**Class XI- MATHEMATICS**

**Chapter-3 : TRIGONOMETRIC FUNCTIONS**

**Worksheet of Module 1/3**

## MCQ / One mark questions

1 If, $x \sin 45° \cos^2 60° = \frac{\tan^2 60° \operatorname{cosec} 30°}{\sec 45° \cot^2 30°}$, then $x =$

a)2 b)4 c)8 d)16

2 The value of $\sin^2 5° + \sin^2 10° + \sin^2 15° + \cdots + \sin^2 85° + \sin^2 90°$ is

a)7 b)8 c)9.5 d)10

3 If the arcs of the same length in two circles subtend angles 65° and 110° at the centre, the the ratio of the radii of the circles is

a)22: 13 b) 11: 13 c) 22: 15 d) 21: 13

4 Radian measure of 15˚ is

a)$\frac{\pi}{3}$ b) $\frac{\pi}{4}$ c) $\frac{\pi}{6}$ d) $\frac{\pi}{12}$

5 A wheel makes 180 revolutions in one minute. Through how many radians does it turn in one second?

a) 12π b) 3π c) 6π d)4π

6 The value of tan1°tan2° tan3° ... ... ... ... ... . . tan89° is

a) $\frac{1}{2}$ b) 1 c)0 d) not defined

7 Find the length of an arc of a circle of radius 5cm subtending a central angle measuring $15^0$.

## Two marks Questions

8 :le In a circle diameter 20 cm, the length of a chord is 10cm. Find the length of minor arc of the chord .

9 Find the radian measure of -22˚ 30′.

10 Find in degrees the angle subtended at the centre of a circle of diameter 50cm by an arc of length 11cm.

11 Find in degree the angle through which a pendulum swings if its length is 50cm

and tip describes an arc of length 10cm.

12 A railway train is travelling a circular curve of 1500m radius at the rate of 66km per hour. Through what angle has it turned in 10 seconds?

13 A horse is tied to a post by a rope. If the horse moves along a circular path always keeping the rope tight and describes 88 metres when it has traced out 72˚at the centre, find the length of the rope.

14 A railroad curve is to be laid out on a circle. What radius should be used if the track is to change direction by 25˚ in a distance of 40 metres?

15 Find the angle between the minute hand and hour hand of a clock when the time is 7:20.

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