B.Sc. DEGREE EXAMINATION,ODD SEMESTER 2020
II Year III Semester
Differential Equations and Laplace Transforms

Max.marks :25

Answer any **FIVE** questions $(5 \times 5 = 25)$ Marks

1. Solve $xp^2-2yp+x=0$
2. Solve $\frac{d^2y}{dx^2}-y=2+5x$
3. Eliminate the arbitrary function f from $x+y+z=f(x^2+y^2+z^2)$ and form a partial differential equation.
4. Find $L\left[cos^2 2t\right]$
5. Solve $\frac{d^2y}{dt^2}+4\frac{dy}{dt}-5y=5$ given that $y=0$, $\frac{dy}{dt}=2$ at t = 0 using Laplace transform.
6. Solve $p^2+\left(x+y-\frac{2y}{x}\right)p+xy+\frac{y^2}{x^2}-y-\frac{y^2}{x}=0$
7. Find the complete integral of $p+q=x+y$