

- \* The order and degree of de  $[1+y_1^2+\sin y_1]^{3/4} = y_2$  are
- 2,3
  - 2,4
  - $2, \frac{3}{4}$
  - 2, not defined

Ans: d)

- \* m and n are the order & degree of de  $(y^{11})^5 + \frac{4(y^{11})^3}{y^{111}} + y^{111} = \sin x$  then m & n are respectively
- 3,5
  - 3,1
  - 3,3
  - 3,2y

Ans: d)

- \* Order & degree of d.e  $y = xy_1 + \frac{2}{y}$  is
- 1,3
  - 1,1
  - 1,2
  - 2,1

Ans: c)

- \* The order of d.e of all circles of given radius 'a' is
- 4
  - 2
  - 1
  - 3

Ans: b)

- \*  $y = \left[ \int_{c_1}^{c_2} \frac{\sqrt{x^2-c_3}}{\sqrt[3]{x^2-c_4}} dx + \lim_{x \rightarrow c_5} \frac{x^n-c_6}{x^m-c_7} + c_7 + x^2 + c_8 x^3 \right]$  then order of d.e formed

[Given  $C_1, C_2, \dots, C_8$  are arbitrary constant.

- 2
- 3

- c) 4
- d) 8

Ans: b)

\* D.E of all circles with center at origin is . . .

- a)  $y^1 + \frac{x}{y} = 0$
- b)  $y^1 + \frac{x}{y}$
- c)  $y^1 + \frac{y}{x} = 0$
- d)  $y^1 + \frac{y}{x}$

Ans: a)

\* D.E of family of curves  $cy^2 = 2x+c$  is  $y^2 - 2xyy^1 = K$  then value of K is . . . . .

- a) 0
- b) 1
- c) -1
- d) 2

Ans : b)

\* The degree of d.e corresponding to family of curves  $y = a(x + a)^2$  is

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

Ans: c)

\* Solution to d.e  $y^1 = (x+y)^2$  is

- a)  $\frac{1}{x+y} = C$
- b)  $\sin^{-1}(x+y) = x+c$
- c)  $\tan^{-1}(x+y) = ca=2, b=2$
- d)  $\tan^{-1}(x+y) = x+c$

Ans: d)

\*  $y = ae^{-\frac{1}{x}} + b$  is a solution of  $y' = yx^{-2}$  then

- a)  $a \in \mathbb{R}, b=0$
- b)  $a=2, b=1$
- c)  $a=1, b=1$
- d)  $a=2, b=2$

Ans: a)

\*  $x \frac{dy}{dx} + 2y = x^2$ , solution of d.e is  $\frac{dy}{dx} + \left(\frac{2}{x}\right)y = x$

- a)  $y = \frac{x^2+c}{4x^2}$
- b)  $y = x^2/4 + C$
- c)  $y = (x^4 + c)/x^2$
- d)  $y = x^4 + c / (4x^2)$

Ans: d)

\* The particular solution of  $\frac{y dy}{x dx} = \frac{1+y^2}{1+x^2}$  when  $x = 1, y = 2$  is

- a)  $5[1+y^2] = 2[1+x^2]$
- b)  $2[1+y^2] = 5[1+x^2]$
- c)  $5[1+y^2] = [1+x^2]$
- d)  $[1+y^2] = 2[1+x^2]$

Ans: b)

\*  $A = \lim_{x \rightarrow 0} x \sin \frac{1}{x}, B = \lim_{x \rightarrow 0} \left[ \frac{1-\cos 2x}{2x^2} \right], C = \lim_{x \rightarrow 0} \left[ \frac{\sqrt{1-\cos 2x}}{\sqrt{2} \sin x} \right]$  then .....

- a)  $A=0, B=C=1$
- b)  $A=B=C=1$
- c)  $A=0, B=1, C \neq 1$
- d)  $A=1, B=1, C \neq 1$

Ans: c)

\*  $A = \lim_{x \rightarrow 3} \frac{x^4-81}{x^2-9}, B = \lim_{x \rightarrow 0} \frac{e^{4x}-1}{x}, C = \lim_{x \rightarrow 0} \frac{100^x-1}{2x}$  then  $A+B+C =$

- a)  $22 + \log_e^{10}$
- b)  $22 + \log_{10}^e$
- c)  $14 + \log_e^{10}$

d)  $14 + \log_{10} e$

Ans: a)

\*  $\frac{\lim_{x \rightarrow 0} [1+2x]^{1/x}}{\lim_{x \rightarrow 0} [1+\frac{1}{x}]^{2x}} + \lim_{x \rightarrow 0} \left[ \frac{\log[1+4x]}{\log(1+2x)} \right] + \lim_{x \rightarrow 0} \left[ \frac{\log[1-8x]}{4x} \right]$  is

- a) 1
- b) 0
- c) -1
- d) 2

Ans: a)

\*  $\lim_{x \rightarrow 0} \frac{\cos x - \sec x}{x^2(x+1)} =$

- a) 1
- b) -1
- c) 2
- d) 0

Ans: b)

\*  $\lim_{x \rightarrow 1} \frac{e^{\{x\}} - \{x\} - 1}{\{x\}^2}$  is

- a) e
- b) e - 2
- c) e + 2
- d) 2

Ans: b)

\*  $\lim_{x \rightarrow -2} \frac{[x^2 - x - 6]^2}{[x+2]^2}$  is

- a) 6
- b) 25
- c) 16
- d) 125

Ans: b)