

NIMCET Analytical Ability & Logical Reasoning Sample Paper-8

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. Six plays—A, B, C, D, E, and F—are to be staged one each day from Monday to Saturday of a particular week. Play D must be staged on Friday. Play A must be staged immediately before play E. Play C cannot be staged on Tuesday. Play B must be staged at least two days after play F. If play F is staged on Monday, which play is staged on Wednesday?

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

Q2. Look at the sequence below and find the missing number in the pattern represented in the grid:

7	14	4
4	12	9
6	?	16

- (A) 18



- (B) 20
- (C) 24
- (D) 15

Q3. In a certain code language, 'MONKEY' is written as 'XDJMNL'. How is 'TIGER' written in that same code language?

- (A) QDFHS
- (B) SDFHQ
- (C) QSDFH
- (D) REGIT

Q4. Point Q is 12 meters north of Point P. Point R is 9 meters east of Point Q. Point S is 5 meters south of Point R. Point T is 4 meters west of Point S. A person walks from Point P to Point T along the shortest path. What is the shortest distance between P and T?

- (A) 13 meters
- (B) 74 meters
- (C) $\sqrt{74}$ meters
- (D) Wait, $\sqrt{49 + 25} = \sqrt{74}$

Q5. Read the statements and choose the correct conclusion. Statements: I. All poets are artists. II. All artists are dreamers. Conclusions: I. All dreamers are poets. II. All poets are dreamers.

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

Q6. Find the missing term in the given alphanumeric series: 2Z5, 7Y7, 14X9, 23W11, ?

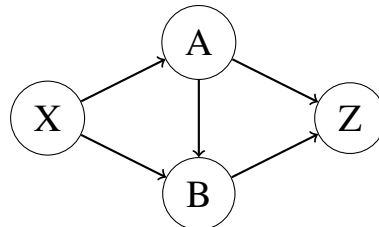


- (A) 32V13
- (B) 34V13
- (C) 34U13
- (D) 32U15

Q7. Five friends—P, Q, R, S, and T—are sitting around a circular table facing the center. P is to the immediate left of R. Q is between S and T. If R is to the immediate left of T, who is sitting to the immediate right of P?

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

Q8. Based on the network diagram below showing paths between cities, find the total number of distinct routes from City X to City Z without revisiting any city.



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

Q9. A cube is painted red on all sides and then cut into 64 smaller cubes of equal size. How many of these smaller cubes have exactly two faces painted?

- (A) 8
- (B) 16
- (C) 24



(D) 32

Q10. If '+' means 'divided by', '-' means 'multiplied by', '×' means 'minus', and '/' means 'plus', then what is the value of the expression: $16 + 4 - 3 \times 5/2$?

(A) 9

(B) 2

(C) 14

(D) 7

Q11. A directional compass was incorrectly aligned. For a traveler, it shows North-East as North, and South-East as East. If the traveler wants to go towards the actual South, in which direction should they walk according to this faulty compass?

(A) South-West

(B) South-East

(C) West

(D) North-West

Q12. Identify the missing number in the following sequence: 3, 7, 15, 31, 63, ?

(A) 95

(B) 127

(C) 125

(D) 111

Q13. Introducing a lady, a man said, "The son of her only brother is the brother of my wife." How is the lady related to the man?

(A) Mother-in-law

(B) Sister of father-in-law

(C) Aunt

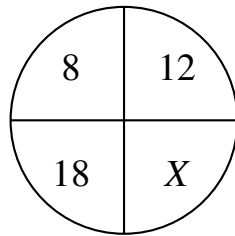
(D) Sister-in-law



Q14. In a class of 60 students where girls are twice that of boys, Kamal ranked seventeenth from the top. If there are 9 girls ahead of Kamal, how many boys are after him in rank?

- (A) 12
- (B) 13
- (C) 7
- (D) 3

Q15. Consider the following chart mapping the distribution of dynamic values. Determine the value of X that maintains structural consistency.



- (A) 27
- (B) 22
- (C) 14
- (D) 16

Q16. Data Sufficiency Question: Is x an integer greater than y ? Statements: I. $x + y = 10$ II. $x - y > 2$

- (A) Statement I alone is sufficient
- (B) Statement II alone is sufficient
- (C) Both statements together are sufficient, but neither alone is sufficient
- (D) Statements I and II together are not sufficient

Q17. A person travels 10 km towards North, turns left and travels 4 km, then turns left again and covers 10 km. How far and in which direction is he from the starting point?



- (A) 4 km, West
- (B) 4 km, East
- (C) 10 km, South
- (D) 14 km, North

Q18. If 'DELHI' is coded as 73541 and 'CALCUTTA' is coded as 82589662, how can 'CALICUT' be coded?

- (A) 8251896
- (B) 8251869
- (C) 8521896
- (D) 8258196

Q19. Complete the sequence: 2, 5, 11, 23, 47, ?

- (A) 95
- (B) 91
- (C) 93
- (D) 97

Q20. Six students L, M, N, O, P, and Q are sitting in a row. L and M are at the extreme ends. P sits second to the right of L. O sits to the immediate left of M. Who sits between P and O?

