

**Vasquez High School -- Chemistry -- Test #1 -- Chapters 1, 2 and Basics -- 100 points**

Write TRUE if the statement is true OR write the word that substitutes for the underlined word that would make it true. Writing false only earns partial credit. Three points each.

- \_\_\_\_\_ 1) A solid substance that does not form crystals is said to be indefinite.
- \_\_\_\_\_ 2) The metric prefix “micro” means one-thousandth.
- \_\_\_\_\_ 3) A heterogeneous mixture, like a hot fudge sundae, are different substances throughout it.
- \_\_\_\_\_ 4) The boiling point of water in kelvin is 212 K.
- \_\_\_\_\_ 5) The metric system is based on the number ten because our number system is too.
- \_\_\_\_\_ 6) The way a substance reacts with another is a chemical property.
- \_\_\_\_\_ 7) At the freezing point, ALL motion stops.
- \_\_\_\_\_ 8) A catalyst speeds up a chemical reaction by lowering the energy necessary to start it.
- \_\_\_\_\_ 9) We added sulfuric acid to the sodium hydroxide in demo to neutralize it.
- \_\_\_\_\_ 10) I can succeed in this class (and anything else) if I put my sincere effort into it.

Short Answer/Fill-in Section. Write complete answers here. Three points each.

- 11) The first three steps in the scientific method are: \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
- 12) Give one example of a qualitative assessment of something: \_\_\_\_\_  
\_\_\_\_\_.
- 13) Describe what scientific notation is, why we use it and how we use it: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.
- 14) Chemistry is the study of \_\_\_\_\_
- 15) Name three qualities of a scientist from the list I gave you (no making them up!):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

16) Give three branches/careers of chemistry AND a definition or description of each:

_____	_____
_____	_____
_____	_____

17) Write the changes of phase (from what to what) for these:

a) condensation goes from \_\_\_\_\_

b) sublimation goes from \_\_\_\_\_

c) vaporization goes from \_\_\_\_\_

18) Describe the difference between a gas and a vapor: \_\_\_\_\_

\_\_\_\_\_.

19) Describe in a few words how the particles of each of these phases of matter behave (in general):

a) solid \_\_\_\_\_

b) liquid \_\_\_\_\_

c) gas \_\_\_\_\_

20) How is a compound distinguished from a mixture? \_\_\_\_\_

\_\_\_\_\_

Calculation Section. Show all your work here -- writing the proper equations gets partial credit. Five points.

21) New experiments have determined that the core temperature of the Earth to be about 10832 °F. What is that temperature in °C?

22) 5.87 seconds is how many microseconds? \_\_\_\_\_

23) 216,000,000,000 nanoseconds is how many seconds? \_\_\_\_\_

25) If there are 25.4 mm in one inch, how many centimeters are in 500 yards?

26) The fastest rocket sled could travel at 660 miles per hour. If there are 5280 feet in one mile, how fast is that speed in feet per minute?

27) For one point each, express these decimal numbers in scientific notation and vice-versa:

395,000

0.0000000993

$2.64 \times 10^8$

$5.17 \times 10^{-2}$

Then express this answer in S/N as well (two points):  $(4.8 \times 10^6) \div (8.0 \times 10^{-3})$

Multiple Choice Section. Write the letter that BEST answers each example. Three points each.

\_\_\_\_\_ 27) Which statement is NOT true?

- a) Pure substances always have the same composition.
- b) Matter has both physical and chemical properties.
- c) Elements can be broken down into simpler substances.
- d) Temperature affects the way particles in a substance are held together.

\_\_\_\_\_ 28) Which of the following is NOT a mixture?

- a) Salt water
- b) Coca-cola
- c) Wood
- d) Carbon dioxide

\_\_\_\_\_ 29) We wish to calculate the volume of a box. We measure the length to be 25.47 cm, the width to be 18.65 cm, and the height to be 4.6600 cm. The best calculation of volume would have how many significant figures?

- a) Three
- b) Four
- c) Five
- d) Thirteen