

CLASS 10 | SESSION 2026-27

Total Questions : 50 Time : 1 hr.

PATTERN & MARKING SCHEME

Section	No. of Questions	Marks per Ques.	Total Marks
(1) Logical Reasoning	15	1	15
(2) Subject Reasoning	20	1	20
(3) Everyday Application	10	1	10
(4) Achievers Section	5	3	15
Total	50	--	60

SYLLABUS

Section 1 Verbal and Non-Verbal Reasoning

Section 2 Real Numbers, Polynomials, Pair of Linear Equations in Two Variables, Quadratic Equations, Arithmetic Progressions, Triangles, Coordinate Geometry, Introduction to Trigonometry, Some Applications of Trigonometry, Circles, Areas Related to Circles, Surface Areas and Volumes, Statistics, Probability

Section 3 The syllabus of this section will be based on the syllabus of Mathematical Reasoning and Quantitative Aptitude

Section 4 Higher Order Thinking Questions - Syllabus as per Section - 2

HOW TO USE THIS PAPER

- Every question is followed immediately by its answer.
- Try each question on your own first, then check the green answer card.
- Use the answer key at a glance on the last page for a quick revision.

TEST DAY INSTRUCTIONS

- The paper has 50 questions carrying a total of 60 marks.
- All questions are compulsory and there is no negative marking.
- Duration is 1 hour - aim for about 60 seconds per question.
- Read every question carefully before choosing your option.

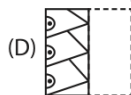
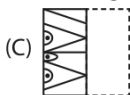
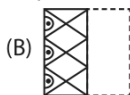
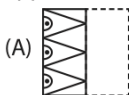
SCORING STRATEGY

- Attempt the Logical Reasoning section first - it is the quickest to score.
- Take the 3-mark Achievers questions after finishing the 1-mark questions.
- Revisit every skipped question during the last ten minutes.

QUESTION 1

Logical Reasoning · Logical Reasoning

1. A square transparent sheet with a pattern and a dotted line on it is shown here. Select a figure from the options as to how the pattern would appear when the transparent sheet is folded along the dotted line.



ANSWER & STEP-BY-STEP EXPLANATION

Correct: (A)

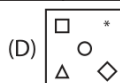
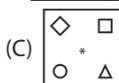
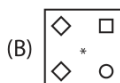
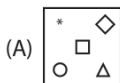
- Identify the underlying pattern and concepts under Visual pattern analysis & directional logic.
- Applying the principles of Mathematics for Class 10, evaluate the given options systematically.
- Option (A) satisfies all required conditions and yields the correct result.

QUESTION 2

Logical Reasoning · Logical Reasoning

2. Select a figure from the options which will continue the same series as established by the Problem Figures.

Problem Figures



ANSWER & STEP-BY-STEP EXPLANATION

Correct: (C)

- Identify the underlying pattern and concepts under Coding-decoding & sequence completion.
- Applying the principles of Mathematics for Class 10, evaluate the given options systematically.
- Option (A) satisfies all required conditions and yields the correct result.

QUESTION 3

Logical Reasoning · Logical Reasoning

3. In a row of boys, Nitish is 8th from the right end and Prem is 17th from the left end. If they interchange their positions, then Nitish becomes 10th from the right end. How many boys are there in the row?

(A) 25

(B) 26

(C) 27

(D) 24

ANSWER & STEP-BY-STEP EXPLANATION

Correct: (B)

- Identify the underlying pattern and concepts under Analogy & classification reasoning.
- Applying the principles of Mathematics for Class 10, evaluate the given options systematically.
- Option (B) satisfies all required conditions and yields the correct result.

QUESTION 4

Mathematical Reasoning · Mathematical Reasoning

4. Let S_n denotes the sum of first n terms of an A.P. If $S_{2n} = 3S_n$, then the value of $\frac{S_{3n}}{S_n}$ is equal to
- (A) 4 (B) 6 (C) 8 (D) 10

ANSWER & STEP-BY-STEP EXPLANATION

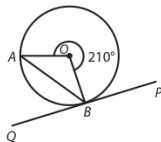
Correct: (B)

- Identify the underlying pattern and concepts under Algebraic expressions & equations.
- Applying the principles of Mathematics for Class 10, evaluate the given options systematically.
- Option (B) satisfies all required conditions and yields the correct result.

QUESTION 5

Mathematical Reasoning · Mathematical Reasoning

5. If AB is chord of a circle with centre O & PQ is a tangent to the circle at B with reflex $\angle AOB = 210^\circ$, then the value of $\angle ABQ$ is
- (A) 105° (B) 150°
(C) 210° (D) 75°



ANSWER & STEP-BY-STEP EXPLANATION

Correct: (D)

- Identify the underlying pattern and concepts under Geometry & angle relationships.
- Applying the principles of Mathematics for Class 10, evaluate the given options systematically.
- Option (D) satisfies all required conditions and yields the correct result.

