SNAP Analytical and Logical Reasoning

Sample Paper – 4

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) 63

(B) 62

(C) 47

(D) 64

Q2. Find the next term in the series: **C, F, I, L, ?**

(A) M

(B) N

(C) O

(D) P

Q3. Choose the option that completes the analogy: **Author : Book :: Composer : ?**

(A) Instrument

(B) Symphony

(C) Orchestra

(D) Song

Q4. Choose the option that completes the analogy: **5 : 125 :: 3 : ?**

(A) 9

(B) 27

(C) 81

(D) 15

Part B: Coding and Decoding

Q5. In a certain code, DESK is written as FGUM. In the same code, how is MARKET written?

(A) OCTMGV

(B) NBSLFU

(C) OCTMGU

(D) OCUMGV

Q6. Using the same code as above (where DESK becomes FGUM), how is PLANET written?

(A) RNCPGU

(B) RNCPGV

(C) QMBOFU

(D) RNDPGV

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 LOGIC, taken as the sum of its letters?

(A) 45

(B) 44

(C) 46

(D) 47

Part C: Blood Relations and Direction Sense

Q8. Pointing to a photograph, Sohan said, "She is the only daughter of the mother of my brother." How is the girl in the photograph related to Sohan?

(A) Mother

(B) Daughter

(C) Cousin

(D) Sister

Q9. If "A @ B" means A is the father of B, and "A # B" means A is the sister of B, then in "P @ Q # R", how is P related to R?

(A) Brother

(B) Father

(C) Grandfather

(D) Uncle

Q10. A man, pointing to a woman, said, "Her father is the only son of my father." How is the woman related to the man?

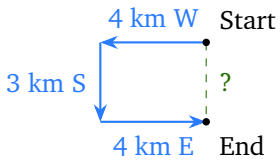
(A) Sister

(B) Daughter

(C) Wife

(D) Niece

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



(A) 3 km North

(B) 4 km West

(C) 5 km South

(D) 3 km South

Part D: Arrangement and Ranking

Q12. In a row of children facing north, D is 4th from the left end and 3rd from the right end. How many children are there in the row?

(A) 6

(B) 7

(C) 5

(D) 8

Q13. In a class of 40 students, Priya is 15th from the top. What is her rank from the bottom?

(A) 24

(B) 25

(C) 26

(D) 27

Q14. Among five friends, Ravi is taller than Sam but shorter than Tom. Umesh is taller than Tom. Vijay is the shortest of all. Who is the tallest?

(A) Umesh

(B) Tom

(C) Ravi

(D) Sam

Q15. Seven students stand in a row facing north. P is 2nd from the left end and T is 6th from the left end. How many students stand between P and T?

(A) 2

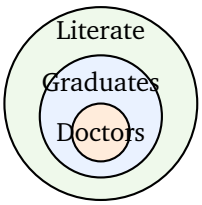
(B) 4

(C) 5

(D) 3

Part E: Syllogisms

Q16. **Statements:** All doctors are graduates. All graduates are literate.
Conclusion I: All doctors are literate. **Conclusion II:** Some literate people are graduates.



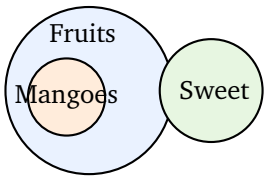
(A) Only Conclusion I follows

(B) Only Conclusion II follows

(C) Both Conclusion I and Conclusion II follow

(D) Neither conclusion follows

Q17. **Statements:** Some fruits are sweet. All mangoes are fruits.
Conclusion I: Some mangoes are sweet. **Conclusion II:** All fruits are mangoes.



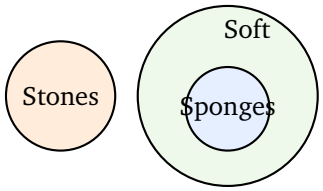
(A) Only Conclusion I follows

(B) Only Conclusion II follows

(C) Both Conclusion I and Conclusion II follow

(D) Neither conclusion follows

Q18. **Statements:** No stone is soft. All sponges are soft.
Conclusion I: No sponge is a stone. **Conclusion II:** Some soft things are sponges.



