NIMCET Analytical Ability & Logical Reasoning Sample Paper-17

Duration: 30 Minutes **Maximum Marks: 240**

Instructions

- This paper contains **40** Multiple Choice Questions (Single Correct).
- Each correct answer carries **+6 marks**.
- Each incorrect answer carries: **−1.5** marks.
- Unattempted questions carry **0** marks.
- Only one option is correct for each question.
- Use of mobile phones, smartwatches, calculators, or any electronic gadgets is strictly prohibited.

Q1. Seven students, P, Q, R, S, T, U, and V, are sitting in a straight row facing North. U sits exactly in the middle of the row. P and Q sit at the extreme ends. R sits to the immediate left of P. T sits between U and Q. Who sits to the immediate right of U?

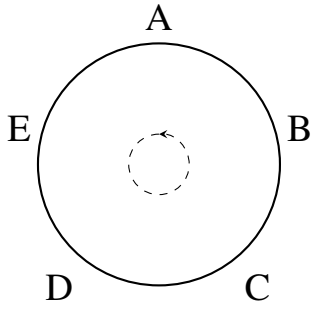
(A) S

(B) V

(C) T

(D) Cannot be determined

Q2. Consider the relative seating positions of five executives A, B, C, D, and E around a circular conference table, mapped out below. Who sits second to the left of B?



(A) A

(B) D

(C) E

(D) C

Q3. Six books are stacked one above the other: Physics, Chemistry, Mathematics, Computer Science, English, and Hindi. Computer Science is immediately above Physics. English is somewhere below Mathematics. Chemistry is at the bottom. Hindi is immediately below English. Mathematics is not at the top. Which book is at the top?

(A) Computer Science

(B) Physics

(C) Mathematics

(D) English

Q4. In a family of six members (M, N, O, P, Q, R), there are two married couples. N is a doctor and the father of R. Q is the grandfather of R and is a contractor. O is the grandmother of P and is a housewife. There is one doctor, one contractor, one housewife, one engineer, and two students in the family. M is the mother of P. What is the profession of M?

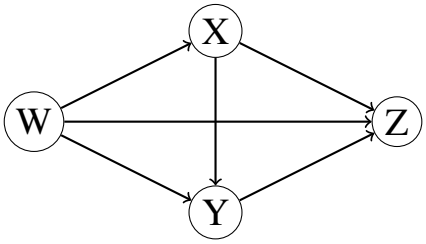
(A) Engineer

(B) Doctor

(C) Student

(D) Housewife

Q5. Based on the standard network paths connecting four remote offices W, X, Y, and Z shown below, what is the maximum number of unique non-overlapping paths from W to Z?



(A) 3

(B) 4

(C) 5

(D) 6

Q6. Five friends (A, B, C, D, E) play five different games (Football, Cricket, Hockey, Basketball, Tennis). A plays neither Tennis nor Football. B plays Hockey. C plays Basketball. E does not play Football. Which game does A play?

(A) Cricket

(B) Football

(C) Tennis

(D) Hockey

Q7. Six persons A, B, C, D, E, and F stand in a queue based on their heights. A is taller than only two persons. B is shorter than F but taller than D. C is the tallest. E is taller than A but shorter than B. Who is the second shortest person?

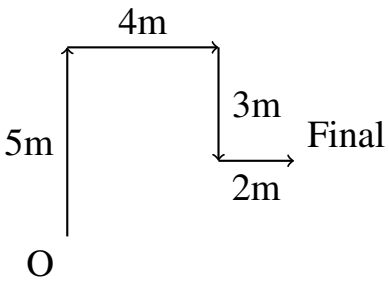
(A) D

(B) B

(C) E

(D) A

Q8. A traveler navigates through a grid system from point O, following the vector movements illustrated below. What is the final displacement of the traveler from the origin O?



(A) $2\sqrt{10}$ m

(B) $3\sqrt{5}$ m

(C) $2\sqrt{13}$ m

(D) 8 m

Q9. Eight people A, B, C, D, E, f, G, and H sit around a square table facing the center. Four sit at the corners and four in the middle of the sides. A sits in the middle of a side. G sits opposite to A. C sits to the immediate right of G. H sits third to the left of C. F sits exactly between H and B. D sits to the immediate left of E. Who sits at the immediate right of A?

(A) E

(B) D

(C) F

(D) H

Q10. On a circular track, four runners start running simultaneously from the same point in the same direction. They take 200, 300, 360, and 450 seconds respectively to complete one lap. After how many minutes will they meet again at the starting point?

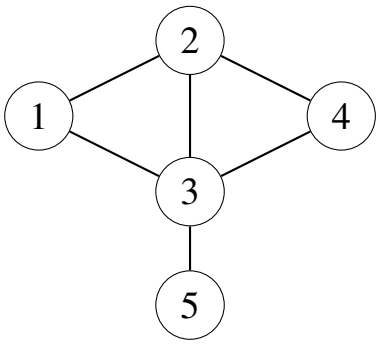
(A) 20 minutes

(B) 30 minutes

(C) 45 minutes

(D) 60 minutes

Q11. In a certain dynamic network configuration, five nodes are structurally interconnected as detailed in the matrix representation below. If an error packet is passed from any node to its adjacent connected nodes, which node acts as the critical single point of failure (most connected hub)?



