Vasquez High School -- AP Chemistry -- Test #1 -- Chapters 1 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) The freezing point of water in kelvin is 32 K.

_____ 2) A catalyst speeds up a chemical reaction by lowering the energy necessary to start it.

_____ 3) We added sulfuric acid to the ammonia in demonstration to neutralize it.

_____ 4) At the freezing point, ALL motion stops.

_____ 5) An extensive property depends on how much of a substance is present.

_____ 6) The combination of two or more metals in a mixture is called a(n) compound.

_____ 7) If a number is greater than one, then all the zeroes written to the right of the decimal point count as significant figures.

_____ 8) The precision in a measurement has to do with the accuracy of that measurement.

_____ 9) Qualitative data describes but normally gives no numeric information.

_____ 10) I can pass the AP test (and anything else) if I really 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) Name three qualities of a scientist from the list I gave you (no making them up!):

_____ _____ _____

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

_____ _____

_____ _____

_____ _____

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

a) condensation goes from _____

b) sublimation goes from _____

c) vaporization goes from _____

16) Describe the difference between a gas and a vapor: _____

_____.

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

a) solid _____

b) liquid _____

c) gas _____

18) How is a compound distinguished from a mixture? _____

_____

19) Describe the difference between a physical property and a chemical property: _____

_____

_____

Calculation Section. Show all your work here -- writing the proper equations gets partial credit. Give all large and small answers in scientific notation for full credit. Five points.

20) Experiments have determined that the boiling point of liquid nitrogen is 77 K. What is that in °F?

21) 25.87 seconds is how many teraseconds? _____

22) 216,000,000,000 nanoliters is how many kiloliters? _____

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

24) A point on the Earth's equator travels through about 25,000 miles in one day. If there are 1609 m in one mile, how fast is that speed in meters per second?

25) A team of students measured the density of gold to be 18.93 g/cm3. The actual value is 19.32 g/cm3. What is their percentage error?

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

395,000 0.0000000993 2.64×10^{8} 5.17×10^{-2}

Then express this answer in S/N as well (three 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.

_____ 29) We wish to calculate the volume of a tiny rectangular box. We measure the length to be .2547 mm, the width to be .1865 mm, and the height to be .046600 mm. The best calculation of volume would have how many significant figures?

a) Three b) Four c) Five d) Six