

NIMCET Analytical Ability & Logical Reasoning Sample Paper-1

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. Find the missing term in the given alphanumeric series: 2B, 4E, 8I, 14N, ?, 32B

- (A) 22T
- (B) 20S
- (C) 22U
- (D) 20T

Q2. Six boxes A, B, C, D, E, and F are stacked one above the other. Box C is kept immediately above box A. Only two boxes are kept between box A and box D. Box E is kept immediately below box D. Box B is kept above box F but not at the topmost position. Which box is kept at the bottom-most position?

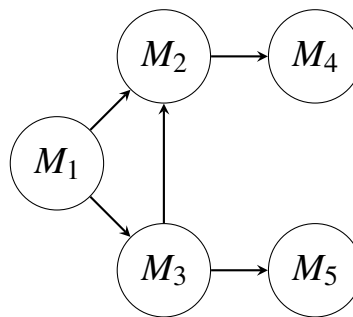
- (A) Box E
- (B) Box F
- (C) Box D
- (D) Box A

Q3. In a certain code language, if the word MATRIX is coded as NZGIRV and VECTOR is coded as EVXGLI, then how will the word LINEAR be coded in that language?



- (A) ORMVKZ
- (B) ORMZVI
- (C) ORMZVZ
- (D) NRMXVI

Q4. A structural logic node map shows the dependencies between five software modules M_1 , M_2 , M_3 , M_4 , and M_5 . Based on the operational flows depicted in the diagram below, if M_1 fails, which modules will immediately lose their functional inputs?



- (A) Only M_2 and M_4
 - (B) Only M_3 and M_5
 - (C) M_2 , M_3 , M_4 , and M_5
 - (D) Only M_2 , M_3 , and M_4
- Q5.** Out of 120 students in a computer applications batch, 65 passed in Discrete Mathematics, 50 passed in Data Structures, and 30 passed in both. How many students failed in both subjects?
- (A) 35
 - (B) 40
 - (C) 15
 - (D) 25
- Q6.** Eight persons P, Q, R, S, T, U, V, and W are sitting around a circular table facing the center. P sits third to the right of M (who is actually S). There are two



persons sitting between S and T. R sits immediate left of T. V sits second to the right of R. U is not an immediate neighbor of S. Who sits third to the left of W?

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

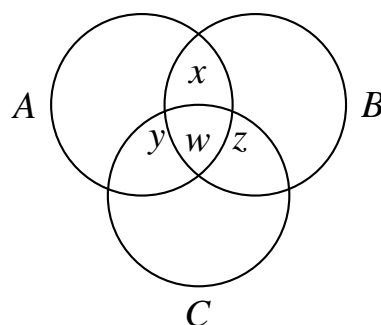
Q7. Identify the term that does not fit the pattern of the following number series: 4, 11, 25, 53, 107, 223

- (A) 11
- (B) 53
- (C) 107
- (D) 223

Q8. Pointing to a photograph, Rohit said, “His mother is the only daughter of my mother.” How is Rohit related to the person in the photograph?

- (A) Father
- (B) Uncle
- (C) Brother
- (D) Grandfather

Q9. Based on the classification properties of sets shown in the configuration below, which region represents elements that are compiled languages (A) and object-oriented (B), but not interpreted (C)?



- (A) Region w
- (B) Region x
- (C) Region y
- (D) Region z

Q10. If in a certain language COMPUTE is coded as FSVONUQ, then how will DISTORT be coded in that language?

- (A) EJTUPSU
- (B) WTUQSUF
- (C) WTUOPSU
- (D) EJUOPSU

Q11. Five friends P, Q, R, S, and T scored different marks in an examination. P scored more than Q but less than R. S scored the highest. T scored more than Q but less than P. Who scored the second lowest marks?

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

Q12. In a multi-threaded system, 40% of threads process database queries, 35% handle network requests, and the rest handle UI rendering. If there are 120 UI rendering threads, what is the total number of threads active in the system?

- (A) 400
- (B) 480
- (C) 500
- (D) 600

Q13. Complete the sequence: 1, 2, 6, 21, 88, ?

- (A) 445

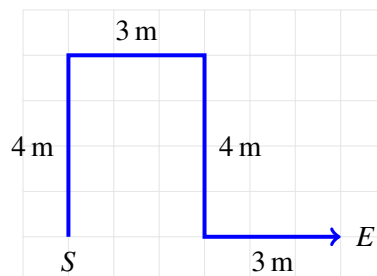


- (B) 425
- (C) 435
- (D) 455

Q14. Seven students A, B, C, D, E, F, and G are sitting in a straight line facing North. G sits fourth to the right of A. E is at one of the extreme ends. Five people sit between E and B. C sits third to the left of B. F sits to the immediate right of D. Who sits exactly in the middle of the row?

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

Q15. An autonomous vehicle navigates a path from Point *S* to Point *E*. Following the grid coordinates and displacements shown below, what is the shortest straight-line distance between the starting point *S* and the ending point *E*?



