

# Chemistry 11 Substantial Assignment

Name: \_\_\_\_\_

Date: \_\_\_\_\_

1. The subatomic particle accounting for all the volume but virtually none of the mass of the atom is the
  - a. Neutron
  - b. Electron
  - c. Proton
  - d. Nucleus
2. For a given element in the periodic table, the number of electrons in the neutral atom and the positive charge on the atom's nucleus are represented by the atom's
  - a. Mass number
  - b. Atomic number minus mass number
  - c. Mass number minus atomic number
  - d. Atomic number
3. Atoms of each element are positively identified by their
  - a. Neutron number
  - b. Mass number
  - c. Atomic number
  - d. Valence electron number
4. Atoms in the same chemical family
  - a. Possess the same number of valence electrons
  - b. Are always at the same state at room temperature
  - c. Have valence electrons occupying the same energy level
  - d. Have similar-sized atoms
5. Which of the following elements will be presented by a Lewis diagram containing three unpaired electrons?
  - a. Sodium
  - b. Fluorine
  - c. Phosphorus
  - d. Sulfur

6. A Lewis diagram for an atom differs from a Bohr diagram because the
- Bohr diagram shows only the valence electrons and a Lewis diagram shows all the electrons
  - Lewis diagram shows only the valence electrons and a Bohr diagram shows all the electrons
  - Lewis diagram shows the nuclear contents and a Bohr diagram does not
  - Lewis diagram shows inner energy level electrons and a Bohr diagram does not
7. Which of the following can be correctly labelled as a covalent compound?
- $\text{PCl}_3$
  - $\text{CaCl}_2$
  - $\text{ClO}_4^{1-}$
  - $\text{Cl}_2$
8. Which of the following compounds would exist as a solid structure, known as a crystal lattice, at room temperature?
- $\text{F}_2$
  - $\text{CCl}_4$
  - $\text{NaBr}$
  - $\text{NH}_3$
9. Which of the following chemical formulas contains the greatest number of different elements?
- Sodium hydroxide
  - Iron(III)chloride
  - Tin(II)dichromate
  - Ammonium acetate
10. Which of the following compounds would require the use of parentheses (brackets) in its chemical formula?
- Ammonium chlorate
  - Iron(III)phosphate
  - Aluminum nitrate
  - Tin(II)dichromate

11. Which of the following compounds contains the greatest number of atoms?
- Lead(IV)acetate
  - Ammonium permanganate
  - Chromium(III)phosphate
  - Aluminum chlorate
12. The compound  $\text{Sn}_3(\text{PO}_4)_2$  is correctly named as
- Tin(III)phosphate
  - Tin(IV)phosphate
  - Tri-tin tetra-phosphate
  - Tin(III)tetraphosphate
13. Which of the following chemical formulas contains the greatest number of oxygen atoms?
- Aluminum dichromate
  - Tin(IV)permanganate
  - Chromium(III)phosphate
  - Silver nitrate
14. In which of the following compounds will the bonding involve the sharing of electrons between atoms?
- $\text{Na}_2\text{O}$
  - $\text{N}_2\text{O}_4$
  - $\text{Nb}_2\text{O}_3$
  - $\text{NiO}$
15. The correct name for the compound  $\text{P}_4\text{O}_{10}$
- Phosphorus(IV)decaoxide
  - Phosphorus oxide
  - Tetraphosphorus decaoxide
  - Diphosphorus pentoxide

16. Chlorine is added to a solution of sodium iodide, and a reaction occurs. The reactants are shown below.



- a.  $2\text{ICl}_2 + 2\text{Na}$
- b.  $2\text{NaCl} + \text{I}_2$
- c.  $2\text{Na} + \text{I}_2 + \text{Cl}_2$
- d.  $2\text{NaCl} + \text{I}_2$

17. Which of the following products would balance this reaction:



- a.  $3 \text{NaNO}_3$
- b.  $4\text{NaNO}_3$
- c.  $7\text{NaNO}_3$
- d.  $12\text{NaNO}_3$

18. Which of the following elements is the least reactive?

- a. Na
- b. Nb
- c. Ne
- d. Ni

19. Which of the following elements is the most reactive?

- a. Rb
- b. Re
- c. Rh
- d. Ru

20. Which compounds below could represent the reactants in a neutralization reaction?

I.	NaOH
II.	$\text{H}_3\text{PO}_4$
III.	$\text{NaNO}_3$
IV.	$\text{H}_2\text{O}$

- a. I and II
- b. I and III
- c. II and III
- d. III and IV