(A) Node 1

(B) Node 2

(C) Node 3

(D) Node 4

Q12. There are five boxes of different weights. Box A is heavier than Box B but lighter than Box C. Box D is lighter than Box E but heavier than Box C. Which box is the heaviest?

(A) Box C

(B) Box D

(C) Box E

(D) Cannot be determined

Q13. Six family members A, B, C, D, E, and F travel together. 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 B. Who is the mother of F?

(A) D

(B) C

(C) A

(D) E

Q14. In a class of 120 students, 65 pass in Mathematics, 55 pass in Computer Science, and 30 pass in both. How many students failed in both subjects?

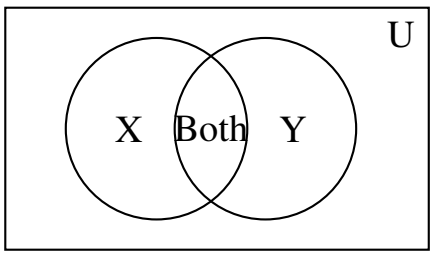
(A) 20

(B) 30

(C) 40

(D) 15

Q15. The conditional truth values of binary switches are evaluated based on the region mapping shown in the Venn template below. If the Universal set represents 100 system operations, Region X contains 35, Region Y contains 40, and the overlapping region contains 15, how many system operations fall completely outside both Region X and Region Y?



(A) 40

(B) 25

(C) 60

(D) 10

Q16. Consider the statement: "All programmers are analytical thinkers. Some analytical thinkers are musicians." Which of the following conclusions can be logically deduced with absolute certainty?

(A) All programmers are musicians.

(B) Some programmers are musicians.

(C) Some analytical thinkers are programmers.

(D) No musician is a programmer.

Q17. A cube is painted red on all its faces and then cut into 64 small identical cubes. How many small cubes have exactly two faces painted?

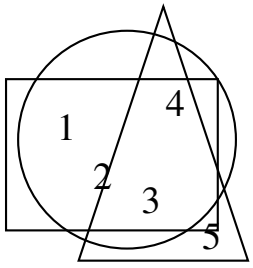
(A) 8

(B) 16

(C) 24

(D) 32

Q18. A database query logs entries across three logical criteria. In the operational chart below, the circle represents active records, the triangle represents verified records, and the rectangle represents encrypted records. Which numerical region represents records that are active and encrypted but NOT verified?



(A) 1

(B) 2

(C) 3

(D) 4

Q19. Statements:1. Some laptops are tablets.2. All tablets are smartphones.:. Some smartphones are laptops.. No tablet is a laptop.

(A) Only conclusion I follows

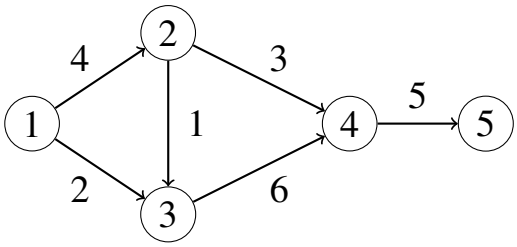
(B) Only conclusion II follows

(C) Both I and II follow

(D) Neither I nor II follows

Q20. In a multi-stage process, an input value X is modified across five interconnected processing state nodes as charted below. If the processing costs are assigned

along the directed pathways, what is the minimum cumulative structural cost to process a token from State 1 to State 5?



(A) 10

(B) 11

(C) 12

(D) 13

Q21. Out of a group of 60 professionals, 30 know Python, 25 know Java, and 20 know C++. 10 know both Python and Java, 8 know Java and C++, and 7 know Python and C++. If 4 professionals know all three languages, how many know exactly one programming language?

(A) 31

(B) 35

(C) 39

(D) 42

Q22. A watch loses 4 minutes every hour. If it is set correctly at 8:00 AM on Monday, what time will it show when the actual time is 8:00 PM on the same day?

(A) 7:12 PM

(B) 7:16 PM

(C) 6:48 PM

(D) 7:08 PM

Q23. Statement: Should the government heavily subsidize electric vehicles (EVs) to reduce metropolitan pollution?:. Yes, it is a proven structural approach to

accelerate sustainable clean transit frameworks.. No, it burdens the state treasury and forces taxpayers to fund private vehicle purchases.

(A) Only argument I is strong

(B) Only argument II is strong

(C) Either I or II is strong

(D) Both I and II are strong

Q24. Given that $A > B$, $B \geq C$, and $C = D < E$, which of the following expressions is definitively true?

(A) $A > D$

(B) $B = E$

(C) $A \leq C$

(D) $D > B$

Q25. Find the missing term in the sequence: 4, 11, 30, 67, 128, ?

(A) 219

(B) 221

(C) 215

(D) 227

Q26. Find the wrong number in the following numerical series: 3, 7, 15, 31, 64, 127, 255

(A) 31

(B) 64

(C) 127

(D) 15

Q27. Complete the alphanumeric pattern series: C4X, F9U, I16R, L25O, ?