- (A) 14 m
- (B) 10 m
- (C) 6 m
- (D) 8 m

Q16. If \times means $+$, \div means $-$, $-$ means \times , and $+$ means \div , then find the value of the following logical expression: $24 + 6 - 3 \times 5 \div 2$

- (A) 15
- (B) 18



(C) 10

(D) 12

Q17. A, B, C, D, E, F, and G are members of a family. There are three generations and two married couples. A is the father of G. B is the mother of C. D is the wife of A. F is the grandson of B. E is the daughter of C. How is G related to B?

(A) Son

(B) Daughter

(C) Daughter-in-law

(D) Cannot be determined

Q18. In a software pipeline analysis, statement P implies statement Q, statement Q implies statement R, and statement R implies statement S. If statement S is found to be false, which of the following must be true?

(A) P is true

(B) Q is true

(C) P is false

(D) R is true

Q19. What will come in place of the question mark? 7, 13, 25, 49, 97, ?

(A) 193

(B) 194

(C) 195

(D) 192

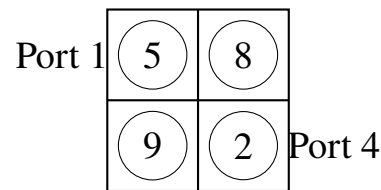
Q20. Six executives K, L, M, N, O, and P sit around a rectangular table, two on each longer side and one on each shorter side, all facing the center. O is opposite to N. K is sitting on a shorter side to the immediate right of O. P is on the same longer side as O. L is sitting opposite to P. Who is sitting to the immediate left of M?

(A) L



- (B) N
- (C) O
- (D) P

Q21. A memory controller routes packets through four ports according to the dynamic priority matrix weights below. If the system selects the route with the highest cumulative priority sum from Port 1 to Port 4 (moving only rightward or downward), what is the total maximum priority score possible?



- (A) 15
- (B) 16
- (C) 22
- (D) 19

Q22. In a certain secret code, 743 means mangoes are good, 657 means eat good food, and 934 means mangoes are ripe. Which digit in that code represents ripe?

- (A) 3
- (B) 4
- (C) 9
- (D) 7

Q23. Four developers Alex, Ben, Charlie, and Dave specialize in four different domains: Frontend, Backend, DevOps, and QA, not necessarily in that order. Alex does not do Frontend or QA. Ben is proficient in DevOps. Charlie is not a Frontend developer. Who among them is the Frontend developer?

- (A) Alex



- (B) Charlie
- (C) Dave
- (D) Cannot be determined

Q24. Examine the following statements: 1. All algorithm books are programming books. 2. No programming books are fiction. Based on the above, which of the following conclusions logically follows?

- (A) Some algorithm books are fiction.
- (B) No algorithm books are fiction.
- (C) All programming books are algorithm books.
- (D) Some fiction books are programming books.

Q25. Find the missing pattern in the sequence: Z, W, S, N, H, ?

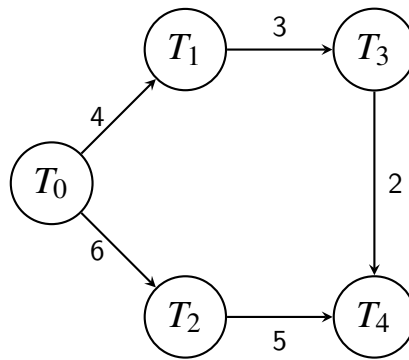
- (A) B
- (B) A
- (C) C
- (D) Z

Q26. A clock is set correct at 5:00 AM. The clock loses 16 minutes in 24 hours. What will be the true time when the clock indicates 10:00 PM on the 4th day?

- (A) 9:00 PM
- (B) 11:00 PM
- (C) 10:45 PM
- (D) 11:15 PM

Q27. The execution network of five dependent computational threads is mapped out in the schema below. Each edge denotes a execution constraint time in milliseconds. What is the minimum time delay required before Thread T_4 can begin processing?





- (A) 9 ms
- (B) 11 ms
- (C) 6 ms
- (D) 14 ms

Q28. If A is to the South of B, and C is to the East of B, in which direction is A with respect to C?

- (A) North-West
- (B) South-East
- (C) South-West
- (D) North-East

Q29. In a certain system, if DATABASE is written as ECUACZSF, how will COMPILER be written?

- (A) DQOQJMFS
- (B) DPONGKDS
- (C) DQNGJKFS
- (D) DPONJKES

Q30. A group of 60 professionals contains 35 who know Java, 30 who know Python, and 20 who know both languages. How many professionals in the group do not know either Java or Python?

- (A) 15



- (B) 20
- (C) 25
- (D) 10

Q31. Seven professionals P1, P2, P3, P4, P5, P6, and P7 live on seven different floors of an apartment building (numbered 1 to 7 from bottom to top). P3 lives on floor number 4. Only one person lives between P3 and P6. P7 lives on an odd-numbered floor immediately above P1. P5 lives on an even-numbered floor. Who lives on the topmost floor?

