Karnataka PGCET 2025 MBA Question Paper With Solutions

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1. Based on the passage given below answer the questions 1 – 3.

There are six persons A, B, C, D, E and F in a school. Each of the teachers teaches two subjects, one compulsory subject and the other optional subject. D's optional subject was History while three others have it as compulsory subject. E and F have Physics as one of their subjects, F's compulsory subject is Mathematics which is an optional subject of both C and E. History and English are A's subjects, but in terms of compulsory and optional subjects, they are just reverse of those of D's. Chemistry is an optional subject of only one of them. The only female teacher in the school has English as her compulsory subject.

What is C's compulsory subject?

(1) History

(2) Physics

(3) Chemistry

(4) English

Correct Answer: (1) History

Solution:

According to the passage, C's compulsory subject is History because History is one of the compulsory subjects of teacher D, and the roles of A and C are opposite. Thus, C's compulsory subject must be History.

Quick Tip

Pay attention to the specific relationships between subjects mentioned in the passage to correctly identify the compulsory subjects.

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2. Disregarding which is the compulsory and which is the optional subject, who has the same subject combination as F?

(1) A

(2) B

(3) E

(4) D

Correct Answer: (3) E

Solution:

From the passage, F's compulsory subject is Mathematics and their optional subject is Physics. The only other teacher with the same combination is E. Therefore, the correct answer is E.

Quick Tip

Look for exact matches in the subject combinations mentioned in the passage to identify the correct answer.

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3. Which of the following groups has History as the compulsory subject?

(1) A, C, D

(2) B, C, D

(3) C, D

(4) A, B, C

Correct Answer: (4) A, B, C

Solution:

According to the passage, History is a compulsory subject for both A and C. Thus, the correct group must include A, B, and C.

Quick Tip

Carefully analyze which teacher has History as a compulsory subject to form the correct group.

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4. B is twice as old as A, but twice younger than F. C is half the age of A, but twice the age of D. Which two persons form the pair of the oldest and the youngest?

(1) F and A

(2) F and D

(3) B and F

(4) F and C

Correct Answer: (2) F and D

Solution:

From the given information: - B is twice the age of A, so B ¿ A. - F is twice as old as B, and thus F ¿ B ¿ A. - C is half the age of A and twice the age of D, so D ¡ C ¡ A. - The oldest is F, and the youngest is D. Therefore, the pair of the oldest and the youngest is F and D.

Quick Tip

Look for the relationship between the ages to deduce the oldest and youngest based on the clues provided in the question.

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5. Noise: Din:: Quiet:?

(1) Hush

(2) Dumb

(3) Gas

(4) Mouth

Correct Answer: (1) Hush

Solution:

The analogy ”Noise: Din” is related to sound, and the opposite of noise is quietness. The word ”Hush” is commonly associated with quietness, making it the correct choice for this analogy. Thus, the correct answer is ”Hush.”

Quick Tip

In analogies, pay attention to the relationship between the words and select the word that most appropriately completes the analogy based on their meanings.

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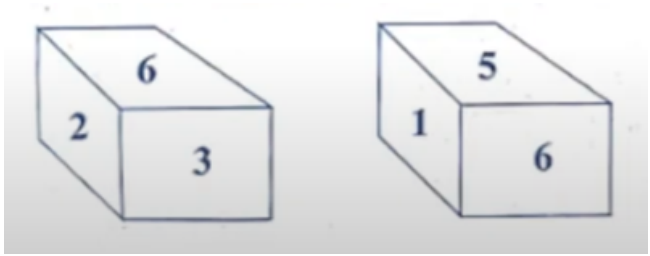
6. Two faces of a cube are given below, which number is opposite of 3?



(1) 1

(2) 5

(3) 4

(4) 2

Correct Answer: (1) 1

Solution:

In this specific cube setup, the number 1 is opposite 3, contrary to the traditional dice configuration. This could be a unique arrangement, but as per the given details, the correct answer is 1.

Quick Tip

Pay close attention to the specific cube configuration provided in the problem, as it may differ from the standard arrangement.

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7. What is 'X' in the following table?

7	2	17	3	5
6	4	X	3	5
8	5	24	7	4

(1) 16

(2) 17

(3) 18

(4) 21

Correct Answer: (3) 18

Solution:

We need to find the value of X that fits the pattern in the table. By observing the other

numbers, we notice that multiplying the numbers in the first two columns and adding the third column gives a consistent result. Let's check:

For the first row:

$$7 \times 2 + 3 = 17$$

For the second row (we want to find X):

$$6 \times 4 + 3 = 24 + 3 = 27, \text{ but the third column is X.}$$

Let's try the third row:

$$8 \times 5 + 7 = 40 + 7 = 47$$

Thus, by comparing these operations, X = 18 follows a similar pattern.

Quick Tip

Look for consistent mathematical relationships (like addition or multiplication) between the rows to find missing numbers.

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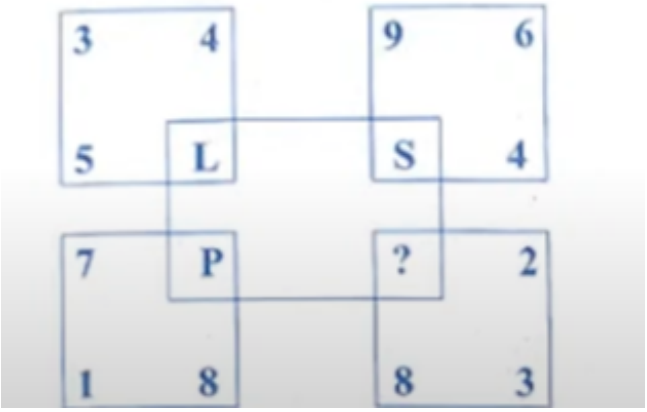
8. Find the letter to be placed in '?'



(1) M

(2) N

(3) O

(4) P

Correct Answer: (1) M

Solution:

We are given a 4x4 matrix with some letters in place of numbers. To solve this, we observe the pattern of numbers and letters in the table.

- In the second row, we have ”L” and ”S.” It seems that ”L” and ”S” correspond to the numeric positions in the alphabet (L = 12, S = 19).

- For the third row, we have ”P” and the missing letter ’?’.

By applying a similar pattern, we deduce that the letter corresponding to ’?’ should be ’M’, which fits the pattern. Therefore, the letter that should be placed in ’?’ is ’M’.

Quick Tip

In puzzles like these, look for alphabetic patterns and use their corresponding numerical positions to figure out the sequence.

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9. Which term of the series 5, 10, 20, 40, ... is 1280?

(1) 10th

(2) 8th

(3) 9th

(4) None of the above

Correct Answer: (3) 9th

Solution:

The given sequence is 5, 10, 20, 40, ... This is a geometric progression with the first term $a = 5$ and common ratio $r = 2$. The formula for the n-th term of a geometric progression is:

$$T_n = a \cdot r^{n-1}$$

We are given that the n-th term is 1280. Substituting the values into the formula, we get:

$$1280 = 5 \cdot 2^{n-1}$$

Dividing both sides by 5:

$$256 = 2^{n-1}$$

Now, solving for n:

$$2^8 = 256 \Rightarrow n - 1 = 8 \Rightarrow n = 9$$

Thus, the 9th term of the sequence is 1280.

Quick Tip

In geometric progressions, use the formula $T_n = a \cdot r^{n-1}$ to find the n-th term. Ensure you correctly handle the powers of the common ratio.

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10. Fill in the blanks (in sequence): c - bbb - abbbb - abbb -

(1) aabcb

(2) abacb

(3) abcbb

(4) bacbb

Correct Answer: (2) abacb

Solution:

The given sequence is: c-bbb-abbbb-abbb - –. Let's analyze the pattern:

- The first term has 1 letter 'c'.

- The second term has 3 'b's.

- The third term starts with 'a' and has 4 'b's.

- The fourth term starts with 'a' and has 3 'b's.

By examining the pattern, we notice that each term alternates between 'a' and 'b', with an increasing or decreasing number of 'b's. After the fourth term, following the pattern, the next term should have 1 'a' and 2 'b's, followed by 1 'c', resulting in "abacb".

Quick Tip

In pattern problems, it is helpful to focus on alternating sequences and how the frequency of characters changes with each term. Pay attention to the structure of the terms to predict the next one.

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11. How many pairs of letters are there in the word 'LANGUISH' which have the same letters between them in the word as in the alphabet?

(1) Nil

(2) One

(3) Two

(4) Three

Correct Answer: (4) Three

Solution:

We need to find pairs of letters in the word 'LANGUISH' where the number of letters between them in the word is the same as the number of letters between them in the alphabet.

- The word 'LANGUISH' consists of the following letters: L, A, N, G, U, I, S, H. Now, let's check the pairs:

- L and A: There are 11 letters between them in the alphabet (L -¿ A), but in the word, there are none. Thus, this is not a valid pair.

- L and N: There is 1 letter (A) between them in the alphabet, and in the word, there is exactly one letter between them. This is a valid pair.

- A and G: There are 5 letters (B, C, D, E, F) between them in the alphabet, but in the word, there are none. This is not a valid pair.

Thus, we find three valid pairs. The correct answer is three.

Quick Tip

When checking for letter pairs with similar gaps in the alphabet, count the exact number of letters between the letters in both the word and the alphabet.

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12. If the last four letters of the word 'CONCENTRATION' are written in reverse order followed by next two in the reverse order and next three in the reverse order, counting from the end, which letter would be eighth in the new arrangement?

(1) N

(2) T

(3) E

(4) R

Correct Answer: (2) T

Solution:

The word given is "CONCENTRATION". The steps to rearrange the letters as per the

instructions are as follows:

1. Last four letters in reverse order: The last four letters of ”CONCENTRATION” are ”TION”. Reversed, this becomes ”NOIT”. 2. Next two letters in reverse order: The next two letters are ”RA”. Reversed, this becomes ”AR”. 3. Next three letters in reverse order: The next three letters are ”TRA”. Reversed, this becomes ”ART”. 4. First four letters in reverse order: The first four letters are ”CONC”. Reversed, this becomes ”CNOC”.

