CHAPTER 7

TEMPERATURE AND ITS MEASUREMENT

CLASS 6TH

NCERT EXERCISE AND SOLUTIONS - SCIENCE

P1 P2

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Q. 1. The normal temperature of a healthy human being is close to

(i) 98.6°C (ii) 37.0°C
(iii) 32.0°C (iv) 27.0°C

ANSWER:-

(ii) 37.0°C
The normal temperature of a healthy human being is close to .

Q. 2. is the same temperature as .

(i) 97.4°F (ii) 97.6°F
(iii) 98.4°F (iv) 98.6°F

ANSWER:-

(iv) 98.6°F is the same temperature as .

Q. 3. Fill in the blanks:

(i) The hotness or coldness of a system is determined by its ……. .
(ii) The temperature of ice-cold water cannot be measured by a …….. thermometer.
(iii) The unit of temperature is degree ……. .

ANSWER:-

(i) The hotness or coldness of a system is determined by its **temperature.**
(ii) The temperature of ice-cold water cannot be measured by a **clinical** thermometer.
(iii) The unit of temperature is degree **Celsius.**

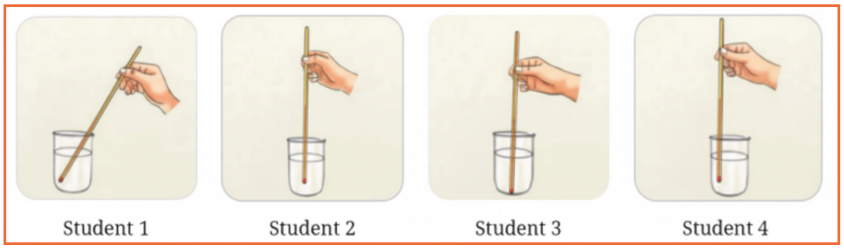
Q. 3. The range of a laboratory thermometer is usually .

(i) 10°C to 100°C (ii) -10°C to110°C
(iii) 32°C to 45°C (iv) 35°C to42°C

ANSWER:-

(ii) -10°C to110°C

Q. 5. **Four students used a laboratory thermometer to measure the temperature of water as shown in Figure:**



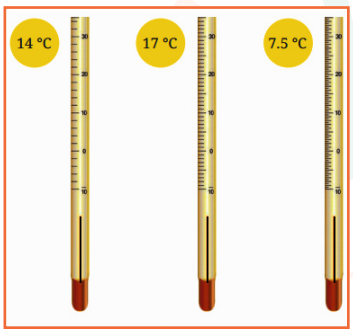
Who do you think followed the correct way for measuring temperature?

(i) Student 1
(ii) Student 2
(iii) Student 3
(iv) Student 4

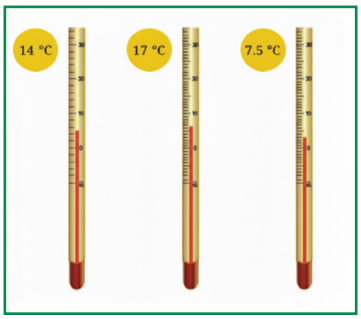
ANSWER:-

Correct Way to Measure Temperature Using a Laboratory Thermometer
Correct Answer: (ii) Student 2
Why?
The thermometer is held vertically.
It is fully immersed in water without touching the sides or bottom of the beaker.
This ensures accurate temperature measurement.

Q. 6. **Colour to show the red column on the drawings of thermometers (See Figure) as per the temperatures written below:**



ANSWER:-



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Q. 7. Observe the part of thermometer shown in Figure and answer the following questions:

(i) What type of thermometer is it?
(ii) What is the reading of the thermometer?
(iii) What is the smallest value that this thermometer can measure?

ANSWER:

Laboratory Thermometer Analysis

(i) Identification:
This is a **laboratory thermometer**, recognized by its **long, narrow tube** and **wide temperature range** beyond human body temperature.

(ii) Temperature Reading:
The thermometer shows **15.4°C**, as the red liquid column is slightly above **15°C**, with four small divisions (each **0.1°C**).