(A) Only Conclusion I follows

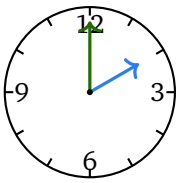
(B) Only Conclusion II follows

(C) Both Conclusion I and Conclusion II follow

(D) Neither conclusion follows

Part F: Clocks, Calendars and Miscellaneous

Q19. What is the angle between the hour hand and the minute hand of a clock at exactly 2:00?



(A) 90 degrees

(B) 45 degrees

(C) 120 degrees

(D) 60 degrees

Q20. If today is Friday, what day of the week will it be after 90 days?

(A) Thursday

(B) Wednesday

(C) Friday

(D) Saturday

Q21. In a 24-hour period, how many times do the hour hand and the minute hand of a clock form a right angle (90 degrees)?

(A) 22

(B) 24

(C) 48

(D) 44

Part G: Logical Deduction

Q22. **Statements:** All doctors respect their patients. Some doctors are surgeons.

Conclusion I: Some surgeons respect their patients. **Conclusion II:** All surgeons respect their patients.

(A) Only Conclusion II follows

(B) Only Conclusion I follows

(C) Both conclusions follow

(D) Neither conclusion follows

Q23. If "+" means divide, "×" means add, "−" means multiply, and "÷" means subtract, then find the value of: $\mathbf{16 + 4 \times 2 - 3 \div 5}$

(A) 8

(B) 7

(C) 5

(D) 6

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

(A) 100

(B) 27

(C) 64

(D) 125

Q25. P is the mother of Q. Q is the sister of R. R is the son of S. How is S related to P?

(A) Husband

(B) Brother

(C) Son

(D) Father

Detailed Solutions

Q1.

Solution

Concept — Number series: Check how each term is built from the one before it.

Step 1: Test the rule "double and add 1". From 3: $3 \times 2 + 1 = 7$.

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

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

Why other options are wrong:

- Option B: 62 is 31×2, forgetting the $+1$.
- Option C: 47 is only $31 + 16$, not the doubling rule.
- Option D: 64 is $31 \times 2 + 2$, adding one too many.

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

Answer: (A) Go Back to Q1

Q2.

Solution

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

Step 1: C(3), F(6), I(9), L(12). Each term rises by 3.

Step 2: Next position $= 12 + 3 = 15$, which is the letter O.

Why other options are wrong:

- Option A: M is position 13, a gap of only 1.
- Option B: N is position 14, a gap of 2.
- Option D: P is position 16, a gap of 4.

Final Answer: The next term is O $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q2

Q3.

Solution

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

Relationship: An author is the person who creates a book, so the link is creator to the work they produce.

Application: A composer is the person who creates a symphony, matching the creator-to-work pattern.

Why other options are wrong:

- Option A: An instrument is a tool a composer may use, not the work created.
- Option C: An orchestra performs the work; it is not the work itself.
- Option D: A song is a possible work, but a symphony is the standard large-scale work a composer creates, giving the closest match.

Final Answer: Composer creates a Symphony $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q3

Q4.

Solution

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

Step 1: $125 = 5 \times 5 \times 5 = 5^3$, so the rule is "cube the number".

Step 2: Apply to 3: $3^3 = 3 \times 3 \times 3 = 27$.

Why other options are wrong:

- Option A: 9 is 3^2, the square, not the cube.
- Option C: 81 is 3^4, the fourth power.
- Option D: 15 is 3×5, an unrelated product.

Final Answer: $3^3 = 27 \Rightarrow \boxed{\text{B}}$

Answer: (B) Go Back to Q4

Q5.

Solution

Concept — Coding: Find the shift by matching DESK to FGUM, then apply it.