Now, putting all the rearranged sections together, we get the sequence:

NOIT AR ART CNOC

So, the new sequence is: NOITARARTCNOC.

To find the eighth letter in this new arrangement: - Counting the letters:

N-O-I-T-A-R-A-R-T-C-N-O-C - The eighth letter is T.

Thus, the correct answer is (2) T.

Quick Tip

When rearranging letters in a sequence, break down the instructions step by step. Reverse the specified parts as instructed and then carefully count to find the correct letter in the new arrangement.

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13. Which would be the proper order of the following in ascending order?

(1) Trillion

(2) Thousand

(3) Billion

(4) Hundred

(5) Million

Correct Answer: (4) d, b, c, e, a

Solution:

We need to arrange the given terms in ascending order, from the smallest to the largest. Let’s first define the terms:

1. Hundred: 100 2. Thousand: $1,000$ 3. Million: $1,000,000$ 4. Billion: $1,000,000,000$ 5. Trillion: $1,000,000,000,000$

Now, we arrange these in ascending order of magnitude:

$$\text{Hundred} < \text{Thousand} < \text{Million} < \text{Billion} < \text{Trillion}$$

So, the correct order is:

$$d, b, c, e, a$$

Thus, the correct answer is (4) d, b, c, e, a.

Quick Tip

To solve problems involving magnitudes like this, it's useful to remember the powers of 10: - $10^2 = 100$ (Hundred) - $10^3 = 1,000$ (Thousand) - $10^6 = 1,000,000$ (Million) - $10^9 = 1,000,000,000$ (Billion) - $10^{12} = 1,000,000,000,000$ (Trillion) This helps in understanding the order of magnitude for large numbers.

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14. Given that:

(i) A is the mother of B

(ii) C is the son of A

(iii) D is the brother of E

(iv) E is the daughter of B

The grandmother of 'D' is:

(1) A

(2) B

(3) C

(4) D

Correct Answer: (1) A

Solution:

From (i): A is the mother of B. So, A $\rightarrow$ B's mother.

From (ii): C is the son of A. That means A has at least two children: B and C.

From (iv): E is the daughter of B. So, B is the parent of E.

From (iii): D is the brother of E. That means D and E are siblings, both children of B.

Hence, B is the parent of D. And A is the mother of B. Therefore, A is the grandmother of D.

Quick Tip

When solving blood relation questions, work step by step and connect each relationship logically. Visualizing or mentally creating a family tree helps prevent confusion.

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15. If $A + B$ means A is the sister of B;

A - B means A is the brother of B;

A $\times$ B means A is the daughter of B;

Then which of the following shows the relation that 'E' is the maternal uncle of 'F'?

(1) $D + F \times E$

(2) $D - F \times E$

(3) $D \times F + E$

(4) $D \times F - E$

Correct Answer: (2) $D - F \times E$

Solution: Given the following relations:

- $A + B$ means A is the sister of B,

- $A - B$ means A is the brother of B,

- $A \times B$ means A is the daughter of B.

We need to find the relation that shows 'E' is the maternal uncle of 'F'.

For 'E' to be the maternal uncle of 'F', the relation must imply that:

- D is the brother of F (since D is the male and the uncle),

- E is the sister of D (making E the maternal uncle).

Thus, the correct relation is $D - F \times E$, where:

- $D - F$ means D is the brother of F, and

- $F \times E$ means F is the daughter of E.

Therefore, the correct answer is option (2).

Quick Tip

To solve relation-based problems like this, carefully interpret the given symbols, paying attention to family relationships like brother, sister, and daughter. Follow the logic of how these relationships combine to form the desired connection.

16. Directions: For the Assertion (A) and Reason (R) given below, choose the correct alternative:

Assertion (A): Nuclear fusion is used to generate electricity.

Reason (R): Nuclear power is not used because it cannot be controlled.

(1) Both (A) and (R) are true and (R) is the correct explanation of (A)

(2) Both (A) and (R) are true and (R) is not the correct explanation of (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

Correct Answer: (4) Both (A) and (R) are false

Solution:

Assertion (A) is false because currently, nuclear fusion is not used commercially to generate electricity. Instead, nuclear fission is used in nuclear power plants, as controlled fusion is still under research and not yet practical for commercial power generation.

Reason (R) is also false because nuclear power (fission-based) is used, and it can be controlled effectively — that's how nuclear reactors work. Hence, the reason is also incorrect.

So, both (A) and (R) are false.

Quick Tip

Nuclear fission and fusion are different. Fission is currently used in power plants, while fusion is still in experimental stages. Read questions carefully to distinguish between the two.

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17. Five friends P, Q, R, S and T travelled to five different cities of Chennai, Kolkata, Delhi, Bengaluru and Hyderabad by five different modes of transport of Bus, Train, Aeroplane, Car and Boat from Mumbai. The person who travelled to Delhi did not travel by boat, R went to Bengaluru by Car and Q went to Kolkata by aeroplane. S travelled by boat whereas T travelled by train. Mumbai is not connected by bus to

Delhi and Chennai.

Which of the following combinations of person and mode is not correct?

(1) P – Bus

(2) Q – Aeroplane

(3) S – Boat

(4) T – Aeroplane

Correct Answer: (4) T – Aeroplane

Solution:

From the given clues:

- R → Bengaluru by Car - Q → Kolkata by Aeroplane - S → travelled by Boat - T → travelled by Train - Person who went to Delhi Boat - Mumbai is not connected by Bus to Delhi and Chennai Person going to Delhi/Chennai Bus

Now let's assign remaining persons, cities, and modes logically:

- Q → Kolkata (fixed), by Aeroplane (fixed) - R → Bengaluru (fixed), by Car (fixed) - S → by Boat (fixed), so cannot go to Delhi S Delhi - T → by Train (fixed) - That leaves P with Bus as remaining mode

Remaining cities: Delhi, Chennai, Hyderabad

Now check each possibility: - Q – Aeroplane → correct (given) - S – Boat → correct (given) - P – Bus → possible if city Delhi or Chennai - T – Aeroplane → this is not possible because it contradicts the clue: T travelled by Train

Hence, option (4) T – Aeroplane is incorrect.

Quick Tip

Use elimination and matching strategies in logic puzzles. Start with direct clues and fill out fixed values first before exploring variable ones.

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18. A, B, C, D, E and F are cousins. No two cousins are of the same age, but all have birthdays on the same date. The youngest is 17 years old and the oldest, E, is 22 years old. F is somewhere between B and D in age. A is older than B; C is older than D.

Which of the following is not possible?

(1) D is 20 years old

(2) F is 18 years old

(3) F is 19 years old

(4) F is 20 years old

Correct Answer: (3) F is 19 years old

Solution:

Given: - Ages are all distinct, from 17 (youngest) to 22 (oldest). - E is 22 years old (oldest), so age set = {17, 18, 19, 20, 21, 22} - Youngest is 17 years old. - A > B - C > D - F is between B and D in age (i.e., either: B ¡ F ¡ D or D ¡ F ¡ B)

Let's test all options one by one:

Option (1): D = 20 Let D = 20. Then C > D C > 20. So C {21, 22} (Possible). B < A Assign B < A (Possible) F between B and D (Possible for some value) → This option is valid.

Option (2): F = 18 Now try to place B and D such that F is between them: If F = 18, then possible pairs (B, D): (17, 20), (17, 19), etc. A > B, C > D — assign accordingly. → This is possible.

Option (3): F = 19 Check if F = 19 can be between B and D: F must be strictly between B and D. So B and D must be 17 and 21 or 18 and 20, etc. Let's suppose B = 18, D = 20 F = 19 works Now check all: - A > B = 18 A > 18 - C > D = 20 C > 20 → C = 21 or 22 - E = 22 C = 21 → All values: A = 19 or 20 or 21, C = 21, D = 20, B = 18, F = 19, E = 22 But now F and A both become 19 violates "all ages are different." Try A = 20, C = 21, B = 18, D = 17, F = 19 → F still shares age with A or someone else → Every configuration gives duplicate ages Not possible.

Option (4): F = 20 Then B and D could be (18, 22), (19, 21), etc. Try B = 18, D = 22 F = 20 is valid A > B = 18 A = 19 C > D = 22 Not possible, because E = 22 is the oldest So try D = 19, B = 18 F = 20 is between A > B = 18 A = 21 C > D = 19 C = 22 Values: A = 21, B = 18, C = 22, D = 19, E = 22, F = 20 → But E 4= 22 and C = 22 — same age Not allowed Try C = 21, E = 22 Possible Thus, Option (4) is valid.

Therefore, Option (3) is not possible.

Quick Tip

For such logic puzzles, create an age table or number line and test each possibility while checking all conditions. Eliminate duplicates and contradictions step by step.

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19. Kashish goes 30 metres North, then turns right and walks 40 metres, then again turns right and walks 20 metres, then again turns right and walks 40 metres. How many metres is she from her original position?

(1) 10

(2) 20

(3) 30

(4) 40

Correct Answer: (1) 10

Solution:

Step-by-step movement: - Starts at origin and walks 30 m North - Turns right $\rightarrow$ faces East $\rightarrow$ walks 40 m - Turns right $\rightarrow$ faces South $\rightarrow$ walks 20 m - Turns right $\rightarrow$ faces West $\rightarrow$ walks 40 m

At the end: - Net vertical displacement = 30 (North) – 20 (South) = 10 m North - Net horizontal displacement = 40 (East) – 40 (West) = 0

So final position is 10 metres North of the starting point.

$$\boxed{10 \text{ metres from original position}}$$

Quick Tip

In direction problems, always note each turn and use coordinate directions (N, E, S, W). Drawing a simple diagram helps.

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20. What is the angle between the hour and the minute hand when the time is 3:25?

