

SUB - MATHS(40)

Max Time : 1 hr

CLASS- 11th

Max mark :25

SECTION A (5 MARKS)

Q1. Angle between hands of clock when it shows the time 9.45 is

- a. $(7.5)^\circ$ b. $(12.5)^\circ$ c. $(17.5)^\circ$ d. $(22.5)^\circ$

Q2. If the angle of a triangle are in the ratio 1:2:3 then the smallest angle in radian is

- a. $\frac{\pi}{3}$ b. $\frac{\pi}{6}$ c. $\frac{\pi}{9}$ d. $\frac{\pi}{2}$

Q3. If $\sec x = m$ and $\tan x = n$ then $\frac{1}{m} \left\{ (m+n) + \frac{1}{m+n} \right\}$ is equal to

- a. 2 b. mn c. 2m. d. 2n

Q4. If $\operatorname{cosec} x + \cot x = \frac{5}{2}$ then the value of $\tan x$ is

- a. $\frac{14}{25}$ b. $\frac{20}{21}$ c. $\frac{21}{20}$ d. $\frac{15}{16}$

Q5. $\frac{\tan A}{1+\sec A} + \frac{1+\sec A}{\tan A}$ is equal to

- a. $2\operatorname{cosec} A$ b. $2 \sec A$ c. $2 \sin A$ d. $2 \cos A$

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SECTION B (8 MARKS)

Q6. Find the other trigonometric function if $\sec A = \frac{-25}{7}$ and A lies in the second quadrant.

Q7. Eliminate θ , $2x = 3 - 4\tan\theta$, $3y = 5 + 3\sec\theta$

Q8. Find the number of sides of regular polygon if each of its interior angle is $\frac{4\pi}{5}$

Q9. Two arcs of the same length subtend angle of 60° and 75° at the centres of two circle. What is the ratio of radii of two circles?

5:4

SECTION C (12 MARKS)

Q10. OPQ is the sector of circle having centre at O and cm. If $m\angle POQ = 30^\circ$, find the area enclosed by arc PQ and chord PQ.

Q11. The perimeter of the sector of the circle of area 64π sq.cm is 56 cm. find the area of the sector.

Q12. Prove that $\frac{1}{\sec\theta + \tan\theta} - \frac{1}{\cos\theta} = \frac{1}{\cos\theta} - \frac{1}{\sec\theta - \tan\theta}$

Q13. If $\frac{\sin A}{3} = \frac{\sin B}{4} = \frac{1}{5}$ A and B are angle in second quadrant then prove that 4

$\cos A + 3\cos B = -5$