Heat

Synopsis

- Heat is a form of energy that can be felt by us by the sense of touch.
- Heat always flows from a hot body to a cold one, i.e., from a part that has more heat energy to the part having less heat energy.
- Heat causes certain changes in a body mainly expansion and change of state. It increases the energy of the molecules.
- Temperature is the measure of the degree of hotness or coldness of a body.
- There are different scales of temperature. Celsius, Fahrenheit, Kelvin and Reaumur are some popularly used scales.
- The average normal body temperature of human beings is $37\,^{\circ}C$ or $98.4\,^{\circ}F$.
- There are different types of thermometers based on their uses. Some of them are clinical thermometers, laboratory thermometers, maximum and minimum thermometers. Each thermometer has a Lower Fixed Point (the lowest temperature it can measure) and an Upper Fixed Point (the highest temperature it can measure). They are denoted as L.F.P. and U.F.P. respectively.

Thermometer	Scale	L.F.P.	U.F.P.	Uses
Clinical	Celsius	$35^{\circ}C$	$42^{\circ}C$	To measure the body temperature by doctors
Laboratory	Celsius	$-10^{\circ}C$	$-110^{\circ}C$	To measure the temperature of various substances
Maximum and Minimum	Celsius / Fahrenheit	Varies	Varies	To find the maximum and minimum temperature of a day

- When all the bodies and their surroundings have the same temperature, they are said to be in thermal equilibrium. The flow of heat takes place till thermal equilibrium is reached.

- There are three modes of transfer of heat: conduction, convection and radiation.

- The process by which heat is transferred from the hotter end to the colder end of an object is known as conduction.

- The process of the transfer of heat in liquids or gases by the movement of molecules from the hotter to the colder part in circular currents is known as convection.

- All bodies that are hot give out heat in all directions in straight lines. Such a transfer does not require any medium and is known as radiation.

- Things that heat up slowly, cool down slowly. Those that heat up faster, cool faster.