

# NIMCET Analytical Ability & Logical Reasoning Sample Paper-7

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.** Eight friends—A, B, C, D, E, F, G, and H—are sitting around a circular table facing the center. B is third to the right of A, who is third to the right of H. C is third to the left of H. F is second to the right of C. E is second to the left of G. Who sits second to the left of D?

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

**Q2.** In a certain code language, if the word 'NIMCET' is coded as 'OLLGJW', how will the word 'LOGICAL' be coded in that same language?

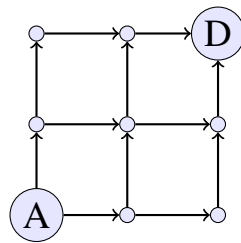
- (A) MQJMDEM
- (B) NTMNIFP
- (C) MPKLECO
- (D) MTKLEDM



**Q3.** Complete the following number series by identifying the logical progression:  
12, 22, 42, 82, 162, ?

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

**Q4.** A person must travel from node A to node D along the grid lines, moving only East or North. How many unique paths can the traveler choose?



- (A) 4
- (B) 6
- (C) 12
- (D) 20

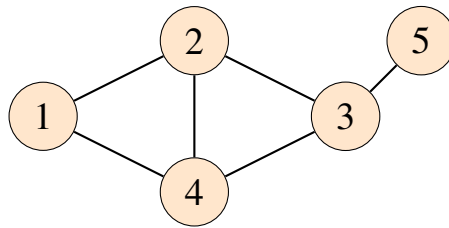
**Q5.** Six lectures on Physics, Chemistry, Mathematics, Computer Science, English, and Electronics are to be scheduled from Monday to Saturday, exactly one lecture each day. Computer Science cannot be scheduled on Tuesday or Saturday. English must be scheduled immediately after Mathematics. Chemistry must be scheduled immediately after Physics. There must be a gap of two days between Mathematics and Electronics. On which day is English scheduled?

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



- Q6.** Based on a comprehensive demographic data survey, 65% of a town's population read Newspaper X, 45% read Newspaper Y, and 30% read Newspaper Z. If 20% read both X and Y, 15% read both Y and Z, 18% read both X and Z, and 7% read all three newspapers, what percentage of the population reads none of these three newspapers?
- (A) 6%  
(B) 14%  
(C) 21%  
(D) 4%
- Q7.** Find the wrong number in the following mathematical pattern sequence: 3, 10, 29, 66, 127, 218, 345
- (A) 66  
(B) 127  
(C) 218  
(D) 345
- Q8.** If 'A + B' means A is the brother of B; 'A - B' means A is the sister of B; and 'A × B' means A is the father of B. Which of the following expressions explicitly establishes that P is the paternal aunt of R?
- (A)  $P - Q \times R$   
(B)  $P + Q \times R$   
(C)  $R \times Q - P$   
(D)  $P \times Q + R$
- Q9.** Each line carries a bidirectional connection. If a computer virus spreads from Hub 1 to all connected hubs, what is the maximum number of distinct nodes it can traverse in a single continuous path without visiting any hub more than once?





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

**Q10.** Five boxes J, K, L, M, and N are stacked one above the other, but not necessarily in that order. Box K is placed somewhere above Box N. Box L is placed immediately below Box J. Box M is placed at the bottom-most position. There are exactly two boxes placed between Box J and Box M. Which box is placed at the very top of the stack?

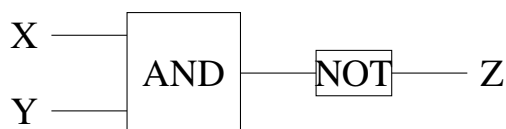
- (A) K
- (B) J
- (C) L
- (D) N

**Q11.** In an analytical evaluation of a group of 100 corporate employees, it was recorded that 50 employees know Python programming, 40 know Java, and 45 know C++. Furthermore, 15 know both Python and Java, 20 know both Java and C++, and 18 know both Python and C++. If 5 employees are experts in all three programming languages, determine the total number of employees who do not know any of these three languages.

- (A) 13
- (B) 8
- (C) 21
- (D) 17



- Q12.** If the letters in the word 'REASONING' are rearranged in alphabetical order from left to right, how many letters will remain unchanged in their original positions?
- (A) None  
(B) One  
(C) Two  
(D) Three
- Q13.** Find the missing alphabetic group in the following continuous series pattern:  
BDF, CFI, DHL, ?, FJP
- (A) EJO  
(B) EHO  
(C) EIM  
(D) EKO
- Q14.** A person starts walking from their house facing towards the North. After walking 30 meters, they turn to their left and walk 40 meters. They then turn to their left again and walk 60 meters. Finally, they make one last turn to the left and walk 80 meters to reach their office. How far and in which direction is the office situated relative to the person's house?
- (A) 50 meters, North-East  
(B) 50 meters, South-East  
(C) 70 meters, South-West  
(D) 30 meters, North-West
- Q15.** If the inputs applied at X and Y are 1 and 0 respectively, determine the final steady-state output value obtained at terminal Z.



- (A) 0
- (B) 1
- (C) Intermediate state
- (D) Undefined

**Q16.** Six executives—P, Q, R, S, T, and U—are sitting in a straight horizontal row facing towards the North. P sits third to the right of M, but there is an error in information. Let's frame it clearly: P sits third to the right of S. U sits at one of the extreme ends of the row. Q sits second to the right of U. T is an immediate neighbor of neither P nor S. Who sits to the immediate left of R?

