ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

WORK SHEET 27

Subject : PHYSICS

CLASS : XII

02.7.20

Chapter : Magnetic properties of materials

Topic: Retentivity, coercivity, hysteresis, Earth's magnetism, dip angle,declination,B_H ,B_V

Multiple Choice Questions : **1x 15 = 15**

1. At which place on earth, horizontal component of earth's total magnetic intensity is zero ?
   (a) magnetic pole (b) equator (c) 23^0 N latitude (d) No where

2. Value of dip angle at the magnetic pole is
   (a) 0^0 (b) 45^0 (c) 90^0 (d) 30^0

3. Dip angle at the equator is
   (a) 0^0 (b) 30^0 (c) 45^0 (d) 90^0

4. Dip angle at a place is 30^0 and earth's horizontal intensity 0.5 Oe. Earth's total magnetic intensity is
   (a) $\sqrt{3}$ Oe (b) 1- Oe (c) $\frac{1}{\sqrt{3}}$ Oe (d) 0 . 5 Oe

5. The magnetic moment of a magnet (15 cm x 2 cm x 1 cm) is 1.2 Am^2. Its intensity of magnetisation is
   (a) 2×10^4 Am^{-1} (b) 4×10^4 Am^{-1} (c) 10^4 Am^{-1} (d) none

6. The vertical component of earth's magnetic field is zero at a place where angle of dip is
   (a) 0^0 (b) 45^0 (c) 60^0 (d) 90^0

7. At a given place on the earth's surface, the horizontal component of earth's magnetic field is 3×10^{-5} T and resultant magnetic field is 6×10^{-5} T. The angle of dip at this place is
   (a) 30^0 (b) 40^0 (c) 50^0 (d) 60^0

8. At a place on earth's surface where the horizontal and vertical components of earth's magnetic field are equal,
   (a) the angle of dip is 0^0 (b) the angle of dip is 90^0
   (c) the angle of dip is 45^0 (d) the angle of dip is 30^0

9. At any place in the northern hemisphere of earth, the value of the angle of dip
   (a) is positive everywhere (b) is negative everywhere (c) is zero everywhere
   (d) may be zero, positive or negative depending on the position of the place

10. If the intensity of geomagnetic field at a place on the magnetic equator of the earth be $28\ A\ .\ m^{-1}$, the horizontal component of the geomagnetic intensity there is

(a) $28\ A\ .\ m^{-1}$ (b) $>28\ A\ .\ m^{-1}$ (c) $<28A\ .\ m^{-1}$ (d) zero

11. If the intensity of geomagnetic field at the magnetic poles of the earth be $32A\ .\ m^{-1}$, the horizontal component of the geomagnetic filed intensity there is

(a) $32\ A\ .\ m^{-1}$ (b) $>32\ A\ .\ m^{-1}$ (c) $<32A\ .\ m^{-1}$ (d) zero

12. Diamagnetic substances are the ones in which resultant magnetic moment in an atom is

(a) zero (b) half (c) one-fourth (d) three-fourth

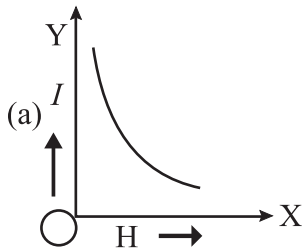
13. Which of the following are used for running magnetically levitated superfast trains ?

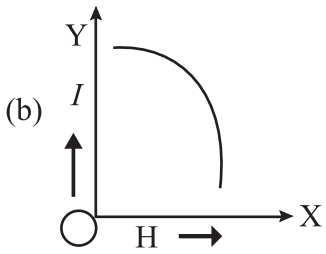
(a) Diamagnets (b) Paramagnets
(c) Ferromagnets (d) Superconducting magnets

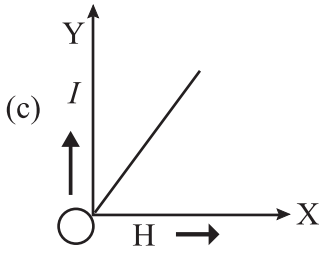
14. For a paramagnetic material both χ and μ_r depend upon

(a) pressure (b) material
(c) temperature (d) Both (b) and (c)

15. The current *I-H* curve for a paramagnetic material is represnted by figure.

(a) 

(b) 

(c) 

(d)