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JC BOSE UNIVERSITY OF SCIENCE & TECHNOLOGY, YMCA, FARIDABAD

1st SESSIONAL EXAM (April 2023)

B.TECH 2nd SEM ECE - MATHEMATICS

MM-15

TIME-1Hr,30 min

NOTE: All questions are compulsory

Q1: Solve the differential equation $(y^2 e^{xy^2} + 4x^3)dx + (2xye^{xy^2} - 3y^2)dy = 0$.

Q2: Solve $x^2 y'' + 3xy' + 5y = x \cos(\log x) + 3$.

Q3: Solve by the method of variation of parameters $\frac{d^2 y}{dx^2} + 2\frac{dy}{dx} + y = \frac{e^{-x}}{x^2}$.