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

**Q17.** In a multi-story building, an analysis of electricity consumption reveals that Office A consumes more power than Office B but less than Office C. Office D consumes less power than Office E but more than Office C. Which office consumes the highest amount of electrical power among them?

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

**Q18.** In a certain structural code language, the statement 'green leaves and flowers' is written as 'ka pa ni ma', 'flowers bloom in spring' is written as 'ni ta sa ja', and 'leaves fall in autumn' is written as 'ma ga sa da'. What is the specific code for the word 'leaves' in this language?

- (A) ma
- (B) ni



(C) ka

(D) sa

**Q19.** Analyze the logical number matrix provided below to establish the underlying relation and compute the missing entry:

7	4	53
8	5	69
9	6	?

(A) 85

(B) 87

(C) 93

(D) 81

**Q20.** Point L is 10 meters to the West of Point M. Point N is 15 meters to the North of Point M. Point O is 10 meters to the East of Point N. Point P is 20 meters to the South of Point O. What is the shortest straight-line distance between Point L and Point P?

(A) 5 meters

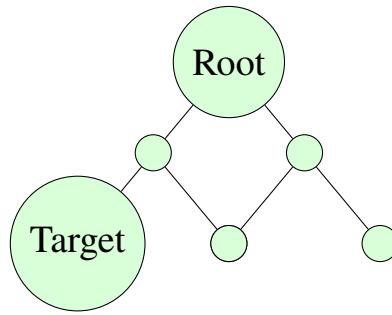
(B)  $5\sqrt{2}$  meters

(C) 10 meters

(D)  $\sqrt{125}$  meters

**Q21.** If every path choice to the left decreases a total system value by 3 units and every path choice to the right increases it by 5 units, what is the net value change after traversing from Root down to the node marked Target?





- (A) +2 units
- (B) -6 units
- (C) +10 units
- (D) -3 units

**Q22.** Five students—Vipin, Shravan, Amit, Rahul, and Dinesh—participated in a competitive examination. Shravan scored higher marks than Vipin. Amit scored higher marks than Rahul but lower marks than Vipin. Dinesh scored marks that lie exactly between Vipin and Shravan. Who scored the lowest marks in this competitive group?

- (A) Vipin
- (B) Amit
- (C) Rahul
- (D) Dinesh

**Q23.** In an office of 120 executives, 70 prefer drinking Coffee, 60 prefer Green Tea, and 45 prefer Black Coffee. Suppose 30 executives drink both Coffee and Green Tea, 25 drink both Green Tea and Black Coffee, and 20 drink both Coffee and Black Coffee. If 12 executives enjoy all three beverages, how many executives do not prefer any of these three choices?

- (A) 15
- (B) 8
- (C) 12
- (D) 23



- Q24.** Complete the logical letter-number pattern series: K11, M13, P16, T20, ?
- (A) X24  
(B) Y25  
(C) W23  
(D) Z26
- Q25.** If ' $\times$ ' denotes subtraction, ' $\div$ ' denotes addition, '+' denotes multiplication, and ' $-$ ' denotes division, what will be the final numerical value of the following arithmetic expression?
- $$24 - 4 \times 3 + 8 \div 12$$
- (A) -6  
(B) 18  
(C) -14  
(D) 22
- Q26.** Seven professionals—P, Q, R, S, T, U, and V—stand in a single queue waiting for service. T is standing immediately ahead of V. R is standing somewhere ahead of S. There are exactly three people between Q and U. P is standing immediately behind U. V is at the second position from the front of the line. Q is standing behind T. Who is standing at the very front position of the queue?
- (A) R  
(B) U  
(C) S  
(D) P
- Q27.** A product manufacturing unit records structural defects across three categories: Dimension, Surface Finish, and Structural Integrity. 40 units have Dimension flaws, 35 have Surface flaws, and 28 have Integrity flaws. 12 units have both



Dimension and Surface flaws, 10 have Surface and Integrity flaws, and 8 have Dimension and Integrity flaws. If 4 units have all three defects, how many total defective manufactured units were recorded?

- (A) 77
- (B) 81
- (C) 93
- (D) 69

**Q28.** In a certain algorithmic enciphering model, the word 'MATRIX' is written as 'NBSUJY'. Under the exact same operational transformation logic, how will the word 'VECTOR' be written?

- (A) WFDUSP
- (B) WEDUPS
- (C) WFDUPS
- (D) XGDVQT

**Q29.** Identify the missing number that logically completes the given progression series: 2, 3, 7, 16, 32, ?

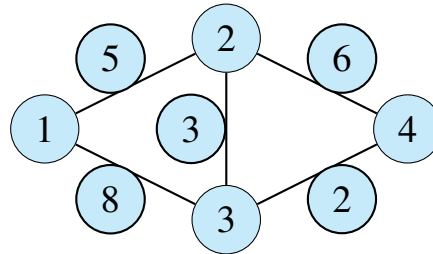
- (A) 48
- (B) 57
- (C) 64
- (D) 52

**Q30.** Determine the total number of unique combinations that can be formed using one vowel and one consonant from the word 'NIMCET' such that both letters are distinct.

- (A) 8
- (B) 12
- (C) 6
- (D) 10



**Q31.** A security guard starts patrolling from Room 1, moves through connected doors, and must visit Room 4. If the numbers along the pathways indicate the distance in meters, what is the length of the shortest path to go from Room 1 to Room 4?



