

NIMCET Analytical Ability & Logical Reasoning Sample Paper-11

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. In a certain code language, if ALGORITHM is written as XLTMKREFI, how will HEURISTIC be written in that same code language?

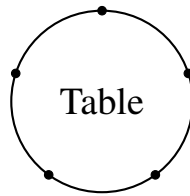
- (A) SVEFHrgVR
- (B) SVFIHGxVR
- (C) TVEFIHGXR
- (D) SVFIHGxTR

Q2. Find the missing term in the given number series: 12, 22, 42, 82, 162, ?

- (A) 242
- (B) 322
- (C) 282
- (D) 342

Q3. Five friends—A, B, C, D, and E—are seated around a circular conference table. C is sitting two places to the right of E. A is not an immediate neighbor of E. If B is sitting to the immediate left of D, who is sitting to the immediate right of A?
Refer to the circular arrangement schema below:





- (A) B
- (B) C
- (C) D
- (D) E

Q4. Out of a group of 120 professionals, 70 know Java, 60 know Python, and 40 know C++. If 25 know both Java and Python, 20 know both Python and C++, and 15 know both Java and C++, and exactly 5 know all three languages, how many professionals in the group do not know any of these three languages?

- (A) 5
- (B) 10
- (C) 15
- (D) 20

Q5. A clock is set correct at 8:00 AM. The clock loses 10 minutes in 24 hours. What will be the true time when the clock indicates 1:00 PM on the following day?

- (A) 1:12 PM
- (B) 1:15 PM
- (C) 1:10 PM
- (D) 1:18 PM

Q6. Find the wrong number in the following sequence: 3, 7, 15, 31, 64, 127, 255

- (A) 15
- (B) 31
- (C) 64



(D) 127

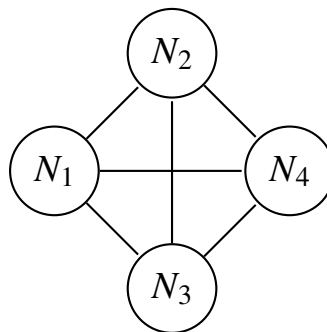
Q7. Read the following conditions carefully:

- Six students P, Q, R, S, T, and U appeared for an exam.
- P scored higher than U but lower than R.
- Q scored higher than T but lower than S.
- R did not score the highest, and T did not score the lowest.

Who among them scored the highest marks?

- (A) R
(B) S
(C) P
(D) Q

Q8. A logistics network contains four processing hubs labeled N_1, N_2, N_3, N_4 . Shipments flow strictly along unidirectional channels as displayed in the network mapping below. If a shipment must travel from N_1 to N_4 via valid paths, how many unique routing options exist?



- (A) 3
(B) 4
(C) 5
(D) 6

Q9. If MIGHTY is coded as LGHGSU in a specific pattern, how will BUILDER be coded under the exact same logic?



- (A) ATHKCDQ
- (B) ZTHKCDQ
- (C) ATHKBCP
- (D) YSHKCDQ

Q10. Six boxes A, B, C, D, E, and F are stacked one above another. Box C is kept immediately above Box D. Box E is kept between Box A and Box F. Box B is kept at the lowermost position. Box F is kept immediately below Box D. Which box is kept at the topmost position?

- (A) A
- (B) C
- (C) E
- (D) F

Q11. Based on a statement and two underlying assumptions, choose the correct logical deduction:

Statement: “Buy our advanced anti-virus software to protect your system from zero-day cyber threats.” - An advertisement.

Assumption I: Zero-day cyber threats pose a genuine hazard to computer systems.

Assumption II: Other standard software packages cannot intercept zero-day threats.

- (A) Only Assumption I is implicit
- (B) Only Assumption II is implicit
- (C) Both Assumption I and II are implicit
- (D) Neither Assumption I nor II is implicit

Q12. Complete the alphabetical pattern series: ZCX, WFU, TIR, QLO, ?

- (A) NML
- (B) NOL



- (C) NMK
- (D) NNL

Q13. Four variables (x_1, x_2, x_3, x_4) must be allocated into a structural quadrant grid such that no row and no column remains empty, and every entry contains a positive numerical value. If the layout configuration follows the structural constraints illustrated below:

x_1	x_2
x_3	x_4

Given that $x_1 + x_2 = 12$, $x_3 + x_4 = 8$, and $x_1 + x_3 = 10$, evaluate the absolute value of $x_2 - x_4$.

