

## Chapter 13: *Magnetic effects of electric current*

1. The change in magnetic field lines in a coil is the cause of induced electric current in it. Name the underlying phenomenon. 1
  
2. Suppose your parents have constructed a two room house and you want that in the living room there should be a provision of one electric bulb, one electric fan, a refrigerator and a plug point for appliances of power up to 2 kilowatt. Draw a circuit diagram showing electric fuse and earthing as safety devices. 3
  
3.
  - (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.5
  
4. Define the term induced electric current. 1
  
5. What is overloading and short circuiting ? State the function of earth wire in a domestic circuit. 3
  
6. Give reasons 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.
  - (iii) The burnt out fuse should be replaced by another fuse of identical rating.3
  
7. Fleming's Right-hand rule gives 1
  - (A) magnitude of the induced current.
  - (B) magnitude of the magnetic field.
  - (C) direction of the induced current.
  - (D) both, direction and magnitude of the induced current.

8. (a) State Fleming's Left-hand rule.
- (b) List three characteristic features of the electric current used in our homes.
- (c) What is a fuse ? Why is it called a safety device ?
- (d) Why is it necessary to earth metallic electric appliances ? 5

9. (a) A coil of insulated wire is connected to a galvanometer. What would be observed if a strong bar magnet with its south pole towards one face of the coil is
- (i) moved quickly toward it ?
- (ii) moved quickly away from it ?
- (iii) held stationary near it ?
- (b) Name the phenomena involved.
- (c) State the conclusion based on the observations in (i), (ii) and (iii). 3

10. **What is a solenoid ? What does the magnetic field pattern inside the solenoid indicate ? State how this field can be utilised to make an electromagnet.** 3