POWER SUPPLY →

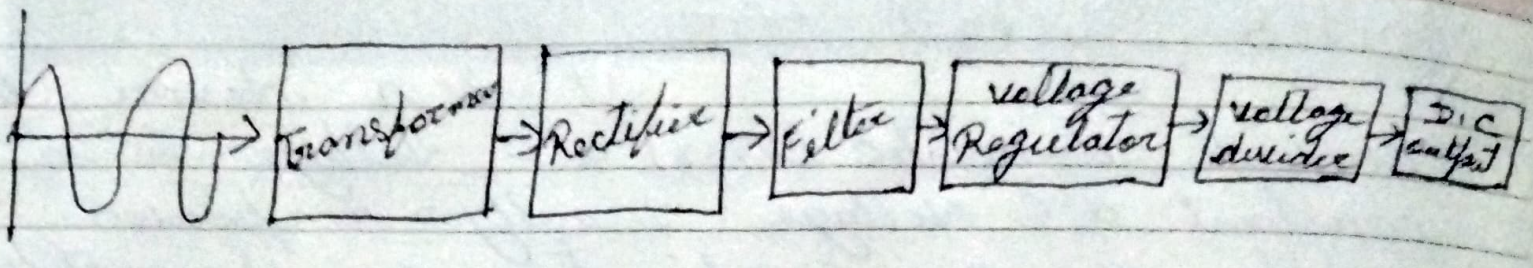
It is a device to convert domestic (230V) a.c voltage to a constant d.c voltage. usually a power supply is a combination of (i) a rectifier (ii) a filter & (iii) voltage regulator circuits.

There may be two types of power supplies.

(1) Unregulated power supply → An unregulated power supply is one whose output d.c voltage is affected significantly by the amount of load. If the load draws more current, the output voltage of such a power supply decreases.

(2) Regulated power supply → A regulated power supply is one whose output d.c voltage remains constant irrespective of the amount of current drawn from it.

A regulated power supply is simply an unregulated power supply plus a voltage regulating circuit. The block diagram of a power supply is shown in fig.



① Transformer →

The function of transformer is (i) to step up or (mostly) step down the a.c supply voltage to suitable value required by circuits or devices fed by d.c power supply (ii) to provide isolation from the supply line - an important safety consideration.

② A full wave Rectifier →

It is circuit to convert ac voltage into dc voltage.

③ Filter →

It is a circuit to reduce or eleminate the pulsations (called ripples) present in the output of a rectifier.

④ voltage Regulator →

It is a circuit which keeps the output voltage constant when input signal or load varies. usually cold cathod valve, zener diode or transistors are used for voltage regulation purposes.

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(5) Potential Divider →

Its function is to provide constant dc voltage required for different electronic devices, Generally it consists of a number of resistors in series across the output terminals of voltage regulator. This makes, the same power supply useful for different electronic circuits, working on different dc voltage..