Step 1: D→F, E→G, S→U, K→M. Each letter moves forward by 2 places.

Step 2: Apply +2 to MARKET: M→O, A→C, R→T, K→M, E→G, T→V, giving OCTMGV.

Why other options are wrong:

- Option B: NBSLFU uses a shift of +1, not +2.
- Option C: OCTMGU moves T to U (+1) instead of V.
- Option D: OCUMGV moves R to U (+3) instead of T.

Final Answer: MARKET becomes OCTMGV ⇒ A

Answer: (A) Go Back to Q5

Q6.

Solution

Concept — Coding: The same +2 shift (from DESK → FGUM) applies here.

Step 1: The rule established earlier is: move each letter forward by 2 places.

Step 2: Apply +2 to PLANET: P→R, L→N, A→C, N→P, E→G, T→V, giving RNCPGV.

Why other options are wrong:

- Option A: RNCPGU moves T to U (+1) instead of V.
- Option C: QMBOFU uses a shift of +1 throughout.
- Option D: RNDPGV moves A to D (+3) instead of C.

Final Answer: PLANET becomes RNCPGV ⇒ B

Answer: (B) Go Back to Q6

Q7.

Solution

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

Step 1: L is the 12th letter, O is the 15th, G is the 7th, I is the 9th, C is the 3rd.

Step 2: Sum $= 12 + 15 + 7 + 9 + 3$.

Step 3: $12 + 15 = 27$; $27 + 7 = 34$; $34 + 9 = 43$; $43 + 3 = 46$.

Why other options are wrong:

- Option A: 45 undercounts by 1.
- Option B: 44 undercounts by 2.
- Option D: 47 overcounts by 1.

Final Answer: L + O + G + I + C = 46 $\Rightarrow$ C

Answer: (C) Go Back to Q7

Q8.

Solution

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

Step 1: "The mother of my brother" is Sohan's own mother.

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

Step 3: So the girl in the photograph is Sohan's sister.

Why other options are wrong:

- Option A: The mother is the one referred to, not the daughter described.
- Option B: A daughter would be one generation below Sohan, but she is his mother's daughter.
- Option C: A cousin would come from a different parent, not Sohan's own mother.

Final Answer: The girl is Sohan's sister $\Rightarrow$ D

Answer: (D) Go Back to Q8

Q9.

Solution

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

Step 1: "P @ Q" means P is the father of Q.

Step 2: "Q # R" means Q is the sister of R, so Q and R are siblings.

Step 3: Since P is the father of Q, and R is Q's sibling, P is also the father of R.

Why other options are wrong:

- Option A: P is a generation above R, not a brother.
- Option C: A grandfather would be two generations above; P is only one.
- Option D: An uncle would be the father's brother, not the father himself.

Final Answer: P is the father of R $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q9

Q10.

Solution

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

Step 1: "The only son of my father" is the man himself, since he is his father's only son.

Step 2: So the woman's father is the man himself.

Step 3: If the man is her father, then the woman is his daughter.

Why other options are wrong:

- Option A: A sister would share his father, but here he is her father.
- Option C: A wife has no parent-child link described here.
- Option D: A niece would be his sibling's child, not his own daughter.

Final Answer: The woman is the man's daughter $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) 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 West.

Step 2: A left turn from West faces South; he walks 3 km South.

Step 3: A left turn from South faces East; he walks 4 km East, cancelling the 4 km West.

Step 4: Net movement is only the 3 km South, so he is 3 km South of the start.

Why other options are wrong:

- Option A: North is opposite to his net travel; both turns were to the left.
- Option B: The West and East legs cancel, so he is not 4 km West.
- Option C: 5 km would need the legs not to cancel; the straight-line distance is only 3 km.

Final Answer: He is 3 km South of the start $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q11

Q12.

Solution

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

Step 1: D is 4th from the left and 3rd from the right.

Step 2: Total children $= 4+3-1 = 6$. We subtract 1 because D is counted in both positions.

