Name _____ Class _____ Date _____

Assessment

# The Science of Physics

## Section Quiz: Measurements in Experiments

**Write the letter of the correct answer in the space provided.**

_____ **1.** What is the SI base unit for length?
- **a.** meter
- **b.** kilogram
- **c.** kilometer
- **d.** second

_____ **2.** What quantity does the kilogram measure?
- **a.** time
- **b.** distance
- **c.** force
- **d.** mass

_____ **3.** In scientific notation, 674.3 mm equals
- **a.** $0.6743 \times 10^{-3}$ mm.
- **b.** $6.743 \times 10^{3}$ km.
- **c.** $6.743 \times 10^{2}$ mm.
- **d.** $6.743 \times 10^{2}$ m.

_____ **4.** In scientific notation, 0.000 005 823 μg equals
- **a.** $5.823 \times 10^{-6}$ μg.
- **b.** $5.823 \times 10^{-12}$ g.
- **c.** $5.823 \times 10^{-9}$ mg.
- **d.** all of the above

_____ **5.** The average mass of a proton is $1.673 \times 10^{-27}$ kg. What is this mass in grams?
- **a.** $1.673 \times 10^{-30}$ g
- **b.** $1.673 \times 10^{-24}$ g
- **c.** $1.673 \times 10^{-27}$ g
- **d.** $1.673 \times 10^{-81}$ g

_____ **6.** The accepted value for free-fall acceleration is 9.806 65 $m/s^2$. Which of the following measurements is the most accurate?
- **a.** 9.808 60 $m/s^2$
- **b.** 9.906 65 $m/s^2$
- **c.** 8.806 77 $m/s^2$
- **d.** 9.006 65 $m/s^2$

_____ **7.** Precision describes
- **a.** human error.
- **b.** the relationship of a measurement to an accepted standard.
- **c.** the limitations of the measuring instrument.
- **d.** the lack of instrument calibration.

_____ **8.** How many significant figures does 50.003 00 have?
- **a.** five
- **b.** seven
- **c.** two
- **d.** three

**9.** How do significant figures indicate a measurement's precision?

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**10.** Calculate the area of a room whose length is 15.23 m and width is 8.7 m. Express your answer in scientific notation and with the correct number of significant digits.