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Set: B **Date: 03-10-2026**

Course Title: Engineering Mathematics
Course Code: MAT211,
Batch: 70*M*, First Quiz, Fall-2026

Student Name. *Student ID:*

Time: 30 minutes Full Marks= 10

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1. Define the Linear Ordinary Differential Equation with examples. [2]

2. Find the differential equation of the of the solution

$$4x^2y = Pe^{3x} + Qe^{-3x} - 6x^3$$

where P and Q are arbitrary constants. [3]

3. Solve the following DE:

I. $\frac{dy}{dx} = \frac{3xy}{x-1}$ [2]

II. $x^2\frac{dy}{dx} = (5x - 3x^4 + x^3e^{x^2})coty$ [3]