Why other options are wrong:

- Option B: 7 forgets to subtract the double-counted D.
- Option C: 5 subtracts one too many.
- Option D: 8 adds extra children who are not there.

Final Answer: There are 6 children $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q12

Q13.

Solution

Concept — Ranking: Rank from bottom = (total) − (rank from top) + 1.

Step 1: Total students = 40 and Priya is 15th from the top.

Step 2: Rank from bottom = $40 - 15 + 1$.

Step 3: $40 - 15 = 25$, then $25 + 1 = 26$.

Why other options are wrong:

- Option A: 24 forgets to add the +1 and subtracts an extra.
- Option B: 25 comes from $40 - 15$ without adding 1 for Priya herself.
- Option D: 27 adds one too many.

Final Answer: Priya is 26th from the bottom $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q13

Q14.

Solution

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

Step 1: Ravi taller than Sam but shorter than Tom gives Sam < Ravi < Tom.

Step 2: Umesh is taller than Tom gives Tom < Umesh.

Step 3: Vijay is the shortest. Combining: Vijay < Sam < Ravi < Tom < Umesh.

Step 4: The tallest is Umesh.

Why other options are wrong:

- Option B: Tom is tall but still shorter than Umesh.
- Option C: Ravi is in the middle of the order.
- Option D: Sam is near the shorter end.

Final Answer: Umesh is the tallest $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q14

Q15.

Solution

Concept — Row position: Count the seats strictly between the two fixed positions.

Step 1: P is at position 2 and T is at position 6.

Step 2: The positions strictly between them are 3, 4 and 5.

Step 3: That is 3 students between P and T.

Why other options are wrong:

- Option A: 2 misses one of the three middle seats.
- Option B: 4 counts one endpoint as "between".
- Option C: 5 counts both endpoints as well.

Final Answer: 3 students stand between P and T $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q15

Q16.

Solution

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

Setup: "All doctors are graduates" puts Doctors inside Graduates. "All graduates are literate" puts Graduates inside Literate. So Doctors sits inside Graduates, which sits inside Literate.

Conclusion I — All doctors are literate: Since Doctors is inside Literate, every doctor is literate. Conclusion I follows.

Conclusion II — Some literate people are graduates: Graduates lie within Literate, so at least the graduates are literate people who are graduates. Conclusion II follows.

Result: Both conclusions follow.

Final Answer: Both Conclusion I and Conclusion II follow $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q16

Q17.

Solution

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

Setup: "All mangoes are fruits" puts Mangoes inside Fruits. "Some fruits are sweet" overlaps Fruits with Sweet, but the sweet part need not touch Mangoes.

Conclusion I — Some mangoes are sweet: The sweet fruits may lie entirely outside the Mangoes circle, so this is not certain. Conclusion I does not follow.

Conclusion II — All fruits are mangoes: We are only told all mangoes are fruits, not the reverse; there can be fruits that are not mangoes. Conclusion II does not follow.

Result: Neither conclusion follows.

Final Answer: Neither conclusion follows $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q17

Q18.

Solution

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

Setup: "No stone is soft" separates Stones from Soft. "All sponges are soft" puts Sponges inside Soft.

Conclusion I — No sponge is a stone: Sponges are all soft, and no soft thing is a stone, so no sponge can be a stone. Conclusion I follows.

Conclusion II — Some soft things are sponges: Sponges lie inside Soft, so at least those soft things that are sponges exist. Conclusion II follows.

Result: Both conclusions follow.

Final Answer: Both Conclusion I and Conclusion II follow $\Rightarrow$ $\boxed{\text{C}}$

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 2:00 the minute hand points to 12 and the hour hand points to 2.

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

Step 3: Angle $= 2 \times 30 = 60$ degrees.

Why other options are wrong:

- Option A: 90 degrees would be a 3-hour gap, as at 3:00.
- Option B: 45 degrees does not correspond to a whole number of hour marks at an exact hour.
- Option C: 120 degrees would be a 4-hour gap.

