

Name: _____

Group: _____

Date: _____

Practice Comp #3

1. When snow is created, water vapors become solid ice in clouds. This process is an example of _____.
 - A. Evaporation
 - B. Deposition
 - C. Condensation
 - D. Sublimation
2. An ion contains 18 electrons, 15 neutrons and 14 protons. What is the charge of this ion?
 - A. -1
 - B. +1
 - C. +4
 - D. -4
3. A neutral atom with the electron configuration, $1s^2 2s^2 2p^6 3s^2 3p^4$. It has _____ energy shells and _____ valence electrons.
 - A. 6, 5
 - B. 5, 6
 - C. 3, 6
 - D. 3, 4
4. Sodium is found in group _____ and in period _____ on the periodic table.
 - A. 1A, 3
 - B. 6A, 4
 - C. 1A, 2
 - D. 6A, 2
5. Which of the following families would have a predicted charge of 1+?
 - A. Noble Gases
 - B. Halogens
 - C. Alkaline earth metals
 - D. Alkali metals

6. What is the mass number of ${}^7_3\text{Li}^{1+}$?
- 1+
 - 3
 - 7
 - 4
7. Which of the following pure substances are likely to be a good conductor of heat?
- NaCl
 - Fe
 - O₂
 - CO₂
8. Which of the following pure substances has the lowest melting point?
- Mg
 - NO₂
 - NaCl
 - NH₄NO₃
9. Which of the following substances would you expect to be brittle?
- CO₂
 - CaO
 - NO
 - O₂
10. In which of the following pure substances would electrons be completely transferring from one atom to another?
- H₂O
 - CO₂
 - C₆H₁₂O₆
 - MgO
11. A sample containing 2.5 moles of magnesium chloride contains how many chloride ions?
- 3.0×10^{24} Cl¹⁻ ions
 - 1.5×10^{24} Cl¹⁻ ions
 - 4.5×10^{23} Cl¹⁻ ions
 - 1.5×10^{23} Cl¹⁻ ions

12. Which of the following substances would increase the electrical conductivity of water the most if it is added to a cup of H₂O?

- A. CO₂
- B. Al
- C. NaCl
- D. O₂

13. In which of the following compounds are atoms cooperating by sharing valence electrons?

- A. Calcium difluoride
- B. Tetrasulfur dinitride
- C. Sodium chloride
- D. Ammonium chloride

14. Which of the following pure substances would be both malleable and ductile?

- A. NO₂
- B. Phosphate
- C. Copper
- D. NH₄OH

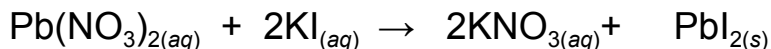
15. What is the correct name for CuSO₄?

- A. Copper sulfide tetroxide
- B. Copper (III) sulfate
- C. Copper monosulfate
- D. Copper (II) sulfate

16. Which of the following equations represents a combustion reaction?

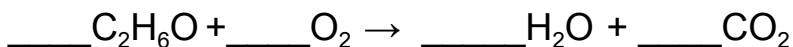
- A. $\text{Li}_2\text{SO}_4 + \text{BaCl}_2 \rightarrow 2\text{LiCl} + \text{BaSO}_4$
- B. $\text{Na}_2\text{S} + 2\text{HCl} \rightarrow 2\text{NaCl} + \text{H}_2\text{S}$
- C. $2\text{NaOH} + \text{CaBr}_2 \rightarrow 2\text{NaBr} + \text{Ca(OH)}_2$
- D. $2\text{C}_4\text{H}_{10} + 13\text{O}_2 \rightarrow 8\text{CO}_2 + 10\text{H}_2\text{O}$

17. During an lab procedure, 110.4 grams of aqueous lead (II) nitrate react with 110.7 grams of potassium iodide according to the balanced equation below. When the reaction is over, 153.7 grams of solid lead (II) iodide are obtained. What is the mass of the potassium nitrate still dissolved in water?



- A. 35.9 g KNO_3
- B. 85.1 g KNO_3
- C. 72.6 g KNO_3
- D. 67.4 g KNO_3

18. Ethanol combusts according to the following unbalanced equation. What are the coefficients when the equation is balanced?



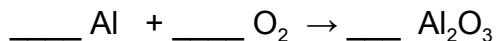
- A. 1, 3, 1, 2
- B. 1, 3, 3, 2
- C. 2, 3, 3, 2
- D. 3, 2, 2, 3

19. According to the following *unbalanced* chemical equation, how many moles of potassium chloride are required to produce 3.4 moles of chlorine gas?



- A. 1.7 moles KCl
- B. 6.8 moles KCl
- C. 10.2 moles KCl
- D. 5.1 moles KCl

20. According to the following unbalanced chemical equation, how many moles of oxygen (O_2) are required to produce 18.3 moles of Al_2O_3 ?

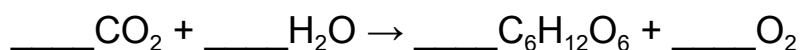


- A. 12.2 moles of O_2
- B. 36.6 moles of O_2
- C. 27.5 moles of O_2
- D. 9.2 moles of O_2

21. A sample of mercury (Hg) contains 4.3×10^{24} atoms which is equivalent to _____ moles of mercury?

- A. 25.8 mol Hg
- B. 2.6 mol Hg
- C. 0.71 mol Hg
- D. 7.1 mol Hg

22. According to the following unbalanced chemical equation for the photosynthetic production of glucose, how many moles of CO_2 are required to produce 1.9 moles of glucose?



- A. 68.6 mol CO_2
- B. 501.6 mol CO_2
- C. 3.16 mol CO_2
- D. 11.4 mol CO_2

Directions: The following two problem should be solved below the bubbles on your answer sheet.



23. Balance the chemical equation above.

23. How many moles of oxygen (O_2) will be produced if 8.4 moles of KClO_3 are decomposed?