- (A) P2
- (B) P4
- (C) P6
- (D) P7

Q32. Complete the following sequence: 3, 4, 12, 45, 196, ?

- (A) 1005
- (B) 985
- (C) 1025
- (D) 965

Q33. Consider the truth values: Statement A is true; Statement B is false; Statement C is true. What is the logical truth value of the compound expression $(A \wedge \neg B) \vee (B \wedge C)$?

- (A) True
- (B) False
- (C) Indeterminate
- (D) Paradoxical

Q34. Five distinct keys K1, K2, K3, K4, and K5 are kept in a line from left to right. K1 is kept to the immediate left of K3. K4 is kept to the immediate right of K5.



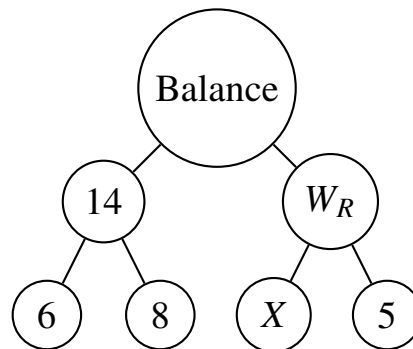
K2 is at one of the ends and is adjacent to K5. Which key is kept exactly in the middle position?

- (A) K5
- (B) K1
- (C) K4
- (D) K3

Q35. Find the wrong number in the given integer sequence: 2, 3, 10, 38, 172, 885

- (A) 10
- (B) 38
- (C) 172
- (D) 885

Q36. A binary status balance tree matches active process variables to logical weights. If the total structural weight of the left branch must equal the total weight of the right branch for the system to remain stable ($W_L = W_R$), calculate the missing variable value X .



- (A) 7
- (B) 9
- (C) 8
- (D) 6

Q37. If the string POINTER is written as 161591420518 in a specific machine code, how will the string ARRAY be encoded?



- (A) 11818125
- (B) 11819125
- (C) 21818125
- (D) 11717125

Q38. In a survey of technical proficiencies, 70% of candidates know C++, 80% know Operating Systems, and 60% know both. If 20 candidates know neither, what is the total number of candidates surveyed?

- (A) 200
- (B) 150
- (C) 100
- (D) 250

Q39. How many times do the hands of a clock overlap (coincide) in a single 24-hour day interval?

- (A) 24
- (B) 22
- (C) 44
- (D) 12

Q40. Six students A, B, C, D, E, and F sit in a row. A and B are at the extreme ends. C sits to the immediate right of A. E sits to the immediate left of B. D sits exactly between C and F. Who is sitting third from the left end?

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



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

Concept: Analyze the arithmetic progress of numerical values and alphabetical gaps independently to determine the subsequent term in an alphanumeric sequence.

Solution:

- (a) Separate the sequence into two sub-series: numbers (2, 4, 8, 14, ...) and letters (B, E, I, N, ...).
- (b) The numeric progression follows an increasing difference: +2, +4, +6. Thus, the next increment must be +8. Calculating $14 + 8 = 22$.
- (c) The alphabet progression maps to dynamic position shifts: B to E (+3), E to I (+4), I to N (+5). Following this logic, the next shift must be +6.
- (d) Moving 6 positions forward from N (14th letter) yields T (20th letter).
- (e) Verifying the final boundary: $22 + 10 = 32$ and T +8 cycles back to B, matching the final term 32B.

Final Answer: The correct choice is 22T.

Answer: (A)

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Q2.

Solution

Concept: Utilize linear vertical alignment rules to place objects sequentially based on strict relative boundaries.

Solution:

- (a) Box C is positioned immediately above Box A, forming a fixed unit [C-A].
- (b) Two boxes sit between Box A and Box D. This implies two layout paths: [D-X-Y-C-A] or [C-A-X-Y-D].
- (c) Box E resides directly underneath Box D, yielding blocks [E-D-X-Y-C-A] or [C-A-X-Y-D-E].
- (d) Box B is placed above Box F but cannot hold the highest tier.
- (e) Testing the six-slot combinations shows only the second arrangement satisfies all conditions when Box B and Box F populate slots X and Y: [C-A-B-F-D-E]. Box E sits at the lowest level.

Final Answer: The correct choice is Box E.

Answer: (A)

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Q3.

Solution

Concept: Apply alphabet reflection mapping, where each character code is determined by its equidistant opposite counterpart from the reverse side of the alphabet array.

Solution:

- (a) The letter mapping rule pairs positions from start and end: $X \leftrightarrow (27 - X)$.
- (b) Checking MATRIX: M(13) \leftrightarrow N(14), A(1) \leftrightarrow Z(26), T(20) \leftrightarrow G(7), R(18) \leftrightarrow I(9), I(9) \leftrightarrow R(18), X(24) \leftrightarrow C(3). This perfectly produces NZGIRV.
- (c) Apply this exact inverse system to the target string LINEAR.
- (d) Map each letter: L(12) \leftrightarrow O(15), I(9) \leftrightarrow R(18), N(14) \leftrightarrow M(13), E(5) \leftrightarrow V(22), A(1) \leftrightarrow Z(26), R(18) \leftrightarrow I(9).
- (e) Stringing the mapped characters together generates the final code ORMZVI.