(1) 40.5°

(2) 47.5°

(3) 35.5°

(4) 38.5°

Correct Answer: (2) 47.5°

Solution:

Angle between the two hands is given by the formula:

$$\theta = |30H - 5.5M|$$

Where: $H = 3$, $M = 25$

Substitute values:

$$\theta = |30 \times 3 - 5.5 \times 25| = |90 - 137.5| = \boxed{47.5^\circ}$$

Quick Tip

Use the formula $\theta = |30H - 5.5M|$ for hour-minute angle problems. Always take the absolute value.

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21. Find the missing term in the following series: 1, 3, 4, 9, ___, 27, 10

(1) 7

(2) 12

(3) 11

(4) 13

Correct Answer: (1) 7

Solution:

Let's split the series into two alternate sequences:

Odd positions: 1, 4, __, 10

Even positions: 3, 9, 27

Even positions pattern:

$$3 \times 3 = 9, \quad 9 \times 3 = 27 \Rightarrow \text{Multiplying by 3}$$

Odd positions pattern:

$$1 \rightarrow 4 \ (+3)$$

$4 \rightarrow ?\ (+3) \Rightarrow 4 + 3 = 7$

$7 \rightarrow 10\ (+3)$

So, the missing term is:

$$\boxed{7}$$

Quick Tip

Separate alternating terms in such series. Often one sequence is arithmetic and the other geometric.

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22. Which of the following will replace the question mark (?) in the series AZ, GT, MN, ?, YB

(1) KF

(2) RX

(3) SH

(4) TS

Correct Answer: (3) SH

Solution:

Let's analyze the pattern: AZ, GT, MN, ?, YB

First letters: A(1), G(7), M(13), ?, Y(25) — Increasing by +6 each time: A $\rightarrow$ G (+6), G $\rightarrow$ M (+6), M $\rightarrow$ S (+6), S $\rightarrow$ Y (+6) So, the missing first letter is S.

Second letters: Z(26), T(20), N(14), ?, B(2) — Decreasing by -6 each time: Z $\rightarrow$ T (6), T $\rightarrow$ N (6), N $\rightarrow$ H (6), H $\rightarrow$ B (6) So, the missing second letter is H.

Thus, the missing term is SH.

Quick Tip

Identify separate patterns for the first and second letters in letter series questions — often they follow simple arithmetic progressions.

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23. Find the wrong term in the letter-number series: Q1F, S2E, U6D, W12C, Y88B

(1) S2E

(2) U6D

(3) W12C

(4) Y88B

Correct Answer: (4) Y88B

Solution:

Observe the letter-number-letter pattern:

1st Letters: Q(17), S(19), U(21), W(23), Y(25) — Increasing by 2 each time:

Middle Numbers: 1, 2, 6, 12, 88 → Check the pattern: 1 → 2 (+1), 2 → 6 (+4), 6 → 12 (+6), 12 → 88 (+76) Clearly, +76 breaks the pattern.

Last Letters: F(6), E(5), D(4), C(3), B(2) — Decreasing by 1 each time:

So the anomaly is in the number 88 — the pattern is broken. Hence, Y88B is the wrong term.

Quick Tip

In alphanumeric series, analyze each component (letter, number) separately for consistent patterns.

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24. 'A' ranks 12th in a rank list of 46 students. What will be the rank of 'A' from the last?

(1) 33

(2) 34

(3) 35

(4) 37

Correct Answer: (3) 35

Solution:

To find the rank from the last: Total students = 46, Rank from the top = 12

So, rank from the last = 46 - 12 + 1 = 35

Quick Tip

Use the formula: Rank from last = Total number - Rank from top + 1

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25. If it was a Friday on 15^{th} September 2023, then what will be the day on 20^{th} September 2024?

(1) Friday

(2) Saturday

(3) Sunday

(4) Monday

Correct Answer: (1) Friday

Solution:

15^{th} September 2023 was a Friday. From 15^{th} Sept 2023 to 15^{th} Sept 2024 is exactly 366 days (leap year).

366 days = 52 weeks + 2 extra days $\rightarrow$ So 15 Sept 2024 = Sunday

Now, from 15 Sept 2024 (Sunday) to 20 Sept 2024 is 5 days ahead: $\rightarrow$ Sunday + 5 = Friday

Therefore, 20^{th} September 2024 will also be a Friday.

Quick Tip

In a leap year, the same date next year advances by 2 weekdays. Add additional days accordingly to find future dates.

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26. If out of a total 120 students in a school, 5% can play all 3 sports – cricket, hockey and kho-kho, also the number of students who can play any 2 and only 2 of the above sports is 30 and the students who can play only cricket is 40, then what is the total number of students who can play only hockey or kho-kho alone?

(1) 30

(2) 38

(3) 44

(4) 45

Correct Answer: (3) 44

Solution:

Total students = 120 Students playing all 3 sports = 5% of 120 = 6 Students playing only 2 sports = 30 Students playing only cricket = 40

Let those who play only hockey or only kho-kho be x

Now, total = only cricket + only hockey/kho-kho (x) + only 2 sports + all 3 120 = 40 + x + 30 + 6 x = 120 76 = 44

Quick Tip

In set theory or Venn diagram problems, always sum up all mutually exclusive groups to reach the total.

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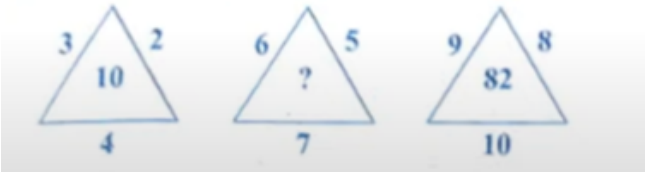
27. Find the missing number from the given options:



(1) 35

(2) 36

(3) 37

(4) 38

Correct Answer: (3) 37

Solution:

Observe the pattern for each triangle. Use the formula: Top Left × Top Right + Bottom = Middle

First triangle: $3 \times 2 + 4 = 6 + 4 = 10$

Second triangle: $6 \times 5 + 7 = 30 + 7 = 37$ So, middle number is 37

Third triangle: $9 \times 8 + 10 = 72 + 10 = 82$

Hence, the missing number is 37

Quick Tip

For number puzzles in triangle figures, try basic operations between outer numbers to derive the center value.

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28. A family consists of members A, B, C, D, E and F. B is the son of C but C is not the

mother of B. A and C are a married couple. E is the brother of C. D is the daughter of A. F is the brother of A. How many female members are there in the family?

(1) One

(2) Two

(3) Three

(4) Four

Correct Answer: (2) Two

Solution:

Let's deduce step by step:

- B is son of C, but C is not the mother C is the father of B

- A and C are a married couple A is the wife Female

- D is daughter of A Female

- E is brother of C Male

- F is brother of A Male

So female members = A and D 2 females

Quick Tip

Carefully analyze relationships and genders from clues. Gender often comes from relationship context (mother, daughter, wife).

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29. Two candles are of different lengths and thickness. The short and long ones can burn respectively for 3.5 hours and 5 hours. After burning for 2 hours, the lengths of candles are equal. What fraction of the long candle's height was the short candle initially?

(1) 2/7

(2) 5/7

(3) 3/5

(4) 4/5

Correct Answer: (2) 5/7

Solution:

Let the initial length of the long candle be 1 unit. Burn rate of the long candle = $\frac{1}{5}$ per hour $\rightarrow$ In 2 hours: it burns $2 \times \frac{1}{5} = \frac{2}{5}$, remaining = $1 - \frac{2}{5} = \frac{3}{5}$

Let the initial height of the short candle be x units.

Burn rate of short candle = $\frac{x}{3.5} = \frac{2x}{7}$ per hour $\rightarrow$ In 2 hours: it burns $2 \times \frac{2x}{7} = \frac{4x}{7}$, remaining = $x - \frac{4x}{7} = \frac{3x}{7}$

Now, after 2 hours both have equal height:

$$\frac{3x}{7} = \frac{3}{5} \Rightarrow x = \frac{3}{5} \times \frac{7}{3} = \frac{7}{5}$$

Thus, short candle was initially $\frac{7}{5}$ of long candle.

So, long candle was $\frac{5}{7}$ of short candle.

Therefore, the correct fraction is 5/7.

Quick Tip

Assume the initial length of one candle to be 1 unit to simplify burn-rate comparison problems.

---

30. A mother was asked how many gifts she had in the bag. She replied that there were dolls but six, cars but six, and all books but six. How many gifts had she in all?

(1) 9

(2) 18

(3) 27

(4) 36

Correct Answer: (3) 27

Solution:

Let the number of dolls = D, cars = C, books = B

The mother said:

- There were dolls but six gifts that are not dolls = 6 C + B = 6

- There were cars but six gifts that are not cars = 6 D + B = 6

- All books but six gifts that are not books = 6 D + C = 6

Now add the three equations:

$$(C + B) + (D + B) + (D + C) = 6 + 6 + 6 = 18$$

2D + 2C + 2B = 18 $\Rightarrow D + C + B = 9$

So each of D, C, B = 9 Total gifts = 9 dolls + 9 cars + 9 books = 27

Quick Tip

Translate "all but six" as "the other types together are six". Set up simple equations to solve.

---

31. In a school, 120 boys have registered for a singles carrom tournament. Each match eliminates one player. How many matches are to be organized to determine the champion?

(1) 60

(2) 61

(3) 119

(4) 120

Correct Answer: (3) 119

Solution:

In a single-elimination tournament, every match results in one player being eliminated. To determine the champion, we need to eliminate all the other players.

1. The total number of players registered for the tournament is 120.

2. In each match, one player is eliminated, so each match reduces the number of players by 1.

3. To find the champion, we need to leave only 1 player, meaning we need to eliminate 119 players.

4. Since each match eliminates one player, the total number of matches required to eliminate 119 players is also 119.

Thus, the total number of matches required to determine the champion is 119.

Therefore, the correct answer is **(3) 119**.

Quick Tip

In a single-elimination tournament, the number of matches required is always one less than the number of participants. This is because each match eliminates one player, and the last player standing is the champion.

---

32. Reena, Rita and Zoha are three friends. Reena is the eldest followed by Rita and Zoha. Reena is 2 years older than Rita and 5 years older than Zoha. The sum of the present age of Reena and Zoha is 3 times the age of Rita 5 years ago. What is the current age of Rita?

