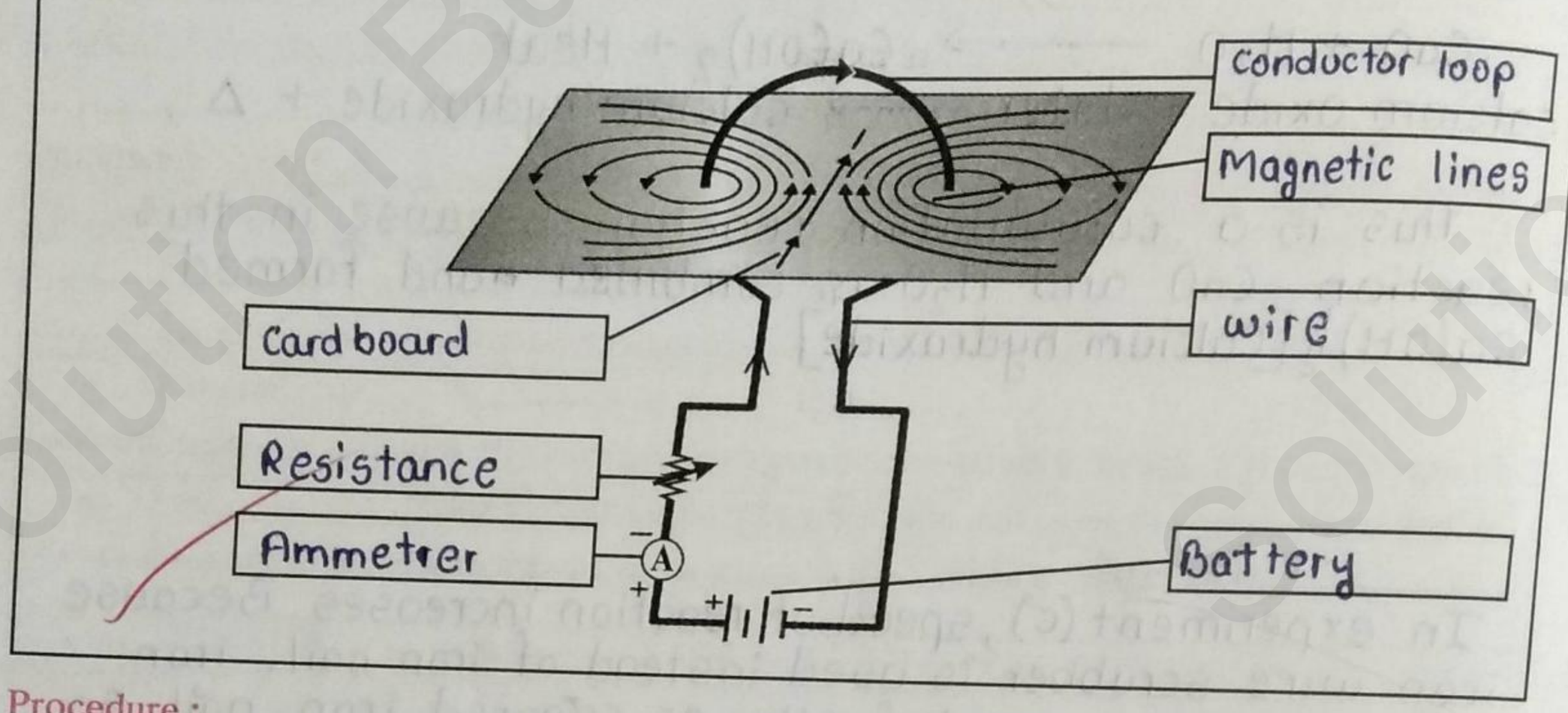
Practical No. 4

Aim : To study the magnetic field due to electric current flowing through the coil.

Apparatus : Insulated copper wire(24 gauge), connecting wires, battery (12V), cardboard/ plastic sheet, iron fillings etc.

Figure : (Complete and label the following diagram.)



Procedure :

1. Make a coil around the hollow tube with around 20 to 25 rounds of copper wire.
2. Arrange coil and cardboard / plastic sheet as shown in the figure.
3. Spread some iron filings on the cardboard.
4. Connect both ends of coil to the battery and start the electric current.
5. Keep flicking gently on the cardboard and observed the arrangement of iron filings.
6. Increase the current in circuit gradually and observe the change in the arrangement of iron filings.

Observation :

1. When electric current starts flowing through the coil, Magnetic force are produced at each point on the coil.
2. As we go away from the wire, the concentric circles representing the magnetic lines of forces will become ~~decrease~~ Increase .
3. As intencity of electric current increases the magnetic lines of force becomes more clearer.

Inference / Conclusion :

1. If the current flows through the coil, magnetic force are produced at each point on the coil.
2. In above expertiment, the intensity of magnetic field at any point by a current flowing through a coil, is dependent on the ..current.....

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Multiple Choice Questions

1. In above experiment ..... would be use to find direction of magnetic lines of force.
   a. bar magnet b. horse shoe magnet
   c. disc magnet d. magnetic needle

2. When electric current is passed through the solenoid, its shows magnetic lines of force similar to a .....
   a. bar magnet. b. horse shoe magnet.
   c. disk magnet. d. spherical magnet.

3. In ..... appliance Fleming Left Hand rule is not used.
   a. electric fan b. mixer c. computer d. electric generator

4. Heating effect of electric current does not observed in .....
   a. electric oven. b. electric iron. c. elecric motor. d. fuse.

5. ..... is used to measure electric resistance in a circuit.
   a. Voltmeter b. Galvanometer c. Ammeter d. Ohm meter

: Exercise :

1. What is the reason behind covering wires carring electricity with rubber in some places?
Some wires are covered with rubber at some places because The wire is looped at on the cardboard at that place there are one needle the needle can atracted by wire or stick to the wire therefore to stop this wire are coverded with rubber at some place

2. What procedure will you follow to study magnetic field, if you are provided with parafin oil, iron nail, bar magnet, battery, coil conductor wire?
Spread the oil on ground to remove all friction between Iron nail and ground place elecro-bar magnet near them with complete circute as we open the circute, the iron nail come in shape of magnetic line

2. Which magnet will you choose among permanent magnet and electromagnet for Industrial purpose? Justify your answer.
I will choose electric magnet for industrial purpose because permanent magnet can be effected by whether conditions, water and other objects so it will become less power and intencity of attraction

Remark and Signature .....

PVYKUF