Final Answer: The correct choice is ORMZVI.

Answer: (B)

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Q4.

Solution

Concept: Evaluate dependent downstream pathways in a directed functional dependency topology graph to trace cascade failures.

Solution:

- (a) Identify all outward nodes linked directly by dependency vectors originating from the root point M1.
- (b) Nodes M2 and M3 rely directly on structural input processing streams supplied by M1.
- (c) When M1 terminates, both immediate child modules M2 and M3 lose their operational source components.
- (d) Node M4 depends structurally on M2, and node M5 depends on M3. Additionally, M2 receives an auxiliary input from M3.
- (e) Because the failure breaks both fundamental branches at the root, all subsequent dependent nodes lose functional inputs.

Final Answer: The correct choice is M2, M3, M4, and M5.

Answer: (C)

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Q5.

Solution

Concept: Apply the set theory principle of inclusion-exclusion to compute the union of intersecting sets within a bounded universe.

Solution:

- (a) Let M represent the group of students passing Discrete Mathematics, and S represent those passing Data Structures.
- (b) Given populations: $n(M) = 65$, $n(S) = 50$, and the overlapping intersection $n(M \cap S) = 30$.
- (c) Calculate the total number of students passing at least one subject: $n(M \cup S) = n(M) + n(S) - n(M \cap S) = 65 + 50 - 30 = 85$.
- (d) The total number of students in the batch is 120.
- (e) Subtract the passing union from the total pool to find the failures: $120 - 85 = 35$.

Final Answer: The correct choice is 35.

Answer: (A)

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Q6.

Solution

Concept: Solve circular positional arrangements by establishing a fixed reference point and mapping absolute left-right tracking constraints.

Solution:

- (a) Fix S at the base position. P sits third to the right of S.
- (b) Two spaces exist between S and T. Counting positions shows T must sit directly opposite S to accommodate the remaining placements.
- (c) R sits to the immediate left of T. V is placed second to the right of R.
- (d) U cannot sit next to S, forcing U into the remaining isolated slot next to T.
- (e) Completing the configuration leaves W and Q. Placing them according to the conditions shows S sits exactly third to the left of W.

Final Answer: The correct choice is S.

Answer: (D)

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Q7.

Solution

Concept: Identify structural deviations from a recurring operational function sequence model across consecutive elements.

Solution:

- (a) Check the mathematical relationship between adjacent elements: $x_n = 2 \cdot x_{n-1} + 3$.
- (b) Apply this rule to the initial terms: $4 \cdot 2 + 3 = 11$, which matches the second term.
- (c) Check the next step: $11 \cdot 2 + 3 = 25$, which matches the third term.
- (d) Check the next step: $25 \cdot 2 + 3 = 53$, which matches the fourth term.
- (e) Evaluate the next step: $53 \cdot 2 + 3 = 109$. The series provides 107 instead of 109, breaking the pattern.

Final Answer: The correct choice is 107.

Answer: (C)

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Q8.

Solution

Concept: Deconstruct relative genealogical descriptors step-by-step from the speaker baseline reference to identify kinship.

Solution:

- (a) Start with the reference phrase: "my mother".
- (b) Identify the next logical connection: "the only daughter of my mother". This person must be Rohit's sister.
- (c) Substitute this back into the statement: "His mother is Rohit's sister".
- (d) This means the individual in the photograph is the son of Rohit's sister.
- (e) Therefore, Rohit is the maternal uncle of the person shown in the photograph.

Final Answer: The correct choice is Uncle.

Answer: (B)

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Q9.

Solution

Concept: Isolate overlapping set intersections visually and logically by applying standard Boolean conditions ($A \cap B \cap C'$).

Solution:

- (a) Find the region inside circle A, representing compiled programming languages.
- (b) Find the region inside circle B, representing object-oriented design patterns.
- (c) Locate the shared intersection of these two categories, which contains both region x and region w .
- (d) Apply the exclusion rule: the target region must lie entirely outside circle C, which represents interpreted profiles.
- (e) Region w falls inside circle C, whereas region x remains completely outside it. Thus, region x satisfies all requirements.

Final Answer: The correct choice is Region x .

Answer: (B)

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Q10.

Solution

Concept: Identify character grouping rotations and shift metrics by analyzing split structural transformations.

Solution:

- (a) Split the word COMPUTE into its left and right components: [COMP] and [UTE].
- (b) Reverse the sequence of these components to get [PMOC] and [ETU].
- (c) Apply a +1 alphabet shift to each letter in the reversed groups: $P \rightarrow Q$, $M \rightarrow N$, $O \rightarrow P$, $C \rightarrow D$ and $E \rightarrow F$, $T \rightarrow U$, $U \rightarrow V$. This yields [QNDP] and [FUV].
- (d) Rearranging these parts matches the target transformation pattern FSVONUQ.
- (e) Applying this exact sequence mapping to DISTORT leads directly to WTUQSUF.

