# SNAP Analytical and Logical Reasoning

## Sample Paper – 1

**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: **2, 6, 12, 20, 30, ?**

(A) 40

(B) 42

(C) 44

(D) 38

**Q2.** Find the next term in the series: **B, E, H, K, ?**

(A) L

(B) M

(C) N

(D) O

**Q3.** Choose the option that completes the analogy: **Cup : Coffee :: Bowl : ?**

(A) Spoon

(B) Kitchen

(C) Soup

(D) Plate

**Q4.** Choose the option that completes the analogy: **7 : 49 :: 11 : ?**

(A) 121

(B) 111

(C) 132

(D) 144

## Part B: Coding and Decoding

**Q5.** In a certain code, CAT is written as DBU. How is DOG written in that code?

(A) EPG

(B) CPH

(C) EPH

(D) EPI

**Q6.** If FRIEND is coded as HTKGPF, how is CANDLE coded in the same way?

(A) ECPFNG

(B) ECPFMG

(C) DCPFNG

(D) ECQFNG

**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 SUN, taken as the sum of its letters?

(A) 52

(B) 54

(C) 56

(D) 50

## Part C: Blood Relations and Direction Sense

**Q8.** Pointing to a man, Reena said, "He is the son of my grandfather's only son." How is the man related to Reena?

(A) Father

(B) Brother

(C) Uncle

(D) Cousin

**Q9.** If "A + B" means A is the father of B, and "A – B" means A is the wife of B, then in "P + Q – R", how is R related to P?

(A) Son

(B) Brother

(C) Son-in-law

(D) Father

**Q10.** Pointing to a photograph, a woman says, "She is the daughter of my mother's only son." How is the woman related to the girl in the photograph?

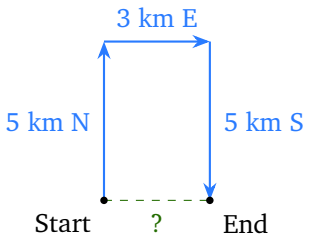
(A) Aunt

(B) Mother

(C) Sister

(D) Cousin

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




(A) 3 km East

(B) 3 km West

(C) 5 km East

(D) 8 km North

## Part D: Arrangement and Ranking

**Q12.** Five friends P, Q, R, S and T sit in a row facing north. Q is immediately to the right of P. R is at the left end. S sits between Q and T. Who sits in the middle of the row?

(A) P

(B) Q

(C) S

(D) R

**Q13.** In a class, Amit ranks 7th from the top and 26th from the bottom. How many students are there in the class?

(A) 33

(B) 32

(C) 31

(D) 34

**Q14.** Box P is heavier than Q but lighter than R. S is heavier than R. T is the lightest of all. Which box is the heaviest?

(A) P

(B) R

(C) S

(D) Q

**Q15.** Six students stand in a row facing north. M is third from the left end and O stands at the sixth position from the left. How many students stand between M and O?

(A) 0

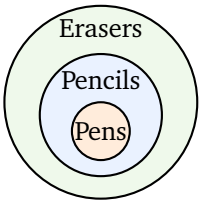
(B) 1

(C) 3

(D) 2

## Part E: Syllogisms

**Q16.** **Statements:** All pens are pencils. All pencils are erasers.
**Conclusion I:** All pens are erasers. **Conclusion II:** Some erasers are pens.



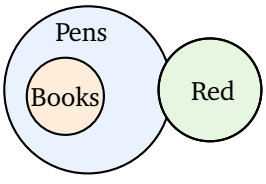

(A) Only Conclusion I follows

(B) Both Conclusion I and Conclusion II follow

(C) Only Conclusion II follows

(D) Neither conclusion follows

**Q17.** **Statements:** All books are pens. Some pens are red.
**Conclusion I:** Some books are red. **Conclusion II:** All pens are books.



