Chapter 5: Heat

Worksheet 1

1. Fill in the blanks.

   (i)   The _____ is the main source of heat energy for us.

   (ii) The degree of hotness or coldness of a body is called its _____.

   (iii) Copper is a _____ conductor of heat.

   (iv) The capillary tube is protected by a thick glass tube called _____.

   (v)   Glass is the _____ conductor of heat.

2. Define the following.

   (i)   Conduction

   (ii) Convection

   (iii) Radiation

   (iv) Thermos flask

   (v)   Thermal expansion

3. Answer the following questions.

   (i)   What is the SI unit of heat?

   (ii) What is a thermometer? What is the range of its temperature?

   (iii) What happens when heat energy is supplied to a substance?

   (iv) Name two conductors.

   (v)   Which is the fastest process, conduction or radiation?

4. Solve the following numerical problems.

   (i)   What is the temperature at which the reading is same both on Celsius and Fahrenheit scales?

   (ii) Covert 40°C into Kelvin.

   (iii) The temperature of an object is 70°C. What will be its value on Fahrenheit scale?

   (iv) The recorded temperature of a patient is 102.4°F. Find its value on Celsius scale.

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Worksheet 2

1. Tick the correct answer.

  (i) Which of the following is a bad conductor of heat?

    (a) aluminium   (b) copper   (c) iron   (d) stone

  (ii) Which of the following is the slowest method of heat transfer from a hot body to a cold body?

    (a) conduction   (b) convection   (c) radiation   (d) none of these

  (iii) Thermos flask was invented by Sir James Dewar in

    (a) 1875   (b) 1890   (c) 1860   (d) 1900

  (iv) The SI unit of temperature is

    (a) celsius   (b) fahrenheit   (c) kelvin   (d) none

  (v) Which shows the correct relation between kelvin, celsius and fahrenheit scales?

    (a) $\dfrac{C}{5} = \dfrac{K-273}{5} = \dfrac{F-32}{9}$ (b) $\dfrac{C}{7} = \dfrac{K-273}{5} = \dfrac{F-32}{9}$

    (c) $\dfrac{C}{9} = \dfrac{K-273}{7} = \dfrac{F-32}{9}$ (d) $\dfrac{C}{8} = \dfrac{K-273}{5} = \dfrac{F-32}{9}$

2. Match the columns.

Column A	Column B
(i) Conduction	(a) Takes place in liquids and gases
(ii) Convection	(b) Dark-coloured
(iii) Radiation	(c) Takes place in solids
(iv) Good absorbers of heat	(d) Medium not required
(v) Poor absorbers of heat	(e) Light-coloured

3. Name the following.

  (i) Heat can be transferred in any direction in this mode of transfer of heat.

  (ii) This thermometric liquid is a good conductor of heat.

  (iii) Materials which allow the heat energy to pass easily through them.

  (iv) This is the process of heat transfer from a hot body to a cold body directly without heating the space in between them.

  (v) In this breeze, the land cools down faster than the sea water.

4. Answer the following questions.

   (i) What do you mean by thermal expansion?

  (ii) What is temperature?

 (iii) What do you mean by ocean currents?

 (iv) Why are radiators of solar heaters and air conditioners painted black?

  (v) Why can mercury be seen as a fine thread in the capillary tube?