Assignment-1

1..Solve the partial differential equation $x(y^2+z)p - y(x^2+z)q = z(x^2-y^2)$ using Lagrange's method.

2. Solve : $\frac{\partial^2 z}{\partial x^2} + \frac{\partial^2 z}{\partial y^2} = \cos mx \cos my + 30(2x+y)$

3. Solve : $(D^2 + DD' - 6D'^2)z = y\sin x$

4. Solve: $((D^2 - DD' - 2D'^2 + 2D + 2D')z = e^{2x+3y} + \sin(2x+y) + xy$

5. Solve $p^2 - qy^2 = y^2 - x^2$ by Charpit's method:

6. Solve $\left(y^2+z^2\right)p - xyq = -zx$

7. Solve $\sqrt{p} + \sqrt{q} = 1$

8. Solve: $x^2p^2 + y^2q^2 = z^2$

9. Solve the following differential equations: $(x^2 - yz)p + (y^2 - zx)q = (z^2 - yx)$

10. Solve $(mz - ny)\frac{\partial z}{\partial x} + (nx - lz)\frac{\partial z}{\partial y} = ly - mx$

11. Solve r-2s = sinx.cos2y

12. Solve r +t-n^2z=0.

13. Solve the partial differential equation $x(y^2+z)p - y(x^2+z)q = z(x^2-y^2)$ using Lagrange's method

14. Solve : $x^2r - y^2t + px - qy = \log x$

15. Solve : $(D^2 + DD' - 2D'^2)z = (y-1)e^x$

16. Solve: $((D^2 - 6DD' + 9D'^2)z = 36xy$

17. Solve : $x^2r - y^2t = xy$

18. Solve : $(x^2D^2 + 2xyDD' + y^2D'^2)z = x^m y^n$

19. Solve: $((D - 3D' - 2)^2 z = 2e^{2x}\tan(y+3x)$

20. Solve: $((D^2 - DD' + D' - 1)z = e^y + \cos(x+2y)$