

Mahesh Public School, Jodhpur

Class 7 Science Revision Notes Chapter – 4Heat

- **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°C to 42°C. For other purposes, we use the laboratory thermometers. The range of these thermometers is usually from –10°C to 110°C.
- The normal temperature of the human body is 37°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°F to 108°F (35°C and 42°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°C to 110°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 and 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.

1. The heat in metals is conducted by the process of
 - a. Radiation
 - b. Convection
 - c. Conduction
 - d. Absorption
2. Glass, plastic, wood are examples of
 - a. Conductor
 - b. Insulator
 - c. Convector
 - d. Radiators
3. During the night
 - a. Land cools more quickly than the sea
 - b. Sea cools quickly than the land
 - c. Land heats up
 - d. Sea water heats up
4. Temperature is measured with the help of
 - a. Thermometer
 - b. Barometer
 - c. Ammeter
 - d. Voltmeter

5. Match the following

Column A	Column B
a. Sea breeze	i. Insulator
b. Land breeze	ii. From sea to land
c. Light colour	iii. From land to sea
d. Glass	iv. Direct molecular contact
e. Conduction	v. Summer

6. Fill in the blanks.
 - a. Water and air are _____ conductor of heat.
 - b. _____ is the liquid used in thermometer.
 - c. _____ is the degree of hotness of the body.
 - d. Liquid and gases transfer heat by _____ method.
 - e. Metals are _____ conductor of heat.
7. What is convection? How heat is transferred by this method?
8. Why is mercury used in thermometers?
9. What is heat? How heat is different from temperature?
10. Classify the following as conductors and insulators:
Glass, Iron, Aluminium, Air, Water, Woollen cloth, Silver, Paper.
11. State similarities and differences between the laboratory thermometer and the clinical thermometer.