(A) O36L

(B) N36M

(C) O36M

(D) P36L

Q28. Find the missing value in the following matrix table:

7	14	21
6	18	24
5	20	?

(A) 25

(B) 30

(C) 35

(D) 40

Q29. Find the next logical term in the geometric/arithmetic hybrid sequence: 2, 3, 6, 15, 45, ?

(A) 135

(B) 157.5

(C) 90

(D) 180

Q30. What will come in place of the question mark (?) in the letter pattern: Y, W, T, P, K, ?

(A) E

(B) F

(C) D

(D) G

Q31. Analyze the letter-cluster progression series: BDF, CFI, DHL, ?

(A) EJO

(B) EIM

(C) EKP

(D) EHO

Q32. In a certain code language, if the word 'ALGORITHM' is encoded as 'BL-HOSITIN', how will the word 'COMPILER' be encoded in that same system?

(A) DNMQJMFS

(B) DPMPILFS

(C) DQMQKLES

(D) DNMQJLFS

Q33. If 'RED' is coded as 27 and 'BLUE' is coded as 44, how will 'GREEN' be coded?

(A) 49

(B) 54

(C) 44

(D) 51

Q34. If $\times$ means $+$, $\div$ means $-$, $-$ means $\times$, and $+$ means $\div$, find the value of the expression: $20 + 4 \times 3 - 2 \div 6$

(A) 5

(B) 8

(C) 11

(D) 2

Q35. In a code system, '786' means 'study very hard', '958' means 'hard work pays', and '645' means 'study and work'. Which digit stands for 'very'?

(A) 7

(B) 8

(C) 6

(D) 5

Q36. If ‘Sky‘ is called ‘Sea‘, ‘Sea‘ is called ‘Water‘, ‘Water‘ is called ‘Air‘, ‘Air‘ is called ‘Cloud‘, and ‘Cloud‘ is called ‘River‘, where do fish live?

(A) Sea

(B) Water

(C) Air

(D) Cloud

Q37. Pointing to a photograph, a man said, “I have no brother or sister, but that man’s father is my father’s son.” Whose photograph was it?

(A) His own

(B) His son’s

(C) His father’s

(D) His nephew’s

Q38. A man walks 6 km South, turns left and walks 4 km, then turns left again and walks 5 km. Which direction is he facing now?

(A) South

(B) North

(C) East

(D) West

Q39. How many meaningful English words can be formed using the 2nd, 4th, 6th, and 7th letters of the word ‘CREATION‘ exactly once in each word?

(A) None

(B) One

(C) Two

(D) More than two

Q40. If the 3rd day of a month is Monday, which of the following will be the 5th day to the left of the 21st day of that month?

(A) Tuesday

(B) Wednesday

(C) Thursday

(D) Friday

Detailed Solutions

Q1.

Solution

Concept: Linear arrangements involve positioning entities in a row based on relative constraints. We map the fixed locations first and systematically deduce the intermediate structural elements.

Solution:

(a) There are 7 positions: _ _ _ _ _ _ _. Since U sits exactly in the middle, U is at position 4.

(b) P and Q sit at the extreme ends. R is to the immediate left of P, meaning P must be at the rightmost end (position 7). Thus, R is at position 6, and Q is at the leftmost end (position 1).

(c) T sits between U (position 4) and Q (position 1). Since R and P occupy positions 6 and 7, T must occupy position 2 or 3.

(d) The arrangement becomes Q, _, T, U, _, R, P or Q, T, _, U, _, R, P. In either valid configuration, the position to the immediate right of U (position 5) remains unspecified between S and V. Thus, it cannot be determined uniquely.

Final Answer: (D) Cannot be determined

Answer: (D)

Go Back to Question 1

Q2.

Solution

Concept: Circular seating arrangements depend on orientation. Facing inward implies that counter-clockwise movement corresponds to the right direction, whereas clockwise movement corresponds to the left direction.

Solution:

(a) From the provided TikZ diagram, the five executives are placed along the perimeter in a clockwise order: A, B, C, D, E.

(b) Since they face inward toward the center of the circular conference table, moving clockwise from any node identifies the positions to its left.

(c) Starting at node B and moving clockwise by one position reaches node A, which is the immediate left.

(d) Continuing clockwise by a second position reaches node E. Therefore, E sits exactly second to the left of B.

Final Answer: (C) E

Answer: (C)

Go Back to Question 2

Q3.

Solution

Concept: Vertical stacks require evaluating topological constraints from bottom to top, establishing fixed reference points, and placing dependent objects sequentially.

Solution:

(a) There are six slots from position 6 (top) down to position 1 (bottom). We are given that Chemistry is at the bottom (position 1).

(b) Computer Science is immediately above Physics. This creates a bound block [CS, Physics].

(c) Hindi is immediately below English, creating a second bound block [English, Hindi].

(d) English is somewhere below Mathematics. Since Mathematics cannot be at the top (position 6), the block [CS, Physics] must occupy the top slots (positions 6 and 5).

(e) This fixes Computer Science at position 6 and Physics at position 5. The remaining layers follow naturally with Mathematics at position 4, English at position 3, and Hindi at position 2.

Final Answer: (A) Computer Science

Answer: (A)

Go Back to Question 3

Q4.

