



SHIKSHA CLASSES

Question Paper

Subject : Physics

Class : XI

12 : Magnetism

Total Marks : 20

Time : 1 Hour

SECTION - A

Q.1 : Choose the correct option : 4

- i) Magnetic meridian is the plane
a) perpendicular to the magnetic axis of Earth
b) perpendicular to geographic axis of Earth
c) passing through the magnetic axis of Earth
d) passing through the geographic axis

ii) The magnetic induction B and the force F on a pole of strength m are related by ----
--.

a) $B = mF$ b) $F = nIABm$ c) F

= mB d) $F = \frac{m}{B}$

iii) A place where the horizontal component of Earth's magnetic field is zero lies at

- a) geographic equator b)
geomagnetic equator
c) one of the geographic poles d)
one of the geomagnetic poles

iv) The angle of dip at the equator is -----.

- a) 90° b) 45° c) 30°
d) 0°

Q.2 : Answer the following : 2

- i) Define magnetic flux.
ii) Define the term magnetic equator.

Section B

: Answer the following : (ANY 2) 4

Q.3 : A bar magnet has a magnetic moment of 2.5 Am^2 . Find its pole strength, if its magnetic length is 5 cm.

Q.4 : State properties of magnetic lines of force.

Q.5 : Define the following terms in case of bar magnet :

- i) Axis ii) Equator

Section C

: Answer the following : (ANY 2) 6

Q.6 : Derive an expression for the magnetic field due to a bar magnet at an arbitrary point.

Q.7 : Explain the Gauss' law for magnetic fields.

Q.8 : A bar magnet has a dipole moment of 5 Am^2 . Calculate the magnetic induction produced by it at a point in air at a distance of 50 cm from either pole.

Section D

: Answer the following : (ANY 1) 4

Q.9 : Write short note on : i) Magnetic declination

ii) Angle of dip

Q.10 : A magnetic short dipole has pole strength 20 A-m and magnetic length 2 cm. Find the magnetic induction at a point at a distance of 40 cm from the centre of the dipole.

i) on the axis and

ii) on the equator of the dipole

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