Elite Metric Higher Secondary School

Half Yearly Question - 1 mark

12th Standard

Date : 14-Jan-19

Maths

Reg.No. : | | | | | | |

Time : 00:10:00 Hrs

Total Marks : 10

Answer All The Question

10 x 1 = 10

1) Rolle's theorem is applicable in the interval -1≤x≤1 for the function

(a) f(x)=|x| (b) $f(x)=x^2$ (c) $f(x)=2x^3+3$ (d) f(x)=x

2) One of the foci of the rectangular hyperbola xy=18 is

(a) (6,6) (b) (3,3) (c) (4,4) (d) (5,5)

3) If the matrix $\begin{bmatrix} -1 & 3 & 2 \\ 1 & k & -3 \\ 1 & 4 & 5 \end{bmatrix}$ has in inverse then

(a) k is any real number (b) k=-4 (c) k≠-4 (d) k≠4

4) The two lines $\frac{x-1}{2} = \frac{y-1}{-1} = \frac{z}{1}$ and $\frac{x-2}{3} - \frac{y-1}{-5} = \frac{z-1}{2}$ are

(a) parallel (b) intersecting (c) skew (d) perpendicular

5) If $z_n=cos(\frac{n\pi}{3}) + isin(\frac{n\pi}{3})$ then, $z_1z_2z_3 \ldots z_6$ is

(a) 1 (b) -1 (c) i (d) -i

6) A random variable X has the probability distribution

X=x	0	1	2	3
P(X=x)	1/10	2/10	λ/10	4/10

Then the mean is

(a) 1 (b) 2 (c) 3 (d) 4

7) The radius of a cylinder is increasing at the rate of 2cm/sec and its altitude is decreasing at the rate of 3cm/sec. The rate of change of volume when the radius and the altitude are respectively 3cm and 5 cm is?

(a) 23π (b) 33π (c) 43π (d) 53π

8) Which of the following is a contradiction?

(a) pvq (b) p∧q (c) pv(~p) (d) p∧(~p)

9) If $A=\begin{bmatrix} 1 & -2 \\ 3 & 4 \end{bmatrix}$ then $(adj\ A)^{-1}$ is

(a) $\begin{bmatrix} 4 & 2 \\ -3 & 1 \end{bmatrix}$ (b) $\frac{1}{10}\begin{bmatrix} 4 & 2 \\ -3 & 1 \end{bmatrix}$ (c) $\frac{1}{10}\begin{bmatrix} 1 & -2 \\ 3 & 4 \end{bmatrix}$ (d) $10\begin{bmatrix} 1 & -2 \\ 3 & 4 \end{bmatrix}$

10) The least possible perimeter of a rectangle of area 100sq.units is

(a) 10 (b) 20 (c) 40 (d) 60

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