UPH/CT/5009

B.Sc. DEGREE EXAMINATION, APRIL 2018
III YEAR - V SEMESTER
Major Paper IX-ELECTRO MAGNETISM

Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10 marks)$

Answer any **TEN** questions

1. Write the equation that measures alternating voltage.
2. Define power factor.
3. According to Faradays Law, e.m.f. stands for?
4. Which law is used to find the direction of induced e.m.f.?
5. Which quantity is not affected by magnetic field?
6. What is an induction motor?
7. Which device converts electrical energy into mechanical energy?
8. Define torque.
9. What type of wave is generated by an oscillating dipole?
10. What is the speed of an electromagnetic wave?
11. What is the average value of alternating current for one complete cycle?
12. Why the core of the AC generator is laminated?

Section B $(5 \times 4 = 20 marks)$

Answer any **FIVE** questions

13. What is meant by inductive reactance?
14. Define self and mutual inductance with units.
15. Write short notes on the principle of operation of AC induction motor.
16. What are the advantages of three phase AC system over other systems?
17. Define displacement current and Poynting vector.
18. Write few lines about wattles current.
19. Explain coefficient of coupling.

Section C $(3 \times 10 = 30 marks)$

Answer any **THREE** questions

20. Describe in detail the construction and working of choke coil.
21. What are eddy currents? Write the uses of eddy currents.
22. Calculate the effective inductance of the inductors connected in (1) parallel and (2) series.
23. Sketch the differences between generator/dynamo and electric motor.
24. Describe Hertz experiment for production and determination of electromagnetic waves.