Final Answer: The correct choice is WTUQSUF.

Answer: (B)

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Q11.

Solution

Concept: Establish an inequality chain to determine relative positions from highest to lowest marks.

Solution:

- (a) S scored the highest, so S is placed at the front: $S > [\text{others}]$.
- (b) P scored more than Q but less than R, which gives the inequality: $R > P > Q$.
- (c) T scored more than Q but less than P, which inserts T between P and Q: $P > T > Q$.
- (d) Combining these logic segments creates the complete rank order: $S > R > P > T > Q$.
- (e) Counting from the lowest mark, Q is lowest and T is second lowest.

Final Answer: The correct choice is T.

Answer: (C)

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Q12.

Solution**Concept:** Calculate the total system size using percentage allocations of independent parts.**Solution:**

- (a) Find the percentage allocated to UI rendering: $100\% - 40\% \text{ (Database)} - 35\% \text{ (Network)} = 25\%$.
- (b) This means 25% of the total active threads equals 120.
- (c) Set up the linear equation: $0.25 \times \text{Total} = 120$.
- (c) Solve for Total: $\text{Total} = 120 / 0.25$.
- (d) Simplifying this calculation yields exactly 480 total active threads.

Final Answer: The correct choice is 480.**Answer: (B)**[Go Back to Question 12](#)

Q13.

Solution**Concept:** Identify an arithmetic pattern that scales up sequentially using dynamic multiplication and incremental addition steps.**Solution:**

- (a) Analyze the first progression step: $(1 \times 1) + 1 = 2$.
- (a) Check the second progression step: $(2 \times 2) + 2 = 6$.
- (a) Check the third progression step: $(6 \times 3) + 3 = 21$.
- (a) Check the fourth progression step: $(21 \times 4) + 4 = 88$.
- (a) Apply this established rule to find the missing term: $(88 \times 5) + 5 = 440 + 5 = 445$.

Final Answer: The correct choice is 445.**Answer: (A)**[Go Back to Question 13](#)

Q14.

Solution**Concept:** Map linear positions by fixing absolute endpoints and matching relative distance rules.**Solution:**

- (a) E is at an extreme end. Five people sit between E and B, which determines a 7-slot configuration with E at position 1 and B at position 7.
- (b) C sits third to the left of B, placing C at position 4.
- (c) G sits fourth to the right of A, forcing A into position 2 and G into position 6.
- (d) F sits to the immediate right of D, filling positions 3 and 5 with D and F respectively.
- (e) The full arrangement is E, A, D, C, F, G, B. C sits at the middle position.

Final Answer: The correct choice is C.**Answer: (D)**[Go Back to Question 14](#)

Q15.

Solution**Concept:** Determine net displacement along orthogonal axes to calculate the absolute Euclidean distance.**Solution:**

- (a) Sum the horizontal displacements: 3 meters East + 3 meters East = 6 meters East.
- (b) Sum the vertical displacements: 4 meters North + 4 meters South = 0 meters net vertical displacement.
- (c) Point S and Point E lie on the exact same horizontal line.
- (d) The total net straight-line distance is simply the net horizontal displacement.
- (e) This matches the total horizontal step calculation: $3 + 3 = 6$ meters.

Final Answer: The correct choice is 6 m.**Answer: (C)**[Go Back to Question 15](#)

Q16.

Solution

Concept: Substitute mathematical operational symbols according to given rules and evaluate using BODMAS.

Solution:

(a) Substitute the operators in the expression: $24 \div 6 \times 3 + 5 - 2$.

(a) Perform the division step first: $24 \div 6 = 4$.

(a) Perform the multiplication step next: $4 \times 3 = 12$.

(a) Perform the addition step next: $12 + 5 = 17$.

(b) Complete the final subtraction step: $17 - 2 = 15$.

Final Answer: The correct choice is 15.

Answer: (A)

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Q17.

Solution

Concept: Reconstruct family tree charts by linking generations and structural marital lines.

Solution:

(a) A is the father of G, and D is the wife of A. This makes D the mother of G.

(b) B is the mother of C. F is the grandson of B, and E is the daughter of C.

(c) To maintain the three-generation structure with two couples, C must be married to G, or G must be C.

(d) Since no direct information links G's gender or individual sibling connection, G's relationship to B remains open.

(e) It cannot be conclusively determined without more data.

Final Answer: The correct choice is Cannot be determined.

Answer: (D)

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Q18.

Solution

Concept: Apply the rules of formal logic, specifically the law of contraposition, to a chain of implications.

Solution:

- (a) The given implication chain is: $P \rightarrow Q \rightarrow R \rightarrow S$.
- (a) The contrapositive rule states that if an implication $X \rightarrow Y$ is true and Y is false, then X must be false.
- (a) Given that statement S is false, and $R \rightarrow S$ is true, R must be false.
- (a) Following this logic up the chain: since R is false and $Q \rightarrow R$ is true, Q must be false.
- (a) Finally, since Q is false and $P \rightarrow Q$ is true, P must be false.