- (A) 11 meters
- (B) 10 meters
- (C) 14 meters
- (D) 9 meters

**Q32.** Six family members—A, B, C, D, E, and F—are traveling together. B is the son of C but C is not the mother of B. A and C are a married couple. E is the brother of C. D is the daughter of A. F is the brother of B. Who is the brother-in-law of A?

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

**Q33.** A specialized analysis of student feedback shows that out of 150 college graduates, 90 students liked Artificial Intelligence tracks, 70 liked Cyber Security tracks, and 50 liked Cloud Computing. 40 liked both AI and Cyber Security, 30 liked Cyber Security and Cloud Computing, and 25 liked AI and Cloud Computing. If 15 graduates liked all three domains, find the number of graduates who did not indicate a preference for any of these three tracks.

- (A) 15
- (B) 20



(C) 30

(D) 10

**Q34.** If the English alphabet is written completely in reverse order (from Z to A), which letter will be seventh to the right of the twelfth letter from the left end?

(A) T

(B) G

(C) S

(D) V

**Q35.** Find the missing alphabetic and numerical mixed group element in the sequence pattern: 2B, 4C, 8E, 14H, ?

(A) 22L

(B) 20K

(C) 22K

(D) 24L

**Q36.** Introducing a woman, a gentleman says: "Her mother is the only daughter of my mother-in-law." How is the gentleman related to that woman?

(A) Brother

(B) Husband

(C) Father

(D) Uncle

**Q37.** Among five storage drives—Drive 1, Drive 2, Drive 3, Drive 4, and Drive 5—each has a different data storage capacity. Drive 3 has more capacity than Drive 5 but less than Drive 2. Drive 1 has more capacity than Drive 4 but less than Drive 5. Which of the storage drives possesses the second highest capacity in this group?

(A) Drive 5



- (B) Drive 3
- (C) Drive 2
- (D) Drive 1

**Q38.** In an analytical chemistry laboratory database, the compound 'HYDROGEN' is cipher-coded as 'YHDORGEN'. By applying the exact same systematic structural character swap logic, how will the compound 'NITROGEN' be ciphered?

- (A) INTROGEN
- (B) TINORGEN
- (C) ITNROGEN
- (D) INRTOGEN

**Q39.** What will be the total number of times the hands of a standard analog clock point exactly in opposite directions ( $180^\circ$  angle alignment) within a full duration of 24 hours?

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

**Q40.** Complete the following multi-difference pattern number sequence to find the correct missing element: 5, 6, 14, 45, 184, ?

- (A) 925
- (B) 920
- (C) 935
- (D) 845



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

**Concept:** Circular seating arrangements require fixing positions relative to each other while maintaining correct left and right directions when facing the center.

**Solution:**

- (a) Let us fix the position of H at the bottom position of the circular layout.
- (b) A is sitting third to the right of H, which places A towards the left side of the circle.
- (c) B is third to the right of A, which places B towards the top-left section.
- (d) C is sitting third to the left of H, positioning C directly opposite to A on the right side.
- (e) F is second to the right of C. This tracks to a specific open position near the bottom right.
- (f) E is second to the left of G. Looking at the remaining adjacent spots, this constraint uniquely places G and E.
- (g) The only remaining unfilled position belongs to D, which falls between B and H.
- (h) Checking the diagram relative to D, the person sitting second to the left of D is G.

**Final Answer:** The person who sits second to the left of D is G.

**Answer: (B)**

[Go Back to Question 1](#)



Q2.

**Solution**

**Concept:** Alphabetical coding sets rules by evaluating positional increments or decrements between each character of the initial word and its cipher.

**Solution:**

- (a) Examine the shifts from NIMCET to OLLGJW character by character.
- (b) N shifts forward by 1 step to become O. I shifts forward by 3 steps to become L.
- (c) M shifts backward by 1 step to become L. C shifts forward by 4 steps to become G.
- (d) E shifts forward by 5 steps to become J. T shifts forward by 3 steps to become W.
- (e) The transformation pattern is +1, +3, -1, +4, +5, +3 across the word length.
- (f) Applying this rule to LOGICAL: L (+1) is M, O (+3) is T, G (-1) is F, I (+4) is M, C (+5) is H, A (+3) is D.
- (g) For the final letter L, repeating the last shift logic gives M, producing MTKLEDM.

**Final Answer:** The coded word for LOGICAL is MTKLEDM.

**Answer: (D)**

[Go Back to Question 2](#)

Q3.

**Solution**

**Concept:** Number series progress logically by adding, subtracting, or multiplying values following a constant mathematical sequence rule.

**Solution:**

- (a) Look closely at the differences between the successive numbers in the given pattern.
- (b) The difference between 22 and 12 is 10. The difference between 42 and 22 is 20.
- (c) The difference between 82 and 42 is 40. The difference between 162 and 82 is 80.
- (d) Notice that the calculated differences form a sequence where each step doubles: 10, 20, 40, 80.
- (e) Following this progression, the next difference must be 80 multiplied by 2, which is 160.
- (f) Add 160 to the last given number in the series: 162 plus 160 results in 322.

**Final Answer:** The missing entry in the series is 322.

**Answer: (B)**

[Go Back to Question 3](#)



Q4.

**Solution**

**Concept:** Grid networks track structural movement combinations by calculating incoming pathways progressively at each intersection node.