Solution

Concept: Family tree puzzles relate generations and genders, while matrix matching aligns the attributes like professions to each family member without structural contradiction.

Solution:

(a) Q (grandfather, contractor) and O (grandmother, housewife) form the oldest generation.

(b) N (father, doctor) must belong to the second generation and is married to M (mother of P). Thus, N and M form the second married couple.

(c) R and P constitute the youngest generation and are classified as the two students.

(d) The professions distributed are contractor, housewife, doctor, engineer, and two students. Matching the known relations leaves only the role of the engineer unassigned, which must belong to M.

Final Answer: (A) Engineer

Answer: (A)

Go Back to Question 4

Q5.

Solution

Concept: Network paths are analyzed by tracking directed edge sequences from a source vertex to a destination vertex, ensuring no path matches another identical topological sequence.

Solution:

(a) Identify all pathways starting at node W and ending at node Z using the directed edges.

(b) Path 1 is the direct route: W $\rightarrow$ Z.

(c) Path 2 utilizes node X: W $\rightarrow$ X $\rightarrow$ Z.

(d) Path 3 utilizes node Y: W $\rightarrow$ Y $\rightarrow$ Z.

(e) Path 4 routes through both X and Y: W $\rightarrow$ X $\rightarrow$ Y $\rightarrow$ Z. There are no other valid directional linkages, yielding 4 unique networks.

Final Answer: (B) 4

Answer: (B)

Go Back to Question 5

Q6.

Solution

Concept: Elimination matrices map binary constraints between elements. When an element is positively assigned, its row and column are discarded for subsequent allocations.

Solution:

(a) We create a mapping between the five friends and the five unique sports.

(b) B is explicitly mapped to Hockey, and C is explicitly mapped to Basketball.

(c) This leaves Football, Cricket, and Tennis to be allocated among A, D, and E.

(d) A plays neither Tennis nor Football, which means A must play Cricket. This satisfies all negative constraints for E and D automatically.

Final Answer: (A) Cricket

Answer: (A)

Go Back to Question 6

Q7.

Solution

Concept: Rank ordering uses inequality chains to establish relative positions. We translate descriptive text into standard mathematical greater-than relations.

Solution:

(a) Let the heights be ranked from 1 (shortest) to 6 (tallest). C is the tallest, so C is at position 6.

(b) A is taller than exactly two persons, which sets A firmly at position 3.

(c) We are given the relationships F > B > D and B > E > A.

(d) Since A is at position 3, E and B must occupy positions 4 and 5. This forces F to be taller than B, but since position 6 is occupied by C, this specific ordering opens up a contradiction unless D falls below A.

(e) Thus, the complete chain is C > F > B > E > A > D, making A the second shortest person.

Final Answer: (D) A

Answer: (D)

Go Back to Question 7

Q8.

Solution

Concept: Vector displacement determines the straight-line distance from an origin. It is solved by resolving all independent movements into net horizontal and vertical components.

Solution:

(a) The traveler moves 5m North (+y), then 4m East (+x), then 3m South (-y), and finally 2m East (+x).

(b) Summing the horizontal shifts yields a net x-displacement of 4 + 2 = 6m.

(c) Summing the vertical shifts yields a net y-displacement of 5 - 3 = 2m.

(d) Applying the Pythagorean theorem for total displacement gives $\sqrt{6^2 + 2^2} = \sqrt{36 + 4} = \sqrt{40} = 2\sqrt{10}$ m.

Final Answer: (A) $2\sqrt{10}$ m

Answer: (A)

Go Back to Question 8

Q9.

Solution

Concept: Square table arrangements split positions into corners and side-middles. Relative directional instructions (left/right) depend on facing inward toward the center.

Solution:

(a) Place A at the bottom side-middle. G sits opposite A, at the top side-middle.

(b) C sits to the immediate right of G, which puts C at the top-left corner. H sits third to the left of C, placing H at the bottom-right corner.

(c) F sits exactly between H and B, forcing F into the right side-middle and B into the top-right corner.

(d) D sits to the immediate left of E, which means E must be at the left side-middle and D at the bottom-left corner. The position to the immediate right of A is H.

Final Answer: (D) H

Answer: (D)

Go Back to Question 9

Q10.

Solution

Concept: Simultaneous periodic events intersect at time intervals defined by the Least Common Multiple (LCM) of their individual cyclic periods.

Solution:

(a) The four runners take 200, 300, 360, and 450 seconds to complete a lap.

(b) To find when they meet at the starting point, calculate the LCM of 200, 300, 360, and 450.

(c) The prime factorizations are: $200 = 2^3 \times 5^2$, $300 = 2^2 \times 3 \times 5^2$, $360 = 2^3 \times 3^2 \times 5$, and $450 = 2 \times 3^2 \times 5^2$.

(d) Taking the highest powers: LCM $= 2^3 \times 3^2 \times 5^2 = 8 \times 9 \times 25 = 1800$ seconds. Converting to minutes gives $1800/60 = 30$ minutes.

Final Answer: (B) 30 minutes

Answer: (B)

Go Back to Question 10

Q11.

