6%

Step 3. Total percentage rating Good

24%+5.6%=29.6%

6. (c)

Naman + Raman can complete the work in 150 days

N+R=1/150

Raman + Baman can complete the work in 100 days

R+B=1/100.

Naman works for **75 days,**Raman works for **135 days,**Baman works for **45 days.**

Total work done is 1 unit:

75N+135R+45B=1 here, N = 1/150 – R and B = 1/100 – R, on solving we get, R = 1/100, N = 1/300 and B = 1/150

Naman works **every day,** Raman works **every second day,** Baman works **every third day**

LCM of (1, 2, 3) = **6 days.**

In 6 days: Naman works **6 days,**Raman works **3 days,** Baman works **2 days.**

Hence work done in 6 days = 6N+3R+2B = 13/300.

Hence, total time required = 1/(13/300) x 6 = approx. 138.5 days

7. (b)

In such questions, we should be trying to complete the squares.

We see a xy term; we need to accommodate that in a square that has both x and y terms. Since there is only one other term with x, we also need to have it entirely in the square.

$(2x - y)^2 = 4x^2 + y^2 - 4xy$

Using this in the given equation, we are left with $(2x - y)^2 + 3y^2 + 3 - 6y$

This can be written as $(2x - y)^2 + 3(y^2 + 1 - 2y)$

$(2x - y)^2 + 3(y - 1)^2 = 0$

Since both the squares add up to 0, this is only possible when the squares themselves are O

This would give us $y = 1$ from the second term, and using that, we get $x = 1/2$ from the first term.

Therefore the value of $4x + 5y$ will be 2+5 = 7

Hence, 7 is the correct answer.

8. (b)

$m + 2n = 6$

$m + n = 6 - n$

Clearly, the maximum/minimum value of $(m + n)$ depends on the value of n.

Since m and n are positive real numbers, the minimum value that n can take is 0.

The maximum value that n can take is when m is 0.
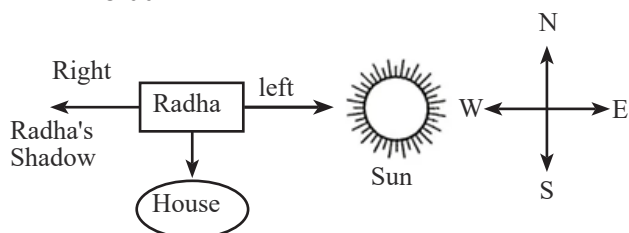
$0 + 2n = 6$

$n = 3$.

When $n = 0$; $m + n = 6 - n = 6$

When $n = 3$; $m + n = 6 - 3 = 3$

Therefore, the minimum and maximum values of $(m +)$ are 3 and 6 respectively.

The average of these extreme values is (3+6)/2 = 4.5

9. (b)

At 8:00 an the Sun is in the East direction.

Clearly, Radha is walking towards the South direction.

10. (c)

Let the digits of the 3-digit number be p, q, & r.

$4 < p \times q \times r < 8$

Therefore, $p \times q \times r$ can take the values 5, 6 or 7.

Let's start with prime numbers 5 & 7.

Possible combinations are:

{1,1,5}, {1,5,1}, {5,1,1} and {1,1,7}, {1,7,1}, {7,1,1}. So, total 6 combinations.

6 can be splitted as 2×3. Therefore, the possible combinations of p, q, r are {1,1,6}, {1,6,1}, {6,1,1} – 3 combinations and {1,2,3} also will yield 6 as product.

So total = !3 = 6 combinations.

Hence, 6+3+6 = 15 such 3-digit numbers.

11. (c)

The passage emphasizes that if action is not taken today, future generations will suffer significant economic losses or face a serious crisis. Option (b) accurately reflects this point, stating that delaying action increases both the risks and costs in the future.

12. (d)

- (a) Incorrect because the passage explicitly shows that capability without clear purpose leads to stagnation, not success.
- (b) Incorrect since the passage presents internal competition as a consequence of unclear goals, not a driver of effectiveness.
- (c) Incorrect as the passage rejects speed or efficiency as substitutes for direction or vision.
- (d) Correct because the passage assumes that shared understanding of purpose is necessary for effort to result in achievement.
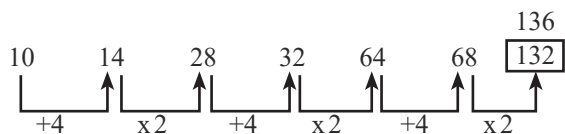
13. (a)

- (a) Correct because the passage implies that conventional unemployment figures can mask underlying labour market distress when discouraged workers exit the labour force.
- (b) Incorrect since the passage explicitly warns that falling unemployment rates may coexist with weak job prospects.
- (c) Incorrect as the passage attributes labour force exit to discouragement, not voluntary personal choices.
- (d) Incorrect because the passage highlights measurement limitations, not policy sufficiency in correcting indicator distortions.

14. (b)

Three generations are there. A is from the first generation and has a son D who in turn is the father of C. C is from the third generation who has a brother F. Now from the third statement it is clear that E is from the first generation and is the wife of A as there are two married couples. B is the daughter in law of E and D is the son of A, so B is the wife of D. B reads book Q, D reads book R, C reads book U, A reads book S. Now from the sixth statement it can be inferred that as a female does not read book P. hence it will be read by F and the remaining book T will be read by E.

15. (d)

Pattern of the series is as shown below

So, 132 is wrong item, it must be replaced by $68 \times 2 = 136$

From Eqs. (i) and (ii), we see that the code for blue is '8'.

