

Symbiosis Entrance Test (SET)

Analytical & Logical Reasoning — Sample Paper 10

Total Questions: 12

Maximum Marks: 12

Duration: 12 minutes

Marking Scheme: +1 per correct answer; no negative marking

Mode: Online CBT

Instructions

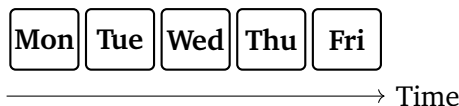
1. This paper contains 12 multiple-choice questions carrying 1 mark each.
2. Each question has four options (A)–(D). Choose the single best answer.
3. There is no negative marking for wrong answers.
4. Attempt all questions within the stipulated time of 12 minutes.
5. Syllabus: Puzzles, Syllogisms, Coding-Decoding, Blood Relations, Series, Direction Sense, Analogies — as tested in SET (Symbiosis Entrance Test) Analytical & Logical Reasoning section.

SECTION: Analytical & Logical Reasoning
(12 Questions × 1 Mark)

Read the following information carefully and answer Questions 1–3.

Setup: Five colleagues — Gopal, Harsha, Inder, Janaki, and Kiran — have individual meetings scheduled from **Monday to Friday** (one meeting per day, each person meeting exactly once). The following conditions hold:

1. Janaki meets on **Monday**.
2. Harsha meets on **Tuesday**.
3. Gopal meets **after** Harsha but **before** Inder.
4. Kiran meets on the day **immediately after** Gopal.



Q1. Who has the meeting on **Wednesday**?

- (A) Harsha
- (B) Gopal
- (C) Kiran
- (D) Inder

Q2. On which day does **Inder** have his meeting?

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

Q3. Who meets on the day **immediately after** Gopal?

- (A) Kiran
- (B) Janaki
- (C) Inder



(D) Harsha

Q4. Statements:

(I) All pens are tools.

(II) Some tools are expensive.

Conclusions:

I. Some pens are expensive.

II. All tools are pens.

Which of the following holds?

(A) Only Conclusion I follows

(B) Both Conclusions follow

(C) Neither follows

(D) Only Conclusion II follows

Q5. Statement: “The government has decided to reduce the price of petrol to promote economic growth.”

Assumptions:

I. Price of petrol affects economic growth.

II. The government has the authority to fix petrol prices.

Which assumption(s) is/are **implicit** in the statement?

(A) Only Assumption I is implicit

(B) Both Assumptions I and II are implicit

(C) Only Assumption II is implicit

(D) Neither is implicit

Q6. In a certain code language, each **consonant** is replaced by the **previous consonant** in the alphabet, and each **vowel** is replaced by the **next vowel** (A→E, E→I, I→O, O→U, U→A). If ROAD is coded as QUEC, how will MINE be coded?



- (A) LOMI
- (B) KOMI
- (C) LONI
- (D) LMOI

Q7. A, B, C, D, and E are five members of a family. A is the son of B. C is the sister of A. D is the father of C. E is the son of D. If B is the **wife of D**, how is E related to C?

- (A) Uncle
- (B) Nephew
- (C) Cousin
- (D) Brother

Q8. Introducing Preeti to her friend, Renu said, “Her father’s mother is the **mother-in-law of my mother.**” How is Preeti related to Renu?

- (A) Aunt
- (B) Sister
- (C) Cousin
- (D) Niece

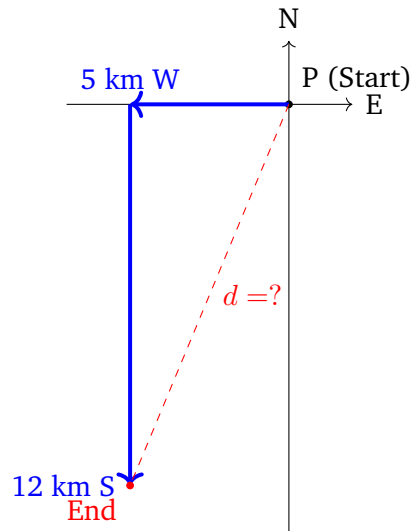
Q9. Find the missing term in the series: 2, 3, 5, 8, 13, 21, ?