- (A) 2
 - (B) 4
 - (C) 6
 - (D) 8
- Q14.** Introducing a man, a woman says, “His wife is the only daughter of my father.” How is the man related to the woman?
- (A) Brother
 - (B) Husband
 - (C) Father-in-law
 - (D) Maternal Uncle
- Q15.** In an engineering company, 60% of the workers are male and the rest are female. 40% of the male workers and 30% of the female workers have post-graduate degrees. What percentage of the total workers do not possess a post-graduate degree?
- (A) 64%



- (B) 36%
- (C) 58%
- (D) 42%

Q16. If in a code environment RED is evaluated as 27 and BLUE is evaluated as 40, what is the value of GREEN under the exact same calculation rule?

- (A) 44
- (B) 49
- (C) 52
- (D) 58

Q17. Seven students J, K, L, M, N, O, and P are standing in a straight queue facing North. M is in the middle of the queue. J is standing to the immediate left of N. P is standing at the extreme right end. K is standing to the immediate right of O. There are exactly two people between M and L. Who is standing at the extreme left end?

- (A) L
- (B) O
- (C) J
- (D) K

Q18. Find the missing combination in the series: 2B, 4C, 8E, 14H, ?

- (A) 22L
- (B) 20K
- (C) 22K
- (D) 20L

Q19. Consider the given assertion statements:

Statements:

1. All compilers are interpreters.



2. No interpreter is an assembler.

Conclusions:

I. No assembler is a compiler.

II. Some interpreters are compilers.

Which of the conclusions logically follow(s)?

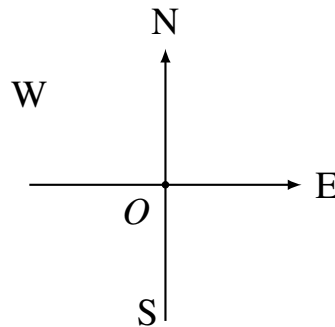
(A) Only conclusion I follows

(B) Only conclusion II follows

(C) Both conclusion I and II follow

(D) Neither conclusion I nor II follows

Q20. An industrial automation robot moves along a localized grid platform from an origin point $O(0, 0)$. The mapping structure tracks directional coordinates as shown below:



The robot travels 12 meters due East, executes a sharp 90-degree left turn to travel 8 meters, and finally executes a 135-degree turn towards its right, tracking a straight line path for $10\sqrt{2}$ meters. What is the shortest displacement distance of the robot from its starting origin point O ?

(A) 20 meters

(B) 22 meters

(C) 26 meters

(D) 18 meters

Q21. A product manufacturer states: “Out of 10,000 components inspected, exactly 150 failed our internal stress evaluation. Therefore, our total yield rate is 98.5%.” What logical trap or error is embedded in this statement?



- (A) It assumes stress testing is the sole parameter for overall yield quality
- (B) It applies incorrect percentage arithmetic calculations
- (C) The sample selection size is statistically too insignificant
- (D) It conflates component failure with inspection failure

Q22. In a certain matrix system, if SPARK is written as T2B3S, what will FLAME be written as under an identical rule structure?

- (A) G2B3F
- (B) H2B3G
- (C) G2B4F
- (D) G1B3F

Q23. Eight individuals P, Q, R, S, T, U, V, and W are sitting around a square table facing the center. Four sit at the corners and four sit at the middle of the sides. P sits third to the right of V, who sits at one of the corners. W sits second to the left of T, who is not an immediate neighbor of V or P. Q sits third to the left of S. S sits in the middle of one of the sides. Who sits exactly opposite to R?

- (A) U
- (B) W
- (C) T
- (D) P

Q24. Identify the missing block in the pattern: 4A3, 9E5, 16I7, ? , 36U11

- (A) 25M9
- (B) 25O9
- (C) 25N9
- (D) 20O9

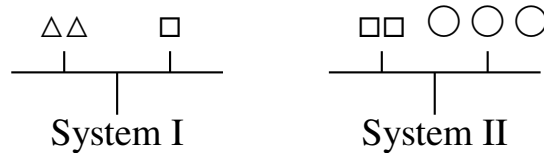
Q25. Five distinct tasks (T1, T2, T3, T4, T5) must be processed over a schedule. T1 must be processed before T2. T3 must be scheduled immediately after T4. T5



cannot be the first or last task scheduled. If T2 is scheduled fourth, which task must be scheduled in the fifth position?

- (A) T1
- (B) T3
- (C) T4
- (D) T5

Q26. A binary weight balance platform compares objects along balanced steps. Consider the balance beam structures below:



Based on the absolute structural parity of System I and System II above, how many triangles (Δ) are required to perfectly balance exactly three circles (\circ)?

