INTERNATIONAL INDIAN SCHOOL BURAIDAH

Worksheet for the Academic Year 2023-24

CLASS:X SUBJECT: PHYSICS DATE:07/12/23

LESSON : Magnetic effects of electric current

1.(a) What is meant by a magnetic field? Mention two parameters that are necessary to describe it completely.
(b) If field lines of a magnetic field are crossed at a point, what does it indicate?

2. how the magnetic field produced by a straight current carrying conductor at a point depends on
(a) current through the conductor
(b) distance of point from conductor.

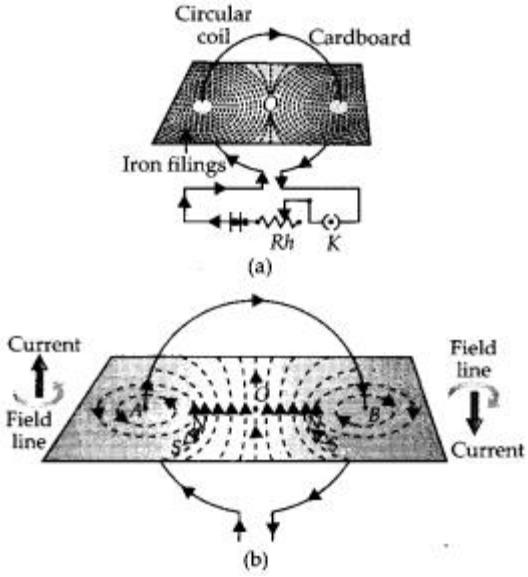
3. Give reason for the following
(i) There is either a convergence or a divergence of magnetic field lines near the ends of a current carrying straight solenoid.
(ii) The current carrying solenoid when suspended freely rests along a particular direction

4. Find the direction of magnetic field due to a current carrying circular coil held:
(i) vertically in North – South plane and an observer looking it from east sees the current to flow in anticlockwise direction,
(ii) vertically in East – West plane and an observer looking it from south sees the current to flow in anticlockwise direction,
(iii) horizontally and an observer looking at it from below sees current to flow in clockwise direction .

5. (a) State Right Hand Thumb rule to find the direction of the magnetic field around a current carrying straight conductor.
(b) How will the magnetic field be affected on:
(i) increasing the current through the conductor
(ii) reversing the direction of flow of current in the conductor?

6.(a) What is an electromagnet? List any two uses.
(b) Draw a labelled diagram to show how an electromagnet is made.
(c) State the purpose of soft iron core used in making an electromagnet.
(d) List two ways of increasing the strength of an electromagnet if the material of the electromagnet is fixed.

7. From this pattern, write the important conclusions.



8. State the direction of magnetic field in the following case.

9. A current carrying conductor is placed in a magnetic field. Now answer the following.
(i) List the factors on which the magnitude of force experienced by conductor depends.
(ii) When is the magnitude of this force maximum?
(iii) State the rule which helps, in finding the direction of motion of conductor.
(iv) If initially this force was acting from right to left, how will the direction of force change if:
(a) direction of magnetic field is reversed?
(b) direction of current is reversed?

10. Give reasons for the following:
(a) It is dangerous to touch the live wire of the main supply rather than neutral wire.
(b) In household circuit, parallel combination of resistances is used.
(c) Using fuse in a household electric circuit is important.

(d) The burnt out fuse should be replaced by another fuse of identical rating