AllCanMath

CLASS 10 (FA-3 MODEL PAPER KA STATE BOARD)

Class 10 - Mathematics

Time Allowed: 45 minutes

Maximum	Marks:	21	

Section A				
1.	If 5 tan $A = 3$, then the value of cot A is:	[1]		
	a) $\frac{3}{4}$ b) $\frac{5}{3}$			
	c) $\frac{3}{5}$ d) $\frac{4}{5}$			
2.	If PA and PB are tangents to the circle with centre O such that $\angle APB = 50^\circ$, then $\angle OAB$ is equal to	[1]		
	a) 50° b) 40°			
	c) ₂₅ ° d) ₃₀ °			
3.	Find the area of a sector of angle p (in degrees) of a circle with radius R.	[1]		
4.	In the adjoining figure, PT is a tangent at T to the circle with centre O. If \angle TPO = 30 ^o , find the value of x.	[1]		
	T O x 30° P			
	Section B			
5.	Evaluate: $\tan^2 60^\circ - 2 \csc^2 30^\circ - 2 \tan^2 30^\circ$.	[2]		
6.	What is the angle subtended at the centre of a circle of radius 6 cm by an arc of length 6π cm?	[2]		
7	In a circle of radius 21 cm, an are subtonds an angle of 60° at the centre. Find the area of the sector formed by	[2]		

7. In a circle of radius 21 cm, an arc subtends an angle of 60° at the centre. Find the area of the sector formed by the arc. Also, find the length of the arc.

Section C

- 8. Prove that: $(\csc\theta \sin\theta)(\sec\theta \cos\theta) = \frac{1}{\tan\theta + \cot\theta}$ [3]
- 9. Prove that the tangents drawn from an external point to a circle are equal in length. [3]

OR

In figure, PA and PB are tangents to the circle drawn from an external point P. CD is a third tangent touching the circle at Q. If PB = 10 cm and CQ = 2 cm, what is the perimeter of \triangle PCD?



Section D

From a point on the ground, the angles of elevation of the bottom and the top of a transmission tower fixed at the [5] top of a 20 m high building are 45° and 60° respectively as shown in Figure. Find the height of the transmission tower.



OR

A ladder of length 6 metres makes an angle of 45° with the floor while leaning against one wall of a room. If the foot of the ladder is kept fixed on the floor and it is made to lean against the opposite wall of the room, it makes an angle of 60° with the floor. Find the distance between two walls of the room.

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