QUESTION 6

Mathematical Reasoning · Mathematical Reasoning

6. The angles of depression of two consecutive kilometre stones on the road on right and left of an aeroplane are 60° and 45° , respectively as observed from the aeroplane. Find the height of the aeroplane from the ground. (Use : $\sqrt{3} = 1.732$)
- (A) 0.634 km (B) 1.682 km (C) 2.384 km (D) 0.236 km

ANSWER & STEP-BY-STEP EXPLANATION

Correct: (A)

- Identify the underlying pattern and concepts under Euclidean geometry & theorems.
- Applying the principles of Mathematics for Class 10, evaluate the given options systematically.
- Option (A) satisfies all required conditions and yields the correct result.

QUESTION 7

Everyday Mathematics · Mathematical Reasoning

7. Two trains leave a railway station at the same time. The first train travels due West and the second train due North. The first train travels 5 km/hr faster than the second train. If after two hours, they are 50 km apart, then find the average speed of each train.
- (A) 20 km/hr, 15 km/hr (B) 25 km/hr, 30 km/hr
(C) 40 km/hr, 30 km/hr (D) 60 km/hr, 55 km/hr

ANSWER & STEP-BY-STEP EXPLANATION

Correct: (A)

- Identify the underlying pattern and concepts under Polynomials & financial math.
- Applying the principles of Mathematics for Class 10, evaluate the given options systematically.
- Option (A) satisfies all required conditions and yields the correct result.

QUESTION 8

Everyday Mathematics · Mathematical Reasoning

8. A design on a floor is made up of triangular tiles. The sides of each triangle being 24 cm, 32 cm and 40 cm. Find the cost of polishing all 170 tiles on the floor at the rate of ₹ 1.50 per cm^2 .
- (A) ₹ 97920 (B) ₹ 65280 (C) ₹ 99480 (D) ₹ 89460

ANSWER & STEP-BY-STEP EXPLANATION

Correct: (A)

- Identify the underlying pattern and concepts under Mensuration & 3D solid geometry.
- Applying the principles of Mathematics for Class 10, evaluate the given options systematically.
- Option (A) satisfies all required conditions and yields the correct result.

QUESTION 9

Achievers Section · Achievers Section

9. Solve the following questions and select the correct option.
- (i) If $\frac{\cos \alpha}{\cos \beta} = m$ and $\frac{\cos \alpha}{\sin \beta} = n$, then $(m^2 + n^2) \cos \alpha \cos \beta \cot \beta$ is equal to _____.
- (ii) If $\operatorname{cosec} A = 2$, then the value of $\frac{1}{\tan A} + \frac{1 - \cos A}{\sin A}$ is _____.
- (A) (i) : n^3 ; (ii) : $\sqrt{2} - 1$ (B) (i) : n ; (ii) : 2
(C) (i) : n^3 ; (ii) : 2 (D) (i) : n^2 ; (ii) : $\sqrt{3} + 2$

ANSWER & STEP-BY-STEP EXPLANATION

Correct: (C)

- Identify the underlying pattern and concepts under HOTS: Multi-concept analytical evaluation.
- Applying the principles of Mathematics for Class 10, evaluate the given options systematically.
- Option (C) satisfies all required conditions and yields the correct result.

QUESTION 10

Achievers Section · Achievers Section

10. Read the given statements carefully and select the correct option.

Statement-I : If the quadratic equation $(4 - k)x^2 + (2k + 4)x + (8k + 1) = 0$ is a perfect square, then the values of k are 0 and 3.

Statement-II : If α, β are the roots of the equation $25x^2 + 20x + 4 = 0$, then the equation whose roots are $\frac{1}{\alpha}$ and $\frac{1}{\beta}$ is $4x^2 + 20x + 25 = 0$.

- (A) Both Statement-I and Statement-II are true.
- (B) Both Statement-I and Statement-II are false.
- (C) Statement-I is true but Statement-II is false.
- (D) Statement-I is false but Statement-II is true.

ANSWER & STEP-BY-STEP EXPLANATION

Correct: (A)

- Identify the underlying pattern and concepts under HOTS: Advanced mathematical statement verification.
- Applying the principles of Mathematics for Class 10, evaluate the given options systematically.
- Option (A) satisfies all required conditions and yields the correct result.

ANSWER KEY AT A GLANCE

Q1 (A)	Q2 (C)	Q3 (B)	Q4 (B)	Q5 (D)	Q6 (A)	Q7 (A)	Q8 (A)	Q9 (C)	Q10 (A)
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REVISION NOTES

- Attempt the section you are strongest in first - it is the quickest to score.
- Aim for about 60 seconds per question and keep an eye on the clock.
- Re-read the question before choosing an option; watch for 'NOT' and 'EXCEPT'.
- Skip and mark anything you are unsure of, then revisit it in the last ten minutes.
- Practise chapter-wise to build both speed and accuracy before the exam.

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