SRM Institute of Science and Technology, Kattankulathur

Department of Mathematics

Assignment-I

18MAB201T-Transforms and Boundary Value Problems

Academic Year: 2021-2022

Answer All the Questions (5 * 12=60 Marks)

1. (i) Form the pde by eliminating f from $xyz = f(x^2 + y^2 - z^2)$
   (ii) Form the pde by eliminating ϕ from $\phi(x^2 + y^2 + z^2, lx + my + nz) = 0$
2. (i) Solve $z = px + qy + \sqrt{p^2 + q^2 + 1}$
   (ii)Solve $z^2(p^2 + q^2 + 1) = 1$
3. (i) Solve $x(y - z)p + y(z - x)q = z(x - y)$
   (ii) Solve $(mz - ny)p + (nx - lz)q = ly - mx$
4. (i) Solve $r - 4s + 4t = e^{2x+y}$
   (ii)Solve $\frac{\partial^2 z}{\partial x^2} + \frac{\partial^2 z}{\partial x \partial y} - 6\frac{\partial^2 z}{\partial y^2} = y\cos x$
5. Solve $(D^2 - 2DD' + D'^2)z = x^2 y^2 e^{x+y} + 2\cos y - \sin(x - y)$