# Chemistry Semester 1 Final Exam Review

1. What is a definition of Chemistry?
2. Matter includes all of the following EXCEPT:

a. air b. light c. smoke d. water vapor

1. What is matter?
2. A physical change occurs when a

a. peach spoils c. copper bowl tarnishes

b. bracelet turns your wrist green d. glue gun melts a glue stick

1. The particles in a solid are

a. packed closely together c. constantly in motion

b. very far apart d. able to slide past one another

Of the following groups, 1, 2, 14, 15, 17, 18:

1. Group(s) \_\_\_\_\_\_\_\_\_\_ contains only metals
2. Group (s)\_\_\_\_\_\_\_\_\_\_is called a Noble gases
3. Group(s) \_\_\_\_\_\_\_\_\_\_has 7 electrons on the valence shell
4. Group(s) \_\_\_\_\_\_\_\_\_\_needs to gain 3 electrons to fill a stable octet
5. Group(s) \_\_\_\_\_\_\_\_\_\_has a 2+ oxidation state
6. Group(s) \_\_\_\_\_\_\_\_\_\_has an electron dot notation of ●X●
7. Using the periodic table, an element similar to carbon would be\_\_\_\_\_\_\_
8. Based on their location on the periodic table, you could infer that \_\_\_\_\_\_\_\_\_\_\_\_\_are very unreactive
9. The horizontal row on the periodic table is called a(n)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. The vertical column of blocks on the periodic table is called a(n)\_\_\_\_\_\_\_\_\_\_\_\_
11. The elements on the zigzag line in the periodic table are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. Which is NOT a property of metal?

a. malleability c. unreactivity

b. ability to lose electrons d. ability to conduct heat

1. A volume of 1 cc (cm3) is the same as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_mL
2. To determine density, the quantities that must be measured are \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_
3. The relationship between the mass *m* of a material , its volume *V*, and its density *D* is

a. *V* = *mD* b. *Vm* = *D* c. *DV* = *m* d. *D* + *V* = *m*

28. The density of aluminum is 2.70 g/cm3. The volume of a solid piece of Aluminum is 1.50 cm3. Find the mass

1. The density of pure diamond is 3.5 g/cm3. The mass of a diamond is 0.25 g. Find the volume
2. What statement about density is true?
3. two samples of a pure substance may have different densities if they are different sizes
4. the density of a sample depends on its location on Earth
5. a cylinder is always used to measure the volume
6. density is a physical property that remains constant for a pure substance
7. The number of grams equal to 0.5 kg is \_\_\_\_\_\_\_\_\_\_\_
8. In a graph the \_\_\_\_\_\_\_\_\_\_\_\_\_ variable is placed on the x axis and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_variable is placed on the y axis.
9. The variable that you change in the lab is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_variable. The variable that responds to the change is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_variable. All other things do not change and are called \_\_\_\_\_\_\_\_\_
10. At first Dalton thought the atom was \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, then Ruther ford discovered the \_\_\_\_\_\_\_\_\_\_\_ of the atom, then the subatomic particles \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_ were discovered
11. The positively charged particle is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ found in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the atom
12. The subatomic particle that has about the same mass as the proton, but with no electrical charge, is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and is found in the \_\_\_\_\_\_\_\_\_ of the atom
13. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_is negatively charged and is found in the \_\_\_\_\_\_\_\_\_\_\_\_\_ of the atom
14. \_\_\_\_\_\_\_\_\_\_\_\_\_is the person credited with placing electrons on levels and \_\_\_\_\_\_\_\_\_\_\_\_\_ established the electron cloud theory.
15. The forces that hold the particles together in the nucleus are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ forces
16. Isotopes are atoms of the same element that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
17. All isotopes of hydrogen contain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
18. What is the atomic number for Nitrogen? To what subatomic particle does this correspond?
19. Zinc –66 has \_\_\_\_\_\_\_\_protons and \_\_\_\_\_\_\_\_\_\_neutrons
20. What is the electron configuration for sodium? Chlorine? Neon?
21. What is the dot notation for magnesium? Bromine? Argon?
22. How many electrons is each element trying to achieve in the valence level?
23. Which family is entirely radioactive?
24. Which family will gain two electrons to complete their octet?
25. Where are the transition metals located? What is special about their electron configuration that gives them special properties?
26. As you move left to right across a period on the table the size (radius) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
27. As you move down a column(group) the ionization energy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
28. The most active metal is \_\_\_\_\_\_ and the most active nonmetal is \_\_\_\_\_\_\_\_\_\_\_
29. What are the diatomic elements?