



Class: X

MODEL PAPER EXAMINATION 2026

Time Allowed: 20 minutes

SUBJECT: MATHEMATICS

Q1: (SECTION "A")

Marks: 15

Note: Attempt all questions from section 'A'. Each question carries **ONE** mark.1 If 1, 9, x and 45 are in proportion, then $x =$

- A. 27 B. 0.2 C. 5 D. 45

2 An improper fraction can be reduced into a proper fraction by:

- A. Addition B. Multiplication C. Subtraction D. Division

3 The angle between the radial segment and tangent at its outer end pointy is:

- A. 45° B. 60° C. 90° D. 120°

4 If m denotes the number of rows and n denotes the number of column such that $m=n$, then matrix is called _____matrix

- A. Rectangular B. Equal C. Square D. null

5 The A.M. of (0, 90, k , 10, 100) is 40, then $k=$

- A. 0 B. 90 C. 10 D. 100

6 If the ratio of two corresponding sides of similar triangles is 5:7, then the ratio of their areas is:

- A. 5:7 B. 7:5 C. 25:7 D. 25:49

7 The fourth proportional to 3, 5, 12 is:

- A. 15 B. 20 C. 36 D. 60

8 $\operatorname{Cosec}\theta \cdot \sin\theta =$

- A. 1 B. 0 C. -1 D. 2

9 The angle 135° in radians is:

- A. $\frac{5\pi}{4}$ B. $\frac{3\pi}{4}$ C. $\frac{2\pi}{4}$ D. 135π

10 A line intersecting a circle at 2 points is called a:

- A. Chord B. Diameter C. Secant D. Tangent

11 Which one is a function?

- A. $\{(2,5),(2,7),(3,8)\}$ B. $\{(6,7),(7,6),(6,8)\}$ C. $\{(0,5),(6,0),(5,6)\}$ D. None of these

12 $\operatorname{Cosec}^2\theta - 1 =$ _____

- A. $\cos^2\theta$ B. $\cot^2\theta$ C. $\sin^2\theta$ D. $\sec^2\theta$

13 Diagonal of a rectangle measures 6.5cm. If its width is 2.5cm, its length is:

- A. 6cm B. 9cm C. 12cm D. 4cm

14 Tangents drawn at the end points of the diameter of a circle are:

- A. Perpendicular B. Intersecting C. Parallel D. None of these

15 If $A \supseteq B$, then $A \cup B =$

- A. B B. θ C. \mathbb{U} D. A

END OF SECTION A



Class: X MODEL PAPER EXAMINATION 2026
Time: 2 hours 40 minutes SUBJECT: MATHEMATICS (SECTION “B” AND SECTION “C”) Total Marks 60
SECTION “B” (SHORT ANSWER QUESTIONS) 30 Marks

Q2: Answer any SIX questions from this section.

- i. If $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$, $A = \{1, 3, 5, 7, 9\}$ and $B = \{2, 4, 6, 8\}$, prove that $(A \cup B)' = A' \cap B'$
- ii. Solve the following equation by using componendo-dividendo theorem.

$$\frac{\sqrt{(x+1)} + \sqrt{(x-1)}}{\sqrt{(x+1)} - \sqrt{(x-1)}} = \frac{1}{2}$$
- iii. Resolve into partial fraction

$$\frac{5x^2 - 30x + 44}{(x+3)^3}$$
- iv. Show that tangents drawn at the ends of a chord in a circle make equal angles with the chord.
- v. Find remaining trigonometric functions /ratios if $\sec \theta = \operatorname{cosec} \theta = \sqrt{2}$ and θ lies in first quadrant.
- vi. If the length of the segment joining two congruent circles touching externally is 12cm, find their radii and circumferences.
- vii. Prove that $\frac{\cot \theta + \operatorname{cosec} \theta}{\sin \theta + \tan \theta} = \operatorname{cosec} \theta \cot \theta$
- viii. If $\begin{bmatrix} a & b \\ c & d \end{bmatrix} + \begin{bmatrix} 3 & -1 \\ 1 & 0 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, then find a, b, c and d
- ix. Determine the value of in the following quadratic equation such that it will make the roots equal

$$9x^2 + mx + 16 = 0$$
- x. A 25-meter-long ladder is leaning against a vertical wall, with its base positioned 7 meters away from the wall. How high will the ladder reach on the wall?

SECTION “C” DETAILED ANSWER QUESTIONS

30 Marks

Q3: Attempt any THREE questions from this section.

- i. Find the invers of $A = \begin{bmatrix} 1 & 0 & 1 \\ -4 & 1 & -1 \\ 6 & -2 & 1 \end{bmatrix}$ by adjoint method.
- ii. If a line segment intersects the two sides of a triangle in the same ratio, then it is parallel to the third side. Prove it.
- iii. In a race, 8 runners completed the race in the following times (in minutes)

Minutes	10-12	13-15	16-18	19-21	22-24
Runners	2	3	1	1	1

(a) Find the Mean.

(b) Find the Median
- vi. Solve the following systems of equations:

$$\frac{4}{x} + \frac{3}{y} = 2 \text{ and } 4x + 3y = 25$$
- v. Find A.M., G.M., H.M., Median and Mode of 51, 52, 52, 52, 54, 55, 57, 58, 60, 61, 62, 64.