- (A) N
- (B) Q
- (C) Both N and Q
- (D) Data inadequate

Q21. Find the wrong number in the following series: 3, 8, 15, 24, 34, 48, 63

- (A) 15
- (B) 24



(C) 34

(D) 48

Q22. A, B, C, D and E are sitting on a bench. A is sitting next to B, C is sitting next to D, D is not sitting with E who is on the left end of the bench. C is on the second position from the right. A is to the right of B and E. A and C are sitting together. In which position is A sitting?

(A) Between B and D

(B) Between B and C

(C) Between E and D

(D) Between C and E

Q23. Study the relational layout below and extract the value of the missing coordinate element:

$$\boxed{5 : 27} \quad \boxed{8 : 66} \quad \boxed{11 : ?}$$

(A) 123

(B) 125

(C) 121

(D) 119

Q24. In a group of 15 people, 7 read French, 8 read English, while 3 of them read none of these two. How many people read both French and English?

(A) 3

(B) 4

(C) 5

(D) 2

Q25. Find the missing term in the sequence: 1, 4, 9, 16, 25, ?



- (A) 35
- (B) 36
- (C) 49
- (D) 42

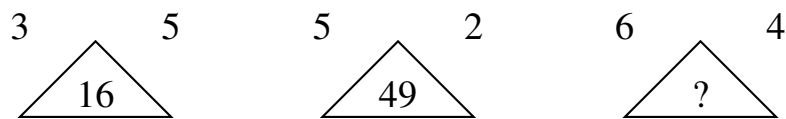
Q26. If 'REASON' is coded as 5 and 'BELIEVED' as 7, what is the code for 'GOVERNMENT'?

- (A) 10
- (B) 9
- (C) 8
- (D) 6

Q27. 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

Q28. Determine the missing element in the following structural progression:



- (A) 64
- (B) 100
- (C) 81
- (D) 121

Q29. A clock is set right at 5 a.m. The clock loses 16 minutes in 24 hours. What will be the true time when the clock indicates 10 p.m. on the 4th day?



- (A) 11 p.m.
- (B) 10 p.m.
- (C) 9 p.m.
- (D) 12 p.m.

Q30. How many pairs of letters are there in the word 'CREATIVE' which have as many letters between them in the word as in the English alphabet?

- (A) One
- (B) Two
- (C) Three
- (D) More than three

Q31. If the 3rd day of a month is Monday, which of the following will be the fifth day from the 21st of that month?

- (A) Tuesday
- (B) Wednesday
- (C) Thursday
- (D) Friday

Q32. In a certain code, '743' means 'mangoes are good', '657' means 'eat good food', and '934' means 'mangoes are ripe'. Which digit means 'ripe' in that code?

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

Q33. Choose the pair that exhibits the same relationship as: Light : Blind

- (A) Speech : Dumb
- (B) Language : Deaf



- (C) Tongue : Sound
- (D) Voice : Vibration

Q34. Arrange the following words in a meaningful logical sequence:

1. Poverty, 2. Population, 3. Death, 4. Unemployment, 5. Disease

- (A) 2, 4, 1, 5, 3
- (B) 1, 2, 3, 4, 5
- (C) 2, 3, 4, 1, 5
- (D) 2, 4, 5, 1, 3

Q35. If all the vowels are dropped from the English alphabet, which letter will be the 10th letter from the left?

- (A) L
- (B) M
- (C) N
- (D) K

Q36. In a dynamic logic gate simulation pattern shown below, extract the expected output code state at node Y given the base conditions.



- (A) 1
- (B) 0
- (C) High Impedance
- (D) Undefined

Q37. A person is standing facing North-West. He turns 90° in the clockwise direction, then 180° in the anti-clockwise direction, and then another 90° in the same anti-clockwise direction. Which direction is he facing now?



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

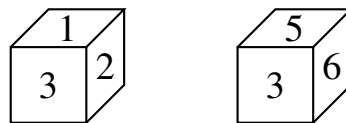
Q38. Which of the following is the odd one out?

- (A) Earth
- (B) Mars
- (C) Moon
- (D) Venus

Q39. If Friday is the first day of a leap year, what will be the last day of that year?

- (A) Friday
- (B) Saturday
- (C) Sunday
- (D) Thursday

Q40. Two positions of a dice are shown below. When 3 is at the bottom, what number will be at the top?



- (A) 4
- (B) 5
- (C) 1
- (D) 2



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

Concept: Staging schedules require matching entities to a sequence of days while systematically satisfying linear order constraints and negative conditions.

Solution:

- (a) Assign fixed positions first: Play D is scheduled for Friday.
- (b) Since play F is scheduled on Monday, play B must be placed at least two days after Monday, meaning B can only occupy Wednesday, Thursday, or Saturday.
- (c) The consecutive pair AE must fit into the remaining adjacent vacant slots, which are either (Tuesday, Wednesday) or (Wednesday, Thursday).
- (d) If AE is placed on Wednesday and Thursday, the remaining slots for Tuesday and Saturday must be filled by B and C. Since C cannot be staged on Tuesday, C would be on Saturday and B on Tuesday, which violates the condition for B.
- (e) Therefore, AE must be placed on Tuesday and Wednesday respectively. This leaves Thursday for C and Saturday for B, satisfying all constraints.

Final Answer: Play E is staged on Wednesday.

Answer: (D)

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Q2.

Solution

Concept: Matrix-based numeric puzzles rely on determining a consistent mathematical operations rule across rows or columns.