Final Answer: The angle is 60 degrees $\Rightarrow \boxed{\text{D}}$

Answer: (D) Go Back to Q19

Q20.

Solution

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

Step 1: Divide 90 by 7: $90 = 7 \times 12 + 6$, so the remainder is 6.

Step 2: Count 6 days forward from Friday: Saturday, Sunday, Monday, Tuesday, Wednesday, Thursday.

Step 3: The day is Thursday.

Why other options are wrong:

- Option B: Wednesday would be a remainder of 5.
- Option C: Friday would be a remainder of 0.
- Option D: Saturday would be a remainder of 1.

Final Answer: It will be Thursday $\Rightarrow \boxed{\text{A}}$

Answer: (A) Go Back to Q20

Q21.

Solution

Concept — Clock right angles: The hands are at right angles twice each hour, but two of these are shared across the day.

Step 1: In 12 hours the hands form a right angle 22 times, not 24, because the pattern loses two coincidences over the cycle.

Step 2: In a full 24-hour day this doubles: $22 \times 2 = 44$.

Why other options are wrong:

- Option A: 22 is the count for only 12 hours, not 24.
- Option B: 24 wrongly assumes exactly two right angles in every hour.
- Option C: 48 assumes two per hour across 24 hours with no loss.

Final Answer: The hands form a right angle 44 times $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q21

Q22.

Solution

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

Step 1: All doctors respect their patients, and some doctors are surgeons.

Step 2: Those doctors who are surgeons must respect their patients, so at least some surgeons respect their patients. Conclusion I follows.

Step 3: Conclusion II claims all surgeons respect patients, but there may be surgeons who are not doctors, and nothing is said about them. Conclusion II does not follow.

Why other options are wrong:

- Option A: Conclusion II is not forced by the statements.
- Option C: Both cannot follow, since Conclusion II is uncertain.
- Option D: Conclusion I clearly follows, so "neither" is wrong.

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

Answer: (B) Go Back to Q22

Q23.

Solution

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

Step 1: "+" means $\div$, "$\times$" means $+$, "$-$" means $\times$, "$\div$" means $-$. The expression $16 + 4 \times 2 - 3 \div 5$ becomes $16 \div 4 + 2 \times 3 - 5$.

Step 2: Do division and multiplication first: $16 \div 4 = 4$ and $2 \times 3 = 6$.

Step 3: Now the expression is $4 + 6 - 5$.

Step 4: $4 + 6 = 10$, then $10 - 5 = 5$.

Why other options are wrong:

- Option A: 8 comes from ignoring one of the operations.
- Option B: 7 uses a wrong order of operations.
- Option D: 6 stops before subtracting the 5.

Final Answer: The value is 5 $\Rightarrow$ C

Answer: (C) 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 four are perfect cubes.

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

Why other options are wrong:

- Option B: 27 is 3^3, a cube, so it fits the group.
- Option C: 64 is 4^3, a cube, so it fits the group.
- Option D: 125 is 5^3, a cube, so it fits the group.

Final Answer: 100 is the odd one out $\Rightarrow$ A

Answer: (A) Go Back to Q24

Q25.

Solution

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

Step 1: P is the mother of Q, and Q is the sister of R, so R is also a child of P.

Step 2: R is the son of S, so S is a parent of R as well.

Step 3: P is the mother of R and S is the father of R, so P and S are the two parents of R, which makes S the husband of P.

Why other options are wrong:

- Option B: A brother would share P's parents, not be R's father.
- Option C: S is a parent of R, in P's own generation, not her son.
- Option D: S is not P's father; they are of the same generation.

Final Answer: S is the husband 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	A	2	C	3	B	4	B	5	A
6	B	7	C	8	D	9	B	10	B
11	D	12	A	13	C	14	A	15	D
16	C	17	D	18	C	19	D	20	A
21	D	22	B	23	C	24	A	25	A