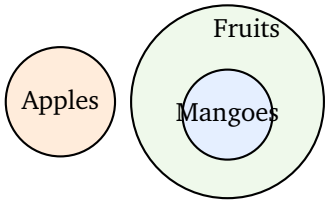
(A) Only Conclusion I follows

(B) Only Conclusion II follows

(C) Both Conclusion I and Conclusion II follow

(D) Neither conclusion follows

**Q18.** **Statements:** No apple is a mango. All mangoes are fruits.
**Conclusion I:** No apple is a fruit. **Conclusion II:** All fruits are mangoes.




(A) Only Conclusion I follows

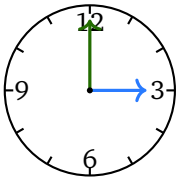
(B) Only Conclusion II follows

(C) Both Conclusion I and Conclusion II follow

(D) Neither conclusion follows

## Part F: Clocks, Calendars and Miscellaneous

**Q19.** What is the angle between the hour hand and the minute hand of a clock at exactly 3:00?




(A) 90 degrees

(B) 60 degrees

(C) 120 degrees

(D) 180 degrees

**Q20.** If today is Monday, what day of the week will it be after 61 days?

(A) Wednesday

(B) Thursday

(C) Friday

(D) Saturday

**Q21.** How many times do the hour and minute hands of a clock coincide (overlap) in a 12-hour period?

(A) 11

(B) 12

(C) 22

(D) 24

## Part G: Logical Deduction

**Q22.** **Statements:** All the students in the class are intelligent. Rohan is not intelligent.
**Conclusion I:** Rohan is not a student of the class. **Conclusion II:** Rohan is a student of the class.

(A) Only Conclusion II follows

(B) Both conclusions follow

(C) Only Conclusion I follows

(D) Neither conclusion follows

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

(A) 8

(B) 9

(C) 10

(D) 11

**Q24.** Find the odd one out: **3, 5, 7, 9, 11, 13**

(A) 3

(B) 5

(C) 7

(D) 9

**Q25.** A is the brother of B. B is the sister of C. C is the father of D. How is A related to D?

(A) Uncle

(B) Father

(C) Brother

(D) Grandfather

## Detailed Solutions

### Q1.

**Solution**

**Concept — Number series:** Look at the difference between consecutive terms.

**Step 1:** Differences are 6-2=4, 12-6=6, 20-12=8, 30-20=10.

**Step 2:** The differences increase by 2 each time: 4, 6, 8, 10, so the next difference is 12.

**Step 3:** Next term = 30 + 12 = 42.

**Why other options are wrong:**

- Option A: 40 would need a difference of 10, but the difference must grow to 12.
- Option C: 44 would need a difference of 14, skipping 12.
- Option D: 38 is smaller than the required jump of 12.

**Final Answer:** The next number is 42 $\Rightarrow$ B

**Answer: (B)** Go Back to Q1

### Q2.

**Solution**

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

**Step 1:** B(2), E(5), H(8), K(11). Each term rises by 3.

**Step 2:** Next position = 11 + 3 = 14, which is the letter N.

**Why other options are wrong:**

- Option A: L is position 12, a gap of only 1.
- Option B: M is position 13, a gap of 2.
- Option D: O is position 15, a gap of 4.

**Final Answer:** The next term is N $\Rightarrow$ C

**Answer: (C)** Go Back to Q2

## Q3.

**Solution**

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

**Relationship:** A cup is the container that holds coffee, so the link is container to what it typically holds.

**Application:** A bowl is the container that typically holds soup, matching the pattern.

**Why other options are wrong:**

- Option A: A spoon is a tool used with a bowl, not what the bowl holds.
- Option B: A kitchen is a place, not the content of a bowl.
- Option D: A plate is another container, not what a bowl holds.

**Final Answer:** Bowl holds Soup $\Rightarrow$ $\boxed{\text{C}}$

**Answer: (C)** Go Back to Q3

## Q4.

**Solution**

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

**Step 1:** $49 = 7 \times 7 = 7^2$, so the rule is "square the number".

**Step 2:** Apply to 11: $11^2 = 121$.

**Why other options are wrong:**

- Option B: 111 is not a perfect square.
- Option C: $132 = 11 \times 12$, a different rule.
- Option D: $144 = 12^2$, the square of 12, not 11.

