## CLASSIFICATION OF TURBINES

A hydraulic turbine is a prime mover (a machine which uses the raw energy of a substance and converts it into mechanical energy) that uses the energy of flowing water and converts it into the mechanical energy (in the form of rotation of the runner). This mechanical energy is used in running an electric generator which is directly coupled to the shaft of the hydraulic turbine; from this electric generator, we get electric power which can be transmitted over long distances by means of transmission lines and transmission towers. The hydraulic turbines are also known as **water turbines**.

Thus, the mechanical energy is converted into electrical energy. This electric power is known as **hydroelectric power.**

CLASSIFICATION OF TURBINES:

1. According to the action of water flowing
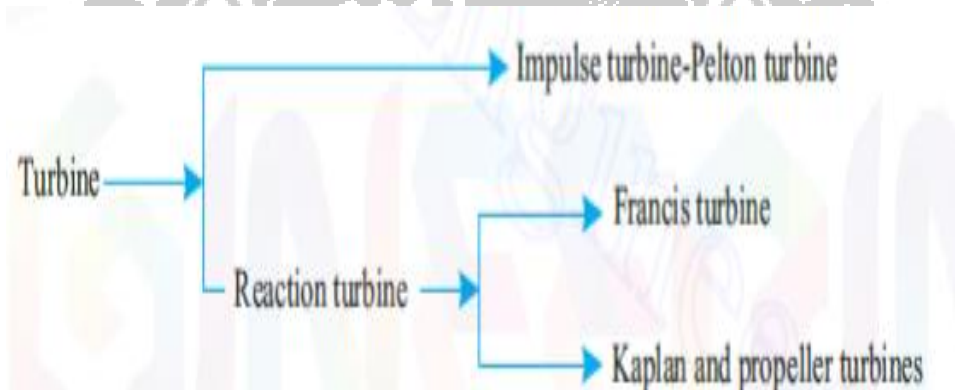
2. According to direction of flow of water in the runner

(i) Tangential flow turbines (Pelton turbine)

(ii) Axial flow turbine (Kaplan turbine)

(iii) Mixed (radial and axial) flow turbine (Francis turbine).

In tangential flow turbine of Pelton type the water strikes the runner tangential to the path of rotation.

In axial flow turbine water flows parallel to the axis of the turbine shaft. Kaplan turbine is an axial flow turbine. In Kaplan turbine the runner blades are adjustable and can be rotated about pivots fixed to the boss of the runner. If the runner blades of the axial flow turbines are fixed, these are called "propeller turbines". In mixed flow turbines the water enters the blades radially and comes out axially, parallel to the turbine shaft. Modern Francis turbines have mixed flow runners.