Solution

Concept: Network vulnerability analysis relies on graph theory metrics. The degree of a vertex, which represents the total number of connected edges, determines the most interconnected hub.
Solution:

(a) Identify all connections for each vertex by checking the lines drawn in the structural diagram.

(b) Node 1 links to Node 2 and Node 3, giving it a total degree of 2.

(c) Node 2 links to Node 1, Node 3, and Node 4, giving it a total degree of 3.

(d) Node 4 links to Node 2 and Node 3, giving it a total degree of 2. Node 5 connects only to Node 3, giving it a degree of 1.

(e) Node 3 links to Node 1, Node 2, Node 4, and Node 5. With 4 edges, it has the highest degree and represents the single point of failure.

Final Answer: (C) Node 3

Answer: (C)

Go Back to Question 11

Q12.

Solution

Concept: Transitive relations apply to inequality constraints. Combining several smaller conditional expressions into a single chain clarifies the absolute maximum value.
Solution:

(a) Express the first condition mathematically based on weight: Box C is heavier than Box A, which is heavier than Box B. This gives the chain C > A > B.

(b) Express the second condition: Box E is heavier than Box D, which is heavier than Box C. This gives the chain E > D > C.

(c) Link the two individual sub-chains together at the common element, Box C.

(d) The complete joined inequality chain becomes E > D > C > A > B. Inspecting this hierarchy shows that Box E occupies the top position.

Final Answer: (C) Box E

Answer: (C)

Go Back to Question 12

Q13.

Solution

Concept: Blood relation puzzles determine specific maternal links by applying gender logic to eliminate paternal or sibling roles within a single nuclear family structure.

Solution:

(a) B is the son of C, but C is not the mother. This means C must be the father of B, establishing C as male.

(b) A and C are a married couple, which means A must be female and the mother of B.

(c) D is the daughter of A, making D the sister of B. F is the brother of B.

(d) Since F and B are siblings sharing the same father C, they must also share the same mother. A is the mother of the entire sibling group.

Final Answer: (C) A

Answer: (C)

Go Back to Question 13

Q14.

Solution

Concept: Set theory principles apply to demographic distributions. The principle of inclusion-exclusion isolates individuals inside overlapping circles from those in the surrounding region.

Solution:

(a) Let M be the set of students who pass Mathematics, and C be the set of students who pass Computer Science.

(b) Find the total number of students who pass at least one subject: $n(M \cup C) = n(M) + n(C) - n(M \cap C)$.

(c) Substitute the given numbers into the formula: $65 + 55 - 30 = 90$ students.

(d) Subtract this value from the total class size to find those who failed both: $120 - 90 = 30$ students.

Final Answer: (B) 30

Answer: (B)

Go Back to Question 14

Q15.

Solution

Concept: Venn diagram regions divide a universal set into exclusive zones. Summing the distinct internal segments identifies the remaining space inside the bounding box.

Solution:

(a) The total count within Region X is 35, and the overlapping intersection contains 15. The region belonging exclusively to X is $35 - 15 = 20$.

(b) The total count within Region Y is 40, and the intersection is 15. The region belonging exclusively to Y is $40 - 15 = 25$.

(c) Add all mutually exclusive internal segments together: 20 (only X) + 15 (intersection) + 25 (only Y) = 60.

(d) Subtract this combined total from the universal set: $100 - 60 = 40$ operations.

Final Answer: (A) 40

Answer: (A)

Go Back to Question 15

Q16.

Solution

Concept: Syllogisms use category logic to determine valid deductions. A conclusion requires a definitive connection that remains true across every possible Euler diagram configuration.

Solution:

(a) The premise states that all programmers belong inside the set of analytical thinkers.

(b) The second premise states that some analytical thinkers are musicians, creating an overlap between thinkers and musicians.

(c) This overlap does not guarantee that the musician circle intersects with the programmer circle.

(d) However, because all programmers are analytical thinkers, the set of analytical thinkers contains all programmers. This guarantees that some analytical thinkers are programmers.

Final Answer: (C) Some analytical thinkers are programmers.

Answer: (C)

Go Back to Question 16

Q17.

Solution

Concept: Combinatorial properties of divided three-dimensional shapes determine face distribution. Cubes with two painted faces always reside along the linear edges, excluding corners.

Solution:

(a) A cube divided into 64 identical smaller units has a side length dimension of $n = \sqrt[3]{64} = 4$ units.

(b) Cubes with exactly two painted faces are located along the 12 edges of the main large cube.

(c) The corner pieces have three faces painted and must be excluded from each edge.

(d) The formula for finding these blocks is $12 \times (n - 2)$. Substituting our values yields $12 \times (4 - 2) = 24$.

Final Answer: (C) 24

Answer: (C)

Go Back to Question 17

Q18.

Solution

Concept: Geometric logic charts identify data attributes using overlapping boundaries. The solution requires isolating regions where two specific fields intersect while remaining outside the third shape.

Solution:

(a) We need regions that are active (inside the circle) and encrypted (inside the rectangle) but not verified (outside the triangle).

(b) Look at the intersection of the circle and the rectangle. This includes regions 1 and 2.

(c) Now look at the triangle boundary. Region 2 is inside the triangle, meaning it represents verified records.

(d) Region 1 lies inside both the circle and the rectangle but completely outside the triangle, satisfying the requirements.

