18MAB101T- CALCULUS AND LINEAR ALGEBRA

ASSIGNMENT

Part-B

1. Find the complementary function of $(x^2D^2+4xD+2)y=x\log x$.
2. Solve $x^2y''-xy'+y=0$.
3. Find the roots of m if $x^2\frac{d^2y}{dx^2}-7x\frac{dy}{dx}+12y=0$.
4. Solve $(x^2D^2+xD+1)y=0$.
5. Define the Legendre's linear differential equations with constant co-efficients.

Part-C

6. Solve $(2x+5)^2\frac{d^2y}{dx^2}-6x(2x+5)\frac{dy}{dx}+8y=0$.
7. Solve $(1+x)^2\frac{d^2y}{dx^2}+(1+x)\frac{dy}{dx}+y=4\cos(\log(1+x))$.
8. Find the solution of $(x^2D^2-xD+4)y=x^2\sin(\log x)$
9. Solve $(x^2D^2-3xD+4)y=x^2\cos(\log x)$
10. Solve $(x^2D^2+xD+1)y=\log x\sin(\log x)$