NCERT solution for Heat

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

Answer

Similarities	Differences
Both of them are made up of uniform glass tube	Range of laboratory thermometer is from -10°C to 110°C while range of clinical thermometer is from 35°C to 42°C.
They both contain mercury	Laboratory thermometer is used to take the reading of temperature in laboratory while clinical thermometer is used to measure the temperature of human body
They both have bulb at one end	Mercury level falls when removed from the source in case of laboratory thermometer while in case of clinical thermometer
They both generally have Celsius scale	

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

Answer

Examples of conductors: Iron, Copper
Examples of insulators: Plastic, Wood

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 _____ colors absorb heat better than clothes of light colors.

Answer

(a) temperature.

(b) clinical thermometer.

(c) Celsius.

(d) radiation.

(e) conduction.

(f) dark.

Question 4

Match the following:

Column I	**Column II**
(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

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

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 air gets trapped in between the two layers of blankets. And as air is bad conductor of heat, it prevents the flow of heat from our body to the cold surroundings

Question 6

Look at the below figure, Mark where the heat is being transferred by conduction, by convection and by radiation.

Answer

Conduction: From pan to water.

Convection: Heat within water.
Radiation: From burner to pan.

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 is absorb 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 but less than 80°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.
Both have the same temperature.

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.
As Wood is a bad conductor of heat.

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 colorful.
(c) copper is a better conductor of heat than the stainless steel.
(d) copper is easier to clean than the stainless steel.

Answer

(c) copper is a better conductor of heat than the stainless steel.