SNAP Analytical and Logical Reasoning

Sample Paper – 9

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, 9, 27, 81, ?**

(A) 324

(B) 162

(C) 216

(D) 243

Q2. Find the next term in the series: **A, E, I, M, ?**

(A) O

(B) S

(C) U

(D) Q

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

(A) Painting

(B) Poem

(C) Symphony

(D) Novel

Q4. Choose the option that completes the analogy: **3 : 27 :: 4 : ?**

(A) 48

(B) 64

(C) 81

(D) 16

Part B: Coding and Decoding

Q5. In a certain code, JUNGLE is written as KVOHMF. How is ROCKET written in that code?

(A) SPCLFU

(B) SPDLEU

(C) SQDLFU

(D) SPDLFU

Q6. If ROCKET is coded as TQEMGV, how is JUNGLE coded in the same way?

(A) LWPINF

(B) LWPJNG

(C) LWPING

(D) LWQING

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) 57

(B) 55

(C) 59

(D) 60

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) Aunt

(C) Daughter

(D) Sister

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

(A) Sister

(B) Aunt

(C) Mother

(D) Grandmother

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

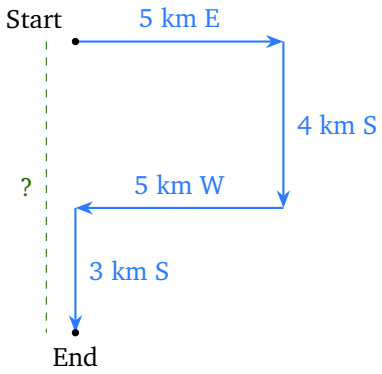
(A) Son

(B) Brother

(C) Nephew

(D) Father

Q11. A man starts from a point and walks 5 km towards East, then turns right and walks 4 km, then turns right again and walks 5 km, and finally turns left and walks 3 km. How far and in which direction is he now from his starting point?



(A) 7 km North

(B) 7 km South

(C) 10 km South

(D) 1 km South

Part D: Arrangement and Ranking

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

(A) P

(B) L

(C) N

(D) O

Q13. In a row of students, Priya is 9th from the left end and 14th from the right end. How many students are there in the row?

(A) 22

(B) 23

(C) 21

(D) 24

Q14. Among five buildings, P is taller than Q. R is shorter than Q. S is taller than P but shorter than T. Which building is the tallest?

(A) P

(B) S

(C) Q

(D) T

Q15. Seven children stand in a row facing north. K stands fourth from the left end and L stands seventh from the left end. How many children stand between K and L?

(A) 1

(B) 2

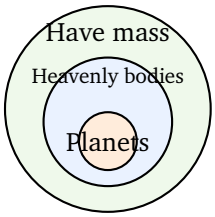
(C) 3

(D) 0

Part E: Syllogisms

Q16. **Statements:** All planets are heavenly bodies. All heavenly bodies have mass.

Conclusion I: All planets have mass. **Conclusion II:** Some heavenly bodies have mass.



(A) Only Conclusion I follows

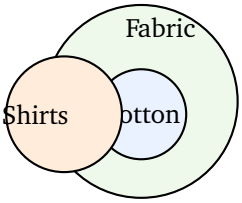
(B) Both Conclusion I and Conclusion II follow

(C) Only Conclusion II follows

(D) Neither conclusion follows

Q17. **Statements:** Some shirts are cotton. All cotton is fabric.

Conclusion I: All shirts are fabric. **Conclusion II:** Some shirts are fabric.



(A) Only Conclusion I follows

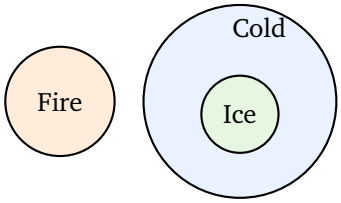
(B) Neither conclusion follows

(C) Only Conclusion II follows

(D) Both Conclusion I and Conclusion II follow

Q18. **Statements:** No fire is cold. All ice is cold.

Conclusion I: No fire is ice. **Conclusion II:** Some ice is cold.



(A) Only Conclusion I follows

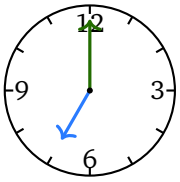
(B) Only Conclusion II follows

(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 7:00?



(A) 120 degrees

(B) 210 degrees

(C) 90 degrees

(D) 150 degrees

Q20. If today is Sunday, what day of the week will it be after 365 days?

(A) Monday

(B) Sunday

(C) Tuesday

(D) Saturday

Q21. How many times in a 12-hour period are the hour and minute hands of a clock at right angles (90 degrees) to each other?