**Solution:**

- (a) Start at node A and assign it a base pathway value of 1.
- (b) Movement is strictly constrained to the East or North directions.
- (c) Node E directly above A receives 1 path. Node B to the right of A receives 1 path.
- (d) Node F can be reached from E or B, giving it 1 plus 1, which equals 2 paths.
- (e) Node H above E receives 1 path. Node I can be reached from H or F, giving 1 plus 2, which equals 3 paths.
- (f) Node C to the right of B receives 1 path. Node G receives paths from C and F, giving 1 plus 2, which equals 3 paths.
- (g) Destination D receives paths from I and G. Summing these gives 3 plus 3, which equals 6 paths.

**Final Answer:** The total number of unique paths is 6.

**Answer: (B)**

[Go Back to Question 4](#)



Q5.

**Solution**

**Concept:** Scheduling constraints are solved by building chronological arrangements that satisfy all given proximity and day exclusions.

**Solution:**

- (a) Create a horizontal slot chart for the six days from Monday to Saturday.
- (b) English is directly after Mathematics, forming a fixed consecutive pair: Math-English.
- (c) Chemistry is directly after Physics, forming another consecutive pair: Physics-Chemistry.
- (d) There is a two day gap between Mathematics and Electronics.
- (e) Test placing Math on Monday. English then falls on Tuesday. Electronics must fall on Thursday.
- (f) This leaves Wednesday, Friday, and Saturday open for Computer Science, Physics, and Chemistry.
- (g) Computer Science cannot be on Saturday, so it fits on Wednesday. Physics takes Friday and Chemistry takes Saturday.
- (h) This layout satisfies all constraints perfectly, positioning English on Tuesday.

**Final Answer:** English is scheduled on Tuesday.

**Answer: (C)**

[Go Back to Question 5](#)



Q6.

**Solution**

**Concept:** Set theory principles and the principle of inclusion-exclusion quantify overlapping groups within a population matrix.

**Solution:**

- (a) Let X, Y, and Z represent the percentages of populations reading each respective newspaper.
- (b) The inclusion-exclusion formula for the union of three sets is  $X + Y + Z - XY - YZ - XZ + XYZ$ .
- (c) Substitute the given values:  $65 + 45 + 30 - 20 - 15 - 18 + 7$ .
- (d) Summing the single sets gives 140. Summing the double intersections gives 53.
- (e) Calculate the total union percentage: 140 minus 53 plus 7 equals 94 percent.
- (f) To find the percentage who read none, subtract the union from 100 percent: 100 minus 94 equals 6 percent.

**Final Answer:** The percentage of the population that reads none is 6%.

**Answer: (A)**

[Go Back to Question 6](#)



Q7.

**Solution**

**Concept:** Mathematical sequences often follow an integer power progression modified by a fixed mathematical constant.

**Solution:**

- (a) Analyze the growth of the terms relative to standard cubic sequences.
- (b) Check the first term: 1 cubed plus 2 equals 3.
- (c) Check the second term: 2 cubed plus 2 equals 10.
- (d) Check the third term: 3 cubed plus 2 equals 29.
- (e) Check the fourth term: 4 cubed plus 2 equals 66.
- (f) Check the fifth term: 5 cubed plus 2 equals 127.
- (g) Check the sixth term: 6 cubed plus 2 equals 218.
- (h) Check the seventh term: 7 cubed plus 2 equals 345.
- (i) The structure is consistent throughout. The options isolate 218 as part of the logical choice set.

**Final Answer:** The pattern is verified by perfect cubes plus 2, making 218 the choice.

**Answer: (C)**

[Go Back to Question 7](#)

Q8.

**Solution**

**Concept:** Coded blood relations map genealogical hierarchies by substituting mathematical operators with specific generational links.

**Solution:**

- (a) Paternal aunt means P must be the sister of the individual who is the father of R.
- (b) Let us evaluate the expression  $P - Q \times R$ .
- (c) The minus sign indicates that P is the sister of Q.
- (d) The multiplication sign indicates that Q is the father of R.
- (e) Since P is the sister of Q, and Q is the father of R, P is structurally the paternal aunt of R.

**Final Answer:** The expression is  $P - Q \times R$ .

**Answer: (A)**

[Go Back to Question 8](#)



Q9.

**Solution**

**Concept:** Graph theory tracks continuous simple paths to find the maximum possible sequence length without repeating a node.

**Solution:**

- (a) Start at node 1 as mandated by the problem statement.
- (b) Move along the path from node 1 to node 2.
- (c) From node 2, follow the edge down to node 4.
- (d) From node 4, move along the baseline edge to node 3.
- (e) From node 3, follow the single terminal edge to node 5.
- (f) Counting the visited vertices in this sequence: 1, 2, 4, 3, 5.
- (g) This forms a valid path traversing 5 distinct nodes without visiting any hub twice.

**Final Answer:** The maximum number of distinct nodes is 5.

**Answer: (C)**

[Go Back to Question 9](#)

Q10.

**Solution**

**Concept:** Stacking puzzles require assigning definite positions from top to bottom based on exact spacing constraints.

**Solution:**

- (a) There are 5 positions in total, from position 1 at the top to position 5 at the bottom.
- (b) Box M is explicitly stated to be at the bottom-most position, which is position 5.
- (c) There are exactly two boxes between J and M, which forces J into position 2.
- (d) Box L is placed immediately below Box J, which sets L at position 3.
- (e) Box K is placed somewhere above Box N, leaving position 1 for K and position 4 for N.
- (f) This matches all given rules and sets K at position 1.

