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Class: VI | Subject: Science | Chapter : Understanding And Measuring Temperature

Multiple Choice Questions (MCQs). Tick (✓) the correct options. Page 100

(d)

(Think and answer)

1. A digital thermometer is safer because it does not contain mercury, which can be hazardous if the thermometer breaks.
2. Using a thermometer to take an accurate temperature reading, we can measure the hotness of a glass of hot milk.

SECTION-A

A. Oral Questions:

1. Temperature measures how hot or cold something is and is crucial for health, weather, and various processes.
2. A thermometer uses a liquid that expands and rises in a tube to indicate temperature changes.
1. Celsius (°C) and Fahrenheit (°F) are the two common scales.
2. Infrared thermometer.
3. Ancient people measured temperature by observation through touching the forehead to feel the warmth or feeling the hotness of the breath.

A. Multiple Choice Questions (MCQs). Tick (✓) the correct options.

1. (b) 2. (c) 3.(b) 4. (b) 5. (b)

6. (b) 7. (a). 8. (c)

B. Assertion-Reason based Questions

1. (a) 2. (a)

A. Case-based Questions: Case 1:

(a) Ravi felt the need to cool down because playing outside increased his body temperature due to physical exertion.

(a) Reading temperature helps to feel whether the body is warm or cold. Knowing the temperature helps to make the person make the correct choice of choosing the drink for themselves, find whether the body is normal in temperature or the person is suffering with fever.

Case 2:

(a) Body temperature rises after physical activity due to increased metabolic activity and heat production in the muscles.

(a) Factors that could cause temperature variation include physical activity, time of day, hydration levels and external temperature.

SECTION – B

A. Very Short Answer Questions:

1. A thermometer is used to measure temperature.
2. The normal body temperature in Fahrenheit is approximately 98.6°F.
1. Mercury or coloured alcohol is often used in thermometers to measure temperature.
2. Physical activity and external temperature are two factors that affect body temperature.
3. The unit for temperature on the Celsius scale is degrees Celsius (°C).

B. Short Answer Questions:

1. Measuring temperature helps us understand changes in our surroundings, monitor health, and control conditions for various activities like cooking and scientific experiments.
2. A laboratory thermometer has a wider temperature range and does not have a kink, so it reads quickly and continuously, while a clinical thermometer is designed specifically to measure body temperature and has a kink to hold the reading.
3. The liquid contracts and moves down the measuring scale as it cools, indicating a lower temperature.
4. Weather stations measure air temperature using a thermometer or electronic temperature sensor kept inside a shaded, ventilated shelter so that direct sunlight does not affect the reading.

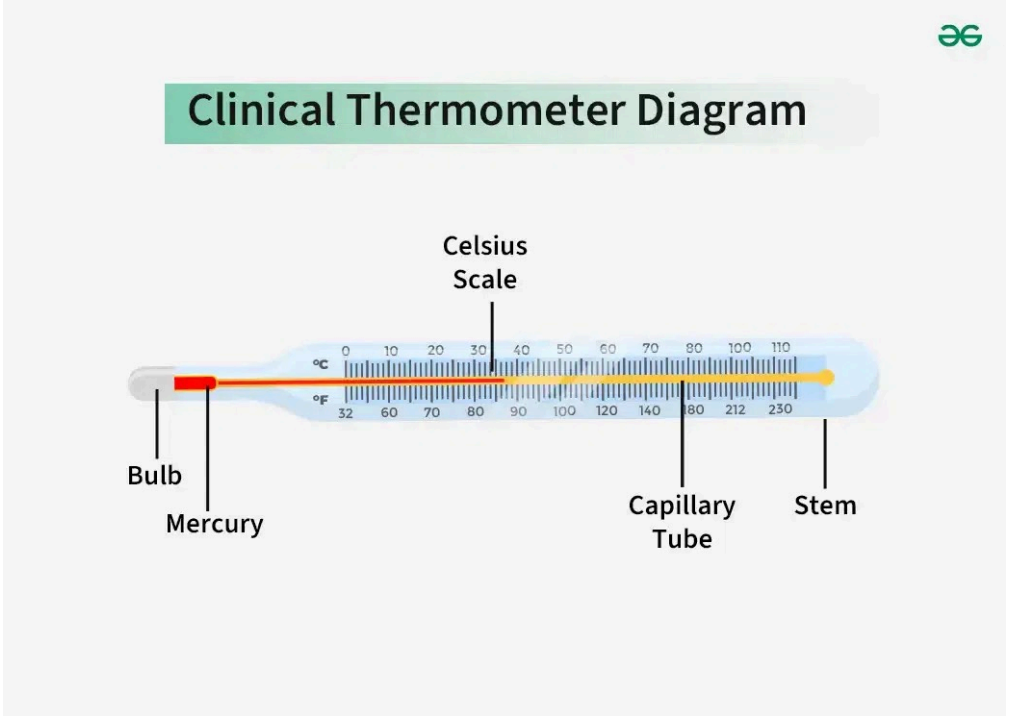
C. Long Answer Questions:

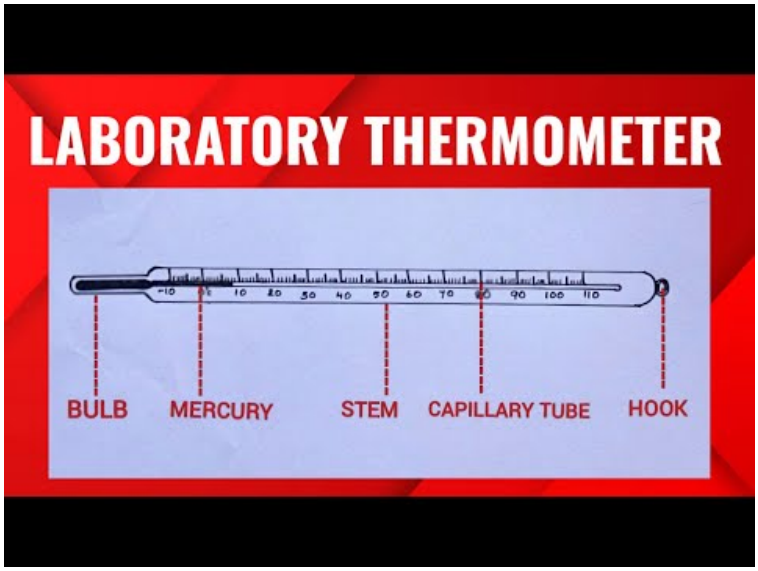
1. A laboratory thermometer consists of a thin glass tube with a bulb at one end filled with liquid, usually mercury or coloured alcohol. As temperature increases, the liquid expands and rises in the tube, indicating the temperature on a calibrated scale. Accurate temperature measurement in laboratories is crucial for experiments, ensuring reactions occur under the right conditions and yielding reliable results.
2. The Celsius scale, widely used in most of the world, sets water's freezing point at 0°C and boiling point at 100°C. The Fahrenheit scale, primarily used in the United States., sets water's freezing point at 32°F and boiling at 212°F. Celsius is often used for scientific and weather data, while Fahrenheit remains common in household and weather contexts in the United States.
3. The invention of the thermometer provided a precise way to measure temperature, moving away from subjective assessments like "hot" or "cold." This allowed for standardisation in medicine, scientific research and daily life, leading to a better understanding and control of environmental and body temperature for health and industrial applications.
4. Different thermometers are designed for specific needs. For example, clinical thermometers are used to measure body temperature with a range around human body temperature, laboratory thermometers handle broader temperature ranges for experiments, and infrared thermometers quickly measure surface temperatures, useful in cooking or industrial settings.

D. Application-Based Questions:

1. Maya should use a thermometer because it measures the temperature of the water accurately. It helps her know whether the water is too hot and prevents burns.
2. In summer, a cooler room temperature feels comfortable, while in winter, a warmer temperature is preferable, helping maintain body warmth and overall comfort according to the season.
4. A thermometer allows you to monitor the temperature accurately, ensuring the liquid reaches and stays at the required temperature for the experiment's success and consistent results.
5. A laboratory thermometer is best for checking room temperature because it measures a broader range of temperatures compared to a clinical thermometer, which is designed specifically for the body temperature.

NOTE- Only Section B is to be done in the notebook. Section-A remains in book.


Clinical Thermometer Diagram
Celsius Scale
°C
°F
0 10 20 30 40 50 60 70 80 100 110
32 60 70 80 90 100 120 140 180 212 230
Bulb
Mercury
Capillary Tube
Stem


LABORATORY THERMOMETER
BULB
MERCURY
STEM
CAPILLARY TUBE
HOOK