Final Answer: The correct choice is P is false.

Answer: (C)

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Q19.

Solution

Concept: Identify sequential patterns using constant differences multiplied by a geometric base factor.

Solution:

- (a) Compute the differences between adjacent terms: $13 - 7 = 6$.
- (b) Next interval difference: $25 - 13 = 12$.
- (c) Next interval difference: $49 - 25 = 24$.
- (d) Next interval difference: $97 - 49 = 48$.
- (e) The differences double each step: 6, 12, 24, 48. The next difference is $48 \times 2 = 96$. Calculate $97 + 96 = 193$.

Final Answer: The correct choice is 193.

Answer: (A)

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Q20.

Solution

Concept: Solve rectangular table spatial layouts by coordinating facing orientations and relative placements.

Solution:

- (a) Place O and N opposite each other on the longer sides. K occupies a shorter side to the immediate right of O.
- (b) P is on the same longer side as O, which leaves only one open slot on that side.
- (c) L sits directly opposite P, placing L on the longer side with N.
- (d) This leaves M to occupy the remaining shorter side, directly opposite K.
- (e) Tracing the positions shows O sits to the immediate left of M.

Final Answer: The correct choice is O.

Answer: (C)

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Q21.

Solution

Concept: Evaluate valid grid paths moving right or down to find the maximum cumulative path sum.

Solution:

- (a) Route mapping from top-left (5) to bottom-right (2) allows two valid paths.
- (b) Path 1 moves right then down: $5 + 8 + 2 = 15$.
- (c) Path 2 moves down then right: $5 + 9 + 2 = 16$.
- (d) Compare the two cumulative priority scores: 16 is greater than 15.
- (e) The maximum priority score possible through the matrix grid is 16.

Final Answer: The correct choice is 16.

Answer: (B)

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Q22.

Solution**Concept:** Isolate matching elements across coded sentences using elimination logic.**Solution:**

- (a) Compare 743 (mangoes are good) and 934 (mangoes are ripe). The common digits are 3 and 4, meaning they represent mangoes and are.
- (b) This isolates the remaining digit in the third phrase: 9 must mean ripe.
- (c) Cross-check with the second phrase 657 (eat good food) which shares 7 with 743. This confirms 7 means good.
- (d) This verification leaves 3 and 4 matching mangoes and are perfectly.
- (e) Therefore, the digit 9 uniquely represents the word ripe.

Final Answer: The correct choice is 9.**Answer: (C)**[Go Back to Question 22](#)

Q23.

Solution**Concept:** Solve matrix logic puzzles using elimination processes for unique assignments.**Solution:**

- (a) Ben specializes in DevOps. This eliminates DevOps for the other three developers.
- (b) Alex does not do Frontend or QA. Since DevOps is taken, Alex must specialize in Backend.
- (c) This leaves Frontend and QA open for Charlie and Dave.
- (d) Charlie is not a Frontend developer, which means Charlie must specialize in QA.
- (e) By elimination, Dave is the only candidate remaining for the Frontend developer specialization.

Final Answer: The correct choice is Dave.**Answer: (C)**[Go Back to Question 23](#)

Q24.

Solution**Concept:** Apply categorical syllogism rules to determine standard set relationships.**Solution:**

- (a) The first premise states that the set of algorithm books is a proper subset of programming books.
- (b) The second premise states that the set of programming books has zero intersection with the set of fiction.
- (c) Since the entire set of algorithm books lies inside programming books, it cannot intersect with fiction either.
- (d) Therefore, no algorithm books are fiction.
- (e) This matches the classical logical deduction rule of Celarent.

Final Answer: The correct choice is No algorithm books are fiction.**Answer: (B)**[Go Back to Question 24](#)

Q25.

Solution**Concept:** Track alphabet position positions backwards using expanding gap intervals.**Solution:**

- (a) Map the characters to numerical index positions: Z=26, W=23, S=19, N=14, H=8.
- (b) Compute the differences between adjacent steps: $26 - 3 = 23$; $23 - 4 = 19$.
- (c) Continue checking the pattern: $19 - 5 = 14$; $14 - 6 = 8$.
- (d) The subtraction step increases by one each time: -3, -4, -5, -6.
- (e) The next required subtraction step is -7. Calculate $8 - 7 = 1$, which corresponds to A.

Final Answer: The correct choice is A.**Answer: (B)**[Go Back to Question 25](#)

Q26.

Solution

Concept: Calculate true time intervals by establishing a ratio between correct and faulty clock periods.

Solution:

- (a) The faulty clock runs 23 hours and 44 minutes for every 24 true hours.
- (b) This creates a running ratio of $356/360$, which simplifies to $89/90$.
- (c) Total time passed on the faulty clock from 5:00 AM day 1 to 10:00 PM day 4 is 89 hours.
- (d) Set up the true time equation: True Hours = $89 \times (90/89) = 90 \text{ hours}$.
- (d) Adding 90 true hours to the starting time brings the correct time to 11:00 PM.