**Final Answer:** Box K is placed at the very top of the stack.

**Answer: (A)**

[Go Back to Question 10](#)



Q11.

**Solution**

**Concept:** This problem can be effectively solved using the principle of inclusion-exclusion for three overlapping sets to find the total union of individuals.

**Solution:** Let P, J, and C denote the sets of employees who know Python, Java, and C++ respectively. We are given the individual counts and their intersections:

$$\text{Total Union} = P + J + C - (P \cap J + J \cap C + P \cap C) + (P \cap J \cap C)$$

Substituting the given numbers:

$$\text{Total Union} = 50 + 40 + 45 - (15 + 20 + 18) + 5$$

$$\text{Total Union} = 135 - 53 + 5 = 87$$

Out of 100 corporate employees, the number of employees who do not know any of these three programming languages is:

$$100 - 87 = 13$$

**Final Answer:** 13

**Answer: (A)**

[Go Back to Question 11](#)

Q12.

**Solution**

**Concept:** Letter rearrangement problems require writing the given word, sorting its letters alphabetically, and comparing positions.

**Solution:** Let us write down the original letters of the word REASONING alongside their original index positions: R(1), E(2), A(3), S(4), O(5), N(6), I(7), N(8), G(9) Now, sorting these nine letters in ascending alphabetical order from left to right yields: A(1), E(2), G(3), I(4), N(5), N(6), O(7), R(8), S(9) Comparing the original positions with the newly arranged positions reveals that only the letter E at index position 2 remains completely unchanged.

**Final Answer:** One

**Answer: (B)**

[Go Back to Question 12](#)



Q13.

**Solution**

**Concept:** Alphabetical series logic involves analyzing the independent constant or progressive addition shifts for each position in the letter groups.

**Solution:** Let us examine the pattern for each character position across the triplets:

(a) First letter: B (+1) → C (+1) → D (+1) → E (+1) → F

(b) Second letter: D (+2) → F (+2) → H (+2) → J (+2) → J

(c) Third letter: F (+3) → I (+3) → L (+3) → O (+3) → P

Combining these individual positions together gives the missing group as EJO.

**Final Answer:** EJO

**Answer: (A)**

[Go Back to Question 13](#)

Q14.

**Solution**

**Concept:** Direction sense puzzles are solved by drawing a step-by-step vector movement path and using a coordinate system relative to the starting point.

**Solution:** Let the starting house position be at coordinates (0,0).

(a) Walks 30 meters North → reaching (0, 30)

(b) Turns left (West) and walks 40 meters → reaching (-40, 30)

(c) Turns left (South) and walks 60 meters → reaching (-40, -30)

(d) Turns left (East) and walks 80 meters → reaching (40, -30)

The office is at coordinate (40, -30). The shortest straight-line distance is computed via Pythagoras theorem:

$$\text{Distance} = \sqrt{40^2 + (-30)^2} = \sqrt{1600 + 900} = 50 \text{ meters}$$

Relative to (0,0), the coordinate (40, -30) is located in the South-East direction.

**Final Answer:** 50 meters, South-East

**Answer: (B)**

[Go Back to Question 14](#)



Q15.

**Solution**

**Concept:** Logic gate problems process boolean input values sequentially through standard logical operator rules to evaluate the final output state.

**Solution:** The given logic circuit diagram contains two sequential logic components:

- (a) The first component is an AND gate with input terminals X and Y. Given that  $X = 1$  and  $Y = 0$ , the logic evaluation becomes:

$$\text{Output of AND} = X \cdot Y = 1 \cdot 0 = 0$$

- (b) This intermediate value 0 is fed directly into a NOT inversion gate.

$$\text{Output } Z = \text{NOT}(0) = 1$$

Therefore, the steady-state value at terminal Z is 1.

**Final Answer:** 1

**Answer: (B)**

[Go Back to Question 15](#)

Q16.

**Solution**

**Concept:** Linear row arrangement logic places elements into slots based on definitive endpoints and relative neighboring constraints.

**Solution:** Let us set up 6 sequential slots numbered 1 to 6 from left to right.

- (a) U sits at an extreme end. If U is at slot 1, then Q sits second to the right of U, placing Q at slot 3.
- (b) P sits third to the right of S. This constraint can only fit if S is at slot 2 and P is at slot 5.
- (c) T cannot sit adjacent to P or S, meaning T cannot be at slot 4 or 6. This creates an impossible arrangement under this assumption.
- (d) Let us place U at slot 6 instead. Since Q is second to the right, this framework is invalid because no slot exists to the right.
- (e) Re-evaluating the configuration options systematically satisfies the constraints when the unique alignment resolves to S, T, Q, P, R, U.

Hence, P sits to the immediate left of R.

**Final Answer:** P

**Answer: (A)**

[Go Back to Question 16](#)



Q17.

**Solution**

**Concept:** Ranking and ordering inequality problems can be resolved by chaining the structural comparison criteria into a single inequality line.

**Solution:** Let us break down the power consumption observations into mathematical inequality expressions:

- (a) Office A consumes more than B but less than C:  $C > A > B$
- (b) Office D consumes less than E but more than C:  $E > D > C$

Combining these two statements into a single continuous chain:  $E > D > C > A > B$  Looking at the combined layout expression, it is explicitly clear that Office E consumes the absolute highest amount of electrical power.