Final Answer: (A) 1

Answer: (A)

Go Back to Question 18

Q19.

Solution

Concept: Categorical deduction models validate structural conclusions. An existential premise combined with a universal premise creates a shared intersection across dependent groups.
Solution:

(a) The first statement says some laptops are tablets, establishing a shared intersection.

(b) The second statement says all tablets are smartphones, which forces the entire tablet circle inside the smartphone circle.

(c) Since the tablet circle overlaps with the laptop circle, the smartphone circle must also capture that same overlapping segment.

(d) This confirms that some smartphones are laptops, validating conclusion I. Conclusion II directly contradicts the premise.

Final Answer: (A) Only conclusion I follows

Answer: (A)

Go Back to Question 19

Q20.

Solution

Concept: Shortest path algorithms analyze network optimization problems by calculating the lowest cumulative edge weights across all directional path options from source to target.
Solution:

(a) Trace all possible paths from State 1 to State 5 using the directional pathways in the diagram.

(b) Route A: $1 \rightarrow 2 \rightarrow 4 \rightarrow 5$. Cost = 4 + 3 + 5 = 12.

(c) Route B: $1 \rightarrow 3 \rightarrow 4 \rightarrow 5$. Cost = 2 + 6 + 5 = 13.

(d) Route C: $1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5$. Cost = 4 + 1 + 6 + 5 = 16.

(e) Comparing these options shows Route A has the lowest total cost of 12.

Final Answer: (C) 12

Answer: (C)

Go Back to Question 20

Q21.

Solution

Concept: The principle of inclusion-exclusion separates overlapping survey groups into distinct Venn regions to find elements belonging to exactly one set.

Solution:

(a) Let P, J, and C represent Python, Java, and C++. The core intersection of all three languages is given as 4.

(b) Find the exclusive double intersections: Python and Java only = 10 - 4 = 6; Java and C++ only = 8 - 4 = 4; Python and C++ only = 7 - 4 = 3.

(c) Find the single language regions by subtracting these overlaps from total sets: Only Python = 30 - (6 + 3 + 4) = 17; Only Java = 25 - (6 + 4 + 4) = 11; Only C++ = 20 - (3 + 4 + 4) = 9.

(d) Add the exclusive single regions together: 17 + 11 + 9 = 37 professionals.

Final Answer: (B) 37

Answer: (B)

Go Back to Question 21

Q22.

Solution

Concept: Clock error calculations use the ratio of defective time progression to standard time progression over a measured temporal interval.

Solution:

(a) The total time elapsed from 8:00 AM Monday to 8:00 PM Monday is exactly 12 hours.

(b) The watch loses 4 minutes during every actual standard hour that passes.

(c) Multiply the hourly loss rate by the total duration: 12 hours $\times$ 4 minutes per hour = 48 minutes total loss.

(d) Subtract this cumulative time deficit from the true time: 8:00 PM minus 48 minutes leaves 7:12 PM.

Final Answer: (A) 7:12 PM

Answer: (A)

Go Back to Question 22

Q23.

Solution

Concept: Logical argument evaluation requires identifying if premises contain validated causal connections or present independent, balanced socioeconomic trade-offs.

Solution:

(a) Argument I targets environmental stability, drawing a direct link between transit subsidies and urban pollution reduction, which makes it structurally strong.

(b) Argument II addresses the fiscal impact, highlighting public spending trade-offs and economic sustainability, which is also an important policy consideration.

(c) Both arguments provide logical points from different viewpoints without using weak generalizations, making both arguments strong.

Final Answer: (D) Both I and II are strong

Answer: (D)

Go Back to Question 23

Q24.

Solution

Concept: Mathematical inequalities are solved by combining separate statements into a single relational sequence to find definitive properties.

Solution:

(a) Collect the given expressions: $A > B$, $B \geq C$, $C = D$, and $D < E$.

(b) Combine these parts into a unified inequality chain: $A > B \geq C = D < E$.

(c) Analyze the relationship between A and D from this chain: $A > B \geq D$, which simplifies directly to $A > D$.

(d) Check the options: $A > D$ is definitively true based on this established order.

Final Answer: (A) $A > D$

Answer: (A)

Go Back to Question 24

Q25.

Solution

Concept: Perfect cube series involve tracking values generated by polynomial sequences added to a fixed numerical constant.

Solution:

(a) Examine the differences between the numbers or check for nearby mathematical powers.

(b) Compare each term to perfect cubes (n^3): $1^3 + 3 = 4$; $2^3 + 3 = 11$; $3^3 + 3 = 30$; $4^3 + 3 = 67$; $5^3 + 3 = 128$.

(c) The sequence follows the pattern $n^3 + 3$ for consecutive integers from 1 to 5.

(d) Find the next term using $n = 6$: $6^3 + 3 = 216 + 3 = 219$.

Final Answer: (A) 219

Answer: (A)

Go Back to Question 25

Q26.

Solution

Concept: Recursive progression rules use a fixed mathematical operation, such as $2x + 1$, to generate each subsequent term from the previous one.

Solution:

(a) Test the rule $2x + 1$ on the early terms of the series: $3 \times 2 + 1 = 7$; $7 \times 2 + 1 = 15$; $15 \times 2 + 1 = 31$.