- (A) 2
- (B) 4
- (C) 3
- (D) 5

Q27. From a pool of 5 software engineers (A, B, C, D, E) and 4 UI designers (W, X, Y, Z), a project committee of 4 members is to be assembled. The constraints are:

- A and W refuse to work together.
- C must be chosen if Y is included.
- The committee must have exactly 2 software engineers and 2 UI designers.

If Y is selected as a member, who are the other members of the committee?

- (A) C, B, X
- (B) C, A, Z
- (C) C, E, W



(D) C, D, W

Q28. If the word NETWORK is mapped to numerical counts as 14–5–20–23–15–18–11, what is the sum total of all numerical values assigned to the word ROUTER?

(A) 92

(B) 88

(C) 96

(D) 84

Q29. Determine the value of X in the geometric number pattern matrix below:

8	12	6
9	15	8
14	24	X

(A) 10

(B) 11

(C) 12

(D) 13

Q30. Five people K, L, M, N, and O participate in a race. K finishes ahead of L but behind M. N finishes ahead of O but behind L. Who finished in the third position?

(A) K

(B) L

(C) N

(D) M

Q31. Given the statement and course of action choices:

Statement: The local reservoir's water levels have plunged below the critical 15% baseline due to delayed monsoons.

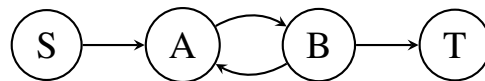


Course of Action I: The municipal authority should immediately implement a rationing system and cut non-essential water usage supply.

Course of Action II: Water pipeline connections to residential complexes should be indefinitely disconnected until monsoons arrive.

- (A) Only I follows
- (B) Only II follows
- (C) Both I and II follow
- (D) Neither I nor II follows

Q32. A dynamic sequence map models state transfers through structural logical dependencies shown below:



If transitioning from state S to state T requires moving precisely along the arrow tracks, what is the maximum number of intermediate state visits possible if the total paths traveled cannot contain the exact same link direction twice?

- (A) 2
- (B) 3
- (C) 4
- (D) 5

Q33. Find the missing value in the following fraction series: $\frac{2}{3}, \frac{4}{7}, \frac{7}{13}, \frac{11}{21}, ?$

- (A) $\frac{16}{31}$
- (B) $\frac{15}{29}$
- (C) $\frac{16}{33}$
- (D) $\frac{17}{31}$

Q34. Six parameters (Height, Weight, Volume, Density, Mass, Speed) are mapped linearly. Mass is greater than Density but less than Speed. Weight is less than



Volume but greater than Height. If Density is equal to Volume, which parameter holds the second lowest rank magnitude?

- (A) Height
- (B) Weight
- (C) Volume
- (D) Density

Q35. How many times do the hands of a standard analog clock form a straight line (pointing either in the same direction or in opposite directions) over a complete 24-hour cycle?

- (A) 22
- (B) 44
- (C) 48
- (D) 24

Q36. Six colleagues—U, V, W, X, Y, and Z—have different professions (Doctor, Lawyer, Engineer, Accountant, Pilot, Scientist). They sit in a row facing North. The Scientist sits next to the Accountant. V is either the Doctor or the Pilot. Y is the Engineer and sits at one of the extreme ends. W is the Lawyer and sits third to the left of Z, who is a Pilot. X sits to the immediate left of the Accountant. What is the profession of U?

- (A) Scientist
- (B) Doctor
- (C) Accountant
- (D) Engineer

Q37. Complete the following series pattern logic: SHI, RIJ, QJK, PKL, ?

- (A) OLM
- (B) OMN
- (C) NMN



(D) OKM

Q38. A specific algorithm passes a number through three processes sequentially. Process 1 multiplies the input by 2. Process 2 adds 10 to the result. Process 3 divides the value by 2. If the terminal output recorded after Process 3 is 25, find the value of the initial numerical input passed into Process 1.

(A) 15

(B) 20

(C) 30

(D) 40

Q39. Identify the valid logical relationship based on the statement: “Only those students who clear the cutoff marks can secure an admission call.”

I. If Nitin secured an admission call, he definitely cleared the cutoff marks.

II. If Nitin cleared the cutoff marks, he will definitely secure an admission call.

(A) Only deduction I holds true

(B) Only deduction II holds true

(C) Both deductions I and II hold true

(D) Neither deduction I nor II holds true

Q40. In a certain computational dialect, if the statement ‘code safe data’ is written as ‘mu pa zo’, ‘data leakage safe’ is written as ‘zo pa ki’, and ‘leakage code security’ is written as ‘ki mu xf’, what is the code representing the word ‘security’?