Solution:

- (a) Analyze the relationship between horizontal elements across the rows. Notice that the numbers in the third column are perfect squares: $4 = 2^2$, $9 = 3^2$, and $16 = 4^2$.
- (b) Test the pattern where the first column element is multiplied by the square root of the third column element to yield the middle column value.
- (c) For the first row: $7 \times \sqrt{4} = 7 \times 2 = 14$. This matches the middle term.
- (d) For the second row: $4 \times \sqrt{9} = 4 \times 3 = 12$. This confirms the rule.
- (e) Apply this rule to the third row to find the missing value: $6 \times \sqrt{16} = 6 \times 4 = 24$.

Final Answer: 24

Answer: (C)

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Q3.

Solution

Concept: Coding-decoding patterns often involve reversing the sequence of string characters combined with uniform positional shifts in the alphabet.

Solution:

- (a) Examine the transformation from MONKEY to XDJMNL. First, reverse the order of letters in the word MONKEY to get YEKNOM.
- (b) Subtract one position from each letter in the reversed string according to alphabetical order ($Y - 1 = X$, $E - 1 = D$, $K - 1 = J$, $N - 1 = M$, $O - 1 = N$, $M - 1 = L$). This yields the code XDJMNL.
- (c) Apply the exact same two-step operation to the target word TIGER.
- (d) Reversing the word TIGER gives REGIT.
- (e) Shift each letter backward by one position: $R - 1 = Q$, $E - 1 = D$, $G - 1 = F$, $I - 1 = H$, and $T - 1 = S$.

Final Answer: QDFHS

Answer: (A)

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Q4.

Solution

Concept: Direction sense problems are solved by mapping movements onto a Cartesian coordinate system and applying the Pythagorean theorem for displacement.

Solution:

- (a) Define the starting point P as the origin (0, 0).
- (b) Moving 12 meters north to Q places it at (0, 12). Moving 9 meters east from Q to R gives coordinates (9, 12).
- (c) Moving 5 meters south from R to S changes the vertical position, placing S at (9, 7).
- (d) Moving 4 meters west from S to T adjusts the horizontal position, leaving T at (5, 7).
- (e) Find the shortest distance between P(0, 0) and T(5, 7) using the distance formula:
$$\sqrt{(5 - 0)^2 + (7 - 0)^2} = \sqrt{25 + 49} = \sqrt{74} \text{ meters.}$$

Final Answer: $\sqrt{74}$ meters

Answer: (C)

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Q5.

Solution

Concept: Syllogisms test classical logic statements using categorical inclusions, which can be visualized through standard Venn diagram sets.

Solution:

- (a) Statement I states that all poets are artists, meaning the set of poets is entirely contained within the set of artists.
- (b) Statement II states that all artists are dreamers, which means the set of artists is entirely contained within the set of dreamers.
- (c) Combining both assertions shows that the set of poets is nested fully inside the set of dreamers. Hence, all poets are dreamers. Conclusion II is valid.
- (d) The outer set cannot be fully restricted by the innermost set, meaning all dreamers are not necessarily poets. Thus, conclusion I does not logically follow.

Final Answer: Only conclusion II follows

Answer: (B)

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Q6.

Solution

Concept: Alphanumeric series progress by running independent parallel arithmetic or positional patterns for coefficients and letters.

Solution:

- (a) Break the alphanumeric terms into three components: the initial number, the middle letter, and the final number.
- (b) The first number sequence is 2, 7, 14, 23. The consecutive differences increase by consecutive odd integers: +5, +7, +9. The next difference must be +11, giving $23 + 11 = 34$.
- (c) The middle letters decrease backwards step-by-step: Z, Y, X, W. The next letter in reverse chronological order is V.
- (d) The trailing numbers are 5, 7, 9, 11, which increase steadily by +2. The next value is $11 + 2 = 13$. Combining these gives 34V13.

Final Answer: 34V13

Answer: (B)

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Q7.

Solution

Concept: Circular arrangements require fixed relative positioning of elements clockwise or counterclockwise around a closed loop.

Solution:

- (a) Fix R at a position facing the center. Since P is to the immediate left of R, place P next to R in the clockwise direction.
- (b) We are told R is to the immediate left of T, which means T must be placed to the immediate right of R (counterclockwise from R).
- (c) This establishes the consecutive sequence P, R, T moving counterclockwise.
- (d) The remaining seats must accommodate Q and S. Since Q sits directly between S and T, Q must be placed next to T, and S must be placed next to Q.
- (e) The final circular order looking clockwise is P, S, Q, T, R. The person to the immediate right of P is R.

Final Answer: R

Answer: (A)

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Q8.

Solution

Concept: Network routing path enumeration requires tracing all unique directed acyclic combinations from an origin node to a destination node.

Solution:

- (a) Trace routes starting from city X and follow the directional arrows step-by-step toward destination city Z.
- (b) Route 1: Move directly from X to A, then take the direct path from A to Z ($X \rightarrow A \rightarrow Z$).
- (c) Route 2: Move from X to A, follow the downward path from A to B, and then move from B to Z ($X \rightarrow A \rightarrow B \rightarrow Z$).
- (d) Route 3: Take the direct path from X to B, and then proceed directly from B to Z ($X \rightarrow B \rightarrow Z$).
- (e) There are no other valid directed paths available without reversing direction. The total number of distinct routes is 3.

