SNAP Analytical and Logical Reasoning

Sample Paper – 5

Duration: 25 Minutes **Maximum Marks: 25**

Instructions

- This paper contains **25** Multiple Choice Questions (Single Correct Answer), modelled on the Analytical and Logical Reasoning section of **SNAP** (Symbiosis National Aptitude Test).
- Each correct answer carries **+1 mark**. **0.25 marks** are deducted for every wrong answer. Unattempted questions carry no penalty.
- Only **one** option is correct. Choose the most appropriate answer.
- SNAP is a computer-based test with no sectional time limit; attempt this practice paper in one timed sitting of about **25 minutes**.
- Use of mobile phones, calculators, or electronic gadgets is strictly prohibited.

Part A: Series and Analogy

Q1. Find the next number in the series: **3, 7, 15, 31, ?**

(A) 62

(B) 61

(C) 63

(D) 47

Q2. Find the next term in the series: **A, D, G, J, ?**

(A) K

(B) L

(C) N

(D) M

Q3. Choose the option that completes the analogy: **Pen : Write :: Knife : ?**

(A) Cut

(B) Sharp

(C) Kitchen

(D) Metal

Q4. Choose the option that completes the analogy: **6 : 216 :: 4 : ?**

(A) 16

(B) 12

(C) 48

(D) 64

Part B: Coding and Decoding

Q5. In a certain code, each letter is shifted forward. If ROAD is written as TQCF, how is WINTER written in that code?

(A) YKPVGS

(B) XKPVGT

(C) YKQVGT

(D) YKPVGT

Q6. In a certain code, PLANT is written as SODQW. Using the same rule, how is CASTLE written?

(A) FDVWOH

(B) FDVWOG

(C) EDVWOH

(D) FDVXOH

Q7. If each letter is given its position value in the alphabet (A=1, B=2, and so on), what is the code for the word MOON, taken as the sum of its letters?

(A) 55

(B) 59

(C) 57

(D) 53

Part C: Blood Relations and Direction Sense

Q8. Pointing to a lady, Rahul said, "She is the only daughter of my father's wife." How is the lady related to Rahul?

(A) Mother

(B) Sister

(C) Aunt

(D) Daughter

Q9. If "P $\times$ Q" means P is the brother of Q, and "P $\div$ Q" means P is the mother of Q, then in "A $\times$ B $\div$ C", how is A related to C?

(A) Father

(B) Uncle

(C) Brother

(D) Grandfather

Q10. Pointing to a boy, Sunita said, "He is the son of the only sister of my father." How is the boy related to Sunita?

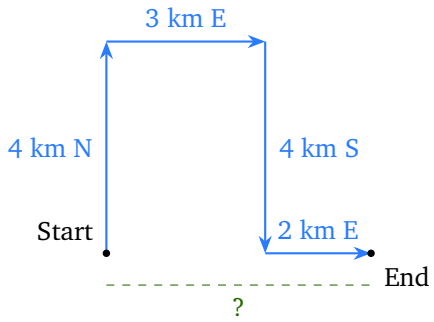
(A) Brother

(B) Nephew

(C) Uncle

(D) Cousin

Q11. A man starts from a point and walks 4 km towards North, then turns right and walks 3 km, then turns right again and walks 4 km, and finally turns left and walks 2 km. How far and in which direction is he now from his starting point?



(A) 5 km East

(B) 3 km East

(C) 5 km West

(D) 4 km North

Part D: Arrangement and Ranking

Q12. Five friends J, K, L, M and N sit in a row facing north. N is at the left end. K is at the right end. L is immediately to the left of K. M is immediately to the left of J. Who sits in the middle of the row?

(A) J

(B) L

(C) M

(D) N

Q13. In a row of 40 students, Priya is 15th from the left end. What is her position from the right end?

(A) 24

(B) 25

(C) 26

(D) 27

Q14. Among five towers, A is taller than B. C is taller than A. D is shorter than B. E is the tallest of all. Which tower is the shortest?

(A) B

(B) A

(C) D

(D) C

Q15. In a row of children all facing north, R is fourth from the left end and also fourth from the right end. How many children are there in the row?

(A) 7

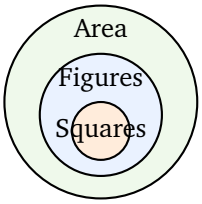
(B) 8

(C) 6

(D) 9

Part E: Syllogisms

Q16. **Statements:** All squares are figures. All figures have an area.
Conclusion I: All squares have an area. **Conclusion II:** Some figures are squares.