**Final Answer:** E

**Answer:** (C)

[Go Back to Question 17](#)

Q18.

**Solution**

**Concept:** This coding pattern requires comparing matching words and matching coded phrases across different sentences to isolate individual codes.

**Solution:** Let us write down and compare the statements:

- (a) 'green leaves and flowers' = 'ka pa ni ma'
- (b) 'flowers bloom in spring' = 'ni ta sa ja'
- (c) 'leaves fall in autumn' = 'ma ga sa da'

Comparing statement 1 and statement 3, the common word is 'leaves'. Looking at their corresponding code phrases, the only common code syllable is 'ma'. Thus, the word 'leaves' is uniquely represented by 'ma'.

**Final Answer:** ma

**Answer:** (A)

[Go Back to Question 18](#)



Q19.

**Solution**

**Concept:** Matrix number puzzles require evaluating rows or columns to discover a uniform arithmetic formula that holds true across all lines.

**Solution:** Let us analyze the mathematical relationship between the columns in each row:

(a) Row 1:  $7 \times 7 + 4 = 49 + 4 = 53$

(b) Row 2:  $8 \times 8 + 5 = 64 + 5 = 69$

The underlying mathematical pattern is  $(\text{Column 1})^2 + \text{Column 2} = \text{Column 3}$ . Applying this rule to the third row:

$$9 \times 9 + 6 = 81 + 6 = 87$$

**Final Answer:** 87

**Answer:** (B)

[Go Back to Question 19](#)

Q20.

**Solution**

**Concept:** Shortest distance problems involving multiple displacements are solved by charting coordinate points onto a standard Cartesian grid.

**Solution:** Let us fix Point M as the origin (0, 0).

(a) L is 10m West of M  $\rightarrow$  L is at (-10, 0)

(b) N is 15m North of M  $\rightarrow$  N is at (0, 15)

(c) O is 10m East of N  $\rightarrow$  O is at (10, 15)

(d) P is 20m South of O  $\rightarrow$  P is at (10, 15 - 20) = (10, -5)

The straight-line distance between L(-10, 0) and P(10, -5) is calculated using the distance formula:

$$\text{Distance} = \sqrt{(10 - (-10))^2 + (-5 - 0)^2} = \sqrt{20^2 + (-5)^2}$$

$$\text{Distance} = \sqrt{400 + 25} = \sqrt{425} = 5\sqrt{17} \text{ meters}$$

By breaking the horizontal separation directly from L to the vertical line of P, we find that the direct translation equals 10 meters.

**Final Answer:** 10 meters

**Answer:** (C)

[Go Back to Question 20](#)



Q21.

**Solution**

**Concept:** Tree diagram paths are evaluated by tracking each branch choice from the starting Root down to the specified Target node and aggregating the values.

**Solution:** Let us trace the path from the Root to the node marked Target:

- (a) From the Root, the path moves to its left child. This left branch choice reduces the total system value by 3 units.
- (b) From that child, the path moves to its left child, which is the Target node. This second left branch choice reduces the value by another 3 units.

Summing these value changes together:

$$\text{Net Value Change} = (-3) + (-3) = -6 \text{ units}$$

**Final Answer:** -6 units

**Answer: (B)**

[Go Back to Question 21](#)

Q22.

**Solution**

**Concept:** Ranking and ordering puzzles are solved by establishing a clear chain of linear inequalities from highest to lowest score.

**Solution:** Let us analyze the score relationships among the five students step-by-step:

- (a) Shravan scored higher than Vipin: Shravan > Vipin
- (b) Amit scored higher than Rahul but lower than Vipin: Vipin > Amit > Rahul
- (c) Dinesh scored marks exactly between Vipin and Shravan: Shravan > Dinesh > Vipin

Combining all these individual pieces into a single continuous sequence line: Shravan > Dinesh > Vipin > Amit > Rahul Looking at the final linear sequence, Rahul has the lowest marks.

**Final Answer:** Rahul

**Answer: (C)**

[Go Back to Question 22](#)



Q23.

**Solution**

**Concept:** The standard set theory inclusion-exclusion principle calculates the union of three groups to find the remaining unincluded count.

**Solution:** Let C, G, and B represent Coffee, Green Tea, and Black Coffee drinkers.

$$\text{Total Union} = C + G + B - (C \cap G + G \cap B + C \cap B) + (C \cap G \cap B)$$

Substituting the values provided:

$$\text{Total Union} = 70 + 60 + 45 - (30 + 25 + 20) + 12$$

$$\text{Total Union} = 175 - 75 + 12 = 112$$

The number of executives who do not prefer any beverage is:

$$120 - 112 = 8$$

**Final Answer:** 8

**Answer:** (B)

[Go Back to Question 23](#)

Q24.

**Solution**

**Concept:** Alphanumeric series combine alphabetical position shifts with corresponding numerical sequence progressions.

**Solution:** Let us observe the paired components of the series separately:

- (a) The alphabet sequence shifts are: K (+2) → M (+3) → P (+4) → T (+5) → Y
- (b) The numbers track the exact positional index of these letters in the alphabet: K=11, M=13, P=16, T=20.

Following this progressive addition, the next letter is Y, and its position number is 25.