(A) 22

(B) 24

(C) 20

(D) 11

Part G: Logical Deduction

Q22. **Statements:** All doctors are graduates. Some graduates are wealthy.
Conclusion I: Some doctors are wealthy. **Conclusion II:** Some graduates are doctors.

(A) Only Conclusion I follows

(B) Only Conclusion II follows

(C) Both conclusions follow

(D) Neither conclusion follows

Q23. If "P" means add, "Q" means subtract, "R" means multiply, and "S" means divide, then find the value of: **12 R 3 Q 8 S 2 P 5**

(A) 35

(B) 39

(C) 37

(D) 41

Q24. Find the odd one out: **4, 9, 16, 25, 30**

(A) 16

(B) 30

(C) 25

(D) 9

Q25. Q is the mother of R. R is the son of S. S is the father of T. How is Q related to T?

(A) Mother

(B) Sister

(C) Aunt

(D) Grandmother

Detailed Solutions

Q1.

Solution

Concept — Number series: Check the ratio between consecutive terms.

Step 1: Divide each term by the one before it: $9 \div 3 = 3$, $27 \div 9 = 3$, $81 \div 27 = 3$.

Step 2: Every term is 3 times the previous one, so the rule is "multiply by 3".

Step 3: Next term $= 81 \times 3 = 243$.

Why other options are wrong:

- Option A: $324 = 81 \times 4$, using a wrong multiplier of 4.
- Option B: $162 = 81 \times 2$, using a wrong multiplier of 2.
- Option C: 216 does not fit the times-3 pattern.

Final Answer: The next number is 243 $\Rightarrow$ D

Answer: (D) Go Back to Q1

Q2.

Solution

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

Step 1: A(1), E(5), I(9), M(13). Each term rises by 4.

Step 2: Next position $= 13 + 4 = 17$, which is the letter Q.

Why other options are wrong:

- Option A: O is position 15, a gap of only 2.
- Option B: S is position 19, a gap of 6.
- Option C: U is position 21, a gap of 8.

Final Answer: The next term is Q $\Rightarrow$ D

Answer: (D) 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 create.

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

Why other options are wrong:

- Option A: A painting is created by a painter, not a composer.
- Option B: A poem is created by a poet, not a composer.
- Option D: A novel is created by a novelist, not a composer.

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

Answer: (C) Go Back to Q3

Q4.

Solution

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

Step 1: $27 = 3 \times 3 \times 3 = 3^3$, 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: $48 = 4 \times 12$, a different rule.
- Option C: $81 = 3^4$, the fourth power of 3, not the cube of 4.
- Option D: $16 = 4^2$, the square of 4, not its cube.

Final Answer: $4^3 = 64 \Rightarrow \boxed{\text{B}}$

Answer: (B) Go Back to Q4

Q5.

Solution

Concept — Coding: Compare each letter of the code with the original.

Step 1: J→K, U→V, N→O, G→H, L→M, E→F. Each letter moves forward by 1 place.

Step 2: Apply +1 to ROCKET: R→S, O→P, C→D, K→L, E→F, T→U, giving SPDLFU.

Why other options are wrong:

- Option A: SPCLFU keeps C instead of moving it to D.
- Option B: SPDLEU moves E backward to E's place wrongly (should be F).
- Option C: SQDLFU moves O forward by 2 to Q instead of P.

Final Answer: ROCKET becomes SPDLFU ⇒ D

Answer: (D) Go Back to Q5

Q6.

Solution

Concept — Coding: Find the shift by matching ROCKET to TQEMGV.

Step 1: R→T, O→Q, C→E, K→M, E→G, T→V. Each letter moves forward by 2 places.

Step 2: Apply +2 to JUNGLE: J→L, U→W, N→P, G→I, L→N, E→G, giving LWPING.

Why other options are wrong:

- Option A: LWPINF moves E to F (only +1) instead of G.
- Option B: LWPJNG moves G to J (+3) instead of I.
- Option D: LWQING moves N to Q (+3) instead of P.

Final Answer: JUNGLE becomes LWPING ⇒ C

Answer: (C) 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 B: 55 undercounts by 2.
- Option C: 59 overcounts by 2.
- Option D: 60 overcounts by 3.

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

Answer: (A) 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 B: An aunt would be a sister of a parent, not a daughter of Rahul's mother.
- Option C: A daughter would be one generation below Rahul, not his sibling.

Final Answer: The lady is Rahul'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: "M $\times$ N" means M is the mother of N.

Step 2: "N $\div$ O" means N is the brother of O, so N and O share the same parents.

Step 3: Since M is the mother of N, and O is N's sibling, M is also the mother of O.