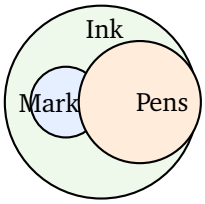
(A) Only Conclusion I follows

(B) Both Conclusion I and Conclusion II follow

(C) Only Conclusion II follows

(D) Neither conclusion follows

Q17. **Statements:** Some pens are markers. All markers have ink.
Conclusion I: Some pens have ink. **Conclusion II:** All pens have ink.



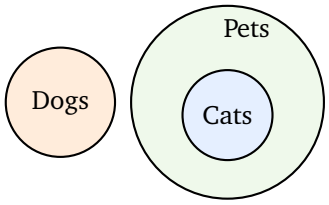
(A) Only Conclusion II follows

(B) Only Conclusion I follows

(C) Both Conclusion I and Conclusion II follow

(D) Neither conclusion follows

Q18. **Statements:** No dog is a cat. All cats are pets.
Conclusion I: No dog is a pet. **Conclusion II:** Some pets are cats.



(A) Only Conclusion I follows

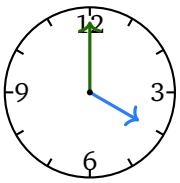
(B) Neither conclusion follows

(C) Only Conclusion II follows

(D) Both Conclusion I and Conclusion II follow

Part F: Clocks, Calendars and Miscellaneous

Q19. What is the angle between the hour hand and the minute hand of a clock at exactly 4:00?



(A) 90 degrees

(B) 150 degrees

(C) 120 degrees

(D) 100 degrees

Q20. If today is Wednesday, what day of the week will it be after 30 days?

(A) Friday

(B) Thursday

(C) Saturday

(D) Sunday

Q21. By how many degrees does the minute hand of a clock move in 20 minutes?

(A) 90 degrees

(B) 100 degrees

(C) 110 degrees

(D) 120 degrees

Part G: Logical Deduction

Q22. **Statements:** All roses are flowers. Some flowers fade quickly.
Conclusion I: Some roses fade quickly. **Conclusion II:** All flowers are roses.

(A) Only Conclusion I follows

(B) Only Conclusion II follows

(C) Both conclusions follow

(D) Neither conclusion follows

Q23. If "+" means divide, "−" means add, "×" means subtract, and "÷" means multiply, then find the value of: $\mathbf{20 + 4 - 6 \div 2 \times 3}$

(A) 14

(B) 12

(C) 16

(D) 11

Q24. Find the odd one out: **8, 27, 64, 100, 125**

(A) 27

(B) 100

(C) 64

(D) 125

Q25. M is the mother of N. N is the son of O. O is the father of P. How is M related to P?

(A) Mother

(B) Sister

(C) Aunt

(D) Grandmother

Detailed Solutions

Q1.

Solution

Concept — Number series: Look at how each term is built from the previous one.

Step 1: Test the rule "multiply by 2, then add 1".

Step 2: $3 \times 2 + 1 = 7$, then $7 \times 2 + 1 = 15$, then $15 \times 2 + 1 = 31$. The rule holds.

Step 3: Next term $= 31 \times 2 + 1 = 62 + 1 = 63$.

Why other options are wrong:

- Option A: 62 forgets to add the final 1.
- Option B: 61 is one short of the correct value.
- Option D: 47 wrongly adds a fixed 16 each time.

Final Answer: The next number is 63 $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q1

Q2.

Solution

Concept — Letter series: Convert letters to positions and find the gap.

Step 1: A(1), D(4), G(7), J(10). Each term rises by 3.

Step 2: Next position $= 10 + 3 = 13$, which is the letter M.

Why other options are wrong:

- Option A: K is position 11, a gap of only 1.
- Option B: L is position 12, a gap of 2.
- Option C: N is position 14, a gap of 4.

Final Answer: The next term is M $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q2

Q3.

Solution

Concept — Analogy: Name the exact relationship in the first pair.

Relationship: A pen is a tool whose main function is to write, so the link is tool to its function.

Application: A knife is a tool whose main function is to cut, matching the pattern.

Why other options are wrong:

- Option B: Sharp is a property of a knife, not its function.
- Option C: Kitchen is a place where a knife is used, not what it does.
- Option D: Metal is the material of a knife, not its function.

Final Answer: A knife is used to Cut $\Rightarrow$ A

Answer: (A) Go Back to Q3

Q4.

Solution

Concept — Number analogy: Find the rule linking the two numbers.

Step 1: $216 = 6 \times 6 \times 6 = 6^3$, so the rule is "cube the number".

