

**MA 6351 - TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS
ASSIGNMENT – V**

**UNIT I PARTIAL DIFFERENTIAL EQUATIONS
PART-A**

1. Form the partial differential equation by eliminating the arbitrary constants 'a' & 'b' from $z = (x^2 + a)(y^2 + b)$
2. Form the partial differential equation by eliminating f from $z = x^2 + 2f\left(\frac{1}{y} + \log x\right)$.
3. Form the partial differential equation by eliminating g from $g(x^2 + y^2 + z^2, x + y + z) = 0$.
4. Find the singular integral of $z = px + qy + 2\sqrt{pq}$
5. Solve $p(1 + q) = qz$.
6. Solve $(D-1)(D-D'+1)z=0$
7. Solve $(D^3 - 3DD'^2 + 2D'^3)z=0$.
8. Find the particular integral of $(D^2 + 2DD' + 5D'^2)z = e^{x-y}$

PART – B

1.
 - a) Solve $x(y^2 - z^2)p + y(x^2 - z^2)q = z(x^2 - y^2)$
 - b) Solve $(D^2 + DD' - 6D'^2)z = x^2y + e^{3x+y}$
2.
 - a) Find the singular solution of the equation $z = px + qy + p^2q^2$
 - b) Solve $(2D^2 - 5DD' + 2D'^2)z = 5\sin(2x + y) + e^{-x+y}$
3.
 - a) Find the singular solution of the equation $z = px + qy + p^2 + pq + q^2$
 - b) Solve $(D^2 + 2DD' + D'^2 - 2D - 2D')z = e^{3x+y} + 4$
4.
 - a) Solve $z^2 = x^2p^2 + y^2q^2$
 - b) Solve $(D^2 - D'^2)y = e^{x-y}\sin(2x + 3y)$