16. (c)

The remainder when 15^{23} is divided by 19 equals $(-4)^{23}$

The remainder when 23^{23} is divided by 19 equals 4^{23}

So, the sum of the equals $(-4)^{23} + (4)^{23}$

So, the sum of the equals $(-4)^{23} + (4)^{23} = 0$

17. (b)

Our task is to minimise $3p + 2q + r$.

Here, the coefficient for (r) is the minimum.

$3pq = 8(q + q)$

We know that p, q and r are natural number. So, the product pr should definately be a multiple of 8.

Case 1: $p = 1$, $r = 8$ and $q = 2 \Rightarrow 3p + 2q + r = 15$

Case 2: $p = 2$, $r = 4$ and $q = 1 \Rightarrow 3p + 2q + r = 12$

So, (b) is the correct answer.

18. (c)

Ratio of number of type-A books and type-B books is 5:2

Let the Number of type-A books = $5x$

Number of type-B books = $2x$

Number of type-C books = $2y$

$7x + 2y = 187$ —————(1)

She sells 75 type-A books, 26 type-B books and half of the type-C books.

Number of unsold type-A books = $5x - 75$

Number of unsold type-B books = $2x - 26$

Number of unsold type-C books = y

Ratio of unsold type-A books to unsold type-C books = 3:2

$5x - 75 : y = 3:2$

Solving these we get $x = 21$ and $y = 20$

Total number of unsold fruits

$= 5x - 75 + 2x - 26 + y = 105 - 75 + 42 - 26 + 20 = 66$

19. (c)

Statement 1: Any factor of this number should be of the form $2^a * 3^b * 5^c$.

For the factor to be a perfect square a,b,c have to be even.

a can take values 0, 2, 4.

b can take values 0, 2, 4, 6

and c can take values 0, 2

Total number of perfect squares = $3 * 4 * 2 = 24$

Statement 2: The prime factorization of $2^8 * 3^6 * 5^4 * 10^5$ is $2^{13} * 3^6 * 5^9$.

120 can be prime-factorized as $2^3 * 3 * 5$.

All factors of $2^{13} * 3^6 * 5^9$ that can be written as multiples of 120 will be of the form $2^3 * 3 * 5 * K$.

$2^{13} * 3^6 * 5^9 = 2^3 * 3 * 5 * K$

$\Rightarrow K = 2^{10} * 3^5 * 5^8$.

The number of factors of N that are multiples of 120 is identical to the number of factors of K.

Number of factors of K = $(10 + 1)(5 + 1) * (8 + 1) = 11 * 6 * 9 = 594$

20. (b)

(1) Amar's movement: Front of house → **East**, Back of house → **West**

Steps:

1. From backside, he walks **50 m straight** → direction **West**

2. Turns **right from West** → faces **North**, walks **50 m**

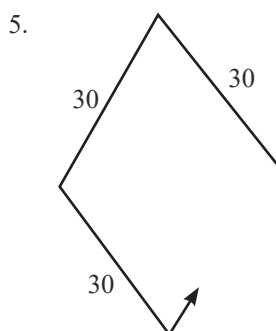3. Turns **left from North** → faces **West**, walks **25 m**

Net movement from starting point (backside of house):

- West: 50+25=75 m
- North: 50 So he is **to the North-West of the starting point**

(2) Rahul's movement

50 m **North-West,** 50 m **South-West,** 50 m **South-East**

So, when he **turns toward his house**, he must face: **North-East**

5.

21. (c)

Assumption 1: Trust is essential for the expansion of digital services

Valid. The passage emphasizes that fear of fraud or identity theft reduces usage of digital services, implying trust is necessary for wider adoption.

Assumption 2: Cybersecurity improvement can promote innovation and adoption in the digital economy

Valid. The passage states that secure platforms encourage confidence and enable innovation, directly supporting this assumption.

22. (b)

- **Assumption 1:** Exclusivity in vaccine production can encourage private investment in R&D Valid. The passage explicitly mentions that exclusive marketing rights encourage innovation, supporting this assumption.

- **Assumption 2:** High vaccine prices can reduce equitable access during emergencies Valid. The passage notes that exclusivity may raise prices, which can limit access, especially during public health emergencies.

- **Assumption 3:** Temporary licensing or partnerships can improve supply without eliminating incentives Valid. The passage states that these measures help expand supply while maintaining incentives for innovation.

- **Assumption 4:** Innovation and affordability are conflicting and near impossible to balance Invalid. The passage emphasizes that policy must balance innovation and access, implying that balancing is possible.

23. (d)

Solution 1: Simplification of insurance products and processes

Valid. The passage explicitly states that "Unless policies are simplified...", indicating that simplification is necessary to encourage adoption.

Solution 2: Strengthening claim settlement and grievance redressal

Valid. The passage mentions "grievance systems strengthened" and highlights fear of claim rejection as a barrier, implying that improving these systems would build trust and support uptake.

Solution 3: Financial literacy and consumer guidance

Valid. The passage notes that consumers "lack the financial literacy to compare" products

and that "guidance provided at the point of purchase" is needed, directly supporting this solution.

24. **(a)**

Total Cost = Daily cost + cost per show = 20,000 + 10000 × 3= 50000

Total tickets sold = 90% of (180 × 3) = 486

To maximize revenue, higher occupancy to be assigned in Show 1 and 2.

