SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
B.Sc. END SEMESTER EXAMINATION APRIL/NOV - 2021
SEMESTER - V
13UPHCT5009 **&** UPH/CT/5009 - **Electromagnetism**

Total Duration : 3 Hrs		**Total Marks : 75**	
MCQ	: 30 Mins	MCQ	: 15
Descriptive	: 2 Hrs.30 Mins	Descriptive	: 60

Section B

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. Elaborate the peak, average and RMS values of AC voltage and current.
2. Give an experimental determination of mutual inductance.
3. Explain the inductances in series and parallel.
4. With neat sketches, explain the working of any two types of DC generators.
5. Obtain an expression for displacement current.
6. Explain existence of eddy currents. To what practical purposes have eddy currents been applied?
7. Derive an expression for Poynting vector.
8. Write notes on: (i) Wattless current, and (ii) Choke coil.

Section C

Answer any **THREE** questions $(3 \times 10 = 30$ Marks)

9. Explain power factor and current values in an AC circuit containing LCR in series resonance circuit.
10. Discuss determination of self-inductance by Raleigh method.
11. Describe the principle and working of single-phase induction motor.
12. Explain the following of a DC motor: working principle, design of armature, back emf, experiment and function of starter.
13. Give an account of the Maxwell's equations in free space. Solve the equations to deduce the e.m. wave equation and determine the velocity of light in vacuum.