Step up Transformer

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A transformer is an electric device which is used for changing the a.c. voltages. A transformer which increases the a.c. voltages is called a step up transformer. A transformer which decreases the a.c. voltages is called a step down transformer.

Principle: A transformer is based on the principle of mutual induction, i.e. whenever the amount of magnetic flux linked with the coil changes, an EMF is induced in the neighbouring coil.

Construction: The transformer consists of two coils of insulated wire wound onto a laminated soft-iron frame. The two coils may be wound on top of one another or on opposite sides of the frame.

Working: An alternating current is passed through the primary coil and this sets up a varying magnetic field which cuts the secondary coil. By electromagnetic induction, an EMF is induced into the secondary circuit.

Step-up transformer:

In this, the number of turns in the primary coil is less than that in the secondary coil

The primary coil is made up of thick insulated copper wire, with a smaller number of turns, while the secondary coil is made up of thin insulated copper wire, with large number of turns. It converts a low voltage at high current into high voltage at low current.

Step-down transformer: In this, the number of turns in the primary coil is more than that in the secondary coil