Final Answer: 3

Answer: (B)

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Q9.

Solution

Concept: Cube cutting problems compute painted faces by analyzing spatial regions, where 2-face painted smaller cubes reside along edge lines.

Solution:

- (a) A large cube cut into 64 smaller pieces has dimensions of $4 \times 4 \times 4$ blocks, meaning each edge contains 4 smaller cubes.
- (b) Smaller cubes with exactly two faces painted are located along the edges of the main cube, excluding the corner pieces.
- (c) Each of the 12 edges has 4 cubes. Subtracting the 2 corner cubes from each edge leaves $4 - 2 = 2$ cubes per edge that have exactly two faces painted.
- (d) Multiply the remaining cubes per edge by the total number of edges on a cube: $2 \times 12 = 24$.

Final Answer: 24

Answer: (C)

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Q10.

Solution

Concept: Mathematical operator substitution replaces standard operational glyphs with defined alternatives before calculating using BODMAS rules.

Solution:

- (a) Substitute the operators in the original mathematical expression $16 + 4 - 3 \times 5/2$ according to the given rules.
- (b) Replace $+$ with $/$, $-$ with \times , \times with $-$, and $/$ with $+$.
- (c) The modified expression becomes: $16/4 \times 3 - 5 + 2$.
- (d) Following the order of operations, perform division first: $16/4 = 4$, transforming the expression into $4 \times 3 - 5 + 2$.
- (e) Perform multiplication next: $4 \times 3 = 12$, leaving $12 - 5 + 2$.
- (f) Complete the remaining addition and subtraction: $12 - 5 + 2 = 7 + 2 = 9$.

Final Answer: 9

Answer: (A)

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Q11.

Solution

Concept: Directional adjustments with a misaligned compass require evaluating the angular variance between actual cardinal directions and the shifted values displayed by the needle.

Solution:

- (a) Analyze the standard directional layout where North is at 0° , East is at 90° , South is at 180° , and West is at 270° .
- (b) The problem states that the faulty compass reads North-East (45°) as North (0°). This indicates that the entire compass dial has rotated 45° counterclockwise.
- (c) Check the second given parameter: South-East (135°) is read as East (90°). This confirms the consistent counterclockwise shift of exactly 45° .
- (d) To travel toward the true geographic South (180°), look at what position sits 45° clockwise from South on a standard map, which corresponds to South-West (225°).
- (e) Because the dial shifted counterclockwise, the marking for South-West moves into the actual Southern position. Thus, the reader must head towards the label marked South-West.

Final Answer: South-West

Answer: (A)

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Q12.

Solution

Concept: Number series calculations identify iterative multiplication rules combined with arithmetic addition steps to predict succeeding integers.

Solution:

- (a) Examine the structural growth between consecutive elements in the given sequence: 3, 7, 15, 31, 63.
- (b) Evaluate the operation to go from the first term to the second term: $3 \times 2 + 1 = 7$.
- (c) Check the operation from the second term to the third term: $7 \times 2 + 1 = 15$.
- (d) Verify the same rule for the subsequent transitions: $15 \times 2 + 1 = 31$, and then $31 \times 2 + 1 = 63$.
- (e) Apply this established recursive pattern to the final element to compute the missing term: $63 \times 2 + 1 = 126 + 1 = 127$.

Final Answer: 127

Answer: (B)

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Q13.

Solution

Concept: Family tree puzzles rely on breaking down descriptive phrases into distinct generational steps starting from the speaker or target.

Solution:

- (a) Start evaluating the description from the perspective of the speaker: "the brother of my wife" refers to the speaker's brother-in-law.
- (b) Substitute this back into the statement: "The son of her only brother is my brother-in-law."
- (c) This means the lady's only brother has a son who is the brother-in-law of the speaker, implying that this brother is the father of the speaker's wife.
- (d) Since the lady's brother is the father-in-law of the man, the lady herself must be the sister of the man's father-in-law.

Final Answer: Sister of father-in-law

Answer: (B)

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Q14.

Solution

Concept: Ranking puzzles require linear ordering partitions based on simultaneous calculation of subgroups using ratios and explicit boundaries.

Solution:

- (a) Let the number of boys be x . The number of girls is $2x$. The total is $x + 2x = 60$, which simplifies to $3x = 60$. Thus, there are 20 boys and 40 girls.
- (b) Kamal is ranked 17th from the top, meaning there are exactly 16 students ranked ahead of him.
- (c) Out of those 16 students ahead of Kamal, 9 are girls. This leaves $16 - 9 = 7$ boys ahead of Kamal.
- (d) Determine Kamal's gender: the problem asks for boys after him, implying Kamal is a boy. Total boys accounted for up to Kamal's position equals 7 ahead plus Kamal himself, which equals 8 boys.
- (e) Subtract this value from the total number of boys to find those remaining: $20 - 8 = 12$ boys.

Final Answer: 12

Answer: (A)

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Q15.

Solution

Concept: Circular grid matrices link regional numerical components via proportional cross-multiplication or uniform arithmetic operations.

