Department of Electrical Engineering
Final Assignment
Date: 23-09-2020

Course Details

Course Title: Electro Magnetic Field Theory **Module:** _____

Instructor: _____ **Total Marks:** 50 .

Student Details

Name: _____ **Student ID:** _____

Q1:	**(a)**	Determine the magnetic field at the center of the semicircular piece of wire with radius 0.20m. The current carried by the semicircular of wire is 150A.	**Marks 12** **CLO 2**
	(b)	Find the force between two charges when they are brought in contact and separated by 4cm apart, charges are 2nC and -1nC, in μN.	**Marks 08** **CLO 2**
Q2:	**(a)**	Compute the magnetic field of a long straight wire that has a circular loop with a radius of 0.05m. 2amp is the reading of the current flowing through this closed loop.	**Marks 10** **CLO 2**
	(b)	Determine the charge that produce an electric field strength of 40 v/cm at a distance of 30cm in vacuum (in 10^{-8}c)	**Marks 05** **CLO 2**
Q3:	**(a)**	Given the time-varying magnetic field B= $(0.5a_x+0.6a_y - 0.3a_z)\ cos5000t\ T$ and a square filamentary loop with its corners at (2, 3, 0), (2,-3,0), and (-2,3,0) and (-2,-3,0), find the time-varying current flowing in the general a_φ direction if the total loop resistance is $400k\Omega$.	**Marks 15** **CLO 3**