



Science

Worksheet 2 : 11/07/2020

Class - VII

CHAPTER 9 : HEAT AND TEMPERATURE**Instructions:**

- ✓ Read the chapter in your book - quickly and thoroughly, preferably more than once.
 - ✓ Watch the uploaded video class 'Heat & Temperature II Class VII II Chapter IX II Part I' from school's website/YouTube channel. For becoming more clear about the basics, watch more than once, if needed.
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Cognitive Questions (Mark 1)**1. What is heat?**

Ans.: Heat is a kind of energy which creates the sensation of hotness and coldness. In SI system the unit of heat is joule (J).

2. What is temperature?

Ans.: Temperature is a thermal condition of a body which determines whether the body will receive or give up heat when it comes in thermal contact with another body.

3. What is freezing point?

Ans.: The temperature at which pure ice melts under normal atmospheric pressure is called the freezing point.

4. What is boiling point?

Ans.: The temperature at which pure water boils to vapour under normal atmospheric pressure is called boiling point.

5. What is the relation between Celsius and Fahrenheit scale?

Ans.: The relation between Celsius and Fahrenheit scale is -

$$C/5 = (F-32)/9$$

Where, C = the temperature in Celsius scale

F = the temperature in Fahrenheit scale

6. What is atmospheric pressure?

Ans.: The amount of force acting perpendicularly on per unit surface area of the earth is called atmospheric pressure.

Analytical Question (Mark-2)

1. What are the difference between heat and temperature?

Ans.: The difference between heat and temperature are given below:

<i>Heat</i>	<i>Temperature</i>
i. Heat is a form of energy.	i. Temperature is a thermal condition of a body.
ii. Heat is the cause of temperature.	ii. Temperature is the result of heat.
iii. The quantities of heat of two bodies may be same but their temperatures may be different.	iii. Two bodies may be at the same temperature but the quantity of heat may be different.
iv. It is measured by calorimeter.	iv. It is measured by thermometer.
v. SI unit of heat is joule.	v. SI unit of temperature is kelvin.

2. Explain the advantages of mercury thermometer.

Ans.: The advantages of using mercury thermometer are given below:

- i. Mercury is a good conductor of heat. It absorbs heat and allows heat to conduct very fast showing accurate measurement of temperature of a body.
- ii. It is available in pure state.
- iii. It doesn't adhere to the wall of glass.
- iv. It is opaque but bright and as such its movement through the narrow and uniform bore of thick glass can be easily visible.

3. Write down the comparison between Celsius scale and Fahrenheit scale.

Ans.: Comparison between Celsius scale and Fahrenheit scale:

<i>Celsius scale</i>	<i>Fahrenheit scale</i>
i. A Swedish scientist invented this scale in the year of 1742. The scale is named the Celsius scale after his name.	i. A German scientist named Fahrenheit invented this scale in 1714.
ii. The lower fixed point in this scale is marked 0° and the upper fixed point is marked 100°.	ii. The lower fixed point in this scale is marked 32° and the upper fixed point is marked 212°.
iii. The interval between the two points is divided into 100 equal divisions. Each division is called one degree Celsius (1°C).	iii. The interval between the two points is divided into 180 equal divisions. Each division is called one degree Fahrenheit (1°F).
iv. This scale is used in all types of scientific work and many of the countries including Bangladesh use this scale.	iv. This scale is mostly used in England and America for house-hold works and almost in all countries in clinical and industrial works.

4. What are the uses of mercury thermometer?

Ans.: Uses of mercury thermometer are given below:

- i. It is used to measure the temperature of human body.
- ii. It is used in the laboratory to determine the temperature of a body.
- iii. It is used in the meteorology department.

Creative Questions

(Solve yourself)

1. Sharmin reads in class seven. One evening she felt feverish. The temperature she measured in Celsius scale was 37°C . Sharmin can understand Fahrenheit scale temperature instead of Celsius scale. Being anxious she went to a doctor to measure the temperature and found no fever.

- a) What was Sharmin's body temperature in Fahrenheit scale?
- b) Explain with reason whether Sharmin would go to the doctor if she knew the relation between Fahrenheit and Celsius scale.

MCQs

(Solve yourself)

- 1.** Which one is energy?
 - a) coal
 - b) gas
 - c) heat
 - d) temperature
- 2.** Which is the measuring unit of heat?
 - a) watt
 - b) kilogram
 - c) calorie
 - d) ampere
- 3.** What does thermal condition of anything refers to?
 - a) energy
 - b) temperature
 - c) work
 - d) heat
- 4.** Which is the measuring unit of temperature?
 - a) kelvin
 - b) joule
 - c) newton
 - d) volt

- 5.** Which one is used to measure temperature?
- barometer
 - ammeter
 - voltmeter
 - thermometer
- 6.** Which one of the following is used in a thermometer?
- sulphuric acid
 - mercury
 - water
 - none
- 7.** What is the freezing point in Celsius scale?
- 32°
 - 212°
 - 100°
 - 0°
- 8.** What is the boiling point in Fahrenheit scale?
- 32°
 - 212°
 - 100°
 - 180°
- 9.** Which one of the following is equivalent to 40°C?
- 100°F
 - 102°F
 - 104°F
 - 103°F
- 10.** What is the temperature which is the same in both Celsius scale and Fahrenheit scale?
- 40°
 - 30°
 - 40°
 - 30°
- 11.** Characteristics of temperature is-
- can be felt
 - can be measured
 - a kind of energy
 - none
- 12.** What is the SI unit of heat?
- calorie
 - kilocalorie
 - joule
 - watt
- 13.** The normal temperature of human body is -
- 98.4°F
 - 36.9°C
 - a and b
 - 100°F
- 14.** Why mercury is used in thermometer?
- it is cheap.
 - it is easily available.
 - it is very much sensitive with heat.
 - it is a bad conductor of heat.
- 15.** Which is the characteristic of energy?
- it has mass.
 - it creates no sensation.
 - it doesn't occupy space
 - it occupies space