Assignment

Solve the following objective type questions.

i. The order of matrix A is m × p and the order of B is p × n. Then the order of matrix AB is?

ii. The number of non-zero rows in an Echelon form?

iii. If B = $\begin{bmatrix} 1 & 4 \\ 2 & a \end{bmatrix}$ is a singular matrix then a=?

iv. If A = $\begin{bmatrix} 2i & i \\ i & -i \end{bmatrix}$ then $|A|$ = ?

v. The matrix A = $\begin{bmatrix} 9 & 0 \\ 0 & 9 \end{bmatrix}$ is?

vi. Solution of $\frac{dy}{dx} + 2xy = y$?

vii. The order and degree of differential equation

$$\left(\frac{dy}{dx}\right)^3 = \sqrt{1 + \left(\frac{dy}{dx}\right)^2} \text{ is ?}$$

viii. The order and degree of differential equation $\frac{d^2y}{dx^2} - 4xy = sin\left(\frac{d^2y}{dx^2}\right)$ is?

ix. The differential equation $2\frac{dy}{dx} + x^2y = 2x + 3, y(0) = 5$ is?

x. $\begin{vmatrix} 1 & a & a^2 \\ 1 & b & b^2 \\ 1 & c & c^2 \end{vmatrix}$ is?

Q.No.2 *(10)*

i. Express the determinant

$$\begin{vmatrix} a & b & c \\ a^2 & b^2 & c^2 \\ a^3 & b^3 & c^3 \end{vmatrix}$$

as the product of factors which are linear in a, b, c.

ii. Find the Eigen value $\begin{bmatrix} 2 & -1 & -1 & 0 \\ -1 & 3 & -1 & -1 \\ -1 & -1 & 3 & -1 \\ 0 & -1 & -1 & 2 \end{bmatrix}$

Q.No.3 *(10)*

The rate of change in the form of differential equation is given by

$(x^2 + 3y^2)dx - 2xydy = 0$. Find the general solution at x=2 and y=6.