- (A) 32
- (B) 34
- (C) 36
- (D) 31

Q10. Mohan starts from point P and walks **5 km West**. He then turns **South** and walks **12 km**. What is the straight-line distance between Mohan’s current position and his starting point P?





- (A) 7 km
- (B) 10 km
- (C) 12 km
- (D) 13 km

Q11. Keyboard : Computer $\therefore$ Steering Wheel : ?

- (A) Car
- (B) Engine
- (C) Road
- (D) Driver

Q12. Which of the following is the **ODD ONE OUT**?

- (A) Mercury
- (B) Venus
- (C) Moon
- (D) Mars



Detailed Solutions

Solution

Topic: Scheduling / Day-based Arrangement

Step-by-step deduction:

- Q1.
- Janaki = Monday; Harsha = Tuesday (both given directly).
 - Remaining days: Wednesday, Thursday, Friday for Gopal, Inder, Kiran.
 - Condition (3): Gopal is after Harsha (Tue) and before Inder $\Rightarrow$ Gopal $\in$ {Wed, Thu} and Inder is on a day after Gopal.
 - Condition (4): Kiran meets immediately after Gopal (Kiran = Gopal + 1 day).
 - If Gopal = Wed, Kiran = Thu. Inder must be after Wed, so Inder $\in$ {Thu, Fri}; since Thu = Kiran, Inder = Fri. **Valid and unique.**
 - If Gopal = Thu, Kiran = Fri. Inder must be after Thu, so Inder = Fri = Kiran. **Conflict.**

Final schedule:

Mon: Janaki Tue: Harsha Wed: Gopal Thu: Kiran Fri: Inder

The Wednesday meeting belongs to **Gopal**.

Option (A) Harsha is on Tuesday. Option (C) Kiran is on Thursday. Option (D) Inder is on Friday.

Correct answer: (B) Gopal.

Answer: (B) [Go Back to Q 1](#)

Q2.

Solution

Topic: Scheduling / Day-based Arrangement

Using the schedule established in Q1:

Mon: Janaki Tue: Harsha Wed: Gopal Thu: Kiran Fri: Inder

Inder's meeting is on **Friday**.

Option (A) Wednesday: Gopal's day. Option (B) Thursday: Kiran's day. Option (C)



Monday: Janaki's day.

Correct answer: (D) Friday.

Answer: (D) [Go Back to Q 2](#)

Q3.

Solution

Topic: Scheduling / Day-based Arrangement

Using the schedule from Q1: Gopal = Wednesday, Kiran = Thursday.

The person meeting on the day immediately after Gopal (Thursday) is **Kiran**.

This follows directly from Condition (4): "Kiran meets on the day immediately after Gopal."

Option (B) Janaki is on Monday — not immediately after Wednesday. Option (C) Inder is on Friday — two days after Gopal. Option (D) Harsha is on Tuesday — before Gopal.

Correct answer: (A) Kiran.

Answer: (A) [Go Back to Q 3](#)

Solution

Topic: Syllogisms

Statements:

Q4. (I) All pens are tools. $[All P \subseteq T]$

(II) Some tools are expensive. $[T \cap E \neq \emptyset]$

Analysis of Conclusion I — "Some pens are expensive":

Statement II says *some* tools are expensive, but does not specify *which* tools. The expensive tools could be hammers, drills, or other tools that are not pens. We cannot conclude that any pen is definitely expensive. **Conclusion I does NOT necessarily follow.**

Analysis of Conclusion II — "All tools are pens":

Statement I says pens are a *subset* of tools ($pens \Rightarrow tools$), not that tools are a subset of pens. Reversing the direction of a universal statement is an invalid inference. There can be many tools that are not pens (e.g. scissors, hammers). **Conclusion II does NOT follow.**

Option (A) Only I: incorrect (I is uncertain). Option (B) Both: incorrect. Option



(D) Only II: incorrect (II is the invalid converse of Statement I).

