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Class: CSE/1st semester

Section: C

Subject: Calculus, Dayyem Shah

Q1) $f(x) = \sin x + \cos x$ is a function:-

(a) odd (b) Even (c) constant ☒ (d) None.

Q2) 2nd order derivative of $r = \frac{12}{x} - \frac{4}{x^3} + \frac{1}{x^4}$ is:-

(a) $-\frac{12}{x^2} + \frac{12}{x^4} - \frac{1}{x^5}$

(b) $-\frac{12}{x^3} + \frac{12}{x^4}$

(c) $12 + 0$

☒ (d) None

~~Q3) If $y = 2\left(\frac{1}{\sqrt{x}} + \sqrt{x}\right)$, then $\frac{dy}{dx}$ is~~

(3) If $y = 2\left(\frac{1}{\sqrt{x}} + \sqrt{x}\right)$, Then $\frac{dy}{dx}$ is

(a) $2\left(\frac{x}{x^{3/2}} + \frac{1}{2}x\right)$ (b) $2\left(\frac{x}{\sqrt{x}} - \frac{1}{2}x\right)$ (c) 3 ☒ (d) None

(2)

4) If $y = x^2 + 1$ then equation of Tangent is at $(1, 1)$ is:-

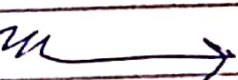
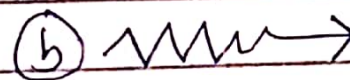
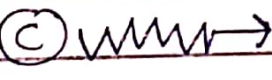
- (a) $y = x + 2$ (b) $y - 1 = x - 1$ (c) $y - 2 = x$ ☒ (d) None

5) If $y = \tan x$ then equation of normal at $(\pi/4, \pi/4)$ is:-


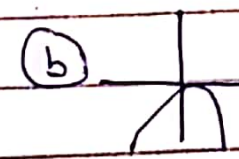
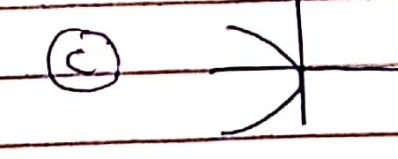
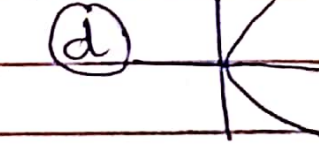
- (a) $y - \frac{\pi}{4} = \sec^2 x$ (b) $y + \frac{\pi}{4} = \tan^2 x$ (c) $y - \frac{\pi}{4} = \sec^2 x - \frac{\pi}{4}$

☒ (d) None

6) The graph of $y = ax + b$ could be:-

- (a)  (b)  (c)  ☒ (d) None

7) The graph of $y = x^2$ is:-

- ☒ (a)  (b)  (c)  (d) 

8) If $y = \ln(x)$ then $\frac{d^n y}{dx^n}$ will be

- (a) $\frac{n}{x^n}$ (b) $\frac{n!}{x^{n+1}}$ (c) $\frac{(-1)(n-1)!}{x^{n+1}}$ ☒ (d) $\frac{(-1)^{n+1}(n-1)!}{x^n}$

9) If $y = \sec(\sqrt{x}) \tan(1/\sqrt{x})$ The dy/dx will be

- (a) $\sec^2 \sqrt{x} \tan(\sqrt{x})^{-3/2}$ (b) $\sec \sqrt{x} \cdot \tan(\sqrt{x})^{-1/2}$
(c) $\sec(\sqrt{x})^{-1} \tan \sqrt{x}^{-3/2}$ ☒ (d) None

(3)

(10) If $f(x)$ = even function
and $g(x)$ = odd function Then
 $f(x) + g(x)$ will be

(a) Even (b) odd (c) both ☒ (d) None