Chemistry Midterm

1. Which of these is a qualitative observation?

   a. The candle is 3.0 cm in length.
   b. The wick of the candle is curled at the top.
   c. The wax contains carbon and hydrogen.

2. Numbers in scientific notation must be expressed in this form where:

   $$M \times 10^n$$

   a. M is one and n is greater than or equal to one but less than ten.
   b. M is greater than or equal to one but less than ten, and n is one.
   c. n is greater than or equal to one but less than ten.
   d. M is greater than or equal to one but less than ten.

3. The process used to find the volume of an object by dropping it in water is called:

   a. water displacement
   b. water subtracting
   c. irregular volume

4. Which of the following could be used as a conversion factor?

   a. 1000 m = 1 mm
   b. 1000 mm = 1 m
   c. 100 m = 1 cm
   d. 1000 cm = 1 m

5. What do you do when you don't know a conversion factor between the two units in the problem?

   a. Make something up.
   b. Give up and take a nap.
   c. Use multiple conversion factors.
   d. Change the problem.

6. The instrument used to measure mass is the:

   a. graduated cylinder
   b. ruler
   c. balance
   d. stopwatch

7. Which of the following is NOT a physical property of the chair?

    a. The chair is blue.
    b. The chair is made of wood.
    c. The chair will burn.
    d. The chair has four legs.

8. Which of the following is NOT a symbol for an element?

    a. Na
    b. CO
    c. S
    d. He

9. Which of the following is an example of a heterogeneous mixture?

    a. tea
    b. oxygen
    c. pizza
    d. water

10. A(n) _____ is made of two or more elements chemically combined.

    a. element
    b. mixture
    c. compound
    d. alloy

11. What is the formula for solving a density problem?

    a. $D = m \times v$
    b. $D = m / v$
    c. $D = v / m$

12. Dalton's atomic theory stated atoms unite in small, whole number ratios to form compounds

    True
    False

13. What particles are responsible for nearly all the mass of the atom?

    a. the protons and electrons
    b. the protons and neutrons
    c. the neutrons and electrons
    d. the electrons

14. The principal quantum number:

    a. is represented by n.
    b. refers to the main energy level of an electron
    c. is a whole number.
    d. all of these

15. What is the electron distribution of carbon, which has an atomic number of six?

    a. $1s^1 2s^1 3s^1 3p^3$
    b. $1s^2 2s^2 3s^2$
    c. $1s^2 2s^2 2p^2$

16. The word "atom" comes from the Greek word "atomos" which means:

    a. divisible
    b. indivisible
    c. invisible

17. Mendeleev arranged the elements by increasing atomic:

    a. number
    b. mass
    c. theory

18. What phase of matter is oxygen at room temperature?

    a. solid
    b. liquid
    c. gas

19. How many energy levels does an atom of oxygen have?

    a. 1
    b. 2
    c. 3
    d. 4

20. Which of the following elements has the largest atomic mass?

    a. K
    b. Ca
    c. Sc