Q1/

A/

What are the Order and Degree for the differential equations?

1. $y''' + 5(y')^4 + 5x = 3y + 4$

2. $\frac{d^2y}{dx^2} + 4\sqrt{\frac{dy}{dx} + y^2} = 0$

B/

Solve of the differential equations $\frac{dy}{dx} = x(3 + y)$ by using Separation variable

Q2/

Prove that $y = xlnx - x$ is a solution of the differential equation:

$$xy' = x + y$$

Q3

Check whether the differential equation:

$(2xy)dx + (x^2 + cosy)\, dy = 0$ **Is Exact or not?**

If yes, find General Solution it.

Q4/

Solve the Linear differential equation:

$\frac{dy}{dx} + 2\, y = e^{-x}$