INDIAN SCHOOL AL WADI AL KABIR

CLASS: VI	**DEPARTMENT: SCIENCE 2024 - 25**	**DATE: 28/10/2024**
WORKSHEET NO: 6 WITH ANSWERS	**TOPIC: TEMPERATURE AND ITS MEASUREMENT**	**NOTE: A4 FILE FORMAT**
NAME OF THE STUDENT:	**CLASS & SEC:**	**ROLL NO.**

I. OBJECTIVE-TYPE QUESTIONS:

1. Refer to the following statements:

   A. To study the minimum and maximum temperature of a day.

   B. To measure boiling point and freezing point during a science experiment.

   C. To measure human body temperature.

   Which of these statements justifies the need for laboratory thermometers?

   a) Only A b) Only C

   c) Both A and C **d) Only B**

2. What is the boiling point of water in Kelvin scale?

   a) 273.15K

   b) 100K

   c) 373.15K

   d) 0K

3. The S I unit of temperature is:

   a) Kelvin.

   b) degree Celsius.

   c) degree Fahrenheit

   d) None of the above

4. What is the average range of a laboratory thermometer and how does it compare to the range of a clinical thermometer?

   a) -10 to 110°C; much greater than the range of clinical thermometers.

   b) -100 to 100°C; much greater than the range of clinical thermometers.

c) 10 to 50°C; much lesser than the range of clinical thermometers.

d) 37 to 40°C; much lesser than the range of clinical thermometers.

5. Room thermometers give an approximate idea of the ----------

a) Body temperature **b) Air temperature**

c) Combination of both d) None of the above

6. Which among the following is a contactless thermometer?

a) Digital clinical thermometer

b) Infrared clinical thermometer

c) Mercury clinical thermometer

d) Laboratory thermometer

For the following questions, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii), and (iv) as given below:

i) Both A and R are true and R is the correct explanation of the assertion.

ii) Both A and R are true but R is not the correct explanation of the assertion.

iii) A is true but R is false.

iv) A is false but R is true

7. **Assertion (A):** While measuring the temperature of hot water using laboratory thermometer, the temperature must be read while the thermometer is immersed in water.

Reason (R): The level of the mercury column begins to fall as soon as you take the laboratory thermometer out of the water.

i) Both A and R are true and R is the correct explanation of the assertion.

8. **Assertion (A):** The temperature of boiling water can be measured by a clinical thermometer.

Reason (R): The range of a clinical thermometer is from 35˚C to 42˚C.

iv) A is false but R is true.

9. **Assertion (A):** The Fahrenheit scale is not used in most scientific studies.

Reason (R): Kelvin scale is used for scientific work.

ii) Both A and R are true but R is not the correct explanation of the assertion.

10. **Assertion (A):** Normal body temperature can vary from person to person.

Reason (R): The body temperature is influenced by many factors such as age, time of the day and activity level.

i) A and R are true and R is the correct explanation of the assertion.

II. VERY SHORT ANSWER TYPE QUESTIONS (2 M):

1. Define thermometer.

   [Hint: A device that measures temperature is called thermometer.]

2. Why were infrared thermometers used widely during covid 19?

   [Hint: Infrared thermometers measure temperature without touching a person's body. So, they reduce the risk of spreading diseases.]

3. Give reason:

   a) A clinical thermometer has a range between 35 ˚C to 42 ˚C.

   [Hint: The temperature of the human body does not go below 35 ˚C or above 42 ˚C.]

   b) Mercury clinical thermometers are not used nowadays.

   [Hint: Mercury is an extremely toxic substance and is difficult to dispose when it breaks]

   c) The temperature of hot water should be measured keeping the laboratory thermometer immersed in hot water.

   [Hint: The level of liquid column comes down when you take the thermometer out of the hot water.]

4. What are the advantages of digital clinical thermometer over mercury clinical thermometer?

   [Hint: Digital clinical thermometers are fast, easy to read the temperature and does not have poisonous substance mercury in it.]

5. Phiban is touching her forehead to check if she has fever. Is this the correct way of measuring temperature? What is the instrument used for checking temperature?

[Hint: No, It is not the correct way of measuring temperature. She should use a clinical thermometer for measuring her body temperature.]

6. Maya visited doctor for a checkup. Doctor told she had a normal body temperature of 98.6 degree. What is the scale of temperature used by doctor? Write the symbol of the same.

[Hint: Doctor used the Fahrenheit scale of temperature. The symbol for Fahrenheit scale is °F

III. SHORT ANSWER TYPE QUESTIONS (3M):

1. i)Write the relation between Celsius scale and Kelvin scale.

   ii) Convert 50°C to Kelvin.

