XII- PHYSICS
Unit test 2: Important questions

Unit 4: Electromagnetic Induction And Alternating Current

2 Marks

1) What is meant by electromagnetic induction?
2) State Faraday's laws of electromagnetic induction.
3) State Lenz's law.
4) State Fleming's right hand rule.
5) Mention the ways of producing induced emf.
6) What do you mean by self-induction?
7) What is meant by mutual induction?
8) Give the principle of AC generator.
9) What are step-up and step-down transformers?
10) Define average value of an alternating current.
11) How will you define RMS value of an alternating current?
12) What do you mean by resonant frequency?
13) How will you define Q-factor?
14) What is meant by wattles current?
15) Give any one definition of power factor.

3 Marks

1) Obtain an expression for motional emf from Lorentz force.
2) How will you induce an emf by changing the area enclosed by the coil?
3) Mention the various energy losses in a transformer.
4) Find out the phase relationship between voltage and current in a pure resistive circuit.
5) Give the advantages and disadvantages of AC over DC.

5 Marks

1) Show mathematically that the rotation of a coil in a magnetic field over one rotation induces an alternating emf of one cycle.
2) Explain the construction and working of the transformer.
3) Derive an expression for phase angle between the applied voltage and current in a series RLC circuit.
4) Prove that the total energy is conserved during LC oscillations.

Sums

Example: 4.1,4.4,4.10,4.11,4.12,4.16,4.17,4.19,4.20,4.22.
Exercise:1,2,9,12,15,17,18,20

Unit 5: Electromagnetic waves

2 Marks

1) What is displacement current?
2) Write down the integral form of modified Ampere's circuital law.
3) Give two uses each of (i) IR radiation, (ii) Microwaves and (iii) UV radiation.
4) Write notes on Ampere-Maxwell law.
5) Why are e.m. waves non-mechanical?

3 Marks

1) What are Fraunhofer lines? How are they useful in the identification of elements present in the Sun?
2) Write short notes on (a) microwave (b) X-ray (c) radio waves (d) visible spectrum
3) Write down the properties of electromagnetic waves.

5 Marks

1) Write down Maxwell equations in integral form.
2) Explain the types of emission spectrum.
3) Explain the types of absorption spectrum.

Sums

Example: 5.2,5.3.
Exercise:5

Prepared by R.ARIKRISHNAN Msc., B.Ed., **Prepared by R.ARIKRISHNAN Msc., B.Ed.,**