Guess Paper – 2008
Class – XI
Subject – Mathematics

MAX MARKS :40 TIME : 90 mts

Instructions : (i) Qns 1 to 6 carry 1 mark each (ii) Qns 7 to 10 carry 4 marks Each and (iii) Qn 11 to 13 carry 6 marks.

1.Find the equation of the circle of radius 2 units and touching the circle $x^2+y^2-2x-4y-20$ at (5,5).

2.Evaluate $\lim_{x \to 2} \frac{x^2-3x+2}{x^2-x-2}$. 3.Differentiate $\sqrt{\frac{\sec x+\tan x}{\sec x-\tan x}}$ w.r.t.x.

4.Find the derivative of $\frac{1+\sin x}{\cos x}$ at x=$\frac{\pi}{6}$.

5.Find the shortest distance of (4,-3,1) from the co-ordinate axes.

6.Show that the points (0,7,-10) , (1,6,-6) , (4,9,-6) are the vertices of an isosceles triangle.

7. Evaluate $\lim_{x \to 0} f(x)$ and $\lim_{x \to 1} f(x)$ where f(x)=$|x| + |x-1|$.

8 Show that function f(x)= $\begin{cases} x-1, if x<2 \\ 2x-3, if x \geq 2 \end{cases}$ is not derivable at x=2.

9.An arch is in the form of a parabola with its axis vertical . The arch is 10m high and 5m wide at the base. How wide is if 2m from the vertex of the parabola.

10.Prove that the plane ax+by+cz+d=0 divides the line segment joining (x_1,y_1,z_1) and (x_2,y_2,z_2) in the ratio - $\frac{ax_1+by_1+cz_1+d}{ax_2+by_2+cz_2+d}$.

11.(i) Show that (-1,4,-3) is the circumcentre of the triangle formed by the points (3,2,-5), (-3,8,-5) and(3,2,-1).

(ii) Show that (1,1,1),(-2,4,1),(-1,5,5)and (2,2,5) are the vertices of a square.

12. Find the coordinates of foci, vertices, lengths of the axes, the eccentricity and the length of the latus rectum of $36x^2 + 4y^2 = 144$.

13.(i) Find the equation of the hyperbola whose foci are $(\pm 5,0)$ and the length of the transverse axis is 8 cm.

(ii) Find the equation of the hyperbola whose vertices are $(\pm 7,0)$ and eccentricity is $\frac{4}{3}$.

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UNIT TEST (RE-TEST)