

## Revision Notes

### Chapter – 4

#### Heat

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- **Heat:** It is a form of energy, which makes any object hot or cold.
- **Temperature:** The degree of hotness of an object is called temperature.
- Our sense of touch is not reliable to measure the temperature.
- Thermometer is a device used for measuring temperatures.
- Heat is the cause of temperature.
- Clinical thermometer is used to measure our body temperature. The range of this thermometer is from  $35^{\circ}\text{C}$  to  $42^{\circ}\text{C}$ . For other purposes, we use the laboratory thermometers. The range of these thermometers is usually from  $-10^{\circ}\text{C}$  to  $110^{\circ}\text{C}$ .
- The normal temperature of the human body is  $37^{\circ}\text{C}$ .
- The materials which allow heat to pass through them easily are conductors of heat.
- The materials which do not allow heat to pass through them easily are called insulators.
- **Clinical Thermometer:** It is a thermometer used to measure the temperature of our body. It consists of a long, narrow, uniform glass tube with a bulb containing mercury at one end. There is a kink near the bulb. It reads a range of temperatures from  $94^{\circ}\text{F}$  to  $108^{\circ}\text{F}$  ( $35^{\circ}\text{C}$  and  $42^{\circ}\text{C}$ ).
- **Laboratory Thermometer:** It is a thermometer used to measure the temperature of objects other than our body. It consists of a column of mercury enclosed in a glass casing. The column is continuous without any kink. It measures a range of temperature from  $-10^{\circ}\text{C}$  to  $110^{\circ}\text{C}$ .
- **Sea Breeze:** During the day, the land heats up faster than the sea.
- Warm air above the land rises and cold air from sea takes its place.
- Warm air from the land moves towards the sea to complete the cycle.
- This produces a sea breeze from the sea to the land.
- **Land Breeze:** At night the land cools faster than sea.
- The warm air above the sea rises.
- This warm air is replaced by colder air from the land producing a land breeze.

- **Transfer of Heat:** Heat flows from a hotter object to a colder object until both objects reach the same temperature.
- The heat flows from a body at a higher temperature to a body at a lower temperature. There are three ways in which heat can flow from one object to another. These are **conduction, convection** and **radiation**.
- **Conduction:** It is the process by which heat is transferred from the hotter end to the colder end of an object.
- **Convection:** It is the flow of heat through a fluid from places of higher temperature to places of lower temperature by movement of the fluid itself.
- **Radiation:** It is the mode of transfer of heat in which energy is directly transferred from one place to another. It does not need any material medium.
- Dark-coloured objects absorb radiation better than the light-coloured objects. That is the reason we feel more comfortable in light-coloured clothes in the summer.
- Woollen clothes keep us warm during winter. It is so because wool is a poor conductor of heat and it has air trapped in between the fibres.