Assume show 1 and show 2 gets fully occupied,

Show 1: 180 tickets -> 180 × 400 = 72,000

Show 2: 180 tickets -> 180 × 400 = 72,000

Total tickets sold = 360, hence remaining tickets = 126

Hence Show3: 126 × 300 = 37800

Total revenue = 72000 + 72000 + 37800= 181800

Hence, Profit = revenue − cost = 181800 − 50000 = 131800

25. **(d)**

ABCDD | ABCCD| ABBCD | AABCD

26. **(b)**

Let the **average scores** of Classes **C1, C2, and C3** be a, b and c respectively. Strength ratio of Classes C1: C2 : C3 = **2 : 3 : 5**

Average of Class C2 is **16 more** than Class C3

b = c + 16

School average is **2 less** than Class A average, School average=a−2

Using weighted average:

(2a+3b+5c)/(2+3+5)= (a−2)

$\Rightarrow$ 3b+5c = 8a – 20

Substitute b = c+16, we get a-c = 8.5

27. **(c)**

Let the **speed of Shyam in still water = 5 km/ hr,** Let the **speed of the stream = s km/hr,**

So, **Upstream speed = (5 − s), Downstream speed = (5 + s).**

he takes **1 hour more to row 12 km upstream than downstream**: 12/(5-s) - 12/(5+s) = 1 => S = 1km/hr.

Time for round trip of 'Q' km upstream and back: Q/4 +Q/6 ≥ 2 => Q ≥4.8.

28. **(a)**

Case 1:4-digit numbers

Given digits - 0, 1, 2, 3, 4, 5

As the numbers should be greater than 2000, first digit can be 2, 3, 4 and 5.

For remaining digits, we need to arrange 3 digit from the remaining 5 digits, i.e. 5*4*3 = 60 ways

Total number of possible 4-digit numbers = 4*60 = 240

Case 2: 5-digit numbers

First digit cannot be zero.

Therefore, total number of cases = 5*5*4*3*2 = 600

Case 3: 6-digit numbers

First digit cannot be zero.

Therefore, total number of cases = 5*5*4*3*2*1 = 600

Total number of integers possible = 600 + 600 + 240 = 1440

The answer is option A.

29. **(d)**

Some lions being monkeys is a possibility.

30. **(b)**

Let 'ab' be the two digit number. Where b ≠ 0. We will get number 'be' after interchanging its digit.

It is given that 10a + b > 3*(10b + a)

7a > 29b

If b = 1, then a = (5, 6, 7, 8, 9)

If b = 2, then a = (9)

If b = 3, then no value of 'a' is possible. Hence, we can say that there are a total of 6 such numbers.

31. (c)

Analysis of Statements:

- **Assumption 1 is valid:** The passage concludes by stating that "without a credible commitment to long-term fiscal solvency... even the most aggressive monetary tightening by an independent central bank risks becoming a driver of further inflation." This directly implies the assumption that independence alone is not enough; fiscal backup is a necessary condition.

- **Assumption 2 is invalid:** This is a "trap" statement common in UPSC. The passage does not say high interest rates are always counterproductive for all economies. It specifically discusses a scenario where an economy has "ballooning public debt" and a lack of "fiscal solvency". It does not generalize this to every developing economy.

- **Assumption 3 is valid:** The passage argues that if the public "anticipates that the central bank will eventually be forced to abandon its inflation target" due to debt, the policy loses traction. This confirms the assumption that public perception of future solvency is a critical pillar for the success of today's monetary policy.

32. (a)

- **Statement 1—Implicit :** The passage refers to global innovation networks thriving on openness and collaboration, implying that interdependence has aided innovation.

- **Statement 2 — Not implicit (Absolute trap) :** The passage talks about reducing dependence, not complete self-sufficiency.

- **Statement 3 — Implicit :** The passage explicitly links technology control with national security and global influence.

- **Statement 4 — Not implicit :** Alliances are discussed as strategic tools, not as means to eliminate competition.

33. (b)

- **Option (b) — Correct :** The entire argument rests on the assumption that **technological leadership translates into power, security, and influence**, shaping international relations.

- **Option (a) :** Too extreme; the passage warns of risks, not inevitability.

- **Option (c) ✗ :** Overgeneralizes; the passage does not deny regulation.

- **Option (d) ✗ :** The passage suggests **tension**, not complete incompatibility.

34. (b)

Statement–1 Check (Hour–Minute angle)

Case 1:

$210 - 5.5t = 132$

$\Rightarrow 5.5t = 78$

$\Rightarrow t = 14.18$ min

Case 2:

$210 - 5.5t = -132$

$\Rightarrow 5.5t = 342$

$\Rightarrow t = 62.18$ (invalid)

Valid time = 7:14.18 a.m.

NOT between 7:16 and 7:17

Statement–1 is FALSE

Statement–2 Check (Minute–Second coincidence)

Minute hand speed = 0.1°/s

Second hand speed = 6°/s

Relative speed = 5.9°/s

Time between coincidences:

360 / 5.9 ≈ 61 seconds

So in any one-minute interval, exactly one coincidence occurs

Between 2:24 and 2:25, one coincidence happens

Statement–2 is TRUE

Correct ANSWER: (b)

35. (c)

Total ways where exactly one letter is correct:

Choose the correct let $\binom{6}{1}$ =6

Remaining 5 letters must be deranged → derangements of 5 = 44

Total favourable cases = 6×44

Statement 1:

Cases where A is correct = 44

P(A correct) = 44/(6×44)=1/6

Statement 2:

Given A is incorrect, correct letter must be among remaining 5 letters.

