

CBSE Class-VII Science
NCERT Solutions
CHAPTER-04
HEAT

Question 1. State similarities and differences between the laboratory thermometer and the clinical thermometer.

Answer: Similarities:

- (i) both made up of uniform glass tube.
- (ii) both contain mercury.
- (iii) both have bulb at one end.
- (iv) both generally have Celsius scale.

Differences:

- (i) Range of laboratory thermometer is from 10°C to 110°C while range of clinical thermometer is from 35°C to 42°C .
- (ii) Laboratory thermometer is used to take the reading of temperature in laboratory while clinical thermometer is used to measure the temperature of human body.
- (iii) Mercury level falls when removed from the source in case of laboratory thermometer while in case of clinical thermometer

Question 2. Give two examples each of conductors and insulators of heat.

Answer:

Conductors	Insulators
Iron	Wood (dry)
Copper	Plastic

Question 3. Fill in the blanks:

- (a) The hotness of an object is determined by its -----.
- (b) Temperature of boiling water cannot be measured by a ----- thermometer.

- (c) Temperature is measured in degree -----.
- (d) No medium is required for transfer of heat by the process of -----.
- (e) A cold steel spoon is dipped in a cup of hot milk. It transfers heat to its other end by the process of -----.
- (f) Clothes of ----- colours absorb heat better than clothes of light colours.

Answer: (a) The hotness of an object is determined by its **temperature**.

(b) Temperature of boiling water cannot be measured by a **clinical** thermometer.

(c) Temperature is measured in degree **Celsius**.

(d) No medium is required for transfer of heat by the process of **radiation**.

(e) A cold steel spoon is dipped in a cup of hot milk. It transfers heat to its other end by the process of **conduction**.

(f) Clothes of **dark** colours absorb heat better than clothes of light colours.

Question 4. Match the following:

(i) Land breeze blows during	(a) summer
(ii) Sea breeze blows during	(b) winter
(iii) Dark coloured clothes are Preferred during	(c) day
(iv) Light coloured clothes are Preferred during	(d) night

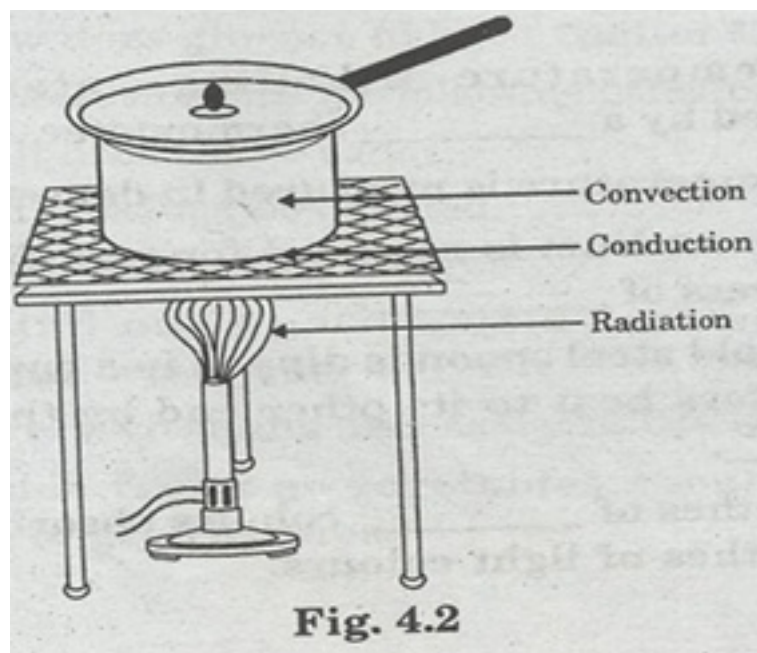
Answer: (i) (d) (ii) (c) (iii) (b) (iv) (a)

Question 5. Discuss why wearing more layers of clothing during winter keeps us warmer than wearing just one thick piece of clothing?

Answer: We wear more layers of clothing during winter to keeps us warmer than wearing just one thick piece of clothing because because air gets trapped in between the two layers of blankets. This air prevents the flow of heat from our body to the cold surroundings as air is bad conductor of heat.

Question 6. Look at Fig. 4.2. Mark where the heat is being transferred by conduction, by convection and by radiation.

Answer:



Question 7. In places of hot climate, it is advised that the outer walls of houses be painted white. Explain.

Answer: In places of hot climate it is advised that the outer walls of houses be painted white because white colour absorbs least heat. It reflects most of the heat and hence keeps the house cooler.

Question 8. One litre of water at 30°C is mixed with one litre of water at 50°C . The temperature of the mixture will be

- (a) 80°C
- (b) More than 50°C
- (c) 20°C
- (d) Between 30°C and 50°C

Answer: (d) Between 30°C and 50°C

Question 9. An iron ball at 40°C is dropped in a mug containing water at 40°C . The heat will

- (a) Flow from iron ball to water.

- (b) Not flow from iron ball to water or from water to iron ball.
- (c) Flow from water to iron ball.
- (d) Increase the temperature of both.

Answer: (b) Not flow from iron ball to water or from water to iron ball.

Question 10. A wooden spoon is dipped in a cup of ice cream. Its other end

- (a) becomes cold by the process of conduction.
- (b) becomes cold by the process of convection.
- (c) becomes cold by the process of radiation.
- (d) does not become cold.

Answer: (d) does not become cold.

Question 11. Stainless steel pans are usually provided with copper bottoms. The reason for this could be that

- (a) Copper bottom makes the pan more durable.
- (b) Such pans appear colourful.
- (c) Copper is better conductor of heat than the stainless steel.
- (d) copper is a better conductor of heat than the stainless steel.

Answer: (c) Copper is better conductor of heat than the stainless steel.