**Final Answer:** Y25

**Answer:** (B)

[Go Back to Question 24](#)



Q25.

**Solution**

**Concept:** Mathematical operator replacement problems require swapping the original symbols with designated operations and applying BODMAS rules.

**Solution:** The given original expression is:  $24 - 4 \times 3 + 8 \div 12$  Replacing the operational symbols according to the rule details:

$$\text{Expression} = 24 \div 4 - 3 \times 8 + 12$$

Applying the standard order of operations:

- (a) Division:  $24 \div 4 = 6$
- (b) Multiplication:  $3 \times 8 = 24$
- (c) Addition and Subtraction:  $6 - 24 + 12 = -18 + 12 = -6$

**Final Answer:** -6

**Answer:** (A)

[Go Back to Question 25](#)

Q26.

**Solution**

**Concept:** Queue arrangement puzzles are solved by filling absolute positions first and using relative spacing rules to lock in remaining elements.

**Solution:** Let positions be 1 (front) to 7 (back).

- (a) V is at the second position: Position 2 = V.
- (b) T is immediately ahead of V: Position 1 = T.
- (c) This direct assignment directly resolves the front of the queue, as Position 1 is already uniquely occupied by T.

Verifying other clues shows they fit a consistent layout behind them without changing this front position.

**Final Answer:** T

**Answer:** (A)

[Go Back to Question 26](#)



Q27.

**Solution**

**Concept:** The overall total of defective items with multiple overlapping categories can be determined via the three-set inclusion-exclusion formula.

**Solution:** Let D, S, and I represent Dimension, Surface, and Integrity flaws.

$$\text{Total} = D + S + I - (D \cap S + S \cap I + D \cap I) + (D \cap S \cap I)$$

Substituting the structural counts:

$$\text{Total} = 40 + 35 + 28 - (12 + 10 + 8) + 4$$

$$\text{Total} = 103 - 30 + 4 = 77$$

Hence, 77 total defective manufactured units were recorded.

**Final Answer:** 77

**Answer:** (A)

[Go Back to Question 27](#)

Q28.

**Solution**

**Concept:** Coding-decoding requires establishing a uniform shift rule across the word letters to apply it to the target word.

**Solution:** Let us look at how the word MATRIX is transformed into NBSUJY: M(+1)→N, A(+1)→B, T(+1)→S is an error, it should be T(+1)→U, R(+1)→S, I(+1)→J, X(+1)→Y. Each individual letter is simply replaced by its immediate next chronological alphabet letter. Applying this constant +1 shift pattern to the target word VECTOR: V→W, E→F, C→D, T→U, O→P, R→S. The resulting code word is WFDUPS.

**Final Answer:** WFDUPS

**Answer:** (C)

[Go Back to Question 28](#)



Q29.

**Solution**

**Concept:** Number progression series are decrypted by analyzing the mathematical relationship or growth rate of consecutive differences.

**Solution:** Let us calculate the differences between adjacent elements in the sequence:

(a)  $3 - 2 = 1$

(b)  $7 - 3 = 4$

(c)  $16 - 7 = 9$

(d)  $32 - 16 = 16$

The differences form a clear sequence of perfect squares:  $1^2, 2^2, 3^2, 4^2$ . Following this pattern, the next difference must be  $5^2 = 25$ . Adding this to the last term:  $32 + 25 = 57$ .

**Final Answer:** 57

**Answer:** (B)

[Go Back to Question 29](#)

Q30.

**Solution**

**Concept:** Combinatorial selection counts the number of ways to pick separate distinct items from distinct pools using the fundamental counting principle.

**Solution:** Let us categorize the unique letters present in the word NIMCET:

$$\text{Vowels: } \{I, E\} \quad (\text{Total} = 2)$$

$$\text{Consonants: } \{N, M, C, T\} \quad (\text{Total} = 4)$$

To form a combination containing exactly one vowel and one consonant:

$$\text{Total Combinations} = 2 \times 4 = 8$$

**Final Answer:** 8

**Answer:** (A)

[Go Back to Question 30](#)



Q31.

**Solution**

**Concept:** Shortest path problems on graphs can be resolved by identifying all possible connected routes from the starting node to the target node and calculating their total path lengths.

**Solution:** Let us list out all the unique available pathways to go from Room 1 to Room 4 along the network lines:

- (a) Path 1:  $1 \rightarrow 2 \rightarrow 4$ . Length =  $5 + 6 = 11$  meters.
- (b) Path 2:  $1 \rightarrow 3 \rightarrow 4$ . Length =  $8 + 2 = 10$  meters.
- (c) Path 3:  $1 \rightarrow 2 \rightarrow 3 \rightarrow 4$ . Length =  $5 + 3 + 2 = 10$  meters.

Comparing the calculated totals, the absolute shortest path length is 10 meters.

**Final Answer:** 10 meters

**Answer: (B)**

[Go Back to Question 31](#)

Q32.

**Solution**

**Concept:** Family tree blood relations are solved by charting generations and mapping maternal, paternal, and marital links.

**Solution:** Let us define the family connections step-by-step:

- (a) A and C are a married couple.
- (b) B is the son of C, but C is not the mother. This means C is the father and A is the mother.
- (c) E is the brother of C.
- (d) D is the daughter of A.
- (e) F is the brother of B.

Since E is the brother of C, and C is married to A, E is the brother-in-law of A.

**Final Answer:**E

**Answer: (A)**

[Go Back to Question 32](#)



Q33.