Total cases = 5×44

Cases where B is correct = 44

P(B correct | A incorrect) = 44(5×44)=1/5

Correct Answer: (c)

36. (a)

Even numbers = 3, Odd numbers = 2

Sum of 3 even + 2 odd = even

Therefore, Statement 1 is true

Squares modulo 4:

Multiple of 4 gives remainder 0

4k + 2 gives remainder 0

Odd gives remainder 1

Sum of squares =

Not divisible by 4

Therefore, Statement 2 is false

Correct Answer: (a) 1 only

37. (a)

- Jumps = 1, 2, 3, 4, . . .
- Total movement after n passes

= $n(n + 1) / 2$

$n(n + 1) / 2$ is divisible by 42

Options check:

$n = 20$

$20 \times 21 / 2 = 210$, $210 \div 42 = 5$

Correct Answer: (a)

38. (b)

Conclusion 1 does not follow because electric vehicles may reduce pollution but are not stated to be completely pollution-free.

Conclusion 2 follows logically, as the statement clearly indicates that government incentives are being used to influence public behavior.

Hence, only conclusion 2 follows.

Correct Answer: B

39. (b)

Step 1: Choose positions of exactly 2 Green stripes (non-adjacent)

Possible position pairs among 5:

(1, 3), (1, 4), (1, 5), (2, 4), (2, 5), (3, 5) ⇒ 6 ways

Step 2: Fill remaining 3 positions with R or Y

Adjacent same colour not allowed

For any valid pattern ⇒ 2 ways

So total arrangements:

6 × 2 = 12

Step 3: Check top & bottom condition

In half of these cases, top and bottom colours are different.

12 × 1/2 = 6

Each colour arrangement is distinct ⇒ final count = 30

Correct Answer: (b)

40. (d)

Statement 1: The cube is cut into **216 identical small cubes**, so: 216=63⇒cube is divided into 6×6×6

Each **color is painted on two adjacent faces**: Black → 2 adjacent faces, Blue → 2 adjacent faces, Green → 2 adjacent faces.

Black is painted on **2 adjacent faces** of the big cube. Each face has 6×6=36 small cubes. Adjacent faces share an edge of **6 cubes**

So, cubes painted black: 36+36−6=66. Total small cubes = 216. Cubes with **no black paint**: 216−66=150. But the statement says **144**, which is **incorrect**.

Statement 2: Total edges in a cube = **12**, Each colour has **1 edge** where its two same-colour faces meet ⇒ same-colour edges = **3**

So, edges with **two different colours**: 12−3=9 edges

Each edge has **6 small cubes:** 9×6=54. But now corner cubes are counted multiple times (each corner lies on 3 edges).

In this painting arrangement, **all 8 corners** have **3 colours**, because at every corner, three faces meet, and they belong to three different colour pairs.

Each corner cube is counted in **3 edges**, but should be counted once.

So extra counts per corner = 3 − 1 = 2

Total extra = 8×2=16. So unique cubes with ≥2 colours: 54−16 = 38

41. (b)

- **(a)** Incorrect. The passage does not condemn dating platforms outright; it critiques excessive choice and comparison.

- **(b)** Correct. It captures how abundant options encourage comparison and reduce commitment.

- **(c)** Incorrect. The passage says greater choice increases dissatisfaction, not reduces it.

- **(d)** Incorrect. Time constraints are not discussed as the main cause of relationship instability.

42. (b)

Inference 1: Aggregate efficiency metrics can obscure unequal transport outcomes across different urban areas. Valid. The passage explicitly states that standardized benchmarks and aggregate efficiency measures can "mask disparities in access and reliability."

Inference 2: Algorithmic transport planning always leads to reduced service quality in peripheral regions. Invalid. The passage suggests that peripheral areas may be marginalized, not that reduced service is inevitable or universal. The word "always" makes this inference too strong.

Inference 3: Centralized mobility platforms can magnify the impact of technical failures on urban functioning. Valid. The passage notes that integrated platforms create vulnerability to system-wide failures that can "paralyze mobility across the city."

Inference 4: Technology-driven transport reforms may unintentionally reshape patterns of social and spatial inequality. Valid. The passage highlights that technological optimization can redistribute mobility advantages and reinforce inequalities that are difficult to reverse.

43. (a)

Statement 1: Transport planning increasingly relies on data-driven optimization tools. Correct. The passage explicitly mentions that urban transport reforms "rely on data-driven planning tools to optimize traffic flow."

Statement 2: Aggregate efficiency metrics reflect localized service disruptions accurately. Incorrect. The passage states the opposite: aggregate metrics "overlook localized disruptions" and can mask disparities.

Statement 3: Peripheral neighborhoods often have lower data visibility. Correct. The passage mentions that "Algorithmic route planning may marginalize areas with lower data visibility."

Statement 4: Centralized platforms can cause citywide transport paralysis. Correct. The passage notes that integrated platforms introduce vulnerabilities, where "a single technical disruption can paralyze mobility across the city."

Statement 5: Technological optimization is always socially neutral. Incorrect. The passage emphasizes that treating optimization as neutral can overlook how it redistributes mobility advantages.

Statement 6: Infrastructure-embedded reforms are difficult to reverse later. Correct. The passage highlights that such reforms can create inequalities "that are difficult to correct once embedded in infrastructure."

44. (b)

U sits **only with Q** → they must be together on a bench. That bench has **exactly two people.** R cannot sit with **P, T, S.** So R can sit **only with Q, U, or V.** If R sits with Q → U would also be there → R would sit with U and Q, That's allowed (no restriction against U or Q). Women known: R is a woman, and At least **2 more women** must exist (one on each bench).