Why other options are wrong:

- Option A: M is a parent of O, not a sister.
- Option B: An aunt would be a sibling of O's parent, but M is the parent herself.
- Option D: M is one generation above O, not two, so not a grandmother.

Final Answer: M is the mother of O $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q9

Q10.

Solution

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

Step 1: "My father's only daughter" is Sunita herself, since she is the single daughter of her father.

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

Why other options are wrong:

- Option B: A brother would be a son of Sunita's father, not of Sunita.
- Option C: A nephew would be a son of Sunita's sibling, but the phrase points to Sunita's own child.
- Option D: A father is a generation above Sunita, not her son.

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

Answer: (A) Go Back to Q10

Q11.

Solution

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

Step 1: He walks 5 km East.

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

Step 3: A right turn from South faces West; he walks 5 km West, which cancels the 5 km East.

Step 4: A left turn from West faces South; he walks a further 3 km South.

Step 5: The East and West legs cancel, leaving $4 + 3 = 7$ km South, so he is 7 km South of the start.

Why other options are wrong:

- Option A: North is the wrong direction; both southward legs point south.
- Option C: 10 km wrongly adds the East and West legs to the vertical distance.
- Option D: 1 km ignores that both south legs add up to 7 km.

Final Answer: He is 7 km South of the start $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q11

Q12.

Solution

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

Step 1: O is at the left end, so O takes position 1.

Step 2: L is immediately to the right of O, so L takes position 2.

Step 3: M is at the right end, so M takes position 5, and N is immediately to the left of M, so N takes position 4.

Step 4: The only seat left is position 3, which must be P. The row is O, L, P, N, M, so the middle seat is P.

Why other options are wrong:

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

Final Answer: P sits in the middle $\Rightarrow$ A

Answer: (A) Go Back to Q12

Q13.

Solution

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

Step 1: Priya is 9th from the left and 14th from the right.

Step 2: Total students = 9 + 14 − 1 = 22. We subtract 1 because Priya is counted in both ranks.

Why other options are wrong:

- Option B: 23 forgets to subtract the double-counted Priya.
- Option C: 21 subtracts one too many.
- Option D: 24 adds two extra students.

Final Answer: There are 22 students $\Rightarrow$ A

Answer: (A) Go Back to Q13

Q14.

Solution

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

Step 1: P taller than Q gives Q < P.

Step 2: R shorter than Q gives R < Q, so R < Q < P.

Step 3: S taller than P but shorter than T gives P < S < T.

Step 4: Combining: R < Q < P < S < T. The tallest is T.

Why other options are wrong:

- Option A: P is in the middle of the order.
- Option B: S is taller than P but still shorter than T.
- Option C: Q is near the shorter end.

Final Answer: T is the tallest $\Rightarrow$ D

Answer: (D) Go Back to Q14

Q15.

Solution

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

Step 1: K is at position 4 and L is at position 7.

Step 2: The positions strictly between them are 5 and 6.

Step 3: That is 2 children between K and L.

Why other options are wrong:

- Option A: 1 misses one of the two middle seats.
- Option C: 3 counts one of the endpoints as "between".
- Option D: 0 would mean they are adjacent, but they are three seats apart.

Final Answer: 2 children stand between K and L $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q15

Q16.

Solution

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

Setup: "All planets are heavenly bodies" puts Planets inside Heavenly bodies. "All heavenly bodies have mass" puts Heavenly bodies inside the set of things that have mass. So Planets sits inside Heavenly bodies, which sits inside Have mass.

Conclusion I — All planets have mass: Since Planets is inside Have mass, every planet has mass. Conclusion I follows.

Conclusion II — Some heavenly bodies have mass: All heavenly bodies have mass, so at least some of them do. Conclusion II follows.

Result: Both conclusions follow.

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

Answer: (B) Go Back to Q16

Q17.

Solution

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

Setup: "Some shirts are cotton" overlaps Shirts with Cotton. "All cotton is fabric" puts Cotton inside Fabric. So the shirts that are cotton also lie inside Fabric.

Conclusion I — All shirts are fabric: Only some shirts are cotton, and the rest of the shirts may lie outside Fabric, so this is not certain. Conclusion I does not follow.

Conclusion II — Some shirts are fabric: The shirts that are cotton are inside Fabric, so at least some shirts are fabric. Conclusion II follows.

Result: Only Conclusion II follows.

Final Answer: Only Conclusion II follows $\Rightarrow$ C

Answer: (C) Go Back to Q17

Q18.

Solution

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

Setup: "No fire is cold" keeps Fire completely outside Cold. "All ice is cold" puts Ice inside Cold. So Ice lies within Cold while Fire lies entirely outside Cold.

Conclusion I — No fire is ice: Ice is inside Cold and Fire is outside Cold, so Fire and Ice cannot overlap. No fire is ice. Conclusion I follows.

