

**SSR DEGREE COLLEGE (ATUONOMOUS) NIZAMABAD**  
**UNIT WISE IMPORTANT QUESTIONS**  
**MATHEMATICS**  
**SEMESTER – I**

**Unit – I**

1. Solve  $(x^2 - y^2) dx + 2xy dy = 0$
2. Solve  $(1+x)\frac{dy}{dx} - xy = 1 - x$
3. Solve  $(x^2y)dx - (x^3 + y^3)dy = 0$
4. Solve  $(y + \frac{1}{3}y^3 + \frac{1}{2}x^2) dx + \frac{1}{4}(x + xy^2)dy = 0$
5. Solve  $(1-X) dy + (1-y) dx = 0$
6. Solve  $\frac{dx}{yz} = \frac{dy}{zx} = \frac{dz}{xy}$
7.  $\frac{dx}{mz-ny} = \frac{dy}{mz-ny} = \frac{dz}{ly-mn}$

**Unit – II**

1. Solve  $P^2 - 5P + 6=0$
2. Solve  $y = px = X^4P^2$
3. Solve  $X^2P^3 + y(1+XY^2)P^2 + Y^3P = 0$
4. Reduce  $(Y-Px)(P-1)=P$  to clariuts from and find the solution.
5. Solve  $X = y + a \log p$
6. Solve  $P^2X^2=Y^2$  where  $P\frac{dy}{dx}$
7. Solve  $P = \log (Px-y)$

**Unit – III**

1. Solve  $(D^2+4)Y=0$
2. Solve  $\frac{d^3y}{dx^3} - 3\frac{dy}{dx} + 2y = 0$
3. Solve  $D^3 + 1) y = \text{Cos } 2x$
4. Find the particular integral of  $(D^2 - 2D+ 5)y=e^{-x}$
5. Solve  $(D^3+1) y = \text{Cos}2X$
6.  $(D^2+4D+4)y = 4X^2 + 6e^x$  by method of undetermined co- efficient.
7. Solve  $Y^{11}+3y^1+2y = 12e^x$  by method of undetermined co –efficient.

**Unit – IV**

1. Solve  $(D^2-3D+2)y= \text{Sine}^{-x}$  using the method of variation of parameter.
2.  $X^2\frac{dy^2}{dx^2} + x\frac{dy}{dx} - uy = x^2$  by using Cauchy euler equation
3. Solve  $X^2y^{11} - Xy^1+y=0$  Given  $Y_1=x$  as a solution

4. By Eliminating the constants find the partial differential the ordinary constants  $2Z = \frac{x^2}{a^2} + \frac{y^2}{b^2}$
5. Solve  $(D^2 + 4D+4)y = 0$
6. Solve  $Y^{11}+2y^1+y= X^2e^{-x}$  by method of variation of parameter.