Name: _____ **Date:** _____

The Metric Expedition: Navigating SI Units for College Science

Bridge the gap between lab theory and industrial standards by identifying the fundamental building blocks of the International System of Units.

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1. During a chemical synthesis, a researcher needs to measure the fundamental 'amount of substance' rather than its weight. Which SI base unit should they record?

A. Gram (g)
B. Mole (mol)
C. Candela (cd)
D. Liter (L)

2. In the SI system, the Kelvin (K) is the base unit for thermodynamic temperature, and it does not use the degree symbol (°).

A. True
B. False

3. When measuring the flow of electrons through a superconducting wire in a physics lab, the standard SI unit used is the _____.

A. Volt
B. Ohm
C. Ampere
D. Watt

4. A laboratory technician reports that a scale consistently provides the same weight for a sample over five trials, but the weight is 2 grams off from the actual standard. This scale is:

A. Accurate but not precise
B. Precise but not accurate
C. Both accurate and precise
D. Neither accurate nor precise

5. If a biological sample is 0.005 meters long, a researcher converting this to millimeters would record the length as ___ millimeters.

A. 0.5
B. 50
C. 500
D. 5

6. The kilogram is the only SI base unit that includes a physical prefix (kilo-) in its standard name.

A. True
B. False

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7. Expressed in SI base units, which of the following is used to measure the intensity of light as perceived by the human eye?

A. Lumen
B. Lux
C. Candela
D. Photon

8. An environmental scientist finds that a sensor is miscalibrated and consistently reads 5% high. This type of consistent, repeatable error is known as a _____ error.

A. Random
B. Systematic
C. Human
D. Variable

9. The second (s) is the SI base unit for time and is currently defined by the vibrations of a cesium-133 atom.

A. True
B. False

10. In a peer-reviewed paper, a distance is listed as 1.5 Megameters (Mm). What is this distance in the base unit of meters?

A. 1,500 m
B. 150,000 m
C. 1,500,000 m
D. 15,000,000 m