MATHEMATICS MODEL PAPER

SRI A.S.N.M. GOVERNMENT COLLEGE(A), PALAKOL. W.G.DT

(Affiliated to Adikavi Nannaya University, Rajahmahendravaram)

I B.Sc Degree Examinations at the end of I semester (CBCS)

Time: 3 hours Max. Marks: 75

SECTION A

Answer any **FIVE** questions each question carries five marks: 5 X 5=25 M

1. Solve $(e^y+1)\cos x\,dx + e^y \sin x\,dy = 0$
2. Solve $(x^2+1)\frac{dy}{} + 4xy =$
3. Solve $x = y+p^2$
4. Solve $y + px = p^2x^4$
5. Solve $(D^4-2D^3-3D^2+4D+4)y = 0$
6. Solve $(D^3-7D+6)y = e^{2x}$
7. Solve $(D^2+9)y = \cos^3 x$
8. Solve $(x^2D^2-xD+1)y = \log x$

SECTION - B

Answer any **FIVE** questions **at least two** from each part. Each question carries Ten marks: 5 X 10 = 50 M

PART – I

9. Solve $x^2y\,dx - (x^3+y^3)\,dy = 0$
10. Solve $x\frac{dy}{} + y = y^2 \log x$
11. Find the orthogonal trajectories of the family of curves $\frac{x^2}{} + \frac{y^2}{} = 1$, where λ is parameter
12. Solve $p^2+2py\cot x = y^2$
13. Solve $(D^2-4D+3)y = \sin 3x \cos 2x$

PART – II

14. Solve $(D^2+4)y = e^x+\sin 2x+\cos 2x$
15. Solve $(D^2+3D+2)y = xe^x \sin x$

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

17. Solve $(D^2+a^2)y = \tan ax$ by the method of variation of parameters

18. Solve $(x^2D^2+2xD-12)y = x^3\log x$