**Final Answer:** $11^2 = 121 \Rightarrow \boxed{\text{A}}$

**Answer: (A)** Go Back to Q4

## Q5.

**Solution**

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

**Step 1:** C→D, A→B, T→U. Each letter moves forward by 1 place.

**Step 2:** Apply +1 to DOG: D→E, O→P, G→H, giving EPH.

**Why other options are wrong:**

- Option A: EPG wrongly keeps G instead of moving it to H.
- Option B: CPH moves D backward to C.
- Option D: EPI moves G forward by 2 to I.

**Final Answer:** DOG becomes EPH ⇒ C

**Answer: (C)** Go Back to Q5

## Q6.

**Solution**

**Concept — Coding:** Find the shift by matching FRIEND to HTKGPF.

**Step 1:** F→H, R→T, I→K, E→G, N→P, D→F. Each letter moves forward by 2 places.

**Step 2:** Apply +2 to CANDLE: C→E, A→C, N→P, D→F, L→N, E→G, giving ECPFNG.

**Why other options are wrong:**

- Option B: ECPFMG moves L to M (only +1) instead of N.
- Option C: DCPFNG moves C to D (only +1) instead of E.
- Option D: ECQFNG moves N to Q (+3) instead of P.

**Final Answer:** CANDLE becomes ECPFNG ⇒ A

**Answer: (A)** Go Back to Q6

## Q7.

**Solution**

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

**Step 1:** S is the 19th letter, U is the 21st, N is the 14th.

**Step 2:** Sum = 19 + 21 + 14 = 54.

**Why other options are wrong:**

- Option A: 52 undercounts by 2.
- Option C: 56 overcounts by 2.
- Option D: 50 undercounts by 4.

**Final Answer:** S + U + N = 54 $\Rightarrow$ B

**Answer: (B)** Go Back to Q7

## Q8.

**Solution**

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

**Step 1:** "My grandfather's only son" is Reena's father (the single son of her grandfather).

**Step 2:** "The son of" Reena's father is Reena's brother.

**Why other options are wrong:**

- Option A: The father would be the grandfather's son himself, not his son's son.
- Option C: An uncle would be another son of the grandfather, but he has only one son.
- Option D: A cousin would come from a different parent, not from Reena's own father.

**Final Answer:** The man is Reena's brother $\Rightarrow$ B

**Answer: (B)** 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 wife of R, so Q is female and R is her husband.

**Step 3:** Q is P's child and R is Q's husband, so R is the husband of P's daughter, that is, P's son-in-law.

**Why other options are wrong:**

- Option A: R is not P's own son but the husband of P's daughter.
- Option B: R is a generation below P, not a brother.
- Option D: R is not P's father; the direction is reversed.

**Final Answer:** R is the son-in-law of P $\Rightarrow$ $\boxed{C}$

**Answer: (C)** Go Back to Q9

## Q10.

**Solution**

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

**Step 1:** "My mother's only son" is the woman's brother.

**Step 2:** "The daughter of" the woman's brother is the woman's niece.

**Step 3:** The woman is therefore the girl's aunt.

**Why other options are wrong:**

- Option B: The mother would be the brother's wife, not his sister.
- Option C: A sister relation does not fit an aunt-niece link.
- Option D: A cousin would share grandparents, not this direct aunt link.

**Final Answer:** The woman is the girl's aunt $\Rightarrow$ $\boxed{A}$

**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 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 5 km South, cancelling the 5 km North.

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

**Why other options are wrong:**

- Option B: West is the wrong direction; both turns were to the right.
- Option C: 5 km ignores that the East leg was only 3 km.
- Option D: The North and South legs cancel, so he is not 8 km North.

