B.Sc. DEGREE EXAMINATION,APRIL 2019
III Year V Semester
Electromagnetism

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

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

Answer any **TEN** questions

1. What is peak value of AC? Draw the signal and mention it.
2. Give the significance of power factor.
3. Why series resonance circuit is called as acceptor circuit?
4. What are Eddy currents?
5. Define coefficient of coupling.
6. Why capacitors does not allow DC current.
7. Write the expression for force acting on a conductor in uniform magnetic field.
8. How the flux leakage loss in dynamo is minimized?
9. Define displacement current.
10. Calculate the velocity of electromagnetic waves in free space.
11. Define poynting vector.
12. What are the advantages of three phase AC generator.

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

Answer any **FIVE** questions

13. Derive the expression for RMS value of AC voltage.
14. Explain Q factor of series resonance circuit.
15. State and explain Faraday's laws of electromagnetic induction.
16. Obtain the expression for self-inductance of a coaxial cylinder.
17. Explain Hertz experiment for the production of electromagnetic waves.
18. Explain the action of series wound dynamo.
19. Derive the plane electromagnetic waves in free sace.

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

Answer any **THREE** questions

20. Derive the expression for impedance and frequency of a parallel resonant circuit.
21. Describe the experimental determination of self-inductance by Raleigh's method.
22. Explain the construction and working of single phase AC induction motor.
23. Discuss the working of compound wound dynamo and DC motor.
24. Derive the entire Maxwell's equation for material medium. Also convert them for free space and harmonically varying fields.

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