(iii) Smallest Measurable Value:
The thermometer can measure as low as **-10°C**, with each small division representing **0.1°C**.

Q. 8. A laboratory thermometer is not used to measure our body temperature. Give a reason.

ANSWER:-

A laboratory thermometer is not used to measure our body temperature because -

- **Not Designed for Body Temperature:** It measures a broader temperature range, not just around 37°C.
- **Must Be Kept Upright:** Cannot be placed under the tongue or armpit easily.
- **Inconvenient & Unsafe:** Handling can be tricky and may cause accidents.
- **Better Alternative:** Use a clinical thermometer, which is designed specifically for measuring body temperature.

Q. 9. Vaishnavi has not gone to school as she is ill. Her mother has kept a record of her body temperature for three days as shown in Table 7.4.

	Temperature at					
DAY	7 AM	10 AM	1 AM	4 AM	7 AM	10 AM
One	38.0°C	37.8°C	38.0°C	38.0°C	40.0°C	39.0°C
Two	38.6°C	38.6°C	39.0°C	39.0°C	39.0°C	38.0°C
Three	37.6°C	37.4°C	37.2°C	37.8°C	36.8°C	36.6°C

(i) What was Vaishnavi's highest recorded temperature?
(ii) On which day and at what time was Vaishnavi's highest temperature recorded?
(iii) On which day did Vaishnavi's temperature return to normal?

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ANSWER:

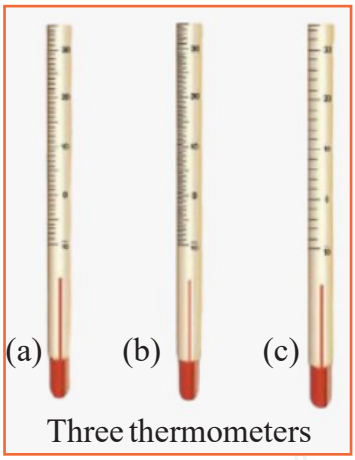
Vaishnavi's body temperature record:

(i) Vaishnavi's highest recorded temperature was 40.0.

(ii) Vaishnavi's highest temperature was recorded on Day One at 7 pm.

(iii) Vaishnavi's temperature returned to normal on Day Three.

Q. 10. If you have to measure the temperature 22.5, which of the following three thermometers will you use (See Figure)? Explain.



Three thermometers

ANSWER:-

Best Thermometer for Measuring 22.5°C

- Thermometer (a): 0°C to 30°C range but lacks fine divisions for 0.5°C accuracy.
- Thermometer (b): -10°C to 50°C range with smaller intervals (likely 0.2°C or 0.1°C), making it a good option.
- Thermometer (c): -10°C to 110°C range with finest divisions, allowing precise 0.5°C readings.

Conclusion:

Thermometer (c) is the best choice because it has finer divisions, ensuring an accurate 22.5°C reading.

Q. 11. The temperature shown by the thermometer in Figure is

(i) 28.0°C

(ii) 27.5°C

(iii) 26.5°C

(iv) 25.3°C

ANSWER:

(ii) 27.5°C

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Q. 12. A laboratory thermometer has 50 divisions between and . What does each division of this thermometer measure?

ANSWER:

A laboratory thermometer with 50 divisions between 0°C and 100°C means each division represents:

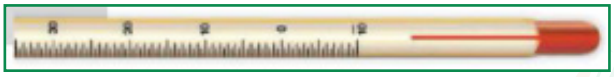
$$\frac{100°C}{50} = 2°C$$

Each division = 2°C

Accuracy: Measurements can be read in 2°C increments.

Q. 13. Draw the scale of a thermometer in which the smallest division reads . You may draw only the portion between and .

ANSWER:



Q. 14. Someone tells you that she has a fever of 101 degrees. Does she mean it on the Celsius scale or Fahrenheit scale?

ANSWER:-

If someone says they have a fever of 101 degrees, they mean 101°F because:

- Normal body temperature is 98.6°F (~37°C).
- 101°C would be extremely high and not survivable.
- 101°F is a common fever temperature.
- So, the fever is measured on the Fahrenheit scale.

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