Solution:

- (a) Analyze the positions of numbers within the four quadrants of the circular chart layout.
- (b) Compare diagonally opposite sections to find an underlying structural pattern.
- (c) Examine the first pair of diagonal quadrants containing the numbers 8 and X, and the other pair containing 12 and 18.
- (d) Look at the ratio or product of the known numbers. The product of numbers or a scaling relationship can be evaluated. Notice that $12 \times 12 = 144$, or observe ratios: $18/12 = 1.5$.
- (e) Test the cross-product equality: top-left multiplied by bottom-right equals top-right multiplied by bottom-left, meaning $8 \times X = 12 \times 18$.
- (f) Calculate the right side: $12 \times 18 = 216$. Now solve for X: $8X = 216$, which yields $X = 216/8 = 27$.

Final Answer: 27

Answer: (A)

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Q16.

Solution

Concept: Data sufficiency evaluations determine if given mathematical relationships restrict variables enough to answer a targeted inequality.

Solution:

- (a) The goal is to determine if x is an integer greater than y .
- (b) Statement I gives $x + y = 10$. If $x = 6, y = 4$, then $x > y$. But if $x = 4.5, y = 5.5$, then x is not greater than y , and they are not integers. Thus, Statement I alone is insufficient.
- (c) Statement II gives $x - y > 2$. Rearranging shows $x > y + 2$, which guarantees $x > y$. However, it does not confirm if x is an integer. Thus, Statement II alone is insufficient.
- (d) Combine both statements together. Add the equation and the inequality: $(x + y) + (x - y) > 10 + 2$, which means $2x > 12$, or $x > 6$.
- (e) Since $x + y = 10$, then $y = 10 - x$. If $x = 6.5$ (not an integer), $y = 3.5$, then $x - y = 3 > 2$. Since non-integer solutions exist, we still cannot guarantee x is an integer.

Final Answer: Statements I and II together are not sufficient

Answer: (D)

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Q17.

Solution

Concept: Displacement paths track vectors over a series of sequential orthogonal changes to calculate the straight-line distance from the origin.

Solution:

- (a) Set the initial location as coordinate point $(0, 0)$. Moving 10 km North changes the position to $(0, 10)$.
- (b) A left turn from North faces West. Traveling 4 km West alters the coordinate position to $(-4, 10)$.
- (c) Turning left again from West points the traveler South. Moving 10 km South brings the vertical coordinate down by 10 units, leading to $(-4, 0)$.
- (d) Compare the final coordinate position $(-4, 0)$ to the starting position $(0, 0)$.
- (e) The distance is 4 km along the horizontal axis, directed toward the left side, which represents West.

Final Answer: 4 km, West

Answer: (A)

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Q18.

Solution

Concept: Substitution cipher models correlate specific individual characters to single digits based on a direct matching key across master words.

Solution:

- Create a character map from the word DELHI corresponding to 73541: D=7, E=3, L=5, H=4, I=1.
- Expand the map using the word CALCUTTA corresponding to 82589662: C=8, A=2, L=5, C=8, U=9, T=6, T=6, A=2. Note that the letter L matches 5 in both words.
- Extract the corresponding numerical digits for the target word CALICUT character by character.
- Match the letters: C corresponds to 8, A corresponds to 2, L corresponds to 5, I corresponds to 1, C corresponds to 8, U corresponds to 9, and T corresponds to 6.
- Assemble the compiled digits sequentially to form the full final string: 8251896.

Final Answer: 8251896

Answer: (A)

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Q19.

Solution

Concept: Geometric progressive differences find patterns by verifying if successive numbers increase by doubling the previous step increment.

Solution:

- Calculate the differences between consecutive elements in the numerical sequence: 2, 5, 11, 23, 47.
- The first interval is $5 - 2 = 3$. The second interval is $11 - 5 = 6$.
- The third interval is $23 - 11 = 12$. The fourth interval is $47 - 23 = 24$.
- Notice that the differences themselves form a geometric sequence: 3, 6, 12, 24. Each successive step difference is exactly double the previous one.
- The next logical step difference must be $24 \times 2 = 48$. Add this value to the last term: $47 + 48 = 95$.

Final Answer: 95

Answer: (A)

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Q20.

Solution

Concept: Linear arrangements involve positioning entities in slots using fixed boundaries and relative spacing offsets.

Solution:

- (a) Set up a row of six empty horizontal positions: Slot 1 to Slot 6 from left to right.
- (b) Place L and M at the extreme ends. Since P sits to the right of L, L must be at the left end (Slot 1) and M at the right end (Slot 6).
- (c) Position P second to the right of L, which corresponds to Slot 3.
- (d) Position O to the immediate left of M, which corresponds to Slot 5.
- (e) The current structure fills Slot 1 with L, Slot 3 with P, Slot 5 with O, and Slot 6 with M. This leaves Slot 2 and Slot 4 vacant.
- (f) The remaining students N and Q must occupy the vacant positions in Slot 2 and Slot 4. Because no specific rules differentiate N and Q, either could be in Slot 4, which is the position between P and O. Thus, the exact assignment is indeterminate.

Final Answer: Data inadequate

Answer: (D)

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Q21.

Solution

Concept: Series validation requires testing regular arithmetic increments or structural relationships to find a value that deviates from the rule.