Step 2: Apply to 4: $4^3 = 4 \times 4 \times 4 = 64$.

Why other options are wrong:

- Option A: $16 = 4^2$, the square, not the cube.
- Option B: $12 = 4 \times 3$, a different rule.
- Option C: $48 = 4 \times 12$, not a cube.

Final Answer: $4^3 = 64 \Rightarrow$ D

Answer: (D) Go Back to Q4

Q5.

Solution

Concept — Coding: Find the shift by matching ROAD to TQCF.

Step 1: R→T, O→Q, A→C, D→F. Each letter moves forward by 2 places.

Step 2: Apply +2 to WINTER: W→Y, I→K, N→P, T→V, E→G, R→T, giving YKPVGT.

Why other options are wrong:

- Option A: YKPVGS moves R to S (only +1) instead of T.
- Option B: XKPVGT moves W to X (only +1) instead of Y.
- Option C: YKQVGT moves N to Q (+3) instead of P.

Final Answer: WINTER becomes YKPVGT ⇒ D

Answer: (D) Go Back to Q5

Q6.

Solution

Concept — Coding: Find the shift by matching PLANT to SODQW.

Step 1: P→S, L→O, A→D, N→Q, T→W. Each letter moves forward by 3 places.

Step 2: Apply +3 to CASTLE: C→F, A→D, S→V, T→W, L→O, E→H, giving FDVWOH.

Why other options are wrong:

- Option B: FDVWOG moves E to G (only +2) instead of H.
- Option C: EDVWOH moves C to E (only +2) instead of F.
- Option D: FDVXOH moves T to X (+4) instead of W.

Final Answer: CASTLE becomes FDVWOH ⇒ A

Answer: (A) Go Back to Q6

Q7.

Solution

Concept — Number coding: Add the alphabet positions of the letters.

Step 1: M is the 13th letter, O is the 15th, O is the 15th, N is the 14th.

Step 2: Sum = 13 + 15 + 15 + 14 = 57.

Why other options are wrong:

- Option A: 55 undercounts by 2.
- Option B: 59 overcounts by 2.
- Option D: 53 undercounts by 4.

Final Answer: M + O + O + N = 57 $\Rightarrow$ C

Answer: (C) Go Back to Q7

Q8.

Solution

Concept — Blood relation: Break the statement from the inside out.

Step 1: "My father's wife" is Rahul's mother.

Step 2: "The only daughter of" Rahul's mother is Rahul's sister.

Why other options are wrong:

- Option A: The mother is the father's wife herself, not her daughter.
- Option C: An aunt would be the sister of a parent, not the daughter of the mother.
- Option D: A daughter would be one generation below Rahul, not his sister.

Final Answer: The lady is Rahul's sister $\Rightarrow$ B

Answer: (B) Go Back to Q8

Q9.

Solution

Concept — Coded relations: Replace each symbol with its meaning step by step.

Step 1: "A $\times$ B" means A is the brother of B.

Step 2: "B $\div$ C" means B is the mother of C.

Step 3: A is the brother of B, and B is the mother of C, so A is the brother of C's mother, that is, C's uncle.

Why other options are wrong:

- Option A: A is not C's father; C's parent is B.
- Option C: A is one generation above C, not C's brother.
- Option D: A is C's uncle, not a grandfather.

Final Answer: A is the uncle of C $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q9

Q10.

Solution

Concept — Blood relation: Work outward from the innermost phrase.

Step 1: "The only sister of my father" is Sunita's aunt.

Step 2: "The son of" Sunita's aunt is Sunita's cousin.

Why other options are wrong:

- Option A: A brother would be the son of Sunita's own parents, not of her aunt.
- Option B: A nephew would be one generation below Sunita, not her cousin.
- Option C: An uncle would be the aunt's husband or brother, not her son.

Final Answer: The boy is Sunita's cousin $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q10

Q11.

Solution

Concept — Direction sense: Track each turn on a rough sketch (see the figure).

Step 1: He walks 4 km North.

Step 2: A right turn from North faces East; he walks 3 km East.

Step 3: A right turn from East faces South; he walks 4 km South, which cancels the 4 km North.

Step 4: A left turn from South faces East; he walks 2 km more East.

Step 5: The North and South legs cancel, leaving $3 + 2 = 5$ km East of the start.

Why other options are wrong:

- Option B: 3 km ignores the final 2 km East leg.
- Option C: West is the wrong direction; all sideways movement was East.
- Option D: The North and South legs cancel, so he is not 4 km North.

