

Quiz #1, 20 points

Chemistry, 7th ed., Zumdahl & Zumdahl, sections 1.1-1.6+1.9

Unless otherwise specified, each question is worth 4 points.

1. Consider the two terms: hypothesis and theory.

a. What is similar for these two terms?

BOTH EXPLAIN

b. What is different about these two terms?

HYPOTHESIS BASED ON FEW OBSERVATIONS

THEORY BASED ON MANY OBSERVATIONS

2. Perform the following conversions:

- a. 1.002 mL = 1.002 cc
b. 1.63 km = 1,630 m
c. 25 cm = 0.25 m
d. 1,025 mg = 1.025 g

3. How many significant digits are in each of the following numbers?

- a. 2,367 4
b. 20 1
c. 30. 2
d. 0.0102 3

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Wallace

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4. Perform each calculation and report the answer to the appropriate number of significant digits.

a. $12 \times 25.6 = \dots\dots\dots$ 310

b. $0.001 \div 956 = \dots\dots\dots$ 1×10^{-6}

c. $100.1 - 0.1234 = \dots\dots\dots$ 100.0

d. $23.2 + .115 + 100.5 = \dots\dots\dots$ 123.8

5. Briefly explain the major distinguishing difference between any *mixture* of hydrogen and oxygen gas and the *compound* water (H_2O).

MIXTURE: #1 ANY COMPOSITION
 #2 PARTICLES NOT CONNECTED
 #3 HETEROGENEOUS

COMPOUND: #1 FIXED COMPOSITION
 #2 CONNECTED ATOMS
 #3 HOMOGENEOUS