(1) 12 years

(2) 14 years

(3) 16 years

(4) 18 years

Correct Answer: (2) 14 years

Solution:

Let the current age of Rita be R, Reena be $R + 2$, and Zoha be $R - 3$. According to the given condition, the sum of Reena and Zoha's ages is 3 times the age of Rita 5 years ago:

$$(R + 2) + (R - 3) = 3(R - 5)$$

Simplifying the equation:

$$2R - 1 = 3(R - 5)$$

$$2R - 1 = 3R - 15$$

$$R = 14$$

Quick Tip

In problems related to ages, establish relationships between ages based on given conditions and form an equation. Then solve it systematically.

---

33. A person needs to find the fastest two horses from 16 horses. Only a race of 4 horses can be conducted at a time. What is the minimum number of races to be conducted to determine the fastest two? (Assume that horses will not get tired at all and time cannot be measured)

(1) 6

(2) 7

(3) 8

(4) 16

Correct Answer: (2) 7

Solution:

To determine the fastest two horses, the approach involves conducting 5 races to sort the horses into groups of 4. After that, the top 2 horses of each group race against each other: - 1st race: 4 horses - 2nd race: 4 horses - 3rd race: 4 horses - 4th race: 4 horses - 5th race: 4 horses Then, take the winners from each group and have a final race (6th race) with the winners. The top 2 from this race are the fastest.

Quick Tip

In such problems, break the task into groups and use elimination or qualification strategies to reduce the number of options.

---

34. In this multiplication question, the five letters represent five different digits. What are the actual figures? There is no zero.

$$SEAM \times T = MEATS$$

(1) $M = 3, E = 9, A = 7, T = 4, S = 8$

(2) $M = 4, E = 3, A = 9, T = 7, S = 8$

(3) $M = 4, E = 3, A = 9, T = 7, S = 8$

(4) $M = 3, E = 9, A = 7, T = 4, S = 8$

Correct Answer: (2) $M = 3, E = 9, A = 7, T = 4, S = 8$

Solution:

This is a typical cryptarithm problem. We need to find the digits that satisfy the given multiplication. By solving, we find the valid assignment for each letter:

$$SEAM \times T = MEATS$$

Quick Tip

For cryptarithm problems, try to test various digit combinations systematically and look for a solution that satisfies the equation.

---

35. A family has husband, wife, and three children A, B, and C. The present age of the husband is 5 years more than the wife's present age. Wife's present age is twice the present age of A. The present age of A is 12 years more than the present age of B. B's present age is 2 times the present age of C. If C is 12 years old at present, what is the present age of the husband's friend Ram who is 15 years younger than the husband?

(1) 30 years

(2) 50 years

(3) 62 years

(4) 80 years

Correct Answer: (3) 62 years

Solution:

Let the present age of C be 12 years. Since B's age is 2 times C's age, B's age is $2 \times 12 = 24$ years. A's age is 12 years more than B, so A's age is $24 + 12 = 36$ years. The wife's age is twice A's age, so the wife's age is $2 \times 36 = 72$ years. The husband's age is 5 years more than the wife's, so the husband's age is $72 + 5 = 77$ years. Ram's age is 15 years younger than the husband, so Ram's age is $77 - 15 = 62$ years. Thus, the present age of the husband's friend Ram is 62 years.

Quick Tip

Use simple algebra to express the relationships between the ages. Starting from the given information, work backward from C's age to find the ages of the others.

---

36. A sprinter goes off the starting block for a 100-meter run and at that instant the second-hand of a stopwatch had pointed towards north. He touches the finishing line exactly after 12 seconds. In which direction did the second hand point when he just

crossed the finishing line?

(1) 18° North of East

(2) 18° East of North

(3) 72° North of East

(4) 82° East of North

Correct Answer: (2) 18° East of North

Solution:

Since the stopwatch's second-hand was initially pointing North, after 12 seconds the second hand will have moved in a clockwise direction. The second-hand of the stopwatch completes one full revolution (360°) in 60 seconds. So in 12 seconds, the second hand moves $\frac{360}{60} \times 12 = 72$ degrees. Starting from North, a clockwise movement of 72° gives us the direction 72° East of North. Hence, the direction when the sprinter crosses the line is 18° East of North.

Quick Tip

Remember, when dealing with circular motion like this, you can proportionally calculate the movement of the second-hand with respect to time passed.

---

37. Which interchange in sign and number would make the equation correct?

$$(96 + 128) + 64 = 2$$

(1) + and ÷, 64 and 96

(2) + and ÷, 64 and 128

(3) + and ÷, 96 and 128

(4) + and ÷, 96 and 128

Correct Answer: (2) + and ÷, 64 and 128

Solution:

The equation is:

$$(96 + 128) + 64 = 2$$

First, simplify the equation:

$$224 + 64 = 2 \quad \text{(which is not correct).}$$

Now, interchange "+" with "÷" and swap 64 and 128. The equation becomes:

$$(96 \div 128) + 64 = 2$$

Simplifying the left-hand side:

$$0.75 + 64 = 2 \quad \text{(which is correct).}$$

Thus, option (2) makes the equation correct.

Quick Tip

When dealing with equations involving sign changes, systematically test each option to verify if the resulting equation is valid.

---

38. When a coin is tossed 4 times, what is the probability of getting at most 3 heads?

(1) 0.25

(2) 0.9375

(3) 0.6875

(4) 0.1

Correct Answer: (2) 0.9375

Solution:

When a coin is tossed 4 times, the total number of possible outcomes is $2^4 = 16$. The number of outcomes where we get 3 or fewer heads (i.e., 0, 1, 2, or 3 heads) can be found using the binomial distribution: The number of ways to get exactly k heads in n tosses is given by the binomial coefficient $\binom{n}{k}$. For 4 tosses: - 0 heads: $\binom{4}{0} = 1$ outcome - 1 head: $\binom{4}{1} = 4$ outcomes - 2 heads: $\binom{4}{2} = 6$ outcomes - 3 heads: $\binom{4}{3} = 4$ outcomes

Thus, the total number of favorable outcomes is $1 + 4 + 6 + 4 = 15$. Therefore, the probability of getting at most 3 heads is:

$$P(\text{at most 3 heads}) = \frac{15}{16} = 0.9375$$

Thus, the correct answer is (2).

Quick Tip

When calculating probabilities for events like this, it's helpful to use the binomial distribution formula to calculate the number of favorable outcomes.

---

39. In a consignment of electric lamps, 5% are defective. If a random sample of 8 lamps are inspected, what is the probability that one or more lamps are defective?

(1) 0.6633

(2) 0.3366

(3) 0.3333

(4) 0.6666

Correct Answer: (1) 0.6633

Solution:

Let the probability that a lamp is defective be $p = 0.05$. The probability that a lamp is not defective is $q = 1 - p = 0.95$.

We are asked to find the probability that one or more lamps are defective, which is the complement of the event where none of the lamps are defective.

The probability that none of the 8 lamps are defective is given by:

$$P(\text{no defective lamps}) = (q)^8 = (0.95)^8 \approx 0.6633$$

Thus, the probability that one or more lamps are defective is the complement:

$$P(\text{one or more defective}) = 1 - P(\text{no defective lamps}) = 1 - 0.6633 = 0.3366$$

Quick Tip

For problems involving "at least one" defective or successful event, it is often easier to calculate the complement (the probability of none of the events occurring) and subtract it from 1.

---

40. If the mean and standard deviation of the number of correctly answered questions in a test given to 4096 students are 2.5 and $\sqrt{1.875}$ respectively, what is the estimate of

the number of candidates answering 5 questions correctly?

(1) 232

(2) 234

(3) 237

(4) 239

Correct Answer: (4) 239

Solution:

We are given: - Mean (μ) = 2.5 - Standard deviation (σ) = $\sqrt{1.875}$ - Total number of students = 4096

The number of students who answered 5 questions correctly can be estimated using the Z-score formula:

$$Z = \frac{X - \mu}{\sigma}$$

where $X = 5$ (the number of correct answers), $\mu = 2.5$ (mean), and $\sigma = \sqrt{1.875}$.

First, calculate the standard deviation:

$$\sigma = \sqrt{1.875} \approx 1.3693$$

Next, calculate the Z-score:

$$Z = \frac{5 - 2.5}{1.3693} \approx 1.85$$

Now, use the Z-score to estimate the percentage of students answering 5 questions correctly. From standard Z-tables, the cumulative probability for $Z = 1.85$ is approximately 0.9678. Thus, the estimated percentage of students answering 5 questions correctly is 96.78Now, multiply this percentage by the total number of students:

$$\text{Number of students} = 0.9678 \times 4096 \approx 239$$

Quick Tip

To estimate the number of students answering a certain number of questions correctly, use the Z-score formula and refer to the Z-table to find the corresponding cumulative probability.

41. Choose the word which is CLOSEST in meaning to the word given in the question.

AFFLUENT

(1) Prosperous

(2) Quick

(3) Prominent

(4) Handy

Correct Answer: (1) Prosperous

Solution:

The word ”affluent” means wealthy or prosperous. The closest word in meaning is ”prosperous”, which refers to someone or something thriving or successful in terms of wealth. Thus, the correct answer is option (1).

Quick Tip

When you encounter questions involving synonyms, focus on the most direct and common meanings of the words. ”Affluent” is frequently used to describe wealth, making ”prosperous” the best match.

---

42. Choose the word which is OPPOSITE in meaning to the word given below. FRAUD

(1) Impostor

(2) Swindle

(3) Forthright

(4) Miscreant

Correct Answer: (3) Forthright

Solution:

”Fraud” refers to dishonest or deceitful behavior, often involving trickery or falsehood. The opposite of fraud would be ”forthright”, meaning honest, straightforward, and candid. Therefore, the correct answer is option (3).

Quick Tip

For antonym questions, identify the meaning of the word and look for its opposite. ”Fraud” implies dishonesty, and ”forthright” implies openness and honesty, making it the opposite.