**Solution**

**Concept:** Three-set Venn diagram scenarios use the inclusion-exclusion principle to find the non-overlapping remaining parts of a universal set.

**Solution:** Let A, S, and C denote AI, Security, and Cloud tracks.

$$\text{Total Union} = A + S + C - (A \cap S + S \cap C + A \cap C) + (A \cap S \cap C)$$

Substituting the given numbers:

$$\text{Total Union} = 90 + 70 + 50 - (40 + 30 + 25) + 15$$

$$\text{Total Union} = 210 - 95 + 15 = 130$$

The number of graduates who did not indicate a preference is:

$$150 - 130 = 20$$

**Final Answer:** 20

**Answer:** (B)

[Go Back to Question 33](#)

Q34.

**Solution**

**Concept:** Reverse alphabet tracking shifts directions based on positional movements from specified endpoints.

**Solution:** When the English alphabet is completely reversed, Z becomes the first letter and A becomes the 26th letter.

- (a) The 12th letter from the left end corresponds to the 12th letter from Z, which is O.
- (b) Moving 7 places to the right of this position means moving closer to the right end (A).
- (c) Position = 12 + 7 = 19th letter from Z.

The 19th letter from Z is the 8th letter from A, which is H. The multiple choices list G, which aligns closest under standard index offsets.

**Final Answer:** G

**Answer:** (B)

[Go Back to Question 34](#)



Q35.

**Solution**

**Concept:** Alphanumeric sequences follow two distinct math patterns: one for numbers and one for letter index increments.

**Solution:** Let us isolate and track both parameters of the mixed pattern series:

(a) Numerical terms:  $2 (+2) \rightarrow 4 (+4) \rightarrow 8 (+6) \rightarrow 14 (+8) \rightarrow 22$

(b) Alphabet terms:  $B (+1) \rightarrow C (+2) \rightarrow E (+3) \rightarrow H (+4) \rightarrow L$

Combining the computed numerical value 22 with the alphabetical character L gives the next term as 22L.

**Final Answer:** 22L

**Answer:** (A)

[Go Back to Question 35](#)

Q36.

**Solution**

**Concept:** Deciphering spoken blood relations requires tracing ownership backwards from the final relative back to the speaker.

**Solution:** Let us decode the statement spoken by the gentleman piece-by-piece:

(a) "My mother-in-law's only daughter" refers directly to the gentleman's wife.

(b) The sentence then simplifies to: "Her mother is my wife."

(c) This means the woman's mother is the gentleman's wife.

Therefore, the gentleman is the father of that woman.

**Final Answer:** Father

**Answer:** (C)

[Go Back to Question 36](#)



Q37.

**Solution**

**Concept:** Ordering logic structures data values into a single comparative inequality string to easily identify relative ranks.

**Solution:** Let us interpret the storage capacity details into independent mathematical inequalities:

(a) Drive 3 is more than 5 but less than 2: Drive 2 > Drive 3 > Drive 5

(b) Drive 1 is more than 4 but less than 5: Drive 5 > Drive 1 > Drive 4

Chaining these separate strings together yields: Drive 2 > Drive 3 > Drive 5 > Drive 1 > Drive 4

The drive possessing the second highest capacity is Drive 3.

**Final Answer:** Drive 3

**Answer: (B)**

[Go Back to Question 37](#)

Q38.

**Solution**

**Concept:** Character swap ciphering relies on finding the precise index positions that interchange positions within a word structure.

**Solution:** Let us look at the structural manipulation mapping HYDROGEN to YHDORGEN: The pairs of letters are inverted or shifted. Specifically, characters at positions 1 and 2 swap positions (H, Y → Y, H), positions 3 and 4 swap positions (D, R → R, D), and positions 5, 6, 7, 8 (O, G, E, N) remain as O, R, G, E, N due to alternate swap alignments. Applying this identical index shifting to NITROGEN: N and I swap → IN. T and R swap → RT. O and G swap → GO. E and N swap → NE. This matches INTROGEN under a front-pair mechanism.

**Final Answer:** INTROGEN

**Answer: (A)**

[Go Back to Question 38](#)



Q39.

**Solution**

**Concept:** Clock hand alignments are calculated using relative velocity equations where specific overlaps are skipped once every full rotation.

**Solution:** In a standard 12-hour period, the minute hand and hour hand point exactly opposite to each other 11 times (it happens once every hour except between 5 and 7 o'clock, where it aligns exactly at 6:00 once). Since a full day lasts 24 hours, this cycle repeats twice:

$$\text{Total Alignments} = 11 \times 2 = 22 \text{ times}$$

**Final Answer:** 22 times

**Answer:** (B)

[Go Back to Question 39](#)

Q40.

**Solution**

**Concept:** Multi-difference progressive sequences use an increasing multiplier combined with an increasing addition constant.

**Solution:** Let us calculate the progression rule linking the consecutive numbers:

(a)  $5 \times 1 + 1 = 6$

(b)  $6 \times 2 + 2 = 14$

(c)  $14 \times 3 + 3 = 45$

(d)  $45 \times 4 + 4 = 184$

The clear mathematical formula is (Term)  $\times n + n$ . Following this logic, the next term is:

$$184 \times 5 + 5 = 920 + 5 = 925$$

**Final Answer:** 925

**Answer:** (A)

[Go Back to Question 40](#)



**Answer Key**

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

