Assignment

Sub Code: 18MAB101T
Sub Name: Calculus and Linear Algebra

PART – C

1. Solve $Dx + y = sint$ and $x + Dy = cost$, given that $x = 2$ and $y = 0$, when $t = 0$.
2. Solve the equation $\frac{d^2y}{dx^2} + a^2y = tanax$ the method of variation of parameters.
3. Solve using variation of parameter method $\frac{d^2y}{dx^2} + 4y = 4tanx$.
4. Solve$(D + y)x + 3y = t, 2x + (D + 5)y = e^{2t}$, where$\frac{d}{dx} = D$.
5. Solve simultaneous differential equation$\frac{dx}{dt} + y = sint, \frac{dy}{dt} + x = cost$.
6. Solve$\frac{d^2x}{dx^2} + y = secx$ by the method of variation of parameters.
7. Solve $\frac{d^2x}{dx^2} + 2\frac{dy}{dx} + 5y = e^x tanx$ using method of variation of parameters.
8. Solve $\frac{dx}{dt} + 7x - y = 0$ and $\frac{dy}{dt} + 2x + 5y = 0$
9. Solve $\frac{d^2x}{dx^2} + y = cosecx$ by the method of variation of parameters.
10. Solve $-y = t$ and $\frac{dy}{dt} + x = t^2$.