

CHEM 110: Chapter 2 Practice Test Questions**Multiple-Choice**

- 1) A certain mass of carbon reacts with 13.6 g of oxygen to form carbon monoxide. _____ grams of oxygen would react with that same mass of carbon to form carbon dioxide, according to the law of multiple proportions?
- A) 25.6
B) 6.8
C) 13.6
D) 136
E) 27.2
- 2) Which statement below correctly describes the responses of alpha, beta, and gamma radiation to an electric field?
- A) Both beta and gamma are deflected in the same direction, while alpha shows no response.
B) Both alpha and gamma are deflected in the same direction, while beta shows no response.
C) Both alpha and beta are deflected in the same direction, while gamma shows no response.
D) Alpha and beta are deflected in opposite directions, while gamma shows no response.
E) Only alpha is deflected, while beta and gamma show no response.
- 3) Which pair of atoms constitutes a pair of isotopes of the same element?
- A) ${}^{14}_6\text{X}$ ${}^{14}_7\text{X}$
B) ${}^{14}_6\text{X}$ ${}^{12}_6\text{X}$
C) ${}^{17}_9\text{X}$ ${}^{17}_8\text{X}$
D) ${}^{19}_{10}\text{X}$ ${}^{19}_9\text{X}$
E) ${}^{20}_{10}\text{X}$ ${}^{21}_{11}\text{X}$
- 4) In the periodic table, the rows are called _____ and the columns are called _____.
- A) octaves, groups
B) staffs, families
C) periods, groups
D) cogeners, families
E) rows, groups
- 5) The element _____ is the most similar to strontium in chemical and physical properties.
- A) Li
B) At
C) Rb
D) Ba
E) Cs

- 6) Elements in Group 6A are known as the _____.
- A) alkali metals
 - B) chalcogens
 - C) alkaline earth metals
 - D) halogens
 - E) noble gases
- 7) Potassium is a _____ and chlorine is a _____.
- A) metal, nonmetal
 - B) metal, metal
 - C) metal, metalloid
 - D) metalloid, nonmetal
 - E) nonmetal, metal
- 8) _____ are found uncombined, as monatomic species in nature.
- A) Noble gases
 - B) Chalcogens
 - C) Alkali metals
 - D) Alkaline earth metals
 - E) Halogens
- 9) When a metal and a nonmetal react, the _____ tends to lose electrons and the _____ tends to gain electrons.
- A) metal, metal
 - B) nonmetal, nonmetal
 - C) metal, nonmetal
 - D) nonmetal, metal
 - E) None of the above, these elements share electrons.
- 10) _____ typically form ions with a 2+ charge.
- A) Alkaline earth metals
 - B) Halogens
 - C) Chalcogens
 - D) Alkali metals
 - E) Transition metals
- 11) What is the formula of the compound formed between strontium ions and nitrogen ions?
- A) SrN
 - B) Sr₃N₂
 - C) Sr₂N₃
 - D) SrN₂
 - E) SrN₃

12) The charge on the manganese in the salt MnF_3 is _____.

- A) +1
- B) -1
- C) +2
- D) -2
- E) +3

13) Aluminum reacts with a certain nonmetallic element to form a compound with the general formula AlX . Element X is a diatomic gas at room temperature. Element X must be _____.

- A) oxygen
- B) fluorine
- C) chlorine
- D) nitrogen
- E) sulfur

14) Iodine forms an ion with a charge of _____.

- A) -7
- B) +1
- C) -2
- D) +2
- E) -1

15) Sulfur forms an ion with a charge of _____.

- A) +2
- B) -2
- C) +3
- D) -6
- E) +6

16) Predict the empirical formula of the ionic compound that forms from magnesium and fluorine.

- A) Mg_2F_3
- B) MgF
- C) Mg_2F
- D) Mg_3F_2
- E) MgF_2

17) The correct name for K_2S is _____.

- A) potassium sulfate
- B) potassium disulfide
- C) potassium bisulfide
- D) potassium sulfide
- E) dipotassium sulfate

18) The correct name for SO is _____.

- A) sulfur oxide
- B) sulfur monoxide
- C) sulfoxide
- D) sulfate
- E) sulfite

19) The correct name for N_2O_5 is _____.

- A) nitrous oxide
- B) nitrogen pentoxide
- C) dinitrogen pentoxide
- D) nitric oxide
- E) nitrogen oxide

20) The correct name for HClO_3 is _____.

- A) hydrochloric acid
- B) perchloric acid
- C) chloric acid
- D) chlorous acid
- E) hydrochlorous acid

21) The formula of bromic acid is _____.

- A) HBr
- B) HBrO_4
- C) HBrO
- D) HBrO_3
- E) HBrO_2

22) The ions Ca^{2+} and PO_4^{3-} form a salt with the formula _____.

- A) CaPO_4
- B) $\text{Ca}_2(\text{PO}_4)_3$
- C) Ca_2PO_4
- D) $\text{Ca}(\text{PO}_4)_2$
- E) $\text{Ca}_3(\text{PO}_4)_2$

23) The formula of ammonium carbonate is _____.

- A) $(\text{NH}_4)_2\text{CO}_3$
- B) NH_4CO_2
- C) $(\text{NH}_3)_2\text{CO}_4$
- D) $(\text{NH}_3)_2\text{CO}_3$
- E) $\text{N}_2(\text{CO}_3)_3$

24) The formula of the chromate ion is _____.

- A) CrO_4^{2-}
- B) CrO_2^{3-}
- C) CrO^-
- D) CrO_3^{2-}
- E) CrO^{2-}

25) The correct name for $\text{Mg}(\text{ClO}_3)_2$ is _____.

- A) magnesium chlorate
- B) manganese chlorate
- C) magnesium chloroxide
- D) magnesium perchlorate
- E) manganese perchlorate

26) Chromium and chlorine form an ionic compound whose formula is CrCl_3 . The name of this compound is _____.

- A) chromium chlorine
- B) chromium(III) chloride
- C) monochromium trichloride
- D) chromium(III) trichloride
- E) chromic trichloride

27) The name of the ionic compound V_2O_3 is _____.

- A) vanadium(III) oxide
- B) vanadium oxide
- C) vanadium(II) oxide
- D) vanadium(III) trioxide
- E) divanadium trioxide

28) What is the molecular formula for propane _____?

- A) C_2H_8
- B) C_3H_6
- C) C_3H_8
- D) C_4H_8
- E) C_4H_{10}

29) What is the molecular formula for n-hexanol _____?

- A) $\text{C}_6\text{H}_{12}\text{OH}$
- B) $\text{C}_6\text{H}_{13}\text{OH}$
- C) $\text{C}_6\text{H}_{14}\text{OH}$
- D) $\text{C}_7\text{H}_{13}\text{OH}$
- E) $\text{C}_7\text{H}_{14}\text{OH}$