Final Answer: He is 5 km East of the start $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q11

Q12.

Solution

Concept — Linear arrangement: Place the fixed ends first, then fit the rest.

Step 1: N is at the left end, so N takes position 1. K is at the right end, so K takes position 5.

Step 2: L is immediately to the left of K, so L takes position 4.

Step 3: M is immediately to the left of J, so M and J form the block M, J. The only empty seats are 2 and 3, so M takes position 2 and J takes position 3.

Step 4: The row is N, M, J, L, K. The middle (third) seat is J.

Why other options are wrong:

- Option B: L sits fourth, not in the middle.
- Option C: M sits second.
- Option D: N sits at the left end.

Final Answer: J sits in the middle $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q12

Q13.

Solution

Concept — Ranking: Position from right = (total) − (position from left) + 1.

Step 1: Total students = 40, position from left = 15.

Step 2: Position from right = 40 − 15 + 1 = 25 + 1 = 26.

Why other options are wrong:

- Option A: 24 subtracts one too many.
- Option B: 25 forgets to add the 1 for Priya herself.
- Option D: 27 adds one too many.

Final Answer: Priya is 26th from the right ⇒ C

Answer: (C) Go Back to Q13

Q14.

Solution

Concept — Comparison: Turn each clue into an inequality and combine.

Step 1: A taller than B gives B < A.

Step 2: C taller than A gives A < C.

Step 3: D shorter than B gives D < B. E is the tallest.

Step 4: Combining: D < B < A < C < E. The shortest is D.

Why other options are wrong:

- Option A: B is taller than D.
- Option B: A is in the upper middle of the order.
- Option D: C is the second tallest.

Final Answer: D is the shortest ⇒ C

Answer: (C) Go Back to Q14

Q15.

Solution

Concept — Row position: Total = (rank from left) + (rank from right) − 1.

Step 1: R is 4th from the left and 4th from the right.

Step 2: Total children = 4 + 4 − 1 = 7. We subtract 1 because R is counted in both ranks.

Why other options are wrong:

- Option B: 8 forgets to subtract the double-counted R.
- Option C: 6 subtracts one too many.
- Option D: 9 adds an extra child.

Final Answer: There are 7 children ⇒ A

Answer: (A) Go Back to Q15

Q16.

Solution

Concept — Syllogism: Use the nested Venn diagram to test each conclusion.

Setup: "All squares are figures" puts Squares inside Figures. "All figures have an area" puts Figures inside the Area group. So Squares sits inside Figures, which sits inside Area.

Conclusion I — All squares have an area: Since Squares is inside the Area group, every square has an area. Conclusion I follows.

Conclusion II — Some figures are squares: Squares lie within Figures, so at least those figures that are squares exist. Conclusion II follows.

Result: Both conclusions follow.

Final Answer: Both Conclusion I and Conclusion II follow ⇒ B

Answer: (B) Go Back to Q16

Q17.

Solution

Concept — Syllogism: A conclusion follows only if it is true in every possible diagram.

Setup: "Some pens are markers" overlaps Pens with Markers. "All markers have ink" puts Markers inside the Ink group.

Conclusion I — Some pens have ink: The pens that are markers lie inside Ink, so at least some pens have ink. Conclusion I follows.

Conclusion II — All pens have ink: Only the overlapping part of Pens is guaranteed to have ink; the rest of the pens may lie outside Ink. Conclusion II does not follow.

Result: Only Conclusion I follows.

Final Answer: Only Conclusion I follows $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q17

Q18.

Solution

Concept — Syllogism: Check whether each conclusion is forced by the statements.

Setup: "No dog is a cat" separates Dogs from Cats. "All cats are pets" puts Cats inside Pets. Dogs stay outside Cats but may still overlap Pets.

Conclusion I — No dog is a pet: Dogs are only barred from Cats, not from Pets; a dog can still be a pet. Conclusion I does not follow.

Conclusion II — Some pets are cats: All cats are pets, so the cats themselves are pets that are cats. Conclusion II follows.

Result: Only Conclusion II follows.

Final Answer: Only Conclusion II follows $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q18

Q19.

Solution

Concept — Clock angle: Each hour gap on the dial is 30 degrees $(360 \div 12)$.

Step 1: At 4:00 the minute hand points to 12 and the hour hand points to 4.

Step 2: The gap from 12 to 4 is 4 hour marks.

Step 3: Angle $= 4 \times 30 = 120$ degrees.

Why other options are wrong:

- Option A: 90 degrees would be a 3-hour gap, as at 3:00.
- Option B: 150 degrees would be a 5-hour gap.
- Option D: 100 degrees is not a multiple of the 30-degree hour step.