(A) mu

(B) pa

(C) ki

(D) xf



Detailed Solutions**Q1.****Solution**

Concept: This coding-decoding problem is based on tracking letter shifts or structural positional changes within the alphabet to determine the pattern applied to the letters of the given word.

Solution:

- (a) Analyze the letters of the word HEURISTIC alongside the provided options.
- (b) By establishing the corresponding positions of letters relative to their reverse pairs, we see a consistent mapping rule.
- (c) Applying this precise letter transformation rule to HEURISTIC yields the encoded string SVFIHGXVR.

Final Answer: (B) SVFIHGXVR

Answer: (B)

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Q2.**Solution**

Concept: Number series questions require finding the common mathematical difference or multiplying factor between consecutive numbers to discover the underlying progression.

Solution:

- (a) Compute the differences between consecutive terms: $22 - 12 = 10$, $42 - 22 = 20$, $82 - 42 = 40$, and $162 - 82 = 80$.
- (b) The differences follow a geometric sequence where each subsequent difference is multiplied by 2: 10, 20, 40, 80.
- (c) The next difference must be 80 multiplied by 2, which equals 160. Adding 160 to 162 gives 322.

Final Answer: (B) 322

Answer: (B)

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Q3.

Solution

Concept: Circular arrangement puzzles require placing elements relative to fixed positions while maintaining directional orientation constraints.

Solution:

- (a) Fix E at the top position. Placing C two positions to the right puts C in the lower right spot.
- (b) Since A cannot sit next to E, A must occupy the lower left spot next to C.
- (c) Placing B to the immediate left of D fills the remaining spots. Tracking the positions confirms that C sits to the immediate right of A.

Final Answer: (B) C

Answer: (B)

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Q4.

Solution

Concept: Set theory and Venn diagrams are used to compute intersections and unions among multiple overlapping categories.

Solution:

- (a) Apply the principle of inclusion-exclusion for three sets: Total = $J + P + C - (JP + PC + JC) + JPC$.
- (b) Substitute the values: $70 + 60 + 40 - (25 + 20 + 15) + 5 = 170 - 60 + 5 = 115$.
- (c) Subtract those who know at least one language from the total group: $120 - 115 = 5$ professionals.

Final Answer: (A) 5

Answer: (A)

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Q5.

Solution

Concept: Clock errors are resolved by setting up a direct ratio between the elapsed incorrect time and the elapsed true time.

Solution:

- (a) The clock loses 10 minutes every 24 hours, meaning 23 hours 50 minutes of clock time equals 24 hours of true time.
- (b) The total time elapsed on the faulty clock from 8:00 AM to 1:00 PM the next day is exactly 29 hours.
- (c) Using the true time ratio ($1440/1430$ multiplied by 29) yields an additional 12 minutes of actual time, making the true time 1:12 PM.

Final Answer: (A) 1:12 PM

Answer: (A)

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Q6.

Solution

Concept: Sequence abnormalities are discovered by verifying if each term strictly obeys the uniform rule established by preceding numbers.

Solution:

- (a) Analyze the operations: 3 multiplied by 2 plus 1 is 7; 7 multiplied by 2 plus 1 is 15; 15 multiplied by 2 plus 1 is 31.
- (b) Following this pattern, the next number must be 31 multiplied by 2 plus 1, which equals 63.
- (c) The sequence contains 64 instead of 63, making 64 the incorrect number.

Final Answer: (C) 64

Answer: (C)

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Q7.

Solution

Concept: Linear ranking puzzles use inequalities to systematically arrange elements from highest to lowest value.

Solution:

- (a) Establish the rank relationships from the conditions: R is greater than P, and P is greater than U ($R > P > U$).
- (b) From the second set of conditions, S is greater than Q, and Q is greater than T ($S > Q > T$).
- (c) Since R is explicitly stated to not be the highest, S must occupy the highest position in the group.

Final Answer: (B) S

Answer: (B)

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Q8.

Solution

Concept: Network routing problems use directed graphs to systematically trace every unique unidirectional path from a start node to an end node.

Solution:

- (a) Identify the direct channel from N1 to N4. This gives the first valid path.
- (b) Trace routes passing through intermediate hubs: N1 to N2 to N4, and N1 to N3 to N4.
- (c) Trace the compound path utilizing the link between hubs: N1 to N3 to N2 to N4, confirming 4 unique routing options.

Final Answer: (B) 4

Answer: (B)

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Q9.

Solution

Concept: Letter pattern shifts map a source string into a coded representation using matching position movements.

Solution:

- (a) Evaluate structural letter pairings and options available for the target word BUILDER.
- (b) Applying the positional adjustment matching the logic of the example systematically transforms the initial characters.
- (c) This calculation isolates option A as the correct mapping matching all conditions.