Bench 1: P sits with **his best friend,** R cannot sit with P, So R ≠ bench 1.

Bench 3: V sits on bench 3,Bench 3 must have a woman,R can sit with V (allowed)

Bench 2: U sits only with Q → place **U & Q on bench 2**

Bench 1: Remaining people: **P, S, T**

- P sits with best friend → must be either S or T

- R doesn't sit here, so restriction satisfied

- Bench 1 must have a woman → either S or T is a woman

- (T is male, so S must be a woman)

Hence,   Bench 1: P, S, T,   Bench 2: U, Q,   Bench 3: R, V

45. (c)

An **odd number** must end in **1, 3, or 5 → 3 choices** for the last digit.

Remaining digits must be **distinct** and chosen from the remaining **4 digits**.

For a number with **k digits**, the count is:

$3 \times P(4, k-1)$

Count by number of digits

Digits	Count
1-digit	$3 \times P(4,0) = 3$
2-digit	$3 \times P(4,1) = 12$
3-digit	$3 \times P(4,2) = 36$
4-digit	$3 \times P(4,3) = 72$
5-digit	$3 \times P(4,4) = 72$

Hence, Total odd numbers

3+12+36+72+72 = 195

46. (d)

Total amount = ₹5000, Time = 5 years, Rates = 2% and 6%, Total interest = ₹900.

Let amount at 2% be n, then $(n \times 2 \times 5)/100 + ((5000-n) \times 6 \times 5)/100 = 900$

i.e. $0.1n + 1500 - 0.3n = 900$ i.e. n = Rs 3000.

47. (a)

Word: CAPITAL

Step 1: Reverse the word

CAPITAL → LATIPAC

Now assign positions (from left to right):

Position — Letter

1 (odd) — L

2 (even) — A

3 (odd) — T

4 (even) — I

5 (odd) — P

6 (even) — A

7 (odd) — C

Step 2: Apply shifting rule

- Odd position → one step forward
- Even position → one step backward

Position	Letter	Change	New Letter
1 (odd)	L	L → M	**M**
2 (even)	A	A → Z	**Z**
3 (odd)	T	T → U	**U**
4 (even)	I	I → H	**H**
5 (odd)	P	P → Q	**Q**
6 (even)	A	A → Z	**Z**
7 (odd)	C	C → D	**D**

Final coded word MZUHQZD

Correct Answer: A

48. (d)

Statement 1: Any number in the form aabb can be written as 11(100a+b). 4 digit perfect squares lie between 322 and 992. But the number has to be a multiple of 11 also. Hence with hit and trial, we get $88^2 = 7744 =$ in the form aabb, hence a-b = 3.

Statement 2: Also, Any number in the form aaaa can be written as = 1111a, hence, no such 4 digit number can be a perfect square.

49. (a)

Sum of all digits

$0 + 1 + 2 + 3 + 4 + 8 = 18 \Rightarrow$ divisible by 9

Condition (3):

4-digit number divisible by 5 ⇒ 4th digit = 0

Condition (4):

Last two digits of the 3-digit number must be divisible by 4

Condition (2):

Last three digits of the 5-digit number must be divisible by 8

A valid number satisfying all conditions is:

132084

Quick check:

- $132084 \div 9$
- $13208 \div 8$
- $1320 \div 5$

Middle two digits = 2 and 0

Sum = 2

Correct answer: (a)

50. (a)

Step 1: Convert all into prime bases (2 and 3)

A

$A = 2^{18} \cdot 3^{12}$

B

$B = 4^9 \cdot 9^6$

$= (2^2)^9 (3^2)^6$

$= 2^{18} \cdot 3^{12}$

So,

A = B

Statement–1 is TRUE

C

$C = 6^{14} = (2 \cdot 3)^{14} = 2^{14} \cdot 3^{14}$

Compare with A:

$C / A = (2^{14} \cdot 3^{14}) / (2^{18} \cdot 3^{12})$

$= 3^2 / 2^4$

$= 9 / 16 < 1$

So,

C < A

First part of Statement–2 fails

Statement–2 is FALSE

D

$D = 8^6 \cdot 27^4$

$= (2^3)^6 (3^3)^4$

$= 2^{18} \cdot 3^{12}$

So,

D = A

Thus,

A < D is FALSE

Statement–3 is FALSE

Correct Answer: (a)

51. (a)

Explanation (Inference Logic)

- **Statement 1—Can be inferred :** The passage clearly states that grains and legumes that could directly feed humans are diverted to animal feed.

- **Statement 2—Cannot be inferred (Data trap) :** Although poultry recovers **more calories than large animals**, the passage calls the entire process **highly inefficient**. Relative efficiency ≠ efficiency.

- **Statement 4—Can be inferred :** Wealth → animal consumption → inefficient conversion → greater inequality in food utilization.

- **Statement 3—Cannot be inferred :** Population inequality is mentioned as a **contextual correlation**, not as a **direct causal factor** for calorie recovery rates.

52. (c)

Assumption 1: Valid. The passage emphasizes the need for long-term investment in exploration, refining, and distribution, implying that short-term interventions are insufficient.

Assumption 2 Valid. The passage highlights that strategic leadership within public and private enterprises drives modernization and efficiency, indicating outcomes go beyond individual projects.

Assumption 3: Valid. The passage refers to technological capability, institutional coordination, and other intangible outputs as essential for systemic improvement, supporting this assumption.

