Guess Paper – 2014
Class – XII
Subject – Physics

Magnetism , Induction , Electric

Marks: 36 Time: 2h

A) Questions of marks =1
1) What is the least possible value of charge?
2) How many electrons are present in 1 coulomb of charge?
3) State Gauss's theorem in electrostatics.
4) What is the angle between the directions of electric field at any (i) axial point and (ii) equatorial point due to an electric dipole?
5) Repulsion is the surest test of magnetism – Explain.
6) What is the basic difference between electric and magnetic lines of force?
7) Why soft iron is used to make electromagnet?
8) Where on the surface of earth is the angle of dip (i) 0 and (ii) 90 ?
9) Write the SI unit of (i) pole strength and (ii) magnetic moment of a bar magnet?
10) Define self inductance? Give its SI unit.

B) Questions are of Marks -2
1) Find the expression of torque on an electric dipole placed in an uniform electric field?
2) State the Biot-Savart Law in electromagnetism.
3) What is the basic difference between the atom or molecule of a diamagnetic and paramagnetic materials ?
4) Why is diamagnetism , in contrast , almost independent of temperature?
5) State Lanz's Law . Prove that charge induced is independent of time?
6) What is electromagnetic damping? How is a galvanometer is made dead beat?
7) A bar magnet of magnetic moment 5.0 Am^2 has poles 20cm apart . Calculate the pole strength?
8) What is the angle of Dip? What is neutral point?

C) Marks -5
1) Explain the phenomenon of hysteresis in magnetic materials . Draw a hysteresis loop showing remanence and coercive force.

2) State Faraday's law of electromagnetic induction.
A horizontal straight wire of length L extending from east to west is falling with speed v at right angel to the horizontal component of Earth's magnetic field B.
   i) Write the expression of the instantaneous value of the emf induced in the wire.
   ii) What is the direction of the emf?
   iii) Which end of the wire is of higher potential ?

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