

TEST -5**CLASS B.A-1/B.SC-1**

DIFF. EQUATION

1. Solve $\frac{dy}{dx} = \frac{x+y+4}{x+y-6}$.

2. Solve $\frac{dy}{dx} + x \sin 2y = x^3 \cos^2 y$.

3. Find I.F. by inspection and solve $ydx + x(1-3x^2y^2)dy = 0$.

4. Solve $(xy^2 + 2x^2y^3)dx + (x^2y - x^3y^2)dy = 0$.

5. Solve $\frac{d^2y}{dx^2} - 4\frac{dy}{dx} + 3y = e^x \cos 2x + \cos 3x$

6. Solve by the method of variation of parameters $(D^2 - 3D + 2)y = \cos(e^{-x})$.

7. Solve $(x^2 D^2 - xD + 4)y = \cos(\log x) + x \sin(\log x)$.

8. Solve $\frac{d^3y}{dx^3} + \cos x \frac{d^2y}{dx^2} - 2 \sin x \frac{dy}{dx} - y \cos x = \sin 2x$.

9. Solve $x^2 \frac{d^2y}{dx^2} - 2x(1+x) \frac{dy}{dx} + 2(1+x)y = x^3$.

10. Solve $(1+2x)^2 \frac{d^2y}{dx^2} - 6(1+2x) \frac{dy}{dx} + 16y = 8(1+2x)^2$