SIR CV RAMAN COACHING CENTRE ,IDAAPADI,SALEM

XLL PHYSICS .UNIT – 3 ,PROBLEM QUESTIONS

DATE : 20.05.2024

Total mark : 25 m

Answer any five questions (5 x 5 = 25 m)

1.The repulsive force between two magnetic poles in air is 9×10^{-3} N. If the two poles are equal in strength and are separated by a distance of 10 cm, calculate the pole strength of each pole.

2.A short bar magnet has a magnetic moment of 0.5 J T^{-1}. Calculate magnitude and direction of the magnetic field produced by the bar magnet which is kept at a distance of 0.1 m from the centre of the bar magnet along (a) axial line of the bar magnet and (b) normal bisector of the bar magnet

3.Consider a magnetic dipole which on switching ON external magnetic field orient only in two possible ways i.e., one along the direction of the magnetic field (parallel to the field) and another anti-parallel to magnetic field. Compute the energy for the possible orientation

4.Compute the intensity of magnetisation of the bar magnet whose mass, magnetic moment and density are 200 g, 2 A m^2 and 8 g cm^{-3}, respectively.

5.Two materials X and Y are magnetised whose values of intensity of magnetisation are 500 A m^{-1} and 2000 A m^{-1} respectively. If the magnetising field is 1000 A m^{-1}, then which one among these materials can be easily magnetized?.

6.Compute the magnitude of the magnetic field of a long, straight wire carrying a current of 1 A at distance of 1m from it. Compare it with Earth's magnetic field.

Prepared by

Dr.G.THIRUMOORTHI,M.SC,B.ED,PH.D

GOVT ARTS COLLEGE (A) ,SALEM -7

Thiruphysics1994@gmail.com

8610560810,,,