Conclusion II — Some ice is cold: All ice is cold, so at least some ice is cold. Conclusion II follows.

Result: Both conclusions follow.

Final Answer: Both Conclusion I and Conclusion II follow $\Rightarrow$ 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 7:00 the minute hand points to 12 and the hour hand points to 7.

Step 2: Counting the shorter way, the gap from 12 to 7 going backwards through 11, 10, 9, 8, 7 is 5 hour marks.

Step 3: Angle $= 5 \times 30 = 150$ degrees.

Why other options are wrong:

- Option A: 120 degrees would be a 4-hour gap.
- Option B: 210 degrees is the longer way around; the angle between hands is the smaller one.
- Option C: 90 degrees would be a 3-hour gap, as at 3:00.

Final Answer: The angle is 150 degrees $\Rightarrow \boxed{D}$

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 365 by 7: $365 = 7 \times 52 + 1$, so the remainder is 1.

Step 2: Count 1 day forward from Sunday, which gives Monday.

Step 3: The day is Monday.

Why other options are wrong:

- Option B: Sunday would need a remainder of 0.
- Option C: Tuesday would need a remainder of 2.
- Option D: Saturday would need a remainder of 6.

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

Answer: (A) Go Back to Q20

Q21.

Solution

Concept — Clock right angles: In each hour the hands form a right angle twice, but two of these coincide across the count.

Step 1: The hands are at 90 degrees roughly twice every hour, which would suggest 24 times in 12 hours.

Step 2: However, in each 6-hour span the hands are at right angles only 11 times, because near the 3 and 9 positions two would-be right angles merge into the count, giving 22 in 12 hours.

Step 3: So the standard count for a 12-hour period is 22.

Why other options are wrong:

- Option B: 24 wrongly assumes exactly two right angles in every single hour.
- Option C: 20 undercounts the right angles.
- Option D: 11 is the count of overlaps, not right angles.

Final Answer: The hands are at right angles 22 times $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q21

Q22.

Solution

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

Step 1: "All doctors are graduates" means every doctor lies inside the group of graduates.

Step 2: Conclusion II says some graduates are doctors. Since all doctors are graduates, those doctors are graduates who are doctors, so some graduates are doctors. Conclusion II follows.

Step 3: "Some graduates are wealthy" does not tell us that any doctor is among the wealthy ones, so we cannot be sure some doctors are wealthy. Conclusion I does not follow.

Why other options are wrong:

- Option A: Conclusion I is not forced, since the wealthy graduates need not be doctors.

- Option C: Both cannot follow because Conclusion I is uncertain.
- Option D: Conclusion II clearly follows, so "neither" is wrong.

Final Answer: Only Conclusion II follows $\Rightarrow$ B

Answer: (B) Go Back to Q22

Q23.

Solution

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

Step 1: "P" means $+$, "Q" means $-$, "R" means $\times$, "S" means $\div$. The expression 12 R 3 Q 8 S 2 P 5 becomes $12 \times 3 - 8 \div 2 + 5$.

Step 2: Do multiplication and division first: $12 \times 3 = 36$ and $8 \div 2 = 4$.

Step 3: Now $36 - 4 + 5 = 32 + 5 = 37$.

Why other options are wrong:

- Option A: 35 comes from a wrong division step.
- Option B: 39 adds instead of subtracting somewhere.
- Option D: 41 ignores the subtraction of 4.

Final Answer: The value is 37 $\Rightarrow$ 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: The numbers 4, 9, 16 and 25 are perfect squares: 2^2, 3^2, 4^2 and 5^2.

Step 2: 30 is not a perfect square, so it breaks the pattern.

Why other options are wrong:

- Option A: $16 = 4^2$ is a perfect square and fits the group.
- Option C: $25 = 5^2$ is a perfect square and fits the group.
- Option D: $9 = 3^2$ is a perfect square and fits the group.

Final Answer: 30 is the odd one out $\Rightarrow$ B

Answer: (B) Go Back to Q24

Q25.

Solution

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

Step 1: Q is the mother of R, and R is the son of S, so Q and S are the parents of R; Q is the mother and S is the father.

Step 2: S is the father of T, so T is another child of S, making T a sibling of R.

Step 3: Since Q is the mother of S's children, Q is also the mother of T.

Why other options are wrong:

- Option B: A sister would be in the same generation as T, but Q is a parent.
- Option C: An aunt would be a sibling of T's parent, not the parent herself.
- Option D: Q is one generation above T, not two, so not a grandmother.

Final Answer: Q is the mother of T $\Rightarrow$ A

Answer: (A) Go Back to Q25

Answer Key

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