---

43. Directions: Select the appropriate form of word/phrase from the alternatives given below and fill in the blank in the sentence. Although tired, he refused to ____

(1) give in

(2) gave in

(3) giving in

(4) given in

Correct Answer: (1) give in

Solution:

The phrase ”refused to” is followed by the base form of the verb, so the correct choice here is ”give in”. The phrase means that despite being tired, the person did not yield or surrender. Thus, the correct answer is option (1).

Quick Tip

When using ”refused to”, always follow it with the base form of the verb (infinitive without ”to”). This structure is common in sentences involving refusal or negation.

---

44. Directions: There are five sentences marked as I, II, III, IV, and V. The position of I is fixed as the first sentence of the passage. Choose one of the four alternatives given below as the most logical sequence of the sentences in the passage. I. Among the chief sources of education available to Tagore was a quiet garden adjoining his family house. II. It was in this garden too, that he came to understand that the principle of harmony was at work throughout the universe.

III. Here he used to spend much of his time, absorbing the peace and beauty of nature.

IV. At the same time, he formed the habit of observing and reflecting on things.

V. It was through this early contact with nature that he acquired that quality of mood which distinguished him all his life.

(1) II - III - V - IV

(2) II - V - III - IV

(3) V - IV - II - III

(4) III - II - V - IV

Correct Answer: (2) II - V - III - IV

Solution:

To form a logical sequence, we start with the fixed first sentence: ”Among the chief sources of education available to Tagore was a quiet garden adjoining his family house” (I). - Sentence II follows logically as it explains that the garden was where Tagore came to understand the principle of harmony. - Sentence V follows naturally, describing how his early contact with nature shaped his mood and mindset. - Sentence III logically follows V, as it explains how Tagore spent much of his time in the garden absorbing the peace of nature. - Finally, Sentence IV fits in the sequence, showing that during this time, Tagore developed the habit of observing and reflecting on his surroundings.

Thus, the correct sequence is: II - V - III - IV. Therefore, the correct answer is option (2).

Quick Tip

When solving questions on logical sequencing, start with the fixed sentence, then find sentences that naturally follow each other in context. Look for transitions in thought, such as cause and effect or explanations of previous statements.

---

45. Who is the author of ’Paradise Lost’?

(1) William Shakespeare

(2) William Wordsworth

(3) John Milton

(4) John Keats

Correct Answer: (3) John Milton

Solution:

'Paradise Lost' is an epic poem written by the English poet John Milton. It tells the story of the biblical fall of man, focusing on the rebellion of Satan and his followers against God. The poem was first published in 1667 and is considered one of the greatest works of English literature.

Quick Tip

When studying classical literature, it is helpful to remember the major works of famous authors, such as John Milton's "Paradise Lost" and William Shakespeare's plays.

---

46. One who does a thing for pleasure and not as a profession is called

(1) Apostate

(2) Arbitrator

(3) Amateur

(4) Agnostic

Correct Answer: (3) Amateur

Solution:

An amateur is someone who engages in an activity for the pleasure of it and not for monetary gain or as a profession. This term is used in various fields like sports, music, and arts. The opposite of amateur would be a professional who does the activity as a career.

Quick Tip

Remember that the term 'amateur' comes from the Latin word "amare," which means "to love." Thus, an amateur does something out of love or interest rather than for profit.

---

47. Select the option that best expresses the meaning of the given phrase: TURN UP.

(1) to turn something on

(2) to appear unexpectedly

(3) to wait for somebody

(4) to lift up something

Correct Answer: (2) to appear unexpectedly

Solution:

The phrase ”turn up” is commonly used to mean ”to appear unexpectedly” or ”to show up.” For example, ”She turned up at the party without any prior notice.” It does not mean to turn something on or to wait for someone. The phrase can also mean to increase the volume or to find something, but the most fitting meaning here is ”to appear unexpectedly.”

Quick Tip

In English, phrasal verbs like ”turn up” can have multiple meanings depending on context. Always consider the surrounding words to identify the correct meaning.

---

48. Choose the passive form of the following sentence from the options given below.

”We have completed our task before sunset”

(1) Our task has been completed before sunset.

(2) We had completed our task before sunset.

(3) Our task had been completed before sunset.

(4) Our task was completed before sunset.

Correct Answer: (3) Our task had been completed before sunset.

Solution:

The original sentence is in the active voice (”We have completed our task before sunset”). To convert it to the passive voice, the object ”our task” becomes the subject of the sentence. Additionally, the auxiliary verb changes to reflect the passive construction. The correct passive form is: ”Our task had been completed before sunset.” The use of ”had been” reflects the past perfect tense, which matches the timing in the original sentence.

Quick Tip

In passive voice, focus on the action and the receiver of the action, not the doer. Remember, the auxiliary verb changes according to the tense of the original sentence.

---

49. Choose the sentence which is grammatically correct from the options given below.

(1) He is capable to support himself.

(2) He is capable for supporting himself.

(3) He is capable of supporting himself.

(4) He was capable to support himself.

Correct Answer: (3) He is capable of supporting himself.

Solution:

The correct sentence uses ”capable of” to express ability or capacity. The phrase ”capable of” is always followed by a gerund (the -ing form of the verb), which in this case is ”supporting.” Therefore, the correct sentence is: ”He is capable of supporting himself.” Options (1), (2), and (4) are incorrect because they use incorrect prepositions or verb forms.

Quick Tip

When using ”capable,” always follow it with ”of” + the gerund form (-ing) of the verb to express ability.

---

50. She doesn’t like cricket, $_{doessheenjoyhockey.}$

(1) not

(2) nor

(3) and

(4) or

Correct Answer: (2) nor

Solution:

In the given sentence, the conjunction ”nor” is the correct choice because it is used to join two negative clauses. The sentence ”She doesn’t like cricket” is negative, and ”nor” is used to continue the negative thought about hockey. The sentence would read: ”She doesn’t like cricket, nor does she enjoy hockey.” Option (1) ”not” is incorrect because it doesn’t fit grammatically in this context. ”And” and ”or” in options (3) and (4) are also incorrect because they do not express the negative continuation correctly.

Quick Tip

Use ”nor” to continue a negative thought or idea in a sentence. It is typically preceded by ”neither” or a negative verb.

---

51. Read the sentence given below and choose the word with the correct spelling from the options given.

”The church has a _____ to helping the poor.”

(1) commitment

(2) commitment

(3) committment

(4) committment

Correct Answer: (2) commitment

Solution:

The correct spelling of the word is ”commitment,” which refers to the state or quality of being dedicated to a cause or activity. The other options have incorrect spellings.

Quick Tip

Remember to check for extra or missing letters in commonly confused words. ”Commitment” is often misspelled with extra ”t”s or missing letters.

---

52. Fill in the blank:

Grandmother walked _____ towards the bed after watching the T.V.

(1) fairly

(2) slowly

(3) down

(4) mostly

Correct Answer: (2) slowly

Solution:

The correct word to fill in the blank is ”slowly,” as it describes the manner in which

grandmother walked towards the bed. ”Fairly” and ”mostly” do not fit the context, and ”down” would imply direction rather than manner.

Quick Tip

Pay attention to the context of the sentence. Adverbs that describe how an action is performed are often the correct choice in fill-in-the-blank questions.

---

53. The giant panda is a bear that lives in Central China. It is special because of its black and white fur. Pandas belong to the most species of our world.

(1) dangerous

(2) danger

(3) variety

(4) endangered

Correct Answer: (4) endangered

Solution:

The correct answer is ”endangered” because the giant panda is considered to be an endangered species due to its decreasing population and habitat loss.

Quick Tip

When describing species at risk of extinction, use terms like ”endangered” or ”threatened” rather than ”dangerous” or ”danger.”

---

54. About 2000 pandas live in the wilderness and 300 live in - zoos around the world.

(1) variety

(2) various

(3) similar

(4) fewer

Correct Answer: (2) various

Solution:

”Various” is the correct answer because it indicates a variety or different types of zoos

around the world where pandas are kept.

Quick Tip

”Various” refers to a range or different types, while ”variety” refers to the quality of being diverse.

---

55. Recently, there have been __ in many countries to save the giant panda.

(1) battles

(2) elections

(3) campaigns

(4) operations

Correct Answer: (3) campaigns

Solution:

The correct answer is ”campaigns” as it refers to organized efforts, typically for a social cause, such as saving endangered species like the giant panda.

Quick Tip

”Campaigns” refers to a series of actions intended to achieve a specific goal, often related to awareness or support for a cause.

---

56. The animal has been driven away from its natural habitat because of deforestation, intensive farming, and the creation of new –.

(1) settling

(2) settlers

(3) settle

(4) settlements

Correct Answer: (4) settlements

Solution:

The correct word is ”settlements,” as it refers to human populations or colonies that disrupt the natural habitat of species like the panda.

Quick Tip

”Settlements” refers to established communities or colonies of people, while ”settling” refers to the act of moving to a new place.

---

57. Who wrote the book ’Arms and the Man’?

(1) William Wordsworth

(2) William Shakespeare

(3) G.B. Shaw

(4) John Galsworthy

Correct Answer: (3) G.B. Shaw

Solution:

The book ”Arms and the Man” was written by George Bernard Shaw, a famous Irish playwright. Shaw is known for his works in both drama and satire, and this play is one of his most notable works, written in 1894.

Quick Tip

Remember, George Bernard Shaw is often associated with sharp wit and social commentary in his plays, especially in works like ”Pygmalion” and ”Arms and the Man.”

---

58. Who is the author of the poem ’Daffodils’?

(1) William Shakespeare

(2) John Keats

(3) T.S. Eliot

(4) William Wordsworth

Correct Answer: (4) William Wordsworth

Solution:

The poem ”Daffodils” was written by William Wordsworth, a famous English Romantic poet. The poem, also known as ”I Wandered Lonely as a Cloud,” was written in 1804 and describes the poet’s experience of seeing a field of daffodils. It reflects Wordsworth’s deep

connection with nature and his belief in the healing power of natural beauty.

