ADITYA DEGREE COLLEGES

ANDHRA PRADESH

II SEMESTER - MID –1 EXAMINATIONS

I – B.Sc MATHEMATICS MINOR

DIFFERENTIAL EQUATIONS

Date:

Max. Marks : 60
Time :2 Hr

SECTION – A

I. Answer any FIVE of the following: **5 x 4 = 20 M**

1) Solve $(D^4-4D^3+6D^2-4D+1)y=0$

2) Solve $(D^3-14D+8)y=0$

3) Solve $(D^4+8D^2+16)y=0$

4) Solve $(D^2-5D+6)y=e^{4x}$

5) Solve $\frac{d^2y}{dx^2} - \frac{dy}{dx} - 2y = \sin 2x$

6) Solve $(D^2-4D+4)y=x^3$

7) Solve $(D^2-2D+1)y=x^2e^{3x}$

8) Solve $(D^2+4)y = x\sin x$

SECTION – B

II. Answer all the following questions: **4 x 10 = 40 M**

9. a) Solve $(D^2-3D+2)y= \cosh x$

(or)

b) Solve $(D^2-4D+4)y=8x^2e^{2x}\sin 2x$

10. a) Solve $(D^2-4D+3)y= \sin 3x\cos 2x$

(or)

b) Solve $(D^2-2D+4)y= 8(x^2+ e^{2x}+\sin 2x)$

11. a) Solve $\frac{d^2y}{dx^2} + 4y = e^x + \sin 2x + \cos 2x$

(or)

b) Solve $\frac{d^2y}{dx^2} - 6\frac{dy}{dx} + 13y = 8e^{3x}\sin 2x$

12. a) Solve $(D^3-5D^2+8D-4)y=e^{2x}$

(or)

b) $Solve \frac{d^2y}{dx^2} + 3\frac{dy}{dx} + 2y = xe^x \sin x$

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