**Final Answer:** He is 3 km East of the start $\Rightarrow$ $\boxed{\text{A}}$

**Answer: (A)** Go Back to Q11

## Q12.

**Solution**

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

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

**Step 2:** Q is immediately right of P, so P and Q are together as P, Q.

**Step 3:** S sits between Q and T, giving the block Q, S, T.

**Step 4:** Joining them after R gives the row R, P, Q, S, T. The middle (third) seat is Q.

**Why other options are wrong:**

- Option A: P sits second, not in the middle.
- Option C: S sits fourth.
- Option D: R sits at the left end.

**Final Answer:** Q sits in the middle $\Rightarrow$ $\boxed{\text{B}}$

**Answer: (B)** Go Back to Q12

## Q13.

**Solution**

**Concept — Ranking:** Total = (rank from top) + (rank from bottom) − 1.

**Step 1:** Amit is 7th from the top and 26th from the bottom.

**Step 2:** Total students = 7 + 26 − 1 = 32. We subtract 1 because Amit is counted in both ranks.

**Why other options are wrong:**

- Option A: 33 forgets to subtract the double-counted Amit.
- Option C: 31 subtracts one too many.
- Option D: 34 adds an extra student.

**Final Answer:** There are 32 students ⇒ B

**Answer: (B)** Go Back to Q13

## Q14.

**Solution**

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

**Step 1:** P heavier than Q but lighter than R gives Q < P < R.

**Step 2:** S heavier than R gives R < S.

**Step 3:** T is the lightest. Combining: T < Q < P < R < S.

**Step 4:** The heaviest is S.

**Why other options are wrong:**

- Option A: P is in the middle of the order.
- Option B: R is heavier than P but still lighter than S.
- Option D: Q is near the lighter end.

**Final Answer:** S is the heaviest ⇒ C

**Answer: (C)** Go Back to Q14

## Q15.

**Solution**

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

**Step 1:** M is at position 3 and O is at position 6.

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

**Step 3:** That is 2 students between M and O.

**Why other options are wrong:**

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

**Final Answer:** 2 students stand between M and O $\Rightarrow$ $\boxed{\text{D}}$

**Answer: (D)** Go Back to Q15

## Q16.

**Solution**

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

**Setup:** "All pens are pencils" puts Pens inside Pencils. "All pencils are erasers" puts Pencils inside Erasers. So Pens sits inside Pencils, which sits inside Erasers.

**Conclusion I — All pens are erasers:** Since Pens is inside Erasers, every pen is an eraser. Conclusion I follows.

**Conclusion II — Some erasers are pens:** Pens lie within Erasers, so at least those are erasers that are pens. 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:** "All books are pens" puts Books inside Pens. "Some pens are red" overlaps Pens with Red, but the red part need not touch Books.

**Conclusion I — Some books are red:** The red pens may lie entirely outside the Books circle, so this is not certain. Conclusion I does not follow.

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

**Result:** Neither conclusion follows.

**Final Answer:** Neither conclusion follows $\Rightarrow$ D

**Answer: (D)** Go Back to Q17

## Q18.

**Solution**

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

**Setup:** "No apple is a mango" separates Apples from Mangoes. "All mangoes are fruits" puts Mangoes inside Fruits. Apples stay outside Mangoes but may still overlap Fruits.

**Conclusion I — No apple is a fruit:** Apples are only barred from Mangoes, not from Fruits; an apple can still be a fruit. Conclusion I does not follow.

**Conclusion II — All fruits are mangoes:** Only mangoes are inside fruits, not the reverse; there may be fruits that are not mangoes. Conclusion II does not follow.

**Result:** Neither conclusion follows.

**Final Answer:** Neither conclusion follows $\Rightarrow$ D

**Answer: (D)** Go Back to Q18

## Q19.

**Solution**

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

**Step 1:** At 3:00 the minute hand points to 12 and the hour hand points to 3.

**Step 2:** The gap from 12 to 3 is 3 hour marks.

**Step 3:** Angle $= 3 \times 30 = 90$ degrees.

**Why other options are wrong:**

- Option B: 60 degrees would be a 2-hour gap.
- Option C: 120 degrees would be a 4-hour gap.
- Option D: 180 degrees would be a 6-hour gap, as at 6:00.