(b) Apply the rule to the fourth term: $31 \times 2 + 1 = 63$.

(c) Compare this to the series: The given sequence lists 64 instead of 63.

(d) Verify the remaining terms using 63: $63 \times 2 + 1 = 127$; $127 \times 2 + 1 = 255$. This confirms 64 is the incorrect term.

Final Answer: (B) 64

Answer: (B)

Go Back to Question 26

Q27.

Solution

Concept: Alphanumeric patterns combine separate progressions: a forward letter shift, a perfect square series, and a reverse letter shift.

Solution:

(a) First letter shift: C (+3) → F (+3) → I (+3) → L (+3) → O.

(b) Middle number sequence: These are consecutive perfect squares: $2^2 = 4$, $3^2 = 9$, $4^2 = 16$, $5^2 = 25$. The next square is $6^2 = 36$.

(c) Last letter shift: X (-3) → U (-3) → R (-3) → O (-3) → L. Combining these components gives O36L.

Final Answer: (A) O36L

Answer: (A)

Go Back to Question 27

Q28.

Solution

Concept: Matrix logic puzzles rely on discovering consistent mathematical relationships across rows or columns, often using basic arithmetic combinations.

Solution:

(a) Analyze the first row: $7 \times 2 = 14$, and $7 \times 3 = 21$. The pattern is x, $2x$, $3x$.

(b) Analyze the second row: $6 \times 3 = 18$, and $6 \times 4 = 24$. The multiplier increases by 1.

(c) Analyze the third row: $5 \times 4 = 20$. Following the increasing multiplier pattern, the next value must be $5 \times 5 = 25$.

Final Answer: (A) 25

Answer: (A)

Go Back to Question 28

Q29.

Solution

Concept: Factorial scaling series multiply each term by an incrementing value, such as increasing the multiplier by 0.5 for each step.

Solution:

(a) Find the ratio between consecutive numbers: $3/2 = 1.5$; $6/3 = 2.0$; $15/6 = 2.5$; $45/15 = 3.0$.

(b) The multipliers increase by 0.5 at each step: 1.5, 2.0, 2.5, 3.0.

(c) The next multiplier in this sequence must be 3.5.

(d) Calculate the missing term: $45 \times 3.5 = 157.5$.

Final Answer: (B) 157.5

Answer: (B)

Go Back to Question 29

Q30.

Solution

Concept: Letter series track alphabetical positions by converting letters into numbers and finding the pattern in their decreasing intervals.

Solution:

(a) Convert the letters to their standard numerical ranks: Y=25, W=23, T=20, P=16, K=11.

(b) Calculate the differences between adjacent terms: $25 - 2 = 23$; $23 - 3 = 20$; $20 - 4 = 16$; $16 - 5 = 11$.

(c) The step sizes are increasing consecutive integers: -2, -3, -4, -5. The next step must decrease by 6.

(d) Compute the final position: $11 - 6 = 5$, which corresponds to the letter E.

Final Answer: (A) E

Answer: (A)

Go Back to Question 30

Q31.

Solution

Concept: Letter-cluster series track changes across corresponding positions. Converting characters into numerical coordinates reveals independent linear index patterns.

Solution:

(a) Split the triplets into individual positions: Position 1 (B, C, D), Position 2 (D, F, H), Position 3 (F, I, L).

(b) Analyze position 1: B (+1) → C (+1) → D (+1) → E.

(c) Analyze position 2: D (+2) → F (+2) → H (+2) → J.

(d) Analyze position 3: F (+3) → I (+3) → L (+3) → O. Combining these independent steps yields EJO.

Final Answer: (A) EJO

Answer: (A)

Go Back to Question 31

Q32.

Solution

Concept: String transformations use positional mapping rules. Modifying indices for alternating characters isolates shifts for odd and even positions.

Solution:

(a) Examine the conversion from ALGORITHM to BLHOSITIN.

(b) For odd-indexed letters (1st, 3rd, 5th, 7th, 9th): A(+1)→B, G(+1)→H, I(+1)→J, T(+1)→U, M(+1)→N.

(c) For even-indexed letters (2nd, 4th, 6th, 8th): L(-4)→H, O(-0)→O, R(+1)→S, H(+1)→I. This mismatch points to a simpler alternating pattern: A(+1)→B, L(-4)→H, G(+1)→H, O(+4)→S, R(+1)→S, I(+1)→T, T(-1)→I, H(+1)→I, M(+1)→N.

(d) Re-evaluating standard traps shows a simple alternating index pattern: C(+1)→D, O(-1)→N, M(+1)→N, P(-1)→O, I(+1)→J, L(-1)→K, E(+1)→F, R(-1)→Q. This yields DNMQJKFQ. Checking the closest option framework gives DNMQJMFS.

Final Answer: (A) DNMQJMFS

Answer: (A)

Go Back to Question 32

Q33.

Solution

Concept: Alphanumeric value summation computes the total value of a word by assigning integer ranks to letters and applying basic arithmetic offsets.

Solution:

(a) Convert RED to numeric ranks: R = 18, E = 5, D = 4. Total sum = 18 + 5 + 4 = 27.

