

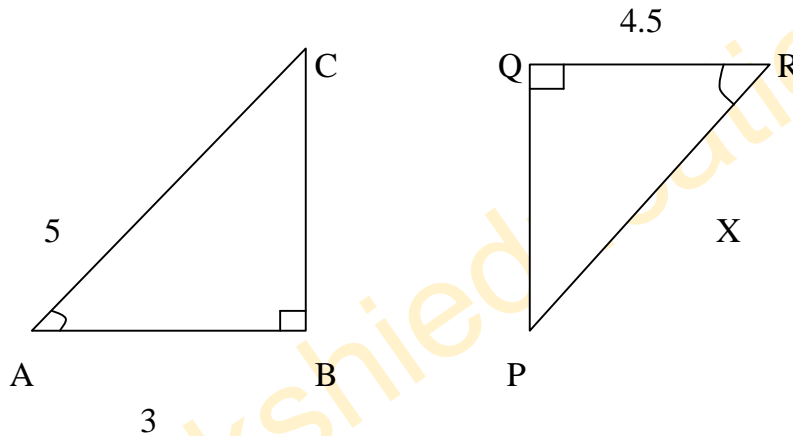
MODEL PAPER – III , PAPER – II

SECTION – I

PART A

SECTION-I

1. write the formula to find the volume of 'cone'? and Explain each term in it ?
2. If the adjacent traingle are similar then find the value of 'X'?



3. If $\cos A = \frac{12}{13}$ then find $\sin A = ?$
4. Find the average of first 'n' natural numbers?
5. Find the probability of getting a prime number when a die is rolled once ?
6. Evaluate $\cos 12^\circ - \sin 78^\circ$?
7. Draw a circle with radius 6cm and construct a pair of tangents to the circle ?

SECTION-II

8. Show that $\sqrt{\frac{1+\sin A}{1-\sin A}} = \sec A + \tan A$?
9. Two poles of height 6cm, and 11cm stand on a plane ground If the distance between the feet of the poles is 12cm find the distance between their tops?
10. Find the volume and surface area of a sphere of radius 2.1cm?
11. Write the formula of mode for grouped data, and explain each term in it?
12. Show that $\frac{1}{\cos \theta} - \cos \theta = \tan \theta \cdot \sin \theta$.
13. The top of a clock tower is observed at angle of elevation of a° and the foot of the tower is at the distance of 'd' meters from the observer draw the diagram for this data ?

SECTION-III

14. A box contains 90 discs which are numbered from 1 to 90 if one disc is selected at random from the box. Find the probability that it bears
 - 1] a two-digit number
 - 2] a perfect square number
 - 3] a number divisible by 5.

(or)

If $\operatorname{cosec} \theta + \cot \theta = k$, then prove that $\cos \theta = \frac{k^2 - 1}{k^2 + 1}$

15. The table below shows the daily expenditure on the food of 25 households in a locality? Find the mean by step-division method.

Daily expenditure (rs)	100-150	150-200	200-250	250-300	300-350
Number of house holds	4	5	12	2	2

(or)

Draw a circle of radius 6cm. from a point 10cm away from its centre construct the pair of tangents to the circle. Find the lengths of the tangents.

16. The following distribution gives the daily income of 50 workers of a factory.

Daily income (Rs)	250-300	300-350	350-400	400-450	450-500
No.of workers	12	14	8	6	10

(or)

Draw both o gives for the above data and find the median ?

17. Two men on either sides of a temple of 30 meters height observe its top at the angle of elevation 30° and 60° respectively .Find the distance between the two men. ?

(or)

A medicine capsule is in the shape of a cylinder with two hemisphere stuck to each of its ends. the length of the capsule is 14mm and the thickness is 5mm. Find its surface area ?

Part-B

18. Identify which is true statement? ()

- A] $0 \leq P(E) \leq 1$ B] $0 \leq P(E) < 2$ c] $9 \leq P(E)$ D] None

19. which of the following is not a measure of central tendency ()

- A] Mean B] Meadian C] Range D] Mode

20 If $\sin \theta = \cos \theta$ (where $0^\circ \leq \theta < 90^\circ$) then $\tan \theta + \cot \theta =$ _____ ()

- A] $2\sqrt{30}$ B] $\frac{2}{\sqrt{3}}$ C] 2 D] 1

21 A boy observed the top of an electrical pole at angle of elevation of 60° when the observation point 8cm find the height of the pole. ()

- A] $8\sqrt{3}M$ B] $10\sqrt{3}M$ C] $15\sqrt{3}$ D] None

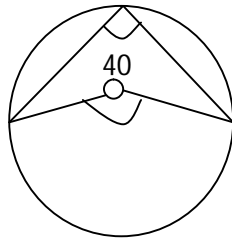
22. The radius of the hemispeare is 21cm find the curved surface area ()

- A] 2772cm^2 B] 7722cm^2 C] 2727cm^2 D] none

23. Find the area of sector whose radius 7cm, angle 60° ()

- A] 20.66cm^2 B] 25.66cm^2 C] 12.83cm^2 D] none

24. In the figure, value 'a' is A



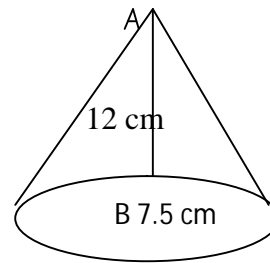
- A] 100° B] 7cm C] 80° D] 90°

25. Which of the following represents an O give curve ? ()

- A) B) C) D)

26. Find the slant height of the right circular cone give figure ()

- A] 17 B]7 c]13 d]20



27. How many tangents draw from a external point ()

- A] 2 B]3 C]4 D]none

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