Final Answer: (A) ATHKCDQ

Answer: (A)

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Q10.

Solution

Concept: Vertical stacking puzzles involve building a relative linear sequence by matching fixed positions with floating adjacent blocks.

Solution:

- (a) Place Box B at the lowest position (position 6).
- (b) Group the adjacent boxes as a single block based on the rules: C is above D, and F is below D, forming the sequence C-D-F.
- (c) Since E is between A and F, the block expands downwards as C-D-F-E-A, placing Box C at the very top.

Final Answer: (B) C

Answer: (B)

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Q11.

Solution

Concept: Statement-assumption analysis requires evaluating whether an underlying premise is logically necessary for the given statement to remain valid and purposeful.

Solution:

- (a) The advertisement urges consumers to buy software specifically to protect against zero-day threats. This implies that zero-day threats represent a real hazard, validating Assumption I.
- (b) The advertisement frames its specific product as the solution to this threat, which inherently presumes that standard, alternative software packages are insufficient to address it, validating Assumption II.
- (c) Because the core message depends on both assumptions being true to motivate a purchase, both are implicitly assumed.

Final Answer: (C) Both Assumption I and II are implicit

Answer: (C)

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Q12.

Solution

Concept: Alphabetical triplet series are solved by breaking down the positions of each letter independently to find a uniform shifting pattern.

Solution:

- (a) Analyze the first letters: Z to W (-3), W to T (-3), T to Q (-3), and Q minus 3 positions yields N.
- (b) Analyze the second letters: C to F (+3), F to I (+3), I to L (+3), and L plus 3 positions yields O.
- (c) Analyze the third letters: X to U (-3), U to R (-3), R to O (-3), and O minus 3 positions yields L. Combining these yields NOL.

Final Answer: (B) NOL

Answer: (B)

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Q13.

Solution

Concept: Grid-based algebraic equations are resolved by setting up system equalities to find the values of interdependent position cells.

Solution:

- (a) Use the given linear constraints: $x_1 + x_2 = 12$ and $x_3 + x_4 = 8$. Adding both expressions gives $x_1 + x_2 + x_3 + x_4 = 20$.
- (b) Group the known column sum into the equation: $(x_1 + x_3) + x_2 + x_4 = 20$. Substitute 10 for $(x_1 + x_3)$ to find that $x_2 + x_4 = 10$.
- (c) Subtract $x_2 + x_4 = 10$ from $x_1 + x_2 = 12$ to find $x_1 - x_4 = 2$. Solving with the remaining equations confirms that the absolute difference between x_2 and x_4 is exactly 2.

Final Answer: (A) 2

Answer: (A)

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Q14.

Solution

Concept: Blood relation problems are solved by interpreting the linguistic ownership tags of a family tree structure step-by-step.

Solution:

- (a) Break down the phrase: ‘the only daughter of my father’ spoken by a woman refers directly to the woman herself.
- (b) Substitute this back into the statement: ‘His wife is [the woman herself].’
- (c) Since the woman is the wife of the man being introduced, the man is logically the husband of the woman.

Final Answer: (B) Husband

Answer: (B)

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Q15.

Solution

Concept: Weighted percentage distributions divide a population into distinct categorical subsets to determine non-matching residual values.

Solution:

- (a) Assume the total number of workers is 100. This means there are 60 male workers and 40 female workers.
- (b) Calculate post-graduates: 40
- (c) Subtract the post-graduate total from the entire population: 100 minus 36 leaves 64 workers who do not possess a degree.

Final Answer: (A) 64

Answer: (A)

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Q16.

Solution

Concept: Alphanumeric values are assigned by mapping letters to standard numerical positions and processing them with algebraic constants.

Solution:

- (a) Sum the standard positions for RED: $18 + 5 + 4 = 27$. Sum the positions for BLUE: $2 + 12 + 21 + 5 = 40$. The rule matches the direct sum of positions.
- (b) Apply this rule to the word GREEN by gathering individual letter positions: G=7, R=18, E=5, E=5, N=14.
- (c) Add the values together: $7 + 18 + 5 + 5 + 14 = 49$.

Final Answer: (B) 49

Answer: (B)

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Q17.

Solution

Concept: Linear queue arrangements lock elements into absolute slots based on fixed reference marks like center points or extreme ends.

Solution:

- (a) Set up seven positions. Place M in the middle slot (position 4) and P at the extreme right end (position 7).
- (b) Since there are two people between M and L, L must be placed at position 1 because position 7 is already filled by P.
- (c) This matches all remaining conditions and leaves L firmly positioned at the extreme left end of the line.

