ADITYA DEGREE COLLEGES – ANDHRA PRADESH

Ist Year MID-I

Differential Equations (Major maths)

Time:2 hrs. Marks:60 M

SECTION-A **5 x 4 = 20 M**

I. Answer any five of the following questions:

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

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

3.Find the particular values of (i) $\frac{1}{(D-2)(D-3)}\ e^{2x}$ (ii) $\frac{1}{D-2}\ e^{2x}$

4.Solve $\frac{d^3y}{dx^3}+6\frac{d^2y}{dx^2}+11\frac{dy}{dx}+6y=0$.

5. Find the particular value of $\frac{1}{D+2}$ (x+ sinx)

6. Find the particular value of $\frac{1}{D^3}\cos x$

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

8. Solve $(D^3+1)\ y=0$.

SECTION-B **4 x 10 = 40 M**

II.Answer ALL Questions:

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

(or)

(b) Solve $(D^2-4D+3)\ y=$ sin3x cos2x.

10. (a) Solve $(D^3-7D+6)\ y= e^{2x}$

(or)

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

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

(or)

(b)Solve $\frac{d^2y}{dx^2}-6\frac{dy}{dx}+13y=8e^{3x}$ sin2x.

12. (a) Solve $(D^2+4)\ y=$ x sinx

(or)

(b) Solve $(D^2-4D+4)\ y= 8x^2\ e^{2x}$ sin2x.