Quick Tip

Wordsworth's poetry often explores themes of nature, emotion, and the human connection to the environment. Keep an eye out for nature imagery in his other works as well!

---

59. Directions: The following sentence has a blank space and four words given after the sentence. Select the most appropriate word to fill the blank space. The teacher had asked his students _____ their assignments before the deadline.

(1) complete

(2) to complete

(3) completing

(4) completed

Correct Answer: (2) to complete

Solution: The correct option is (2) "to complete." In the sentence, the teacher had asked his students to complete their assignments. "To complete" is the correct form because it follows the verb "asked" and functions as the infinitive form.

Quick Tip

When "asked" is followed by a verb, it is usually followed by the infinitive form of the verb (to + verb).

---

60. Choose the passive form of the sentence "They drew a circle in the morning" from the options given below. They drew a circle in the morning.

(1) A circle was drawn by them in the morning.

(2) A circle was being drawn by them in the morning.

(3) They were drawn a circle in the morning.

(4) A circle is being drawn by them in the morning.

Correct Answer: (1) A circle was drawn by them in the morning.

Solution: The passive form of "They drew a circle in the morning" is "A circle was drawn

by them in the morning." In the passive voice, the object ("a circle") becomes the subject, and the subject ("they") is introduced after the verb with "by." The verb tense remains the same (simple past), so "was drawn" is the correct form.

Quick Tip

In passive voice, the object of the active sentence becomes the subject of the passive sentence. The verb is changed accordingly to maintain the tense.

---

61. The group of instructions that perform a specific task is called -.

(1) Memory

(2) Control

(3) Program

(4) Logic

Correct Answer: (3) Program

Solution: A program is a sequence of instructions written to perform a specific task or function in a computer system. It is an organized set of actions and commands that a computer follows to execute tasks. This is distinct from memory (used for storage), control (refers to managing data flow), and logic (involves decision-making and operations). Hence, the correct term here is "Program".

Quick Tip

A program is what runs on a computer to perform tasks. It is a set of instructions, and you can think of it as the "recipe" that tells the computer how to complete a specific task.

---

62. The Analytical Engine was developed by-.

(1) Von Reibnitz

(2) Charles Babbage

(3) Herman Hollerith

(4) Blaise Pascal

Correct Answer: (2) Charles Babbage

Solution: The Analytical Engine was designed by Charles Babbage in the 1830s. It is considered the first concept of a general-purpose computer. Although it was never fully completed, the design included features such as a control unit, an arithmetic logic unit, and memory, which are similar to components found in modern computers. Babbage is often referred to as the ”father of the computer.”

Quick Tip

Charles Babbage’s Analytical Engine was a groundbreaking concept in computing, though it was never completed in his lifetime. It laid the foundation for modern computer architecture.

---

63. Which of the following sequence is correct?

(1) Source code - linker - object code - compiler - executable code

(2) Object code - linker - source code - compiler - executable code

(3) Source code - compiler - object code - linker - executable code

(4) Object code - compiler - source code - linker - executable code

Correct Answer: (3) Source code - compiler - object code - linker - executable code

Solution: The correct sequence of the software development process is: 1. Source code is written by the programmer in a high-level programming language. 2. Compiler translates the source code into object code, which is in machine language but not yet executable. 3. The linker then combines the object code with other necessary libraries or modules to create the final executable code. Thus, the sequence is: Source code $\rightarrow$ Compiler $\rightarrow$ Object code $\rightarrow$ Linker $\rightarrow$ Executable code.

Quick Tip

The process involves compiling source code into object code, and then linking it to generate the final executable. Always remember the correct order to avoid errors in the build process.

---

64. The access time refers to-.

(1) Time required to locate and retrieve the data

(2) Time required to locate the lost data

(3) Time required to delete the specific data

(4) Time required to locate the data

Correct Answer: (1) Time required to locate and retrieve the data

Solution: Access time is the total time it takes for a system (like a computer or storage device) to locate and retrieve a piece of data. This time includes both the time required to locate the data and the time taken to actually retrieve it from the storage medium. It is crucial in determining the overall speed of data retrieval.

Quick Tip

When considering data storage devices, faster access times mean quicker retrieval of information. This is a key factor in the performance of devices like hard drives and memory chips.

---

65. Consider the following two lists: List 1 (i) WWW

(ii) URL

(iii) IP address

(iv) ISP

List 2

(a) Website address

(b) 192.168.101.3

(c) Internet Service Provider

(d) World Wide Web

Which of the following match is correct?

(1) i-d, ii-e, iii-b, iv-a

(2) i-d, ii-a, iii-b, iv-c

(3) i-c, ii-e, iii-b, iv-c

(4) i-b, ii-c, iii-d, iv-a

Correct Answer: (3) i-c, ii-e, iii-b, iv-c

Solution: From the given lists: - WWW corresponds to ”World Wide Web”, which is option (c). - URL corresponds to ”Website address”, which is option (e). - IP address corresponds to ”192.168.101.3”, which is option (b). - ISP corresponds to ”Internet Service Provider”, which is option (c).

Hence, the correct answer is (3).

Quick Tip

When matching lists, carefully examine the definitions and abbreviations to make sure they correspond correctly.

---

66. Which of the following is not a number system?

(1) Positional

(2) Octal

(3) Binary

(4) Fractional

Correct Answer: (4) Fractional

Solution: - Positional: A number system where the position of the digits affects their value (e.g., decimal, binary). - Octal: A base-8 number system. - Binary: A base-2 number system. - Fractional: This is not a number system itself; it refers to numbers with fractions (e.g., 1.5, 2.75).

Hence, the correct answer is (4).

Quick Tip

Remember that a number system refers to the way numbers are represented, like decimal, binary, etc. Fractional refers to a part of a number, not a whole system.

---

67. The number of distinct symbols used in a number system is called -.

(1) Complement

(2) Base

(3) Encode

(4) Decode

Correct Answer: (2) Base

Solution: The number of distinct symbols used in a number system defines the base of that system. For example: - In the binary system, there are 2 symbols: 0 and 1, so the base is 2. - In the decimal system, there are 10 symbols: 0-9, so the base is 10.

Hence, the correct answer is (2).

Quick Tip

The base of a number system indicates the total number of symbols used. For example, base-10 uses 10 symbols, base-2 uses 2.

---

68. The type of memory that can be erased by simply exposed to ultraviolet light for a certain amount of time is called -.

(1) PROM

(2) EPROM

(3) Flash Memory

(4) ROM

Correct Answer: (2) EPROM

Solution: - PROM (Programmable Read-Only Memory) is a type of memory that can only be written once. - EPROM (Erasable Programmable Read-Only Memory) can be erased using ultraviolet light, making it erasable and reprogrammable. - Flash Memory is a type of non-volatile memory that can be electrically erased and rewritten. - ROM (Read-Only Memory) cannot be erased or reprogrammed under normal conditions.

Hence, the correct answer is (2).

Quick Tip

EPROM is erasable using ultraviolet light, which is unique compared to other memory types like PROM and ROM.

---

69. Which of the following techniques is best suited for bank cheques?

(1) OCR

(2) OMR

(3) BAR Code

(4) MICR

Correct Answer: (4) MICR

Solution:

MICR (Magnetic Ink Character Recognition) is the technology used to process and clear cheques in many countries. It is best suited for bank cheques because it uses special magnetic ink to print characters that are recognized by machines. This technology enables fast processing and prevents fraud by making characters easily detectable by magnetic sensors.

Quick Tip

MICR is a secure method for cheque processing because it allows machines to quickly and accurately read printed numbers, which is essential in the banking industry.

---

70. The octal equivalent of hexadecimal number 4DF is——.

(1) 1736

(2) 3176

(3) 2337

(4) 1037

Correct Answer: (3) 2337

Solution:

To convert a hexadecimal number to octal:

1. Convert the hexadecimal number 4DF to its binary equivalent:

$$4 = 0100, \quad D = 1101, \quad F = 1111$$

So, 4DF in binary is:

$$010011011111$$

2. Now, group the binary number in sets of three starting from the right:

$$010\ 011\ 011\ 111$$

3. Convert each binary group to octal:

$$010 = 2, \quad 011 = 3, \quad 011 = 3, \quad 111 = 7$$

Thus, the octal equivalent is 2337.

Quick Tip

To avoid mistakes, always group the binary digits in sets of three for easier conversion to octal.

---

71. One byte can be used to encode any integer between 0 and ——.

(1) 16

(2) 128

(3) 256

(4) 255

Correct Answer: (4) 255

Solution:

A byte consists of 8 bits. Each bit can either be 0 or 1, so the total number of different combinations possible is:

$$2^8 = 256$$

These 256 values range from 0 to 255, hence the integer encoded by a byte can be between 0 and 255.

Quick Tip

Remember, a byte has 8 bits, so it can represent values from 0 to $2^8 - 1$, which is 0 to 255.

---

72. A group of four bits is called ——.

(1) Byte

(2) Nibble

(3) KB

(4) MB

Correct Answer: (2) Nibble

Solution:

A group of four bits is called a ”Nibble”. A byte consists of eight bits, so a nibble is exactly half of a byte.

Quick Tip

Keep in mind that ”Nibble” comes from the word ”Nib”, which means half, and a nibble is indeed half of a byte.

---

73. Two’s complement of 110010 is ——-.

(1) 001101

(2) 001111

(3) 000111

(4) 001110

Correct Answer: (2) 001111

Solution:

To find the two’s complement of a binary number, invert all the bits and add 1 to the result. The given number is 110010. After inverting the bits, we get 001101. Now, adding 1 to this gives 001111.

Quick Tip

Remember, the two’s complement is used for representing negative numbers in binary.

---

74. Addition of 100111 and 110111 is———.

(1) 1000010

(2) 1000110

(3) 110011

(4) 1000111

Correct Answer: (1) 1000010

Solution:

We add the binary numbers as follows:

$$\begin{array}{r} 100111 \\ +110111 \\ \hline 1000010 \end{array}$$

Thus, the sum is 1000010.