   [Hint: i) Temperature in Kelvin scale=Temperature in Celsius scale+273.15

   ii) 50°C=50+273.15=323.15K.]

2. Define the three clinical thermometers.

   [Hint: i) Digital clinical thermometer

   Clinical thermometers that show the temperature digitally is called digital clinical thermometer.

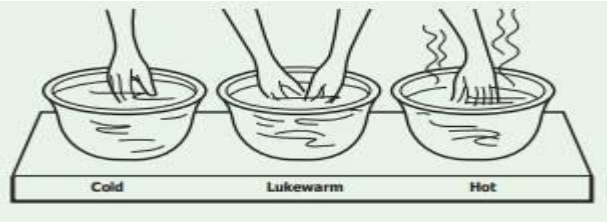
   ii)Mercury clinical thermometer

   Clinical thermometers that measure the body temperature by checking the rise in mercury level is called mercury clinical thermometer.

   iii)Infrared thermometer

   Non-contact thermometer that can measure the body temperature without touching a person's body is called infrared thermometer.]

3. Observe the figure given below, and answer the questions.



i)What will happen if you dip your hand in hot water and then immediately dip it in lukewarm water?

ii)What will happen if you dip your hand in cold water and then immediately dip it in lukewarm water?

iii)What is the reliable measure of hotness or coldness?

[Hint: i) – When you dip your hand in hot water and then immediately dip it in lukewarm water your hand will feel cold.

ii) – When you dip your hand in cold water and then immediately dip it in lukewarm water you will feel hot.

iii)The reliable measure of hotness or coldness is called temperature.]

IV. LONG ANSWER TYPE QUESTIONS (5M):

1. What are the precautions to be taken while using a digital clinical thermometer and a laboratory thermometer?

[Hint: *Digital clinical thermometer:*

i)Read the instruction manual before use.

ii) Tip of the thermometer is to be washed with soap and water before and after use.

iii) Digital portion or display should be out of water while washing.

iv) Do not hold the thermometer by the tip.

Laboratory thermometer:

i) Handle the thermometer with care. If it hits some hard object, it can break.

ii) Should be kept vertically. It should not be tilted.

iii) The bulb should be surrounded from all sides by the substance of which the temperature is to be measured. The bulb should not touch the surface of the container.

iv)The temperature should be read while the thermometer is inside the water.

v)Eye should be directly in line with the level of liquid column while reading temperature.]

2. Write down the three most used scales of temperature with its units and symbols.

[Hint

SCALES OF TEMPERATURE	**Celsius scale**	**Fahrenheit scale**	**Kelvin scale**
UNIT	**degree Celsius**	**degree Fahrenheit**	**Kelvin**
SYMBOL	**°C**	**°F**	**K**

3. Describe the three broad classification of thermometers.

[Hint: i) *Clinical thermometer:* The thermometer that measures our body temperature is called a clinical thermometer. A clinical thermometer reads the temperature from 35˚C to 42˚C. Clinical thermometer can be digital clinical thermometer, infrared clinical thermometer or mercury clinical thermometer.

ii) *Laboratory thermometer:* A laboratory thermometer is used to measure the temperature of objects other than the human body. The range of a laboratory thermometer is generally from -10˚C to 110˚C.Mercury or alcohol is used as liquid in laboratory thermometer.

iii) *Room thermometer*: The daily maximum and minimum air temperatures reported in weather reports, are all measured by a thermometer known as the room thermometer.]

V. SOURCE-BASED/ CASE STUDY-BASED QUESTIONS

Read the passage and answer the following questions:

A thermometer is a special tool that helps us measure how hot or cold something is. We use thermometers to check our temperature when we are feeling sick. The thermometer is put under our tongue, and it shows a number that tells us if we have fever. Thermometers can also be used to check the temperature outside or in the water. Some thermometers are digital that means they show numbers on a screen. Others are like little glass sticks with a liquid inside that moves up and down to show the temperature. Thermometers help doctors and nurses take care of us when we are sick. They are also used in kitchens and weather stations.

i) Define thermometer. **[Hint- A thermometer is a special tool that help us measure how hot or cold something is]**

ii) Write down the three areas where we make use of the thermometers.

[Hint: Thermometers are used in hospitals, kitchens and weather stations.]

iii) How can we measure the temperature of a person?

[Hint: The thermometer is put under the tongue and it shows a number on a screen. It tells us if we have fever.]

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