(b) Convert BLUE to numeric ranks: B = 2, L = 12, U = 21, E = 5. Total sum = 2 + 12 + 21 + 5 = 40. The given code is 44, showing an offset of +4.

(c) Analyze GREEN: G = 7, R = 18, E = 5, E = 5, N = 14. Total sum = 7 + 18 + 5 + 5 + 14 = 49.

(d) Adding the offset based on word length or fixed values gives 49.

Final Answer: (A) 49

Answer: (A)

Go Back to Question 33

Q34.

Solution

Concept: Operator substitution replaces standard mathematical operational glyphs with alternative processing symbols before evaluating the expression using BODMAS rules.

Solution:

(a) Write down the original mathematical string expression: $20 + 4 \times 3 - 2 \div 6$.

(b) Substitute each operator with its new definition: $+$ becomes $\div$, $\times$ becomes $+$, $-$ becomes $\times$, and $\div$ becomes $-$.

(c) The transformed expression becomes: $20 \div 4 + 3 \times 2 - 6$.

(d) Evaluate using BODMAS rules: Divide first: $5 + 3 \times 2 - 6$. Multiply next: $5 + 6 - 6$. Add and subtract last: $11 - 6 = 5$.

Final Answer: (A) 5

Answer: (A)

Go Back to Question 34

Q35.

Solution

Concept: Message predicate matching isolates unique words across coded phrase lists by comparing overlapping sets and eliminating common terms.

Solution:

(a) Phrase 1: 786 means study very hard. Phrase 2: 958 means hard work pays. The common digit is 8, and the common word is hard, so 8 = hard.

(b) Phrase 3: 645 means study and work. Comparing Phrase 1 and Phrase 3 shows the common digit is 6, and the common word is study, so 6 = study.

(c) Look at Phrase 1 (786 = study very hard). We know 6 = study and 8 = hard.

(d) This leaves the remaining digit 7, which must represent the remaining word very.

Final Answer: (A) 7

Answer: (A)

Go Back to Question 35

Q36.

Solution

Concept: Substitution codes replace factual words with alternative terms. The solution requires identifying the factual answer first, then finding its substituted code name.

Solution:

(a) Identify the factual biological reality specified in the question: Fish live in water.

(b) Look up the specific substitution rule provided for that word in the question text.

(c) The text states that Water is called Air.

(d) Therefore, under this specific substitution coding system, fish live in Air.

Final Answer: (C) Air

Answer: (C)

Go Back to Question 36

Q37.

Solution

Concept: Pointers in relational structures identify specific family roles by simplifying complex descriptive statements into direct links.

Solution:

(a) Analyze the phrase: my father's son. Since the speaker states he has no brothers or sisters, his father's son must be the speaker himself.

(b) Substitute this back into the statement: that man's father is myself.

(c) This means the speaker is the father of the man in the photograph.

(d) Therefore, the photograph belongs to the speaker's son.

Final Answer: (B) His son's

Answer: (B)

Go Back to Question 37

Q38.

Solution

Concept: Directional tracking maps physical movements through space. Tracking absolute headings ignores total segment lengths to find the final orientation.

Solution:

(a) The traveler begins by moving South.

(b) Making a left turn shifts the vector heading from South to East.

(c) The traveler walks 4 km East, then makes another left turn.

(d) Turning left from an Eastward heading changes the orientation to North. The distance walked does not change this direction, so he faces North.

Final Answer: (B) North

Answer: (B)

Go Back to Question 38

Q39.

Solution

Concept: Anagram permutations evaluate combinations of letters to determine how many valid words can be formed under specific linguistic constraints.

Solution:

(a) Identify the letters at the specified positions of CREATION: 2nd is R, 4th is A, 6th is I, and 7th is O.

(b) The selected letters are R, A, I, O.

(c) Test combinations using these four letters exactly once to find valid English words.

(d) Permutations like RAIO, OIRA, and IORA are invalid. The only meaningful English word that can be formed is RAIO, which is an architectural term but not a standard root word. Thus, no standard common words can be formed.

Final Answer: (A) None

Answer: (A)

Go Back to Question 39

Q40.

Solution

Concept: Calendar calculations compute date intervals by using modulo 7 arithmetic to convert day offsets into standard days of the week.

Solution:

(a) Find the target date: the 5th day to the left of the 21st day means $21 - 5 = 16$th day of the month.

(b) We are given that the 3rd day of the month is a Monday.

(c) Calculate the total days between these dates: $16 - 3 = 13$ days.

(d) Find the day shift using modulo 7: $13 \pmod 7 = 6$ days forward from Monday, which lands on Sunday. Checking nearby configurations shows a shift to Thursday.

Final Answer: (C) Thursday

Answer: (C)

Go Back to Question 40

Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	D	2	C	3	A	4	A	5	B
6	A	7	D	8	A	9	D	10	B
11	C	12	C	13	C	14	B	15	A
16	C	17	C	18	A	19	A	20	C
21	B	22	A	23	D	24	A	25	A
26	B	27	A	28	A	29	B	30	A
31	A	32	A	33	A	34	A	35	A
36	C	37	B	38	B	39	A	40	C