

Time: 01Hr

Maximum marks: 20

Note: Attempt any four questions. Each question carries equal marks.

1. Solve: $(x^3 + y^3)dx = (x^2y + xy^2)dy$

2. Solve: $x \frac{dy}{dx} + y = y^2 \log x$

3. Solve: $(D^2 + 3D + 2)y = e^{e^x}$

4. Solve: $\frac{d^2y}{dx^2} + 4y = x^2 + \cos 2x$

5. Solve: $x^2 \frac{d^2y}{dx^2} + x \frac{dy}{dx} - y = x^3$