

**J.C Bose University of Science & Technology, YMCA Faridabad**  
**B.Tech. (ECE, ENC, EEIOT)-2<sup>nd</sup> Semester,**  
**Sessional - I (July.- 2022)**

**Subject Name: Calculus, Ordinary Differential Equation and Complex Variable**  
**Subject Code: BSC106D(Mathematics-II)**

**Time :90 minutes**

**M.M:15 Marks**

**Note: Attempt all questions .**

**Each Question carry equal marks.**

Que.1 Solve  $y(2xy+1)dx + x(1+2xy - x^3y^3)dy = 0$ . (CO-2)

Que.2 Solve  $x(dy/dx) + y = x^3y^6$  (Bernoulli's equation). (CO-2)

Que.3 Solve  $x = y + p^2$  (solvable for x). (CO-2)

Que.4 Find the complete solution of  $(D^3+2D^2+D)y = e^{-x} + \sin 2x$ . (CO-1)

Que.5 Solve  $(x^2D^2 - xD - 3)y = x^2 \log x$ . (CO-1)