Final Answer: The angle is 120 degrees $\Rightarrow$ C

Answer: (C) Go Back to Q19

Q20.

Solution

Concept — Calendar: Days of the week repeat every 7 days, so use the remainder.

Step 1: Divide 30 by 7: $30 = 7 \times 4 + 2$, so the remainder is 2.

Step 2: Count 2 days forward from Wednesday: Thursday, Friday.

Step 3: The day is Friday.

Why other options are wrong:

- Option B: Thursday would be a remainder of 1.
- Option C: Saturday would be a remainder of 3.
- Option D: Sunday would be a remainder of 4.

Final Answer: It will be Friday $\Rightarrow$ A

Answer: (A) Go Back to Q20

Q21.

Solution

Concept — Clock movement: The minute hand sweeps a full 360 degrees in 60 minutes.

Step 1: Speed of the minute hand $= 360 \div 60 = 6$ degrees per minute.

Step 2: In 20 minutes it moves $20 \times 6 = 120$ degrees.

Why other options are wrong:

- Option A: 90 degrees corresponds to only 15 minutes.
- Option B: 100 degrees is not a multiple of the 6-degree-per-minute step.
- Option C: 110 degrees is also not a whole-minute value.

Final Answer: The minute hand moves 120 degrees $\Rightarrow$ D

Answer: (D) Go Back to Q21

Q22.

Solution

Concept — Statement and conclusion: A conclusion follows only if the statements force it.

Step 1: All roses are flowers, so roses form a part of the flowers group.

Step 2: "Some flowers fade quickly" need not include the rose part; the fading flowers may all be non-roses. So "some roses fade quickly" is not certain, and Conclusion I does not follow.

Step 3: We are told all roses are flowers, not the reverse; there can be flowers that are not roses, so "all flowers are roses" does not follow either.

Why other options are wrong:

- Option A: Conclusion I is only a possibility, not a certainty.
- Option B: Conclusion II reverses the given statement.
- Option C: Neither conclusion is forced, so both cannot follow.

Final Answer: Neither conclusion follows $\Rightarrow$ D

Answer: (D) Go Back to Q22

Q23.

Solution

Concept — Symbol substitution: Replace each symbol with its real operation, then use BODMAS.

Step 1: "+" means $\div$, "$-$" means $+$, "$\div$" means $\times$, "$\times$" means $-$. The expression $20 + 4 - 6 \div 2 \times 3$ becomes $20 \div 4 + 6 \times 2 - 3$.

Step 2: Do division and multiplication first: $20 \div 4 = 5$ and $6 \times 2 = 12$.

Step 3: Now $5 + 12 - 3 = 17 - 3 = 14$.

Why other options are wrong:

- Option B: 12 skips one of the terms.
- Option C: 16 comes from a wrong order of operations.
- Option D: 11 mis-handles the final subtraction.

Final Answer: The value is 14 $\Rightarrow$ $\boxed{A}$

Answer: (A) Go Back to Q23

Q24.

Solution

Concept — Odd one out: Find the shared property and the one that breaks it.

Step 1: $8 = 2^3$, $27 = 3^3$, $64 = 4^3$, $125 = 5^3$. These are all perfect cubes.

Step 2: $100 = 10^2$ is a perfect square but not a perfect cube, so it breaks the pattern.

Why other options are wrong:

- Option A: $27 = 3^3$ fits the group.
- Option C: $64 = 4^3$ fits the group.
- Option D: $125 = 5^3$ fits the group.

Final Answer: 100 is the odd one out $\Rightarrow$ $\boxed{B}$

Answer: (B) Go Back to Q24

Q25.

Solution

Concept — Blood relation: Link the relations one at a time.

Step 1: M is the mother of N, and N is the son of O, so O is the father of N. Thus M and O are the parents of N, which makes M the wife of O.

Step 2: O is the father of P, so P is the child of O.

Step 3: Since M is O's wife and O is P's father, M is the mother of P.

Why other options are wrong:

- Option B: A sister would be in the same generation as P.
- Option C: An aunt would be a sister of a parent, not the parent herself.
- Option D: A grandmother would be one generation higher than M is here.

Final Answer: M is the mother of P $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q25

Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	C	2	D	3	A	4	D	5	D
6	A	7	C	8	B	9	B	10	D
11	A	12	A	13	C	14	C	15	A
16	B	17	B	18	C	19	C	20	A
21	D	22	D	23	A	24	B	25	A