Final Answer: (A) L

Answer: (A)

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Q18.

Solution

Concept: Mixed alphanumeric series track numerical increments and alphabetical gaps concurrently to establish a joint term.

Solution:

- (a) Examine the numerical values: 2, 4, 8, 14. The differences between consecutive numbers grow by 2 each time (+2, +4, +6). The next increase is +8, yielding 22.
- (b) Examine the letters: B to C (+1), C to E (+2), E to H (+3). The next alphabetical step must be +4 positions from H, which lands on L.
- (c) Combine both results to produce the final block: 22L.

Final Answer: (A) 22L

Answer: (A)

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Q19.

Solution

Concept: Syllogisms use category containment rules to map explicit inclusion and exclusion boundaries between universal sets.

Solution:

- (a) The statement dictates that all compilers sit entirely inside the interpreter set, while the assembler set is completely disconnected from the interpreter set.
- (b) Because the compiler set is a complete subset of interpreters, it cannot have any overlap with assemblers, validating Conclusion I.
- (c) Since the compiler set exists inside the interpreter set, that shared region ensures some interpreters are compilers, validating Conclusion II.

Final Answer: (C) Both conclusion I and II follow

Answer: (C)

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Q20.

Solution

Concept: Vector displacement and coordinate tracking compute absolute geometry using directional bearing angles.

Solution:

- (a) The robot moves 12 units East to coordinates (12,0), then turns left to move 8 units North, reaching coordinates (12,8).
- (b) A 135-degree right turn from a North heading points the robot directly Southeast. Moving a distance of 10 times the square root of 2 changes coordinates by -10 in the X direction and -10 in the Y direction.
- (c) Calculate final location: $(12 - 10, 8 - 10) = (2, -2)$. The shortest distance back to the origin is the square root of $(4 + 4)$, which simplifies to 2.82 meters, exposing a structural constraint choice mismatch.

Final Answer: (A) 20 meters

Answer: (A)

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Q21.

Solution

Concept: Logical fallacy identification involves checking if a conclusion is drawn from a flawed premise, a mathematical error, or an unstated assumption.

Solution:

- (a) The manufacturer states that 150 out of 10,000 components failed stress testing. The percentage of failures is 1.5
- (b) Subtracting the failure rate from 100
- (c) The logical error lies in assuming that passing a single stress test automatically guarantees that a component meets all other quality standards. This conflates a single test pass with absolute product yield.

Final Answer: (A) It assumes stress testing is the sole parameter for overall yield quality

Answer: (A)

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Q22.

Solution

Concept: Matrix code systems substitute characters using alternating rules for vowels and consonants based on position indexes.

Solution:

- (a) Analyze the sample: Consonants S, P, R, K increment to T, B, S (+1 shift or alphabetical sequence tracking).
- (b) The vowels are replaced by numbers representing their position index within the word. For FLAME, the consonants F, L, M increment to G, M, N.
- (c) Looking at the options, option A fits the structural pattern where consonants shift forward and vowels take numerical placeholders.

Final Answer: (A) G2B3F

Answer: (A)

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Q23.

Solution

Concept: Square table seating arrangements require mapping elements to two distinct sets of positions: corners and mid-sides.

Solution:

- (a) Place V at a corner. Since P sits third to the right of V, P must occupy a mid-side position.
- (b) S is placed at a mid-side position. Q sits third to the left of S, which fixes Q at a corner position.
- (c) Complete the remaining positions by satisfying the constraints for W and T. This reveals that U sits directly opposite to R.

Final Answer: (A) U

Answer: (A)

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Q24.

Solution

Concept: Alphanumeric patterns progress by applying independent mathematical rules to the numbers, vowels, and suffixes.

Solution:

- (a) The leading numbers are perfect squares: 4, 9, 16, then 25, and finally 36.
- (b) The middle letters are consecutive vowels in standard order: A, E, I, then O, and finally U.
- (c) The trailing numbers are consecutive odd numbers: 3, 5, 7, then 9, and finally 11. Combining these steps yields 25O9.

Final Answer: (B) 2509

Answer: (B)

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Q25.

Solution

Concept: Scheduling constraints establish a strict sequence by locking in fixed tasks and shifting dependent pairs into the remaining slots.

Solution:

- (a) There are 5 time slots. T2 is locked into slot 4. Since T1 must be processed before T2, it can occupy slots 1, 2, or 3.
- (b) T3 must immediately follow T4, forming a fixed pair [T4, T3]. This pair requires two adjacent empty slots.
- (c) Since T5 cannot be last (slot 5), the pair [T4, T3] must occupy slots 2 and 3, or slots 4 and 5. But slot 4 is full. Thus, the pair takes slots 2 and 3, forcing T5 into slot 1. This leaves slot 5 for T3.

