Temperature and its Measurements

A. Choose the Correct Answer:

1. Which instrument is commonly used to measure temperature?

A) Barometer B) Thermometer

C) Anemometer D) Hygrometer

2. What is the standard unit of temperature measurement in the SI system?

A) Fahrenheit B) Kelvin

C) Celsius D) Rankine

3. At what temperature does pure water freeze under normal atmospheric pressure?

A) 0°C B) 100°C

C) -10°C D) 37°C

B. Fill in the Blanks

1. Temperature is a measure of the _____ of particles in a substance.
2. The Celsius scale is based on the freezing and boiling points of _____.
3. A clinical thermometer typically measures temperatures in the range of _____ to _____ degrees Celsius.

C. Case Study

A scientist, Dr. Mehta, conducted an experiment to study temperature variations in different environments. He placed three thermometers in separate locations:

- Thermometer A was placed inside a refrigerator.
- Thermometer B was kept in direct sunlight at noon.
- Thermometer C was placed in a shaded room at room temperature.

After one hour, the readings were recorded as follows:

- Thermometer A: 4°C
- Thermometer B: 45°C
- Thermometer C: 25°C

Case Study Questions:

1. What was the purpose of Dr. Mehta's experiment?
2. Why was the temperature reading of Thermometer B the highest?

3. What factors influence the temperature variations observed in this experiment?
4. How does this experiment demonstrate the effect of surrounding conditions on temperature?

D. Short Answer Questions

1. What are the three common temperature scales used worldwide?
2. How does a mercury thermometer work?
3. Why is Kelvin considered the absolute temperature scale?

E. Long Answer Questions

1. Explain the different types of thermometers and their applications.
2. Discuss the importance of accurate temperature measurement in daily life and scientific research.
3. How do temperature variations affect weather patterns and climate changes?