Minor- III

School of Mathematics and Statistics
University of Hyderabad

November 07, 2025

Duration: 60 minutes
Maximum Score: 20 points

Instructor: Dharmendra Kumar
Course: Eng Math - I

Instructions: You may use results proven in the lectures; however, answers without justification will receive a score of zero.

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1. Find the solution of the following initial value problem:

$$y' = x + y,$$
$$y(0) = 0.$$

[4]

2. Find the general solution of the following DEs:

$$\frac{dy}{dx} = \frac{2x + y - 1}{4x + 2y + 5}.$$

[5]

3. Solve the following DEs:

$$\frac{dy}{dx} = x^3y^3 - xy.$$

[4]

4. Using the variation of parameters, solve the following DE:

$$y'' + 2y = e^{-2x}.$$

[7]

All the best !