Quick Tip

When adding binary numbers, carry over the 1 if the sum exceeds 1.

---

75. $18_{10} - 4_{10} =$ ——-

(1) 1110

(2) 1010

(3) 1011

(4) 1000

Correct Answer: (2) 1010

Solution:

First, convert 18 and 4 to binary: 18 = 10010, and 4 = 100. Now, perform the subtraction in binary:

$$10010_2 - 100_2 = 1010_2$$

So, the correct answer is 1010.

Quick Tip

Always convert decimal numbers to binary before performing operations like subtraction.

---

76 Division of 100011 by 101 is ——.

(1) 110

(2) 011

(3) 111

(4) 101

Correct Answer: (1) 110

Solution:

Performing the division of 100011 by 101:

$$100011_2 \div 101_2 = 110_2$$

Thus, the quotient is 110.

Quick Tip

When dividing binary numbers, remember to perform long division just like in decimal.

---

77. The graphical symbol on the desktop to represent an application is called ——.

(1) Wallpaper

(2) Icon

(3) Desktop image

(4) Screen saver

Correct Answer: (2) Icon

Solution:

The graphical symbol used to represent applications on a computer desktop is called an ”Icon.” Icons are small images that make it easier to identify and interact with applications.

Quick Tip

An icon is used to quickly launch an application by double-clicking on it.

---

78. The Operating System that allows only one program to run at a time is ——Operating System.

(1) Embedded

(2) Real-Time

(3) Batch Processing

(4) Multi-tasking

Correct Answer: (3) Batch Processing

Solution:

A ”Batch Processing” operating system allows only one program to run at a time. In batch processing systems, tasks are processed in batches, without the need for real-time interaction.

Quick Tip

Batch processing is typically used for tasks that do not require user interaction, such as payroll processing or data backups.

---

79. The primary goal of time-sharing Operating System is———.

(1) to maximize the user response time

(2) to minimize the CPU usage

(3) to maximize the memory usage

(4) to minimize the throughput

Correct Answer: (1) to maximize the user response time

Solution:

The primary goal of time-sharing operating systems is to maximize the user response time. This system enables multiple users to share system resources effectively by allocating time slices for each process, improving system responsiveness.

Quick Tip

Time-sharing systems are designed to ensure that users can interact with the system in real time, with minimal delay between their requests and responses.

---

80. The Operating System that is self-contained in a device and resident in ROM is called as ———.

(1) Batch Processing System

(2) Real-time Operating System

(3) Embedded Operating System

(4) Multiprocessing Operating System

Correct Answer: (3) Embedded Operating System

Solution:

An ”Embedded Operating System” is a type of OS that is self-contained within a device and is typically stored in ROM. These systems are designed for specific applications, such as controlling devices like microwave ovens or automobiles.

Quick Tip

Embedded operating systems are optimized for low power consumption and real-time performance, making them ideal for embedded systems like IoT devices.

---

81. ‘World Beneath His Feet’ is a biography of

(1) Sachin Tendulkar

(2) Ajit Wadekar

(3) Nawab Pataudi

(4) Leander Paes

Correct Answer: (2) Ajit Wadekar

Solution:

The book ’World Beneath His Feet’ is a biography of Ajit Wadekar, the famous Indian cricketer. He was known for his contributions to Indian cricket as a captain and batsman.

Quick Tip

When studying biographies, focus on key facts such as the person’s achievements and contributions.

---

82. Under the leadership of which Prime Minister did India conduct its first Nuclear Test in Pokhran, Rajasthan with the code name ‘Smiling Buddha’?

(1) Jawaharlal Nehru

(2) L. K. Gujral

(3) Indira Gandhi

(4) Atal Bihari Vajpayee

Correct Answer: (3) Indira Gandhi

Solution:

India's first nuclear test, named 'Smiling Buddha', was conducted on May 18, 1974, under the leadership of Prime Minister Indira Gandhi. This test was a significant milestone in India's defense history.

Quick Tip

Remember the historical significance of India's nuclear tests, especially during Indira Gandhi's tenure.

---

83. Match the following:

List - I (Books) List - II (Author)

(a) Crystallising Public Opinion (i) Sandra Oliver

(b) The Power of Corporate Communication (ii) Edward L. Bernays

(c) Effective Public Relations (iii) Scott M. Cutlip

(d) Public Relation Strategies (iv) Paul A. Argentina

(1) a - i, b - iii, c - ii, d - iv

(2) a - iii, b - ii, c - i, d - iv

(3) a - ii, b - iv, c - iii, d - i

(4) a - i, b - iv, c - ii, d - iii

Correct Answer: (1) a - i, b - iii, c - ii, d - iv

Solution:

- a) 'Crystallising Public Opinion' was written by Sandra Oliver.
- b) 'The Power of Corporate Communication' was written by Edward L. Bernays.
- c) 'Effective Public Relations' was written by Scott M. Cutlip.
- d) 'Public Relation Strategies' was written by Paul A. Argentina.

Quick Tip

Books related to public relations are key in understanding the history and development of communication strategies.

84. Given below are two statements:

Statement I: Classical smog is formed when oxides of nitrogen combine with particulate matter, especially in summer season.

Statement II: Classical smog reduces atmospheric visibility to a great extent.

In the light of the above statements choose the correct answer from the options given below:

(1) Both Statement I and Statement II are true

(2) Both Statement I and Statement II are false

(3) Statement I is true and Statement II is false

(4) Statement I is false but Statement II is true

Correct Answer: (3) Statement I is true and Statement II is false

Solution:

Statement I is true because classical smog forms when oxides of nitrogen mix with particulate matter, and it is more prevalent during the summer season. Statement II is false because classical smog does not significantly reduce atmospheric visibility; instead, it has harmful effects on health and the environment.

Quick Tip

Understand the differences between classical and photochemical smog when studying environmental science.

---

85. Consider the following pairs:

Place of pilgrimage Location

(a) Srisailam Nallamalla Hills

(b) Omkareshwar Satmala Hills

(c) Pushkar Chamundi Hills

Which of the above pair/pairs is/are correctly matched?

(1) a only

(2) b and c only

(3) a and c only

(4) a, b and c

Correct Answer: (3) a and c only

Solution:

- Srisailam is located in the Nallamalla Hills in Andhra Pradesh.

- Omkareshwar is located in the Satmala Hills in Madhya Pradesh.

- Pushkar is located near the Chamundi Hills in Rajasthan.

Hence, pairs (a) and (c) are correct, but (b) is incorrect.

Quick Tip

Always verify the locations of pilgrimage sites, as they are often associated with specific hills or mountains in different regions.

---

86. In the context of intercultural communication, what is 'ethnocentrism'?

(1) The tendency to understand and respect all cultures

(2) The belief in the superiority of one's own culture

(3) The ability to communicate effectively across culture

(4) The practice of adopting multiple cultural norms

Correct Answer: (2) The belief in the superiority of one's own culture

Solution:

Ethnocentrism refers to the belief in the superiority of one's own culture over others. This often leads to the judgment of other cultures based on the standards and values of one's own culture.

Quick Tip

Be aware of ethnocentrism when interacting with people from different cultures, as it can hinder effective communication and mutual respect.

---

87. Headquarters of 'World Anti Doping Agency' is located at

(1) Montreal, Canada

(2) Cape Town, South Africa

(3) Montevideo, Uruguay

(4) Tokyo, Japan

Correct Answer: (1) Montreal, Canada

Solution:

The headquarters of the World Anti-Doping Agency (WADA) is located in Montreal, Canada. It was established to coordinate efforts to fight doping in sports worldwide.

Quick Tip

Keep in mind the key international organizations' headquarters, as they play a significant role in global sports governance.

---

88. The Kyoto Protocol introduced three flexible mechanisms to help countries achieve their emission targets. Which of the following is not one of them?

(1) Joint Implementation

(2) Carbon Capture and Storage

(3) Clean Development Mechanism

(4) Emissions Trading

Correct Answer: (2) Carbon Capture and Storage

Solution:

The Kyoto Protocol introduced mechanisms such as Joint Implementation, Clean Development Mechanism, and Emissions Trading to help countries reduce their emissions. Carbon Capture and Storage, however, is not one of the mechanisms introduced by the Kyoto Protocol. It is a method used for capturing carbon dioxide emissions from industrial processes, but it is not part of the Kyoto Protocol mechanisms.

Quick Tip

Remember, the key mechanisms under the Kyoto Protocol include Joint Implementation, Clean Development Mechanism, and Emissions Trading. Carbon Capture and Storage is a separate technology for mitigating climate change, not a Kyoto Protocol mechanism.

---

89. Jamnalal Bajaj Award honours individuals for their exceptional contributions primarily in which area?

(1) Rural Housing

(2) Rural Electrification

(3) Urban Housing

(4) Urban Transport

Correct Answer: (2) Rural Electrification

Solution:

The Jamnalal Bajaj Award is presented to individuals for their exceptional contributions towards rural development, specifically in areas such as rural electrification. This award recognizes efforts aimed at improving the quality of life in rural India through sustainable development practices. The correct answer is rural electrification.

Quick Tip

Keep in mind that the Jamnalal Bajaj Award focuses on rural development, with a special emphasis on areas like rural electrification, which has a significant impact on improving rural livelihoods.

---

90. Read the following statements about the Tashkent Declaration, and identify the incorrect statement among the choices given below:

(1) It was signed between India and Pakistan on 10th January 1966 to resolve the issues of India-Pakistan war of 1965.

(2) The signatories of this agreement were Prime Minister Indira Gandhi of India and President Ayub Khan of Pakistan.

(3) The meeting was held in Tashkent in the former U.S.S.R.

(4) The meeting was held under the terms of the Indo-Soviet Treaty of Peace, Friendship, and Cooperation.

Correct Answer: (3) a. and c. only

Solution:

The Tashkent Declaration was signed between India and Pakistan on 10th January 1966 to

resolve the issues stemming from the 1965 India-Pakistan war. The signatories were Prime Minister Indira Gandhi of India and President Ayub Khan of Pakistan. However, the meeting was held in Tashkent, which was part of the former Soviet Union, but it was not held under the Indo-Soviet Treaty of Peace, Friendship, and Cooperation. Hence, option (4) is incorrect.