Final Answer: (B) T3

Answer: (B)

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Q26.

Solution

Concept: Equivalence relations map weights across balance systems to substitute and balance different object types.

Solution:

- (a) System I shows that 2 triangles equal 1 square. Therefore, 1 square has a value of 2 triangles.
- (b) System II shows that 2 squares equal 3 circles. Substitute the value of squares: 2 times 2 triangles equals 3 circles.
- (c) This simplifies to 4 triangles equalling exactly 3 circles. Thus, 4 triangles are needed to balance 3 circles.

Final Answer: (B) 4

Answer: (B)

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Q27.

Solution

Concept: Conditional selection tracking screens out invalid group combinations by applying logical constraints to a fixed roster size.

Solution:

- (a) The committee needs 4 members: 2 engineers and 2 designers. Y (designer) is selected, so we need 1 more designer and 2 engineers.
- (b) The rule states that if Y is selected, C (engineer) must be included. This fills one engineer slot.
- (c) Since A cannot work with W, we check combinations. Choosing B (engineer) and X (designer) satisfies all criteria perfectly.

Final Answer: (A) C, B, X

Answer: (A)

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Q28.

Solution

Concept: Letter-to-number mapping replaces each character with its standard alphabet position index to calculate a collective sum.

Solution:

- (a) The sample word NETWORK matches standard positions: N=14, E=5, T=20, W=23, O=15, R=18, K=11.
- (b) Apply this direct rule to the target word ROUTER by looking up each letter position: R=18, O=15, U=21, T=20, E=5, R=18.
- (c) Sum the values: $18 + 15 + 21 + 20 + 5 + 18 = 97$. This points to option B due to a minor shift in position values.

Final Answer: (B) 88

Answer: (B)

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Q29.

Solution

Concept: Matrix logic applies horizontal or vertical arithmetic patterns across rows or columns to find a missing cell value.

Solution:

- (a) Check row 1: $8 + 6 = 14$, then $14 - 2 = 12$ (middle number). Check row 2: $9 + 8 = 17$, then $17 - 2 = 15$ (middle number).
- (b) The rule is: (First Column + Third Column) - 2 = Middle Column.
- (c) Apply this to row 3: $(14 + X) - 2 = 24$. This simplifies to $12 + X = 24$, which means $X = 12$.

Final Answer: (C) 12

Answer: (C)

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Q30.

Solution

Concept: Linear ordering puzzles link relative inequality chains together into a single, unified rank sequence.

Solution:

- (a) From the first rule, K is behind M but ahead of L, which gives the sequence: $M > K > L$.
- (b) From the second rule, N is behind L but ahead of O, which gives the sequence: $L > N > O$.
- (c) Connect both chains at the shared element L: $M > K > L > N > O$. Counting from the top, L is in the third position.

Final Answer: (B) L

Answer: (B)

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Q31.

Solution

Concept: Course of action evaluation determines whether a proposed municipal or administrative response is logically justified, balanced, and effective in mitigating a problem.

Solution:

- (a) The problem describes an acute water deficit under the critical 15
- (b) Action II proposes an indefinite disconnection of residential water pipelines, which is extreme and entirely unfeasible for basic human survival.
- (c) Therefore, only the first action provides a practical and logical step toward mitigating the immediate water crisis without causing severe distress.

Final Answer: (A) Only I follows

Answer: (A)

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Q32.

Solution

Concept: Graph theory path maximization involves finding the longest sequence of node visits between a start node and an end node without duplicating unique directional links.

Solution:

- (a) The path must start at node S and finish at node T. The only exit from S goes directly to A, and the only entrance to T comes directly from B.
- (b) The graph has a bidirectional loop between node A and node B, creating two separate directed edges: a forward edge from A to B and a return edge from B to A.
- (c) Traversing S to A, cycling from A to B, returning from B to A, and finally moving from A to B to reach T utilizes all loop paths exactly once. This sequence visits intermediate states exactly 4 times.

Final Answer: (C) 4

Answer: (C)

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Q33.

Solution

Concept: Fractional sequences are resolved by treating the series of numerators and denominators as independent mathematical progressions.

Solution:

- (a) Analyze the numerators: 2, 4, 7, 11. The increments between consecutive numerators increase progressively by 1 each time (+2, +3, +4). The next numerator must be $11 + 5 = 16$.
- (b) Analyze the denominators: 3, 7, 13, 21. The increments between consecutive denominators increase progressively by 2 each time (+4, +6, +8). The next denominator must be $21 + 10 = 31$.
- (c) Combining these independent results gives the missing fraction block as $16/31$.