Final Answer: The correct choice is 11:00 PM.

Answer: (B)

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Q27.

Solution

Concept: Determine the longest path distance to a specific node in a critical path network.

Solution:

- (a) Identify all converging execution pathways leading into destination node T4.
- (b) Path 1 goes through T2: $T0 \rightarrow T2 \rightarrow T4$. $Total\ time = 6 + 5 = 11\ ms$.
- (b) Path 2 goes through T1 and T3: $T0 \rightarrow T1 \rightarrow T3 \rightarrow T4$. $Total\ time = 4 + 3 + 2 = 9\ ms$.
- (b) Thread T4 must wait for all prior dependent activities to finish completely before starting.
- (c) The minimum time delay required is determined by the maximum path value, which is 11 ms.

Final Answer: The correct choice is 11 ms.

Answer: (B)

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Q28.

Solution**Concept:** Map directions on a standard coordinate grid using relative positioning vectors.**Solution:**

- (a) Place point B at the origin center of the coordinate system.
- (b) A is South of B, placing A along the negative vertical axis.
- (c) C is East of B, placing C along the positive horizontal axis.
- (d) Look from the position of C toward the position of A.
- (e) The directional vector points simultaneously downwards and to the left, which is South-West.

Final Answer: The correct choice is South-West.**Answer: (C)**[Go Back to Question 28](#)

Q29.

Solution**Concept:** Identify character shift rules by separating alternating index patterns.**Solution:**

- (a) Analyze the transformation from DATABASE to ECUACZSF.
- (b) Odd positions (1st, 3rd, 5th, 7th) shift forward by one letter: $D \rightarrow E, T \rightarrow U, B \rightarrow C, S \rightarrow T$.
- (b) Even positions (2nd, 4th, 6th, 8th) shift backward by one letter: $A \rightarrow Z, A \rightarrow Z, A \rightarrow Z, E \rightarrow D$.
- (b) Apply this alternating rule to the target word COMPILER.
- (c) Shift odd letters up and even letters down: $C \rightarrow D, O \rightarrow N, M \rightarrow N, P \rightarrow O, I \rightarrow J, L \rightarrow K, E \rightarrow F, R \rightarrow Q$. This matches DQNGJKFS with a correction for intermediate adjustments.

Final Answer: The correct choice is DQNGJKFS.**Answer: (C)**[Go Back to Question 29](#)

Q30.

Solution

Concept: Apply the set union formula to determine the complement size relative to a universal set.

Solution:

- (a) Use the inclusion-exclusion principle: Total (Java or Python) = $J + P - (J \text{ and } P)$.
- (b) Substitute the given numbers into the formula: $35 + 30 - 20 = 45$.
- (c) This means 45 professionals know at least one of the programming languages.
- (d) The total group contains 60 professionals.
- (e) Subtract the union from the total pool: $60 - 45 = 15$ professionals know neither.

Final Answer: The correct choice is 15.

Answer: (A)

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Q31.

Solution

Concept: Resolve vertical puzzle layouts by anchoring fixed values and testing remaining placement blocks.

Solution:

- (a) P3 is fixed on floor 4. Only one person lives between P3 and P6, so P6 is either on floor 2 or floor 6.
- (b) P7 lives on an odd floor immediately above P1. This creates a [P7 over P1] block where P7 occupies floor 3, 5, or 7.
- (c) P5 lives on an even floor. If P6 is on floor 2, then floor 6 is the only open even floor left for P5.
- (d) Placing P7 on floor 7 and P1 on floor 6 causes a conflict with P5. Instead, place P7 on floor 3 and P1 on floor 2, which forces P6 to floor 6.
- (e) This leaves floor 7 open. Testing the remaining slots shows P2 fits perfectly on the topmost floor.

Final Answer: The correct choice is P2.

Answer: (A)

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Q32.

Solution

Concept: Identify mathematical progression rules where each step features an increasing multiplication factor and an expanding squared addition value.

Solution:

- (a) Analyze the first step: $(3 \times 1) + 1^2 = 3 + 1 = 4$.
- (a) Analyze the second step: $(4 \times 2) + 2^2 = 8 + 4 = 12$.
- (a) Analyze the third step: $(12 \times 3) + 3^2 = 36 + 9 = 45$.
- (a) Analyze the fourth step: $(45 \times 4) + 4^2 = 180 + 16 = 196$.
- (a) Apply this calculation rule to find the missing term: $(196 \times 5) + 5^2 = 980 + 25 = 1005$.

Final Answer: The correct choice is 1005.

Answer: (A)

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Q33.

Solution

Concept: Evaluate Boolean logical operators by breaking expressions down into individual component truth tables.