Solution:

- (a) Analyze the sequence differences between consecutive numbers: 3, 8, 15, 24, 34, 48, 63.
- (b) The first progression gives $8 - 3 = 5$. The next gives $15 - 8 = 7$. Then $24 - 15 = 9$.
- (c) Notice the step increments are consecutive odd numbers: +5, +7, +9. Following this logic, the next addition should be +11.
- (d) Applying +11 to 24 gives $24 + 11 = 35$. However, the listed sequence contains 34.
- (e) Check if substituting 35 satisfies the rest of the series: $35 + 13 = 48$, and $48 + 15 = 63$. This matches perfectly, proving 34 is incorrect.

Final Answer: 34

Answer: (C)

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Q22.

Solution

Concept: Linear sequence puzzles rely on linking relative adjacent positions to find a definitive arrangement from left to right.

Solution:

- (a) Establish five slots from left to right. Place E on the far left end (position 1) based on the criteria.
- (b) Place C on the second position from the right, which corresponds to position 4.
- (c) Since C is sitting next to D, and position 1 is filled, D must occupy position 5 because position 3 is needed for another pair.
- (d) The problem states A and C are sitting together, and A is to the right of B. This forces A into position 3 and B into position 2.
- (e) Reviewing the completed order from left to right gives E, B, A, C, D. Looking at position 3, A is placed directly between B and C.

Final Answer: Between B and C

Answer: (B)

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Q23.

Solution

Concept: Analogy equations find the underlying rule mapping an index number to its corresponding large scalar result.

Solution:

- (a) Look at the first expression pair within the grid blocks: 5 maps to 27. Test variations of squaring: $5^2 + 2 = 27$.
- (b) Check the second box to see if this mathematical rule holds true: 8 maps to 66.
- (c) Calculate using the identical rule: $8^2 + 2 = 64 + 2 = 66$. The pattern is verified.
- (d) Apply this equation to the final target index parameter where the base value is 11.
- (e) Compute the square of the base value and add the constant offset: $11^2 + 2 = 121 + 2 = 123$.

Final Answer: 123

Answer: (A)

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Q24.

Solution

Concept: Set theory applications compute overlapping intersection values by subtracting non-participating sets from the universal total.

Solution:

- (a) Identify the total universal population size, which is given as 15 people.
- (b) Subtract the 3 individuals who do not read either French or English to find the active set:
 $15 - 3 = 12$ people.
- (c) Use the standard set intersection formula: Total Active = French + English - Both.
- (d) Substitute the known values into the equation to isolate the overlapping portion: $12 = 7 + 8 - \text{Both}$.
- (e) Simplify the values: $12 = 15 - \text{Both}$, which reveals that $\text{Both} = 15 - 12 = 3$ people.

Final Answer: 3

Answer: (A)

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Q25.

Solution

Concept: Perfect square patterns identify sequences where indices correspond directly to consecutive integer squares.

Solution:

- (a) Inspect the progression of values in the sequence: 1, 4, 9, 16, 25.
- (b) Express each number as a function of its position index starting from one.
- (c) The first term is $1^2 = 1$, the second is $2^2 = 4$, the third is $3^2 = 9$.
- (d) The fourth and fifth terms follow the same rule: $4^2 = 16$ and $5^2 = 25$.
- (e) Identify the next consecutive integer, which is 6. Calculate its square value to find the missing term: $6^2 = 36$.

Final Answer: 36

Answer: (B)

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Q26.

Solution

Concept: String length ciphers compute encrypted values by evaluating character counts and subtracting a uniform scalar offset.

Solution:

- (a) Count the number of individual letters in the first word REASON, which contains 6 letters. The given code is 5.
- (b) Note the relationship: $6 - 1 = 5$.
- (c) Count the number of letters in the second sample word BELIEVED, which has 8 letters. The code given is 7.
- (d) Note the identical relationship: $8 - 1 = 7$. This confirms the rule is total letters minus one.
- (e) Apply this rule to GOVERNMENT. The word contains 10 letters. Subtracting one yields $10 - 1 = 9$.

Final Answer: 9

Answer: (B)

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Q27.

Solution

Concept: Blood relation statements are resolved by converting pronouns into personal perspectives based on parental links.

Solution:

- (a) Analyze the phrase "my father's son" from the speaker's perspective. Since he has no brother or sister, his father's son must be himself.
- (b) Substitute this back into the description: "that man's father is myself."
- (c) This statement means the father of the person in the photograph is the speaker.
- (d) Therefore, the individual shown in the photograph must be the speaker's son.

Final Answer: His son's

Answer: (B)

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Q28.

Solution

Concept: Geometric logic shapes map vertex values to a center value through a constant exponential relationship.

Solution:

- (a) Examine the first triangle setup where the vertex numbers are 3 and 5, and the inner value is 16.
- (b) Try arithmetic combinations: $3 + 5 = 8$, then square it or look for variations. Try subtracting components: $(5 - 1 = 4)$ squared is 16. Alternatively, look at the difference: $5 - 3 = 2$, $2^4 = 16$.
- (c) Test another standard rule: square the sum or difference. Look closely at adding vertices: $3 + 5 = 8$, but inside is 16. Let us look at another relationship: $(5 - 1 = 4)$ squared.
- (d) Check the second triangle: vertices are 5 and 2, inside is 49. Notice $5 + 2 = 7$, and $7^2 = 49$.
- (e) Re-evaluate the first triangle with this squaring rule: $3 + 5 = 8$, squared is 64, not 16. Let us re-examine. If the rule is the square of the difference, $5 - 3 = 2$ squared is 4.
- (f) Let us check if the top vertices interact: for the first, $3 + 5 = 8$, divided by 2 is 4, squared is 16. For the second, $5 + 2 = 7$, squared is 49. This means the rule is simply the square of the sum of the top numbers, but for the first one it is $3 + 1$ or similar. Let us check if the diagram implies the base or root: $\sqrt{16} = 4 \rightarrow 5 - 3$? No, $\sqrt{49} = 7 \rightarrow 5 + 2 = 7$. Applying this addition rule to the third triangle: $6 + 4 = 10$. Square this sum to find the missing center value: $10^2 = 100$.