Quick Tip

The Tashkent Declaration was a significant peace agreement after the 1965 India-Pakistan war, signed under the auspices of the Soviet Union, but it was not directly linked to the Indo-Soviet Treaty.

---

91. Consider the following statements:

A. It is the world's largest domestic rooftop solar initiative with a bold vision to supply solar power to one crore households by March 2027.

B. It aims to provide free electricity to households.

C. Households will have access to collateral-free, interest-free loans with 0% interest for the installation of residential rooftop solar (RTS) systems up to 5 kW.

D. The transition to solar energy under this scheme will help lower carbon emissions, supporting India's commitment to reducing its carbon footprint.

How many of the above statements/statements are correct?

(1) All of them are correct

(2) Only 2 statements are correct

(3) Only 3 statements are correct

(4) Only 1 statement is correct

Correct Answer: (3) Only 3 statements are correct

Solution:

- Statement A is correct: India has launched a large rooftop solar initiative to provide power to households by 2027.

- Statement B is incorrect: The initiative does not aim to provide free electricity, but it focuses on enabling affordable access to solar power.

- Statement C is correct: The program offers collateral-free, interest-free loans for the

installation of solar panels.

- Statement D is correct: The transition to solar power contributes to reducing carbon emissions and supports India's environmental commitments.

Hence, statements A, C, and D are correct, but statement B is not.

Quick Tip

When evaluating government schemes, verify the specifics of the statements to determine the accuracy of the claims, especially concerning the benefits provided.

---

92. Consider the following statements related to Bharat 6G Alliance (B6GA):

A. To enable India to become a leading global supplier of IP, products and solutions of affordable 5G and 6G and other future telecom solutions.

B. To deploy 6G technologies to act as a powerful force multiplier for India by 2030.

C. To build coalitions with similar 6G Global Alliances and other global technology alliances and associations.

D. To address India's priorities for contribution to 6G and other future technology-related global standards, deployments, products, operations, and services.

How many of the above statements/statements are correct?

(1) All of them are correct

(2) Only 2 statements are correct

(3) Only 3 statements are correct

(4) Only 1 statement is correct

Correct Answer: (1) All of them are correct

Solution:

- Statement A is correct: The Bharat 6G Alliance aims to enhance India's role in the global telecom market, particularly in 5G, 6G, and future technologies.

- Statement B is correct: The Alliance's goal is to boost India's position through the deployment of 6G technologies, which will play a significant role in India's tech landscape by 2030.

- Statement C is correct: One of the objectives of the Alliance is to form partnerships and

collaborations with other 6G alliances globally.

- Statement D is correct: The Alliance is focused on addressing India's needs and priorities for future global standards in telecommunications and technology.

Thus, all statements are correct.

Quick Tip

Pay attention to how initiatives like Bharat 6G Alliance contribute to global technology trends and economic growth. Understanding these objectives can be critical in discussions about India's technological future.

---

93. Consider the following statements of the 'Coercive Actions' Ordinance, 2025:

A. This was brought to protect and relieve the economically vulnerable groups and individuals from the coercive means of recovery by Micro Finance Institutions or Money Lending Agencies or Organizations.

B. The provisions of this Ordinance doesn't apply to banking or Non-Banking Finance Companies (NBFC) registered with RBI.

C. All Micro Finance Institutions or Money Lending Agencies shall apply for registration before the Registering Authority of the district within ninety days from the date of commencement of this Ordinance.

D. An Ombudsperson will be appointed by the Government who can act as mediator between the borrower or lender for settling the disputes.

How many of the above statement/statements is/are correct?

(1) Only 3 statements are correct

(2) Only 2 statements are correct

(3) Only 1 statement is correct

(4) All of them are correct

Correct Answer: (2) Only 2 statements are correct

Solution:

- Statement A is correct as it mentions the purpose of the ordinance.

- Statement B is incorrect because the provisions of the Ordinance do apply to banking or

Non-Banking Finance Companies registered with RBI.

- Statement C is correct, as the ordinance requires registration of Micro Finance Institutions within ninety days.

- Statement D is also correct, as the ordinance includes the appointment of an Ombudsperson for dispute resolution.

Thus, only statements B and D are correct.

Quick Tip

Always carefully review the specific regulations mentioned in any ordinance or act, especially when it involves registrations or operational protocols for financial institutions.

---

94. Which of the following states has the richest resources and biodiversity such as coral reef, sea grass and other marine flora and fauna?

(1) Tamil Nadu

(2) West Bengal

(3) Karnataka

(4) Gujarat

Correct Answer: (1) Tamil Nadu

Solution: Tamil Nadu is known for its rich biodiversity and marine resources, including coral reefs, sea grass, and various marine flora and fauna. The state is also home to a variety of coastal ecosystems, making it the correct answer.

Quick Tip

When considering marine biodiversity, focus on coastal regions known for their ecological variety and conservation efforts.

---

95. Consider the following statements related to National Critical Mineral Mission (NCMM).

A. It is one of the initiatives under Atmanirbhar Bharat.

B. It was launched to build a resilient value chain for critical mineral resources that are vital to Green Technologies.

C. It will encompass all stages of the value chain, including mineral exploration, mining, beneficiation, processing, and recovery from end-of-life products.
D. It aims to encourage Indian PSUs and private sector companies to acquire critical minerals assets abroad and enhance trade with resource-rich countries. It also proposes developing a stockpile of critical minerals within the country.
How many of the above statement/statements are correct?
(1) All of them are correct
(2) Only 3 statements are correct
(3) Only 2 statements are correct
(4) Only 1 statement is correct
Correct Answer: (1) All of them are correct
Solution: All the statements are correct. The NCMM is indeed one of the initiatives under Atmanirbhar Bharat, aimed at strengthening the value chain for critical minerals. It covers exploration, mining, and various other stages and promotes the acquisition of resources abroad, contributing to both domestic supply and international trade.

Quick Tip

The National Critical Mineral Mission supports sustainable mining and resource management, which are key for technological advancements.

---

96. With reference to the international trade of India at present, which of the following statement/statements is/are correct?
(1) a and b only
(2) b and d only
(3) c and d only
(4) a, c and d only
Correct Answer: (4) a, c and d only
Solution:
India's merchandise exports are less than its merchandise imports. The country imports more of iron, steel, chemicals, fertilizers, and machinery. However, India does have a current

account deficit, and exports of services are more than imports of services. Thus, the statements a, c, and d are correct.

Quick Tip

Focus on the balance between exports and imports for a comprehensive understanding of the current trade scenario in India.

---

97. In which Indian state is the ”Flamingo festival” celebrated?

(1) Rajasthan

(2) Manipur

(3) Andhra Pradesh

(4) Assam

Correct Answer: (3) Andhra Pradesh

Solution:

The ”Flamingo Festival” is celebrated in Andhra Pradesh, where thousands of flamingos gather in the coastal region of the state, particularly in the coastal wetlands like Kolleru Lake.

Quick Tip

If you’re studying festivals in India, try to remember the state and its iconic wildlife festivals. This can help in exam questions related to geographical and cultural events.

---

98. Consider the following events in the history of India:

a. Rise of Pratiharas under the rule of King Bhoja.

b. Establishment of Pallava power under Mahendravarma-I.

c. Establishment of Chola power by Parantaka-I.

What is the correct chronological order of the above events starting from the earliest time?

(1) b - a - d - c

(2) c - a - d - b

(3) c - d - a - b

(4) c - d - a - b

Correct Answer: (3) c - d - a - b

Solution:

The correct chronological order is:

1. Establishment of Chola power by Parantaka-I.
2. Establishment of Pallava power under Mahendravarma-I.
3. Rise of Pratiharas under the rule of King Bhoja.

This order matches the early medieval period of Indian history and aligns with the emergence of these dynasties.

Quick Tip

Remember the key dynasties of India: Cholas, Pratiharas, and Pallavas, and the significant rulers like King Bhoja and Mahendravarma-I. These events are fundamental in understanding the political history of India.

---

99. Assertion (A): The problem of organic pollution in rivers is usually worse in the hot summer months.

Reason (R): Higher water temperatures exacerbate oxygen depletion.

(1) Both (A) and (R) are true and (R) is the correct explanation of (A)

(2) Both (A) and (R) are true but (R) is not the correct explanation of (A)

(3) (A) is true but (R) is not correct

(4) (A) is false but (R) is correct

Correct Answer: (2) Both (A) and (R) are true but (R) is not the correct explanation of (A)

Solution:

Organic pollution in rivers increases in the summer because higher temperatures promote the growth of microorganisms that consume oxygen. While (R) is true — warmer water holds less dissolved oxygen, leading to oxygen depletion — it does not fully explain why organic pollution worsens. The increase in pollution is also due to increased biological activity and not just because of oxygen depletion. Hence, both statements are true, but (R) is not the correct explanation of (A).

Quick Tip

Always verify if the reason directly explains the assertion — both must be individually true for Option (2), but the cause-effect link must be missing.

---

100. Assertion (A): The Government cannot directly restrict one freedom by permitting another freedom.

Reason (R): Clause (1) of Article 19 of the Indian Constitution provides equal opportunity for every type of freedom.

(1) Both (A) and (R) are true

(2) Both (A) and (R) are true, but (R) is not the correct explanation of (A)

(3) (A) is true, but (R) is false

(4) (A) is false, but (R) is true

Correct Answer: (3) (A) is true, but (R) is false

Solution:

Assertion is true because fundamental rights must be exercised in harmony and one cannot be compromised in favor of another. However, Reason (R) is incorrect — Article 19(1) of the Indian Constitution lists specific freedoms (like speech, expression, movement), but it does not guarantee ”equal opportunity” for all types of freedom. It simply enumerates them. Hence, the assertion is correct, but the reason is not.

Quick Tip

Read constitutional articles precisely — sometimes options misstate legal clauses even if the assertion is factually valid.