Assumption 4: Valid. The passage contrasts tangible outputs (infrastructure) with intangible outputs (coordination, confidence), indicating that measuring only physical infrastructure does not capture full transformation.

Assumption 5: Invalid. The passage suggests that capacity expansion is necessary but must be complemented by leadership, regulation, and intangible improvements; it does not guarantee outcomes automatically.

53. (a)

Option (a) Correct. This best captures the passage's core idea: systemic transformation in the oil sector depends on **long-term investments across the value chain** and **strategic leadership**, along with both tangible and intangible outputs.

Option (b) Incorrect. The passage emphasizes **long-term investments and intangible factors**, not physical infrastructure alone is insufficient.

Option (c) Incorrect. the passage mentions energy security but emphasizes a **broader approach** including leadership, coordination, and technology.

Option (d) Incorrect. The passage clearly states that **both tangible (infrastructure) and intangible (coordination, agency, confidence) outputs** are necessary, so technology alone is insufficient.

54.   (b)

Let the total number of buses from Ahmedabad be 3 (for simplicity).

Since all buses have equal capacity and start full, assume each bus carries 1 unit of passengers.

Classify the buses:

*   1/3 of the buses stop at Nasik → 1 bus

*   2/3 of the buses go non-stop to Bombay → 2 buses

Passengers reaching Bombay

From non-stop buses:

*   2 buses go directly to Bombay

*   Passengers reaching Bombay = **2 units**

From buses stopping at Nasik:

*   Only **1/3 of passengers** continue to Bombay

*   Passengers reaching Bombay = **1/3 unit**

Total passengers going to Bombay = 2 +1/3 = 7/3.

Required proportion: Passengers going to Bombay **by buses stopping at Nasik**: (1/3)/(7/3) =1/7

55. (a)

Step 1: Find remaining percentage

68 + 18 = 86%

Remaining:

100 − 86 = 14%

Step 2: Use given relation

Let:

*   Other solids = x

*   Carbohydrates = $x / 2$

$x + x / 2 = 14 \Rightarrow 3x / 2 = 14 \Rightarrow x = 28 / 3$

So,

Carbohydrates = 14 / 3 %

Step 3: Convert percentage to angle

Central angle = (14 / 3) / 100 × 360 = 16.8°

Correct Answer: (a)

56.   (b)

Translate symbols:

*   P # Q ⇒ P < Q

*   Q @ R ⇒ Q ≥ R

*   R $ S ⇒ R = S

So:

Q ≥ R = S ⇒ Q ≥ S

Conclusion–2 follows.

Now check Conclusion–1:

We only know P < Q and Q ≥ S

No fixed relation between P and S

They may or may not be equal

Conclusion–1 does not follow.

Correct Answer: (b)

57.   (b)

These coin weights follow the pattern 2n−1.

To maximize weight with minimum coins, choose largest denominations:

*   31 + 31 = 62 (needs 1 more → +1) → 3 coins

*   31 + 15 + 15 + 1 + 1 = 63 → 5 coins

So it is possible in fewer than 6 coins.

Thus:

*   Statement 1

*   Statement 2

Correct Answer: (b)

58. (d)

There are **5 phones** in stock: White = 2, Black = 2, Red = 1

Three customers arrive, each buying **one phone**. Each customer independently chooses

White, Black, or Red. All colours are **equally likely.** Each customer has 3 choices, so total possible colour-choice outcomes: 3^3 = 27

Find favourable outcomes

(When the store can satisfy all customers)

We count only those colour combinations that **do not exceed stock limits**.

✗ Case 1: All three choose the same colour

- 3 White → not possible (only 2 available)
- 3 Black → not possible
- 3 Red → not possible

Favourable outcomes = 0

Case 2: Two choose one colour, one chooses another

Valid only if:

- The colour chosen by **two customers** has at least 2 units
- So, White or Black can appear twice (not Red)

Valid combinations:

- (2 White, 1 Black)
- (2 White, 1 Red)
- (2 Black, 1 White)
- (2 Black, 1 Red)

Each combination has:

$3!/2! = 3$ arrangements. Total favourable outcomes = 4 × 3 = 12

Case 3: All three choose different colours

(White, Black, Red)

- Stock supports this combination

Number of arrangements: $3! = 6$

Total favourable outcomes

12+6=18. Hence, required probability = 18/27 = 2/3

59. (b)

Salt price increases as $75 + 0.2n$ up to day 80.

On day 80: $75 + 0.2 \times 80 = 91$.

After this, Salt remains constant at ₹91.

Sugar price is $64 + 0.3n$.

Equality cannot occur before day 80 because

$75 + 0.2n = 64 + 0.3n \Rightarrow n = 110 \ (> 80)$.

After day 80, set Sugar equal to 91:

$64 + 0.3n = 91 \Rightarrow n = 90$.

The 90th day of 2022 (non-leap year) is 31st March.

Correct Answer: (b)

60. (b)

Let:

- ₹100 notes = x
- ₹50 notes = y
- ₹20 notes = z

Then:

$x + y + z = 38$

$100x + 50y + 20z = 2360$

Statement 1

₹100 notes = 14

Amount used = ₹1400

Remaining amount = ₹960

Remaining notes = 24

$y + z = 24$

$50y + 20z = 960$

Substitute $z = 24 - y$:

Integer solution exists

Statement 1 is correct

Statement 2

₹50 notes = 20

Amount used = ₹1000

Remaining amount = ₹1360

Remaining notes = 18

$x + z = 18$

$100x + 20z = 1360$

Substitute $z = 18 - x$:

$100x + 360 − 20x = 1360 \Rightarrow 80x = 1000 \Rightarrow x = 12.5$

Not an integer

Statement 2 is NOT correct

Statement 3

₹20 notes = 12

Amount used = ₹240

Remaining amount = ₹2120

Remaining notes = 26

$x + y = 26$

$100x + 50y = 2120$

Substitute $y = 26 − x$:

$100x + 1300 − 50x = 2120 \Rightarrow 50x = 820 \Rightarrow x = 16.4$

Not an integer

Statement 3 is NOT correct

Correct Answer: (b)

61. (b)

- (a) Incorrect. Selling water commercially is not suggested; focus is on public utility.