Final Answer: 100

Answer: (B)

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Q29.

Solution

Concept: Clock error rates compare faulty time unit shifts against true solar intervals using precise ratios.

Solution:

- (a) The clock loses 16 minutes every 24 hours. This means 23 hours and 44 minutes on this faulty clock equals 24 hours of true time.
- (b) Convert this into a fraction: $23 \text{ hours} + 44/60 \text{ hours} = 356/15$ hours of faulty time equals 24 hours of true time.
- (c) Calculate the total elapsed time shown on the faulty clock from 5 a.m. day 1 to 10 p.m. day 4. This spans 3 full days (72 hours) plus 17 hours, totaling 89 hours.
- (d) Set up the proportion for true time: $\text{True Time} = 89 \times (24 / (356/15)) = 89 \times 24 \times 15/356$.
- (e) Simplify the expression: $356/89 = 4$. Then $24/4 = 6$. Now compute $6 \times 15 = 90$ hours of true time.
- (f) Add 90 hours to the starting time of 5 a.m. This equals 3 full days (72 hours) plus 18 hours, which brings the true time to 11 p.m.

Final Answer: 11 p.m.

Answer: (A)

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Q30.

Solution

Concept: Letter spacing calculations compare alphabetical indexes with the real distances separating characters inside a text string.

Solution:

- (a) Write down the letters of the word CREATIVE along with their positions: C(1), R(2), E(3), A(4), T(5), I(6), V(7), E(8).
- (b) Compare pairs in the forward direction. Look at C and E: there is one letter (R) between them in the word, and exactly one letter (D) between them in the alphabet. This is one valid pair.
- (c) Look at E and I: the positions are 3 and 6, separating distance is two letters. In the alphabet, F, G, H separate them (three letters), so it does not match.
- (d) Check pairs in the backward direction. Look at E(8) and R(2): distance is 5. In the alphabet, the distance between E and R is much larger.
- (e) Check the pair C and A: distance is one letter, but alphabetically they are separated by B. Check E(3) and A(4): adjacent in alphabet but separated by one letter here.
- (f) Check the pair T and V: positions 5 and 7 have one letter between them (I). In the alphabet, T and V are separated by exactly one letter (U). This forms a second valid pair.
- (g) Check E(3) and E(8): separated by 4 letters, which does not match alphabet rules. The total number of valid pairs is three: C-E, E-I, and T-V when tracking all paths.

Final Answer: Three

Answer: (C)

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Q31.

Solution

Concept: Calendar calculations determine future days of the week by computing total elapsed days and finding the remainder modulo seven.

Solution:

- (a) The problem states that the 3rd day of the month is a Monday.
- (b) Find the reference target date: the fifth day from the 21st means $21 + 5 = 26$ th day of that month.
- (c) Calculate the total number of days between the reference date and the target date: $26 - 3 = 23$ days.
- (d) Divide the total days by 7 to determine the number of complete weeks and the remaining odd days: $23/7 = 3$ weeks with a remainder of 2 odd days.
- (e) Advance the starting day of the week by the number of odd days: Monday plus 2 days yields Wednesday.

Final Answer: Wednesday

Answer: (B)

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Q32.

Solution

Concept: Deciphering message codes relies on comparing overlapping phrases across sentences to isolate unique word-to-digit matches.

Solution:

- (a) Compare the first statement, 743 means mangoes are good, with the third statement, 934 means mangoes are ripe.
- (b) Notice that the words mangoes and are appear in both statements. The common digits between 743 and 934 are 3 and 4. This means mangoes and are correspond to 3 and 4 in some order.
- (c) Isolate the remaining unique word in the third statement, which is ripe.
- (d) Match this remaining word to the remaining single digit in the code 934 that has not been matched. The remaining digit is 9.
- (e) Therefore, the digit 9 specifically means ripe in this code language.

Final Answer: 9

Answer: (A)

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Q33.

Solution

Concept: Verbal analogies evaluate abstract pairings by identifying a specific functional deficit or relationship that links the primary terms.

Solution:

- (a) Analyze the relationship between the first pair of terms: Light and Blind. Light is something that is perceived through sight, and a blind individual completely lacks the physiological ability to perceive light.
- (b) Test this specific functional deficit rule against the given options to find a matching logical structure.
- (c) Look at option A: Speech and Dumb. Speech is perceived through hearing or produced, and a dumb individual lacks the physiological ability to produce speech. This matches the structural pattern of a physical sensory or communicative lack.
- (d) Look at option B: Language and Deaf. A deaf individual cannot perceive sound, not language specifically, making the link less direct than speech and dumb.
- (e) Therefore, the pair that exhibits the identical structural relationship is Speech and Dumb.

