

	<b>SUBJECT:</b> ORDINARY DIFFERENTIAL EQUATIONS		<b>MARKS:</b>  <span style="font-size: 2em;">/10</span>
	<b>CHAPTER:</b> 1	<b>CODE:</b>	
	<b>ASSESSMENT:</b> Quiz	<b>NO:</b> 2	
<b>NAME:</b>		<b>STUDENT ID :</b> <b>SECTION :</b>	

For question 1 to 2, please choose the correct answer.

1. Which of the following differential equations is a homogeneous equation?

[a]  $\frac{dy}{dx} = \frac{x+y}{2x}$

[b]  $\frac{dy}{dx} = 3x + y^2$

[c]  $\frac{dy}{dx} = \frac{xy}{x^3 + y^3}$

[d]  $\frac{dy}{dx} = 2xy + 3x^2y$

2. Given linear first ODE  $x\frac{dy}{dx} = -y + 3$ . Identify  $p(x)$  and  $q(x)$ .

[a]  $p(x) = x, \quad q(x) = 3x$

[b]  $p(x) = -\frac{1}{x}, \quad q(x) = \frac{3}{x}$

[c]  $p(x) = \frac{1}{x}, \quad q(x) = \frac{3}{x}$

[d]  $p(x) = 1, \quad q(x) = 3$

**[2 Marks]**

3. Given that  $(6x^2 + 3y^2 - 10xy)dx + (-3y^2 - 5x^2 + 6xy)dy = 0$ . Show that the equation is an exact equation.

**[2 Marks]**



4. Given the linear differential equation

$$\frac{dy}{dx} + \frac{y}{x} = \frac{3}{x^2}$$

Find the general solution of the equation.

**[6 Marks]**