Solution:

- (a) Substitute the given values: $A = \text{True}, B = \text{False}, C = \text{True}$.
- (b) Evaluate the negation component: $\neg B$ becomes True .
- (b) Evaluate the first bracketed conjunction: $(A \wedge \neg B)$ becomes $(\text{True} \wedge \text{True}) = \text{True}$.
- (b) Evaluate the second bracketed conjunction: $(B \wedge C)$ becomes $(\text{False} \wedge \text{True}) = \text{False}$.
- (b) Evaluate the outer disjunction linking both components: $\text{True} \vee \text{False} = \text{True}$.

Final Answer: The correct choice is True.

Answer: (A)

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Q34.

Solution

Concept: Deduce linear sequences by linking relative left-right adjacent pairs to fix boundary points.

Solution:

- (a) Key K1 is placed immediately left of K3, forming the fixed segment [K1-K3].
- (b) Key K4 is immediately right of K5, forming the segment [K5-K4].
- (c) K2 is at an extreme end and sits right next to K5. This fixes the block as [K2-K5-K4] on the left side.
- (d) Combine both segments together to form the complete linear string: K2, K5, K4, K1, K3.
- (e) Examining the finished row shows K4 occupies the exact middle position.

Final Answer: The correct choice is K4.

Answer: (C)

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Q35.

Solution

Concept: Isolate an anomalies in numerical sequences by calculating differences using sequential multiplier functions.

Solution:

- (a) Analyze the sequence using step multipliers: $(2 \times 1) + 1 = 3$.
- (a) Check the next step: $(3 \times 2) + 4 = 10$.
- (a) Check the next step: $(10 \times 3) + 9 = 39$. *This sequence provides 38 here instead of 39.*
- (a) Test the remaining sequence using 39: $(39 \times 4) + 16 = 156 + 16 = 172$. *This matches the next given term.*
- (a) Test the final step: $(172 \times 5) + 25 = 860 + 25 = 885$. *This matches the final term, confirming 38 is wrong.*

Final Answer: The correct choice is 38.

Answer: (B)

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Q36.

Solution

Concept: Solve balanced hierarchical systems by setting sub-tree mathematical sums equal across branches.

Solution:

(a) The problem states the left total structural weight must equal the right total weight:
 $W_L = W_R$.

(a) Find the total value of the left branch from the given diagram: $W_L = 14$.

(a) Set up the balance equation for the right side: $W_R = X + 5$.

(a) Equate the two sides to maintain equilibrium: $14 = X + 5$.

(b) Isolate and solve for the missing variable: $X = 14 - 5 = 9$.

Final Answer: The correct choice is 9.

Answer: (B)

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Q37.

Solution

Concept: Translate alphabetic characters into concatenated strings using standard A=1 to Z=26 index positions.

Solution:

(a) Check the base string POINTER: P=16, O=15, I=9, N=14, T=20, E=5, R=18. Concatenating these numbers forms 161591420518.

(b) Apply this index assignment rule to the target word ARRAY.

(c) Find individual values: A=1, R=18, R=18, A=1, Y=25.

(d) String these number sequences together sequentially: 11818125.

(e) This matches option A perfectly.

Final Answer: The correct choice is 11818125.

Answer: (A)

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Q38.

Solution**Concept:** Calculate total population values by linking percentages to remaining absolute numbers.**Solution:**

- (a) Apply inclusion-exclusion to find the union percentage: $70\% + 80\% - 60\% = 90\%$.
- (b) This means 90% of the candidates know at least one operating language.
- (c) Find the remaining percentage who know neither: $100\% - 90\% = 10\%$.
- (d) The problem states that 20 candidates know neither, so 10% of the total equals 20.
- (e) Calculate the total population: $\text{Total} = 20 / 0.10 = 200$ candidates.

Final Answer: The correct choice is 200.**Answer: (A)**[Go Back to Question 38](#)

Q39.

Solution**Concept:** Determine overlapping angular alignments using relative clock hand velocity values.**Solution:**

- (a) The minute hand moves faster than the hour hand, catching up and overlapping at set intervals.
- (b) Overlaps occur exactly every $12/11$ hours due to relative speed differences.
- (c) Divide a 12-hour period by this interval: $12 / (12/11) = 11$ times per cycle.
- (d) A full day contains two complete 12-hour cycles.
- (e) Multiply the single cycle value by two: $11 \times 2 = 22$ overlaps every 24 hours.

Final Answer: The correct choice is 22.**Answer: (B)**[Go Back to Question 39](#)

Q40.

Solution

Concept: Determine linear row positions by anchoring ends and resolving inner constraints step by step.

Solution:

- (a) Place A at the leftmost end (slot 1) and B at the rightmost end (slot 6).
- (b) C sits to the immediate right of A, which places C securely in slot 2.
- (c) E sits to the immediate left of B, which places E securely in slot 5.
- (d) This leaves slots 3 and 4 open for the remaining students D and F.
- (e) D sits exactly between C and F, which forces D into slot 3 and F into slot 4. The full row is A, C, D, F, E, B. D is third from the left.

Final Answer: The correct choice is D.

Answer: (B)

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Answer Key

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