Correct answer: (C) Neither follows.

Answer: (C) [Go Back to Q 4](#)

Q5.

Solution

Topic: Statement–Assumptions

Statement: “The government has decided to reduce the price of petrol to promote economic growth.”

Analysis of Assumption I — “Price of petrol affects economic growth”:

The government’s explicit goal is to promote economic growth by reducing petrol prices. For this reasoning to hold, the government must *assume* that a change in petrol prices will influence economic growth. Without this assumption, the action would have no rationale. **Assumption I is implicit.**

Analysis of Assumption II — “The government has the authority to fix petrol prices”:

The statement says the government “has decided” to reduce the price — this is only a coherent decision if the government believes it can actually change petrol prices. A decision to act assumes the power and authority to carry out that action. **Assumption II is also implicit.**

Option (A) Only I: ignores the equally implicit Assumption II. Option (C) Only II: ignores Assumption I. Option (D) Neither: incorrect.

Correct answer: (B) Both Assumptions I and II are implicit.

Answer: (B) [Go Back to Q 5](#)

Solution

Topic: Coding-Decoding (Consonant → Previous Consonant; Vowel → Next Vowel)

Vowel sequence: A → E → I → O → U → A (cyclic).

Consonants in order: B, C, D, F, G, H, J, K, L, M, N, P, Q, R, S, T, V, W, X, Y, Z.

Previous consonant: R → Q, D → C, M → L, N → M, etc.

Verification with ROAD → QUEC:



	Letter	Type	Rule	Code
Q6.	R	consonant	previous consonant	Q
	O	vowel	next vowel (O→U)	U
	A	vowel	next vowel (A→E)	E
	D	consonant	previous consonant	C

Result: QUEC ✓

Applying to MINE:

	Letter	Type	Rule	Code
	M	consonant	previous consonant	L
	I	vowel	next vowel (I→O)	O
	N	consonant	previous consonant	M
	E	vowel	next vowel (E→I)	I

Code for MINE = L-O-M-I = **LOMI**.

Option (B) KOMI: K would require M→K (skipping L). Incorrect. Option (C) LONI: O for N is wrong; N is a consonant, its previous consonant is M. Incorrect. Option (D) LMOI: places M before O, reversing the N and I positions. Incorrect.

Correct answer: (A) LOMI.

Answer: (A) [Go Back to Q 6](#)

Solution

Topic: Blood Relations

Given facts:

- Q7.
- A is the son of B.
 - C is the sister of A.
 - D is the father of C.
 - E is the son of D.
 - B is the wife of D.

Deduction:

Since B is the wife of D, they are a couple. D is the father of C, and A is the son of B — since B and D are married, D is also the father of A (and B is the mother of both A and C). E is the son of D, so D and B are the parents of A, C, and E. All three are siblings.

E is the son of D and a sibling of C ⇒ E is the **brother of C**.



Option (A) Uncle: E would need to be a sibling of one of C's parents, not a sibling of C. Incorrect. Option (B) Nephew: a nephew is the son of one's sibling. C would have to be E's aunt for E to be C's nephew. Incorrect. Option (C) Cousin: cousins share grandparents but not parents. Incorrect.

Correct answer: (D) Brother.

Answer: (D) [Go Back to Q 7](#)

Solution

Topic: Blood Relations

Statement: "Preeti's father's mother is the mother-in-law of Renu's mother."

Step-by-step:

- Q8. (a) **Renu's mother's mother-in-law** = Renu's mother's husband's mother = Renu's **father's mother** (Renu's paternal grandmother).
- (b) **Preeti's father's mother** = Preeti's paternal grandmother.
- (c) Therefore: Preeti's paternal grandmother = Renu's paternal grandmother.
- (d) This means Preeti's father and Renu's father share the same mother $\Rightarrow$ they are **brothers**.
- (e) Hence Preeti and Renu are **cousins** (daughters of brothers).

