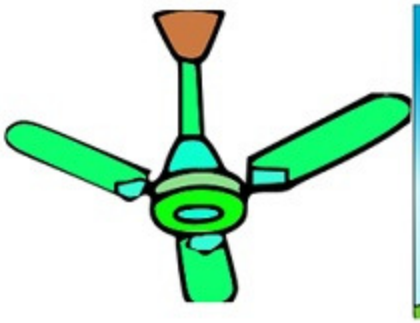
O P JINDAL SCHOOL, SAVITRINAGAR

CLASS NOTES

CLASS X PHYSICS | TOPIC : MAGNETIC EFFECT OF CURRENT

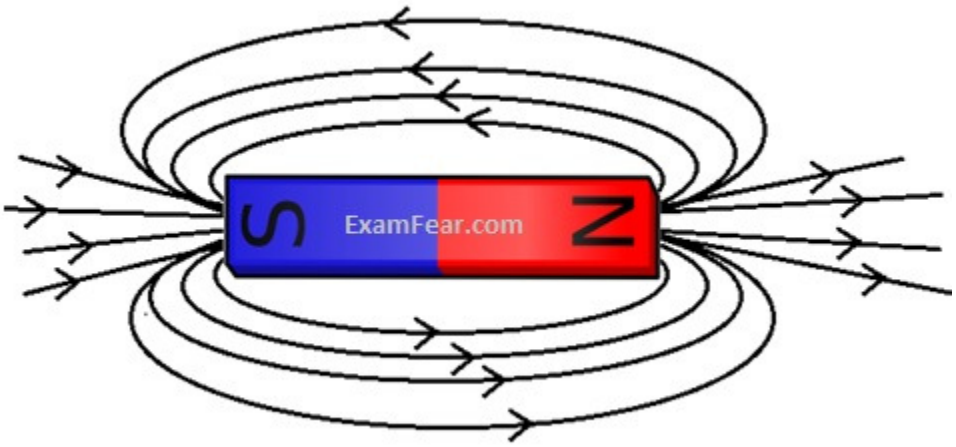
Date : 01 /05/20 | SUBTOPIC: MAGNETIC LINS OF FORCE

We use many appliances at home, like the mixers, grinders, fans etc which draw electricity and convert them to motor movement i.e. mechanical energy. Also, we know of turbines, windmills, generators etc which move a mechanical part to generate electricity. These are possible because when electric current flows through a wire, it produces a magnetic effect around it. So in this chapter, we will study about these interesting facts - **'Magnetic effects of Electric Current'**



Magnetic Field around a Bar Magnet

- A magnet always exerts a influence around the region surrounding it. This region is called the **Magnetic Field**.
- Magnetic Field has both direction and quantity.
- The fields always **emerge out of the North pole and always merge into the South pole**
- Inside the magnet, the field is from the south pole to the north pole, ie merge into the south pole and emerge out of the north pole.



- The strength of the magnetic field is determined by the **closeness of the field lines**.
- If the lines are **closer and crowded**, it means that the strength of the magnetic field is **high** and exerts a strong force on a magnet which is brought in its proximity.
- If the lines are **farer and less crowded**, it means that the strength of the magnetic field is relatively **low** and exerts a weaker force on a magnet which is brought in its proximity.
- When a **magnetic compass** is brought in the proximity of a bar magnet, it deflects and always points in the **north-south direction**.
- When iron filing are brought in the vicinity of a bar magnet, they arrange themselves along the field lines.
- The magnetic field lines are such that they never cross each other. If they did cross at a certain point, it means that at that point, the compass needle would point towards two directions, which is logically incorrect.