

AUGUST MONTHLY TEST 2024**12th Standard****Maths**

Exam Time : 00:45 Hrs

Total Marks : 25

PART - A

3 x 2 = 6

Answer any **THREE** questions

- 1) Find the period and amplitude of $y = \sin 7x$
- 2) Find $\cos^{-1} \left(-\frac{1}{\sqrt{2}} \right)$
- 3) If $y = 4x + c$ is a tangent to the circle $x^2 + y^2 = 9$, find c
- 4) Identify the type of the conic for the following equations :
 $11x^2 - 25y^2 - 44x + 50y - 256 = 0$

PART - B

3 x 3 = 9

Answer any **THREE** questions

- 5) Find the domain of $\cos^{-1} \left(\frac{2 + \sin x}{3} \right)$
- 6) Find the vertex, focus, equation of directrix and length of the latus rectum of the following:
 $y^2 = -8x$
- 7) Prove that
 $\tan^{-1} \left(\frac{2}{11} \right) + \tan^{-1} \left(\frac{7}{24} \right) = \tan^{-1} \left(\frac{1}{2} \right)$
- 8) Find the equation of the hyperbola with vertices $(0, \pm 4)$ and foci $(0, \pm 6)$.

PART - C

2 x 5 = 10

Answer any **TWO** Questions

- 9) Prove that $\tan^{-1} x + \tan^{-1} y + \tan^{-1} z = \tan^{-1} \left[\frac{x+y+z-xyz}{1-xy-yz-zx} \right]$
- 10) Find the value of $\cot^{-1}(1) + \sin^{-1} \left(-\frac{\sqrt{3}}{2} \right) - \sec^{-1}(-\sqrt{2})$
- 11) Find the equation of the circle passing through the points $(1, 1)$, $(2, -1)$ and $(3, 2)$.
- 12) Find the foci, vertices and length of major and minor axis of the conic $4x^2 + 36y^2 + 40x - 288y + 532 = 0$

ALL THE BEST
