1. Define Plane. Show that the equation of first degree in x,y,z represent the plane. Find the equation of sphere passing through the circle  and the touch the plane  [10]
2. Define Laplace and inverse Laplace transform. Show that Laplace transform is a linear operator. Find and  [10]
3. Change the order of Integration and evaluate  [10]
4. If u=f(x,y) where  and . [10]

Show that 

5.Show that the rectangular solid of maximum volume that can be inscribed in a sphere is cube . [10]

6. Define differential equation , degree and order of differential equation. Discuss the different method to solve the first order first degree differential equation with examples. Define second order linear differential equation solve:  [20]