

**MIND MAP**

- A magnet is a substance with attractive and directive properties.
- Magnetic field is a space around magnet where force of attraction and repulsion is detected.
- Magnetic field lines represent a magnetic field.
  - a The lines are directed from North pole to South pole.
  - b They are parallel and equidistant to each other and form closed and continuous curve.
- Oersted demonstrated that around every conductor carrying an electric current there is a magnetic field.
- The magnitude of magnetic field is (B)
 
$$B \propto \frac{NI}{r}$$
- Unit of magnetic field is Tesla.

- Right hand thumb rule – Imagine a straight conductor in your right hand such that the thumb points in the direction of current and the curling of fingers gives the direction of magnetic field lines.
- Fleming left hand rule – On stretching your left hand, fore finger points in the direction of the magnetic field, the central finger points in the direction of current and the thumb points in the direction of motion of conductor.
- Fleming right hand rule – On stretching your right hand, such that the central finger and the first finger are mutually perpendicular to each other, the first finger points in the direction of magnetic field, the thumb points in the direction of motion of the conductor and the central finger points in the direction of induced current.

- The cable supplying power to house hold has
  - a Live wire (red).
  - b Neutral wire (black)
  - c Earth wire (green)
- A fuse protects the electric circuits and appliances from short circuiting or from overloading.

- Electro magnetic induction is the conversion of mechanical energy into electrical energy.
- Electric motor is used to convert electric energy into mechanical energy.
- Generator is used to convert mechanical energy into electrical energy.