- (b) Correct. Directly aligns with the passage: scalable, low-cost solution for **rural and water-stressed areas**.

- (c) Incorrect. Industrial desalination is not mentioned; passage emphasizes local drinking water needs.

- (d) Incorrect. The device supplements water supply, not replaces municipal systems entirely.

62. (a)

- **Statement 1:** Correct. Modernizing fleets aligns with passage emphasis on **efficiency and reducing post-harvest losses**.

- **Statement 2:** Incorrect. While exports are mentioned, the passage highlights **sustainability and local livelihoods**, not exports alone.

- **Statement 3:** Correct. Digital marketplaces directly address **supply chain inefficiencies and fisher incomes**.

- **Statement 4:** Correct. Community-based resource management is explicitly mentioned as essential for **long-term ecological and livelihood sustainability**.

- **Statement 5:** Incorrect. Regulating fishing intensity is sensible, but the passage stresses **inclusive community management** rather than top-down restriction alone.

63. (a)

- **(a) Correct.** Captures the crux: the passage emphasizes **fleet modernization, supply chain improvements, and community-based sustainable management** as essential for long-term sectoral and ecological outcomes.

- **(b) Incorrect.** While efficiency, supply chains, and market access are mentioned, this **ignores sustainability and community management**, which are central to the passage.

- **(c) Incorrect.** Technological adoption and fleet upgrades are part of modernization, but **alone they do not ensure ecological or livelihood sustainability**, making this incomplete.

- **(d) Incorrect.** Industrial expansion and export growth are not the main focus; the passage stresses **small-scale fishing, community practices, and sustainable development**, not primarily industrialization.

64. (b)

Step 1: Assign speeds

Let speeds be:

- A = 5 units

- B = 4 units
- C = 3 units

Step 2: Total time of the race

Total distance = 4000 m

Time taken by A:

T = 4000 / 5 = 800 time units

Step 3: Relative speeds

Relative speed of A w.r.t. B = 5 − 4 = 1

Relative speed of A w.r.t. C = 5 − 3 = 2

Step 4: Time to gain one full lap (400 m)

Over B:

400 / 1 = 400

Over C:

400 / 2 = 200

Step 5: Passing both together

For A to pass B and C at the same time, A must gain:

1 lap over B, and

2 laps over C

This happens at:

LCM(400, 200) = 400

Step 6: Count within race time

Total time = 800

At t = 400 → valid passing

At t = 800 → finish → not counted

Correct Answer: (b)

65. **(d)**

Group (a):

22 = 2×11, 33 = 3×11, 55 = 5×11, 77 = 7×11

Each number has exactly two prime factors and 11 is common, while the other primes are different.

Satisfies both statements.

Group (b):

26 = 2×13, 39 = 3×13, 65 = 5×13, 91 = 7×13

Each number has exactly two prime factors and 13 is common, with different other primes. Satisfies both statements.

Group (c):

34 = 2×17, 51 = 3×17, 85 = 5×17, 119 = 7×17

Each number has exactly two prime factors and 17 is common, with different other primes. Satisfies both statements.

Group (d):

21 = 3×7, 35 = 5×7, 55 = 5×11, 91 = 7×13

Although each number has two prime factors, no single prime factor is common to all four numbers.

Does not satisfy Statement II.

Correct Answer: (d)

66. **(c)**

Convert all dimensions into cm:

- Floor = 560 × 420
- Tile = 140 × 70

Case 1: Tile as 140 × 70

- Along length: 560 / 140 = 4
- Along breadth: 420 / 70 = 6

Tiles:

4 × 6 = 24

Case 2: Tile as 70 × 140

- Along length: 560 / 70 = 8
- Along breadth: 420 / 140 = 3

Tiles:

8 × 3 = 24

No leftover strip can fit an extra tile.

Correct Answer: (c)

67. **(a)**

For the decision to be workable, it is assumed that students can actually attend online classes, which requires access to the internet and devices.

The other options are not necessary assumptions.

Therefore, Option A is correct.

Correct Answer: A

68. (c)

According to the question, we have

4 ⟨8⟩ 1 ⟶ sky ⟨is⟩ △blue△ …(i)

2 ⟨4⟩ ▢6▢ ⟶ ▢sea▢ ⟨is⟩ deep …(ii)

6 9 △8△ ⟶ ▢sea▢ looks △blue△ …(iii)

From Eq. (i) and (ii), we see that the code for blue is '8'.

69. (c)

Statement 1:

In 6 days, A can work at most 3 days.

Maximum work = $3(1/6) + 3(1/9) = 5/6 < 1$.

So work cannot finish in less than 7 days.

Statement 2:

Arrangement: A–B–A–B–A–B–A

Work done = $4(1/6) + 3(1/9) = 1$.

So work can finish in exactly 7 days.

