Total Marks
10

Course Code and Name: Differential Equations and MATH218
Quiz 1
462 - Date: 17/04/2025 Duration: 10 Mins

Student Name: **Student ID:** **S.No.**

Answer all questions:

1. State whether the given differential equation is linear or non linear. Give the order of the equation

$$y\frac{d^2y}{dx^2} - 3\frac{dy}{dx} = x.$$

(2 marks)

2. Determine whether the function $f(x,y) = \frac{x}{3y} + 5$ **is homogeneous. If so, state the degree of homogeneity.** **(2 Mark)**

3. Solve $y'' - 4y = 0.$ **(3 Mark)**

4. Find the differential operator that annihilates $3 - 5x + \sin 2x$ **(3 Marks)**