Option (A) Aunt: an aunt is the sister of one's parent; there is no such relationship established here. Incorrect. Option (B) Sister: sisters share the same parents. Here Preeti and Renu have different fathers. Incorrect. Option (D) Niece: a niece is the daughter of one's sibling. Incorrect.

Correct answer: (C) Cousin.

Answer: (C) [Go Back to Q 8](#)

Q9.

Solution

Topic: Number Series (Fibonacci Pattern)

Series: 2, 3, 5, 8, 13, 21, ?

Identifying the pattern — each term equals the sum of the two preceding terms:

$$2 + 3 = 5 \checkmark \quad 3 + 5 = 8 \checkmark \quad 5 + 8 = 13 \checkmark \quad 8 + 13 = 21 \checkmark$$



Applying the rule: $13 + 21 = 34$.

This is the well-known **Fibonacci sequence** (starting from 2, 3 instead of the classical 1, 1).

Option (A) 32: $21 + 11 = 32$ — the second-to-last added value (11) is not in the series. Incorrect. Option (C) 36: $21 + 15 = 36$ — 15 is not a term in the series. Incorrect. Option (D) 31: $21 + 10 = 31$ — 10 is not a term. Incorrect.

Correct answer: (B) 34.

Answer: (B) [Go Back to Q 9](#)

Solution

Topic: Direction Sense (Pythagorean Distance)

Step-by-step movement:

Q10. (a) Mohan starts at point P.

(b) He walks **5 km West**: now at a point 5 km due West of P.

(c) He turns **South** and walks **12 km**: now 5 km West *and* 12 km South of P.

Net displacement from P:

The two legs (West and South) are perpendicular. By the **Pythagorean theorem**:

$$d = \sqrt{5^2 + 12^2} = \sqrt{25 + 144} = \sqrt{169} = 13 \text{ km}$$

(This is the classic 5-12-13 Pythagorean triple.)

Option (A) 7 km: equals $12 - 5$ (difference, not distance). Incorrect. Option (B) 10 km: $5 + 5 = 10$, or misapplying the formula. Incorrect. Option (C) 12 km: only the southward component; ignores the 5 km westward displacement. Incorrect.

Correct answer: (D) 13 km.

Answer: (D) [Go Back to Q 10](#)

Solution

Topic: Primary-Control-Device Analogy

The relationship is: **Primary input/control device : Machine it operates.**

Q11. • A **Keyboard** is the primary device through which a user inputs commands to a **Computer**.



- A **Steering Wheel** is the primary device through which a driver controls a **Car**.

Option (B) Engine: the engine is the power source of a car; the steering wheel does not control the engine (it controls direction). Incorrect. Option (C) Road: a road is the surface a car travels on, not something controlled by the steering wheel. Incorrect. Option (D) Driver: the driver is the person who operates the steering wheel, not the machine it analogises. Incorrect.

Correct answer: (A) Car.

Answer: (A) [Go Back to Q 11](#)

Solution

Topic: Classification / Odd One Out

Classifying the options:

	Option	Body	Category
Q12.	(A) Mercury	Planet	Revolves around the Sun
	(B) Venus	Planet	Revolves around the Sun
	(C) Moon	Natural satellite of Earth	Revolves around Earth
	(D) Mars	Planet	Revolves around the Sun

Mercury, Venus, and Mars are **planets** in our Solar System. The **Moon** is Earth's natural **satellite** — it revolves around the Earth, not directly around the Sun. It is therefore the odd one out in a list otherwise composed of planets.

Option (A) Mercury: a planet — fits the majority group. Option (B) Venus: a planet — fits the majority group. Option (D) Mars: a planet — fits the majority group.

Correct answer: (C) Moon.

Answer: (C) [Go Back to Q 12](#)

ANSWER KEY

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	2	D	3	A	4	C	5	B
6	A	7	D	8	C	9	B	10	D
11	A	12	C						

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