

Q. I answer the following questions:-

(i) Define heat.

Ans. The energy transferred from one body to another body due to temperature difference between them is called Heat.

(ii) What is thermometer?

Ans. Thermometer is a device which is used for measuring the temperature of different objects is called a thermometer.

(iii) Write the temperature of pure melting ice and pure boiling water.

Ans. 0°C temp of pure melting ice 100°C temp of pure boiling water.

(iv) What term is used to describe degree of hotness or coldness of a body?

Ans. Temperature.

(v) What is the magnitude in degree Celsius for the upper standard or steam point. Ans. 100°C .

(vi) Name the thermometer used to find the temperature of human body. Ans. Clinical thermometer.

(vii) What is the normal temperature of human body? Ans. 37°C

(viii) Why is kink provided in the capillary tube of a clinical thermometer?

Ans. The kink allows the mercury to move into the tube, but does not flow back into the bulb, when the thermometer is taken out from the mouth of patient.

(ix) Name the modes of transmission of Heat.

Ans. Conduction, Convection and Radiation

(x) Define conduction, good conductors and insulators.

Conduction → The process of transmission of heat energy in solids without the actual movement of particles from their position is called conduction.

Good Conductors → The substance which allow heat energy to flow through them are called good conductors.

Bad Conductors or insulators, The substance which do not allow heat energy to flow through them easily is called insulators.

Q. ~~What~~ By which mode of transmission of heat, air in the room gets warm? (2)

Ans. Convection.

Q) What name is given to the heat energy received from the sun?
Ans. Radiant heat.

Q) Why does a wooden spoon not get hot when used in stirring hot liquids?

Q) because wood is a bad conductor of heat.

Q) Why do we wear white or light coloured clothes in summer?

Q) because light coloured or white clothes absorb less radiant heat energy.

Q) Why do animals in cold countries have thick fur?

Q) The fur traps a large amount of air and acts as an insulator. Thus, the heat generated within them does not flow out and hence keep them warm.

Q) State the precautions for using a laboratory thermometer.

1. Wash the thermometer with an antiseptic solution before use.

2. If the temp more than 35°C , jerk the thermometer till

the mercury is below 35°C .

3. Place the thermometer bulb, under the tongue of the person for 1 minute.

4. After removing read the mercury level.

5. Rewash the thermometer with antiseptic solution.

Q) Why is the handle of pressure cooker covered with thick plastic?

Q) because plastic is a bad conductor of heat. Hence, the heat from the hot appliances does not flow to the handles, with the result that we can hold them easily.

Q) How does a blanket keep warm in winter, but prevents ice from melting?

Q) Blanket is loosely woven woollen material, containing large amount of trapped air, which in turn is poor conductor of heat. Thus our body heat does not flow out and hence we feel warm. Conversely the heat from outside does not reach ice and hence it melts slowly.

1) Define convection

Ans. The process of transference of heat in the material bodies, due to the actual movement of the particles of the medium.

2) Why is convection not possible in solids?

Ans. The molecules of a solid are held strongly due to intermolecular forces. As these molecules cannot travel to the source of heat energy, convection is not possible in case of solids.

3) Why do people wear dull clothes in winter?

1) The dull clothes are good absorbers of heat.

2) While sitting around burning wood, by which mode of transmission of heat do you receive heat energy?

1) The heat from burning wood reaches by radiation.

2) Which of the following containing same amount of boiling hot water is likely to cool first and why (a) A beaker whose surface is covered with aluminium foil (b) A beaker whose surface is painted black.

Ans. The beaker (b) will cool first as the black surface are good radiators of radiant heat energy.

3) Why do birds puff up their feathers in the winter?

Ans) Because in doing so they trap a large amount of air, which in turn acts as an insulator and does not allow their body heat to flow out.

4) State the similarities and differences between a laboratory thermometer and a clinical thermometer.

Similarities - Both use mercury as thermometric liquid.

Both use Celsius scale for reading temperature.

Differences - Clinical thermometer has a kink in capillary tube, but not laboratory thermometer.

① The scale of ^{clinical} thermometer from 35°C to 43°C , scale of Lab thermometer from -10°C to 110°C .

- ① The energy transferred from one body to another body due to temperature difference between them is called **Heat energy**.
- 2) S.I. unit of temperature - **Kelvin**
- 3) A device used for measuring the temp of different object - **Thermometer**
- 4) The normal temp of any healthy human being is **37°C**
- 5) The phenomenon due to which particles of a medium actually move to the source of heat energy and then move away from it after absorbing heat energy is called - **Convection of heat**
- 6) The process by which impure and warm air inside a room is continuously replaced by fresh air from outside - **ventilation**
- 7) The transfer of heat energy from a hot body to a cold body directly, without heating the space in between the two bodies.

Radiation

Q. Statements given below are incorrect. Write the correct.

- ① During **conduction** the heat energy travels by the actual visible movement of the particles. **convection**
2. Black bodies are good absorber, **but poor** radiators of heat. **and good**
3. Sea breeze blows during the **night** time. **day**
4. Copper is an example of good **insulator** of heat. **conductor**
5. During heat radiation, the medium in between the hot body and the cold body becomes hot. **does not become**

Q. Match the column

- | | |
|--------------------------------------------------------------------------------------------------------|-------------------------------|
| 1. Transmission of ^{heat} energy by actual movement of the particles | - convection |
| 2. A device which measures the degree of hotness | - Thermometer |
| 3. The thermometer scale used in lab thermometer | - Celsius |
| 4. A process of transmission of heat which does not require any medium | - Radiation |
| 5. A device used for measuring the temp of human body | - Clinical thermometer |
| 6. Process of transmission of heat in which particles of medium do not move towards the source of heat | - conduction |

5

Fill in the blanks:-

1. The degree of hotness is called temperature.
2. Temp of boiling water is 100° degree celsius.
3. Shining bodies are poor radiators of heat energy.
4. Conduction is not possible in liquids and gases.
5. Radiant heat can easily pass through - vacuum.

9. T/F.

① Shining bodies are good absorber and good radiators of heat. — F.

2) Convection easily takes place in gases. — T

3) Radiation can easily take place through vacuum. — T

4) conduction take place in liquids. — F

5) wood is a good insulator of heat — T

6) white clothes are cool in summer. — T