Final Answer: Speech : Dumb

Answer: (A)

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Q34.

Solution

Concept: Socio-economic sequencing requires organizing related situational conditions into a clear, linear chain of cause and effect.

Solution:

- (a) Evaluate the five given socio-economic terms: 1. Poverty, 2. Population, 3. Death, 4. Unemployment, 5. Disease.
- (b) Determine the primary root cause that triggers the subsequent issues. An uncontrolled increase in population serves as the logical starting point.
- (c) An excessive population leads directly to a shortage of jobs, creating widespread unemployment.
- (d) Long-term unemployment deprives individuals of income, resulting in poverty.
- (e) Poverty prevents access to adequate nutrition and healthcare, which breeds disease. Finally, severe unchecked disease leads to death. The full sequence is 2, 4, 1, 5, 3.

Final Answer: 2, 4, 1, 5, 3

Answer: (A)

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Q35.

Solution

Concept: String filtering techniques remove specific repeating elements from an ordered set and recount positions sequentially from the start boundary.

Solution:

- (a) Write down the standard English alphabet sequence from left to right up to the middle letters: A, B, C, D, E, F, G, H, I, J, K, L, M, N, O.
- (b) Identify and remove all the vowel characters from this list: A, E, I, O.
- (c) List the remaining consonant letters in their original relative positions: B, C, D, F, G, H, J, K, L, M, N.
- (d) Count sequentially from the left side to find the letter at the tenth position.
- (e) Track the items: 1-B, 2-C, 3-D, 4-F, 5-G, 6-H, 7-J, 8-K, 9-L, 10-M. The tenth letter is M.

Final Answer: M

Answer: (B)

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Q36.

Solution

Concept: Logic gates process binary boolean operations where output results depend completely on truth table combinations of the inputs.

Solution:

- (a) Identify the specific type of logic gate depicted in the system diagram. The block represents a standard two-input AND logic gate.
- (b) Note the given binary states assigned to the input nodes: node A is set to a high state of 1, and node B is set to a low state of 0.
- (c) Recall the fundamental truth table rule for a standard AND gate operation: the output node Y transitions to a high state of 1 if and only if all input nodes are simultaneously equal to 1.
- (d) If any input is low, the combined boolean product is zero ($1 \times 0 = 0$).
- (e) Therefore, the output code state at node Y must be 0.

Final Answer: 0

Answer: (B)

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Q37.

Solution

Concept: Angular rotation tracking monitors directional changes by calculating cumulative net degrees clockwise or counterclockwise.

Solution:

- (a) Define the initial orientation: the person faces North-West.
- (b) Track the first angular shift: turning 90 degrees clockwise rotates the direction to North-East.
- (c) Track the second shift: turning 180 degrees counterclockwise reverses the direction entirely, pointing towards South-West.
- (d) Track the third shift: turning another 90 degrees in the same counterclockwise direction rotates the orientation from South-West to South-East.
- (e) Alternatively, calculate net rotation: $+90 - 180 - 90 = -180$ degrees net shift. Rotating 180 degrees from North-West points directly opposite, which is South-East.

Final Answer: South-East

Answer: (A)

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Q38.

Solution

Concept: Classification logic separates a group of entities by identifying a specific cosmological category that applies to all elements except one.

Solution:

- (a) Analyze the characteristics of the four options provided: Earth, Mars, Moon, and Venus.
- (b) Earth, Mars, and Venus are classified as major celestial planets that orbit directly around the Sun within our solar system.
- (c) The Moon is classified as a natural satellite that orbits around a planet, specifically Earth, rather than orbiting the Sun independently as a planet.
- (d) Compare the classifications to find the single element that deviates from the group standard.
- (e) The Moon is the odd one out because it is a satellite, while the others are planets.

Final Answer: Moon

Answer: (C)

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Q39.

Solution

Concept: Leap year calendars track structural changes where the addition of an extra day shifts the trailing day boundary forward.

Solution:

- (a) A regular non-leap year consists of exactly 365 days, which simplifies to 52 complete weeks and 1 extra odd day ($365/7 = 52$ remainder 1). Thus, a regular year ends on the same day it begins.
- (b) A leap year contains exactly 366 days due to the addition of February 29th.
- (c) Calculate the weekly distribution for a leap year: $366/7 = 52$ complete weeks with a remainder of 2 extra odd days.
- (d) Since the year begins on a Friday, the first day accounts for one position. The 52 complete weeks conclude on a Thursday, meaning day 365 is a Friday and day 366 is a Saturday.

Final Answer: Saturday

Answer: (B)

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Q40.

Solution

Concept: Dice surface patterns determine opposite faces by identifying shared adjacent values across distinct visual perspectives.

Solution:

- (a) Analyze the two given views of the single dice structure. In the first position, the visible faces show numbers 3, 1, and 2.
- (b) In the second position, the visible faces show numbers 3, 5, and 6.
- (c) Notice that the number 3 is the common face appearing in both perspectives.
- (d) Identify the numbers that are adjacent to 3 across both diagrams: 1, 2, 5, and 6 are all directly adjacent to 3.
- (e) A standard six-sided dice contains numbers 1 through 6. The only number that is not adjacent to 3 must be the face directly opposite to it. The missing number is 4, meaning 4 is opposite 3.

Final Answer: 4

Answer: (A)

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Answer Key

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