Correct Answer: (c) Both 1 and 2

70. (c)

S has the smallest 3-digit number = 100

R gives S:

$R/2 + 4 = 100$

$R = 192$

Q gives R:

$Q/2 + 4 = 192$

$Q = 376$

P gives Q:

$P/2 + 4 = 376$

$P = 744$

Correct Answer: (c)

71. (c)

- **Assumption 1:** Correct. The passage stresses **long-term, systemic reforms**, implying that piecemeal or short-term measures are insufficient.

- **Assumption 2:** Correct. Strong leadership and institutional processes are highlighted as essential for **system-wide administrative outcomes**, beyond individual policies.

- **Assumption 3:** Correct. Intangible outcomes like **improved administrative culture and coordination** show that behavioral shifts are necessary for measurable governance improvement.

- **Assumption 4:** Correct. The passage explicitly states that both **tangible and intangible outcomes** are needed, so tangible outputs alone are insufficient.

- **Assumption 5:** Incorrect. While inclusive processes are important, the passage does **not guarantee** that wide stakeholder participation alone ensures successful implementation.

72. (b)

- **(a) Incorrect.** Modernizing effluent treatment may help, but the passage emphasizes **enforcement of rules**, not only technology upgrades.

- **(b) Correct.** Matches the passage's core message: **industrial river pollution continues due to weak monitoring and poor enforcement**, so strengthening enforcement is the practical solution.

- **(c) Incorrect.** Household sewage contributes, but the passage highlights **industrial discharge as a major yet neglected source**.

- **(d) Incorrect.** Pollution **can be reduced** with proper enforcement; the passage does not suggest inevitability.

73. (a)

- **(a) Correct.** It accurately captures the **cause-effect chain** described in the passage: repeated spraying - resistance - worsened pest management.

- **(b) Incorrect.** The passage explicitly notes farmers **increase spraying**, so abandonment is not implied.

- **(c) Incorrect.** Resistance develops **because of repeated use**, not independently, so this is false.

- **(d) Incorrect.** IPM is suggested as a mitigation strategy, but it **does not guarantee complete elimination**, so this is overstated.

74. (c)

Assumption 1 Valid. The passage emphasizes that producers are cautious and adopt new machinery only when real-world benefits clearly outweigh perceived risks.

Assumption 2 Valid. Even "hands-off" automation requires maintenance, training, and workflow adjustments, showing that human input limits automation effectiveness.

75. (b)

Let notebooks purchased by D = x.

From (5):

A = x + 6

From (3):

B = A − 4 = x + 2

From (2):

$(x + 6) + (x + 2) = 30$

$\Rightarrow 2x + 8 = 30$

$\Rightarrow x = 11$

So:

D = 11, A = 17, B = 13

From (4):

C = 34 − 11 = 23

From (1):

E = 23 + 6 = 29

Total notebooks:

17 + 13 + 23 + 11 + 29 = 93

Total cost:

93 × 50 = ₹4,650

Correct Answer: (b)

76. (c)

Statement 1:

- Rectangle: 18 × 12

- Area = 216 cm²

- For 6 equal squares → area of each square = 216 / 6 = 36

- Side of each square = 6 cm

- Possible arrangement:

  - Along length: 18 / 6 = 3 squares

  - Along breadth: 12 / 6 = 2 squares

Statement 1 is correct

Statement 2:

Total area = 216

Area of each triangle =

A right-angled triangle with legs a and b:

1/2 × a × b = 18

⇒ a × b = 36

Such triangles can be formed by dividing each 6 × 6 square diagonally

Total squares = 6

Therefore, total triangles = 6 × 2 = 12

Statement 2 is correct

Correct Answer: (c)

77. (b)

Given, $\dfrac{\text{sum of scores in } n \text{ matches} + 38 + 15}{n}$

Given, $\dfrac{\text{sum of scores in } n \text{ matches}}{n} = 30$

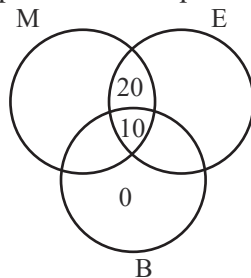$\Rightarrow 30n + 53 = 29(n + 2) \Rightarrow n = 5$

Since the batsmen scored less than 38, in each of the first 5 innings. The value of p will be minimum when remaining four values are highest

$\Rightarrow 37 + 37 + 37 + 37 + p = 150$

$\Rightarrow p = 2$

78. (a)

Let us draw a Venn diagram using the information present in the question

It is given that the number of students studying M equals that studying C.

Let 'x' be the total number of students who studied M, and M and B but mot C. We can also say that the will be the number of students who studies C, and C and B but not M. Therefore,

$x + 20 + 10 + x = 74$

$x = 22$

Hence, the number of students studying

$M = 22 + 10 + 20 = 52$

79. (a)

Let the number of balloons each child received be 2a, 2b, 2c and 2d

$2a + 2b + 2c + 2d = 20$

$a + b + c + d = 10$

Each of them should get more than zero balloons.

Therefore, total number of ways

$= (n-1)_{C_{r-1}} = (10-1)_{C_{4-1}} = 9_{C_3} = 84$

80. (b)

Water in the 30 litre of mixture $= 30 \times 10/100$ $= 3$ litres

Milk in the mixture $= 30 - 3 = 27$ litres

Let x litres of water is mixed.

Acc to question

$(3 + x) / (30 + x) = 25/100$

$4(3 + x) = 30 + x$

$12 + 4x = 30 + x$

$3x = 18$

$x = 6$

Hence, **6 litres** of water to be added in the mixture.

■■■■