**Final Answer:** The angle is 90 degrees $\Rightarrow$ $\boxed{\text{A}}$

**Answer: (A)** Go Back to Q19

## Q20.

**Solution**

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

**Step 1:** Divide 61 by 7: $61 = 7 \times 8 + 5$, so the remainder is 5.

**Step 2:** Count 5 days forward from Monday: Tuesday, Wednesday, Thursday, Friday, Saturday.

**Step 3:** The day is Saturday.

**Why other options are wrong:**

- Option A: Wednesday would be a remainder of 2.
- Option B: Thursday would be a remainder of 3.
- Option C: Friday would be a remainder of 4.

**Final Answer:** It will be Saturday $\Rightarrow$ $\boxed{\text{D}}$

**Answer: (D)** Go Back to Q20

## Q21.

**Solution**

**Concept — Clock overlaps:** The hands overlap once each hour except one hour is skipped.

**Step 1:** In 12 hours the hands coincide 11 times, not 12, because between 11 and 12 they meet exactly at 12.

**Step 2:** So the standard count for 12 hours is 11.

**Why other options are wrong:**

- Option B: 12 forgets that one overlap is shared between the 11 and 12 o'clock hours.
- Option C: 22 is the count for 24 hours.
- Option D: 24 double-counts across a full day.

**Final Answer:** The hands coincide 11 times $\Rightarrow$ $\boxed{A}$

**Answer: (A)** Go Back to Q21

## Q22.

**Solution**

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

**Step 1:** All students in the class are intelligent, so anyone who is not intelligent cannot be a student of that class.

**Step 2:** Rohan is not intelligent, so Rohan cannot be a student of the class. Conclusion I follows.

**Step 3:** Conclusion II says the opposite, that Rohan is a student, which contradicts Step 2, so it does not follow.

**Why other options are wrong:**

- Option A: Conclusion II is directly contradicted.
- Option B: Both cannot follow when they are opposite.
- Option D: Conclusion I clearly follows, so "neither" is wrong.

**Final Answer:** Only Conclusion I follows $\Rightarrow$ $\boxed{C}$

**Answer: (C)** Go Back to Q22

## Q23.

**Solution**

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

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

**Step 2:** Do multiplication first: $6 \times 2 = 12$.

**Step 3:** Now $12 - 4 + 3 = 8 + 3 = 11$.

**Why other options are wrong:**

- Option A: 8 stops before adding the 3.
- Option B: 9 comes from a wrong order of operations.
- Option C: 10 miscounts the final addition.

**Final Answer:** The value is 11 $\Rightarrow$ $\boxed{\text{D}}$

**Answer: (D)** Go Back to Q23

## Q24.

**Solution**

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

**Step 1:** The numbers 3, 5, 7, 11 and 13 are all prime numbers.

**Step 2:** $9 = 3 \times 3$ is not prime, so it breaks the pattern.

**Why other options are wrong:**

- Option A: 3 is prime and fits the group.
- Option B: 5 is prime and fits the group.
- Option C: 7 is prime and fits the group.

**Final Answer:** 9 is the odd one out $\Rightarrow$ $\boxed{\text{D}}$

**Answer: (D)** Go Back to Q24

## Q25.

**Solution**

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

**Step 1:** A is the brother of B, and B is the sister of C, so A, B and C are siblings; A is also the brother of C.

**Step 2:** C is the father of D, so A is the brother of D's father.

**Step 3:** The brother of one's father is one's uncle, so A is D's uncle.

**Why other options are wrong:**

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

**Final Answer:** A is the uncle of D $\Rightarrow$ $\boxed{A}$

**Answer: (A)** Go Back to Q25

# Answer Key

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