

CHAPTER 4. (WORK, ENERGY AND POWER REVISION)(BASED ON NCERT PATTERN)

Question 1. What is the role of the split ring in an electric motor ?

Answer: The split ring reverses the direction of current in the armature coil after every half rotation, i.e., it acts as a commutator. The reversed current reverses the direction of the forces acting on the two arms of the armature after every half rotation. This allows the armature coil to rotate continuously in the same direction.

Question 2. Explain the underlying principle and working of an electric generator by drawing a labelled diagram. What is the function of brushes ?

Answer: Principle : The electric generator is based on the principle of electromagnetic induction. When a coil is rotated with respect to a magnetic field, the number of magnetic field lines through the coil changes. Due to this a current is induced in the coil whose direction can be found by Fleming's right hand rule.

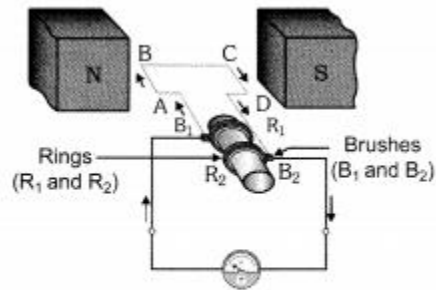


Illustration of the principle of electric generator

Question 3. Why does a compass needle get deflected when brought near a bar magnet ?

Answer: The magnetic field of the magnet exerts force on both the poles of the compass needle. The forces experienced by the two poles are equal and opposite. These two forces form a couple which deflects the compass needle.