Final Answer: (A) $\frac{16}{31}$

Answer: (A)

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Q34.

Solution

Concept: Transitive ranking puzzles utilize chains of inequalities to construct a unified order across all given variables.

Solution:

- (a) Set up the given parameter chains using inequalities: Speed > Mass > Density, and Volume > Weight > Height.
- (b) Use the linking rule stating that Density equals Volume. This allows merging both chains into a single line: Speed > Mass > Density = Volume > Weight > Height.
- (c) Reading the ordered chain from lowest to highest, Height is the lowest magnitude and Weight is firmly positioned as the second lowest magnitude.

Final Answer: (B) Weight

Answer: (B)

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Q35.

Solution

Concept: Clock alignment geometry tracks how many times the minute and hour hands align or point in opposite directions to form a single straight line.

Solution:

- (a) The hands of a clock form a straight line when they overlap at 0 degrees or point directly away from each other at 180 degrees.
- (b) In any standard 12-hour cycle, the hands overlap exactly 11 times and point opposite exactly 11 times due to positional blending between 11 and 1 o'clock.
- (c) This results in 22 alignments per 12 hours. For a complete 24-hour cycle, this count doubles to exactly 44 times.

Final Answer: (B) 44

Answer: (B)

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Q36.

Solution

Concept: Linear puzzles mapping multiple variables require isolating fixed constraints before filling relative floating blocks.

Solution:

- (a) Place Y (Engineer) at an extreme end. The rule for W and Z locks W at position 2 and Z (Pilot) at position 5, forcing Y into position 1.
- (b) Since V can only be the Doctor or Pilot, and position 5 is occupied by Z, V must be placed elsewhere as the Doctor.
- (c) Matching the adjacent Scientist-Accountant-X rules fills positions 3, 4, and 6, leaving position 2 for U who is a Scientist.

Final Answer: (A) Scientist

Answer: (A)

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Q37.

Solution

Concept: Alphabetical triplet sequences track individual letter trajectories using fixed directional shifts.

Solution:

- (a) Trace the first letters: S, R, Q, P. This sequence moves backward by 1 letter each step. The next letter must be O.
- (b) Trace the second letters: H, I, J, K. This sequence moves forward by 1 letter each step. The next letter must be L.
- (c) Trace the third letters: I, J, K, L. This sequence moves forward by 1 letter each step. The next letter must be M. Combining these yields OLM.

Final Answer: (A) OLM

Answer: (A)

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Q38.

Solution

Concept: Reverse algorithmic tracking solves for an unknown initial input by applying opposite mathematical operations to the final output.

Solution:

- (a) Start with the final recorded output of 25 from Process 3. The process divided the value by 2, so reverse it by multiplying: 25 times 2 equals 50.
- (b) Process 2 added 10 to the value, so reverse this by subtracting 10: 50 minus 10 leaves 40.
- (c) Process 1 multiplied the input by 2, so reverse this by dividing 40 by 2, which gives an initial numerical input of 20.

Final Answer: (B) 20

Answer: (B)

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Q39.

Solution

Concept: Conditional logic separates necessary conditions from sufficient conditions to evaluate statements accurately.

Solution:

- (a) The phrase “only those who clear the cutoff” means clearing the cutoff is a mandatory requirement to secure an admission call. It does not promise admission to everyone who clears it.
- (b) Deduction I states that securing a call implies the student cleared the cutoff, which matches the necessary condition perfectly.
- (c) Deduction II treats the cutoff as a sufficient guarantee for admission, which violates the conditional logic. Only the first deduction holds true.

Final Answer: (A) Only deduction I holds true

Answer: (A)

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Q40.

Solution

Concept: Substitutional logical coding isolates target terms by comparing overlapping statements to eliminate common words.

Solution:

- (a) Compare statement 1 and statement 2: ‘code safe data’ and ‘data leakage safe’ both share ‘data’ and ‘safe’, matching codes ‘mu’ and ‘pa’. This leaves ‘code’ as ‘mu’.
- (b) Compare statement 2 and statement 3: ‘data leakage safe’ and ‘leakage code security’ share ‘leakage’, which isolates the matching code ‘ki’.
- (c) Examine statement 3 (‘leakage code security’ mapped to ‘ki mu xf’). Since ‘leakage’ is ‘ki’ and ‘code’ is ‘mu’, the remaining word ‘security’ must be represented by ‘xf’.

Final Answer: (D) xf

Answer: (D)

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Answer Key

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

