**Quiz 1**

# Directions: Answer each of the following questions. Be sure to use complete sentences where appropriate. For full credit be sure to show all of your work. Where appropriate answers should be boxed for clarity, written to the correct number of significant figures, and, include the proper units.

1. Classify each statement as an observation, a law, or a theory (2 points):
   1. The reactivity of elements depends on the arrangement of their electrons. \_\_\_\_\_\_\_\_\_\_\_\_
   2. Neon does not react with sodium at room temperature and pressure. \_\_\_\_\_\_\_\_\_\_\_\_
2. What is the difference between a homogeneous and a heterogeneous mixture (2 points)?

A homogeneous mixture has the same composition throughout, while a heterogeneous mixture has different compositions in different regions.

1. Classify each of the properties of ozone (a pollutant in the lower atmosphere, but part of the protective shield against ultraviolet, UV, light in the upper atmosphere) as chemical or physical (3 points):
   1. Bluish color \_\_\_\_\_\_\_\_\_\_\_\_
   2. Decomposes on exposure to UV light. \_\_\_\_\_\_\_\_\_\_\_\_
   3. Gas a room temperature \_\_\_\_\_\_\_\_\_\_\_\_
2. Use prefix multipliers to express each measurement without exponents (3 points):
   1. 44.1 × 105 g \_\_\_\_\_\_\_\_\_\_\_\_
   2. 0.873 × 10-2 L \_\_\_\_\_\_\_\_\_\_\_\_
3. Complete the following calculations (10 points):

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# Directions: Answer each of the following questions. Be sure to use complete sentences where appropriate. For full credit be sure to show all of your work. Where appropriate answers should be boxed for clarity, written to the correct number of significant figures, and, include the proper units.

1. Classify each statement as an observation, a law, or a theory (2 points):
   1. The reactivity of elements depends on the arrangement of their electrons. \_\_\_theory
   2. Neon does not react with sodium at room temperature and pressure. \_\_observation
2. What is the difference between a homogeneous and a heterogeneous mixture (2 points)?

A homogeneous mixture has the same composition throughout, while a heterogeneous mixture has different compositions in different regions.

1. Classify each of the properties of ozone (a pollutant in the lower atmosphere, but part of the protective shield against ultraviolet, UV, light in the upper atmosphere) as chemical or physical (3 points):
   1. Bluish color \_\_\_physical
   2. Decomposes on exposure to UV light. \_\_\_chemical
   3. Gas a room temperature \_\_\_physical
2. Use prefix multipliers to express each measurement without exponents (3 points):
   1. 44.1 × 105 g \_\_\_4.41 Mg
   2. 0.873 × 10-2 L \_\_\_8.73 mL
3. Complete the following calculations (10 points):