

WEEKLY TEST

STD: 12<sup>th</sup>Sci.

MARKS: 30

SUB: Maths - 2

Ch. 3

DATE:

Q 1. Multiple Choice Questions.

- The equation of tangent at (-4, -4) on the curve  $x^2 = -4y$  is  
(A)  $2x + y + 4 = 0$  (B)  $2x - y - 12 = 0$   
(C)  $2x + y - 4 = 0$  (D)  $2x - y + 4 = 0$
- Sides of a square are increasing at the rate 0.5cm/sec. When the side is 10cm long, its area is increasing at the rate of  
(A)  $100 \text{ cm}^2/\text{sec}$  (B)  $0.10 \text{ cm}^2/\text{sec}$  (C)  $10 \text{ cm}^2/\text{sec}$  (D)  $1 \text{ cm}^2/\text{sec}$
- The acceleration of a moving particle whose space time equation is given by  $s = 3t^2 + 2t - 5$  is  
(A) 6 (B) 5 (C) 0 (D) 1
- Radius of a circle is increasing uniformly at the rate of 3cm/sec. The rate of increase in area when radius is 10cm, will be  
(A)  $\pi \text{ cm}^2/\text{s}$  (B)  $2\pi \text{ cm}^2/\text{s}$  (C)  $10\pi \text{ cm}^2/\text{s}$  (D)  $60\pi \text{ cm}^2/\text{sec}$
- The displacement of a particle in time is given by  $s = 2t^2 - 3t + 1$ . The acceleration is  
(A) 1 (B) 3 (C) 4 (D) 5
- The approximate value of square root of 25.2 is  
(A) 5.01 (B) 5.02 (C) 5.03 (D) 5.04
- Rolle's theorem is true for the function  $f(x) = x^2 - 4$  in the interval  
(A) [-2, 0] (B) [-2, 2] (C)  $\left[0, \frac{1}{2}\right]$  (D) [0, 2]
- The function  $f(x) = 2x^3 - 3x^2 - 12x + 5$  has a minimum at  $x =$   
(A) -1 (B) 2 (C)  $-\frac{1}{2}$  (D)  $\frac{3}{2}$
- The minimum value of the expression  $f(x) = 7 - 20x + 11x^2$  is  
(A)  $\frac{177}{11}$  (B)  $-\frac{177}{11}$  (C)  $-\frac{23}{11}$  (D)  $\frac{23}{11}$
- If the radius of a circle is increasing at a uniform rate of 2cm./sec. The rate of increase of area of circle at the instant when the radius is 20cm, is

(A)  $70 \pi \text{ cm}^2/\text{sec}$  (B)  $70 \text{ cm}^2/\text{sec}$  (C)  $80 \pi \text{ cm}^2/\text{sec}$  (D)  $80 \text{ cm}^2/\text{sec}$

- A square plate is contracting at the uniform rate of  $2 \text{ cm}^2/\text{sec}$ . The rate at which the perimeter is decreasing when the side of the square is 16cm long is  
(A)  $\frac{1}{2} \text{ cm}/\text{sec}$  (B)  $\frac{1}{3} \text{ cm}/\text{sec}$  (C)  $\frac{1}{4} \text{ cm}/\text{sec}$  (D) none of these
- The edge of a cube is increasing at the rate of 5cm/sec. How fast is the volume of the cube increasing when the edge is 12cm long?  
(A)  $4342 \text{ cm}^3/\text{sec}$  (B)  $2160 \text{ cm}^3/\text{sec}$   
(C)  $180 \text{ cm}^3/\text{sec}$  (D) None of these
- If the radius of a circle increases from 3 cm to 3.2cm, then the increase in the area of the circle is  
(A)  $1.2\pi \text{ cm}^2$  (B)  $12\pi \text{ cm}^2$  (C)  $6\pi \text{ cm}^2$  (D) None of these
- $f(x) = x^3 - 3x + 5$ ,  $f(1.99) =$   
(A) 6.91 (B) 6.19 (C) 6.09 (D) None of these
- Maximum area of a rectangle whose perimeter is given as 24 metres is equal to  
(A)  $36 \text{ m}^2$  (B)  $49 \text{ m}^2$  (C)  $64 \text{ m}^2$  (D)  $81 \text{ m}^2$