

**Department of Electrical Engineering**

**Final term exam**

**Date: 25/09/2020**

**Course Details**

**Course Title:** Complex & Multivariable Calculus

**Module:** 03

**Instructor:** \_\_\_\_\_

**Total Marks:** 50

**Student Details**

**Name:** \_\_\_\_\_

**Student ID:** \_\_\_\_\_

Q1.	(a)	$A = x^2 y^4 z^3 \mathbf{i} - 3y^2 z \mathbf{j} + 4xz^2 \mathbf{k}$ express $\nabla \times (\nabla \times A)$	Marks 08 +10
	(b)	<b>Extend</b> $\iint_1^4 (2x + 6x^2 y) dy dx$	CLO 2
Q2.		<b>Express</b> the equation of the plane passing through the point (5, -2, 4) that is perpendicular to the plane $3x + y - 6z + 8 = 0$	Marks 06 CLO 2
Q3.		Given $a = \langle 2, -1, 6 \rangle$ and $b = \langle -3, 5, 1 \rangle$ <b>express</b> $a \times b$	Marks 08 CLO 2
Q4.		<b>Estimate</b> the angle between the plane $4x + 2y - 6z = 10$ and $xz$ plane.	Marks 08 CLO 2
Q5.		Give all values of $\sin^{-1} \sqrt{5}$	Marks 10 CLO 1