

- 1) Which of the following can not be directly found just by looking at your periodic table?
A) an element's atomic number **B)** whether an element is a metal or non-metal
C) an element's atomic mass **D)** whether or not an element is a transition metal
E) an element's mass number
- 2) What is the formula for hydrosulfuric acid?
A) $\text{H}_3\text{S}(\text{aq})$ **B)** $\text{H}_2\text{SO}_3(\text{aq})$ **C)** $\text{H}_3\text{SO}_3(\text{aq})$ **D)** $\text{H}_2\text{S}(\text{aq})$ **E)** $\text{H}_2\text{SO}_4(\text{aq})$
- 3) What is the symbol for the isotope that has 21 p^+ and 23 n^0 ?
A) ^{21}V **B)** ^{23}Sc **C)** ^{44}Sc **D)** ^{44}V **E)** ^{21}Sc **F)** ^{23}V
- 4) What is the name for $\text{Mn}(\text{ClO}_2)_2$?
A) manganese chlorite **B)** manganese(II) chlorite **C)** manganese(II) chlorate
D) manganese(I) chlorate **E)** manganese(I) chlorite **F)** manganese chlorate
- 5) What needs to happen to an atom of Ni to turn it into a Ni^{2+} ion?
A) it must gain 2 protons **B)** it must gain 2 neutrons **C)** it must lose 2 electrons
D) it must lose 2 protons **E)** it must lose 2 neutrons **F)** it must gain 2 electrons
- 6) How many total non-metal atoms are present in 1 unit of magnesium acetate?
A) 4 **B)** 15 **C)** 7 **D)** 14 **E)** 8
- 7) What is the name for $\text{HIO}(\text{aq})$?
A) hydroiodous acid **B)** hypoiodous acid **C)** hydroiodic acid
D) hypoiodic acid **E)** hydromonoiodic acid **F)** hypoiodide acid
- 8) What is the name for $\text{Cr}(\text{C}_2\text{O}_4)_3$?
A) chromium(III) dicarbonate **B)** chromium(II) dioxalate **C)** chromium(III) oxalate
D) chromium(II) oxalate **E)** chromium(VI) oxalate **F)** chromium(III) carboxide
- 9) Which of the following is true about Medeleev's original periodic table, but not the modern one?
A) blank spaces can be left for missing elements
B) elements have increasing atomic mass from left to right across a period
C) elements in the same group have similar properties
D) new elements can be added when they are created or discovered
- 10) Which of the following elements would be most likely to have an isotope with 75 neutrons?
A) Re **B)** As **C)** Br **D)** Te
- 11) What is the chemical formula for the ionic compound that forms when calcium reacts with sulfur?
A) Ca_2S_3 **B)** CaS **C)** Ca_3S_2 **D)** Ca_3S **E)** CaS_3
- 12) A 14.0 g sample of a compound containing only phosphorus and oxygen is found to have 8.0 g of oxygen. How many grams of phosphorus are there in a second sample of this compound if the second sample contains 5.9 g of oxygen?
A) 4.4 g **B)** 0.13 g **C)** 7.9 g **D)** 0.23 g **E)** 3.4 g

- 13) What is wrong with calling " Co_3N_2 " by the name "cobalt nitride"?
- A)** the name for the anion portion should be "nitrite"
 - B)** the name needs the roman numeral "(III)" after the metal
 - C)** the name needs "tri-" and "di-" prefixes
 - D)** the name needs the roman numeral "(II)" after the metal
 - E)** the name for the cation portion should be "copper"
- 14) Which of the following contains the correct numbers of protons and electrons for a zinc ion?
- A)** 30 p^+ and 32 e^-
 - B)** 30 p^+ and 28 e^-
 - C)** 28 p^+ and 30 e^-
 - D)** 32 p^+ and 32 e^-
 - E)** 30 p^+ and 30 e^-
 - F)** 32 p^+ and 30 e^-
- 15) What is the name for KMnO_4 ?
- A)** potassium(I) permanganate
 - B)** potassium(II) permanganate
 - C)** potassium permanganate
 - D)** potassium(II) permanganite
 - E)** potassium permanganite
 - F)** potassium(I) permanganite
- 16) Which of the following statements is true regarding ionic compounds?
- A)** the metal atom loses one or more electrons to become a negatively charged ion
 - B)** the ion with a positive charge is called the anion
 - C)** ionic compounds are also called *salts*
 - D)** all ionic compounds contain a metal
 - E)** none of these statements about ionic compounds is true
- 17) Which of the following samples would have the most atoms?
- A)** 1-g sample of S-32
 - B)** 1-g sample of S-34
 - C)** 1-g sample of Cl-35
 - D)** 1-g sample of Cl-37
 - E)** not enough information is provided
- 18) What is the formula for tetranitrogen pentoxide?
- A)** N_2O_3
 - B)** N_4O_6
 - C)** N_3O_5
 - D)** N_4O_5
 - E)** N_3O_6
- 19) What is the formula for iron(III) hydrogen carbonate?
- A)** FeHCO_2
 - B)** Fe_3HCO_3
 - C)** $\text{Fe}(\text{HCO}_2)_3$
 - D)** $\text{Fe}_2(\text{CO}_3)_3$
 - E)** $\text{Fe}(\text{HCO}_3)_3$
- 20) Which of the following statements best describe the typical behavior of Al when becoming an ion?
- A)** it gains 3 electrons to have the same number of electrons as Ne
 - B)** it loses 3 electrons to have the same number of electrons as Ne
 - C)** it gains 5 electrons to have the same number of electrons as Ar
 - D)** it loses 5 electrons to have the same number of electrons as Ar
- 21) What is the formula for ammonium oxalate?
- A)** $(\text{NH}_4)_2\text{C}_2\text{O}_4$
 - B)** $(\text{NH}_4)_2\text{OH}$
 - C)** $\text{NH}_4\text{C}_2\text{O}_4$
 - D)** $\text{NH}_4(\text{OH})_2$
 - E)** $\text{NH}_4(\text{C}_2\text{O}_4)_2$
- 22) Based on the current periodic table, which of the following statements is true?
- A)** an element can be both a halogen and a metal
 - B)** an element can be both in group 4 and period 3
 - C)** an element can be both an alkaline earth metal and a type I metal
 - D)** an element can be a non-metal in group 2
- 23) A 23.0 g sample of a compound containing only C and H is found to have 3.6 g of H. A second sample of the same compound is found to have 9.8 g of C. How many grams of H are there in this second sample?
- A)** 1.8 g
 - B)** 0.50 g
 - C)** 2.3 g
 - D)** 1.4 g
 - E)** 21 g

24) Gallium has two naturally occurring isotopes. One isotope, Ga-69, has a mass of 68.93 amu and a percent abundance of 60.1%. What is the mass of the other isotope?

- A)** 70.91 amu **B)** 69.93 amu **C)** 70.72 amu **D)** 69.72 amu **E)** 71.48 amu

25) Naturally occurring antimony has two isotopes: Sb-121 with a mass of 120.9 amu and Sb-123 with a mass of 122.9 amu. What is the percent abundance of Sb-121?

- A)** 43 % **B)** 55 % **C)** 56 % **D)** 45 % **E)** 57 %

Answer Key

Each Question is Worth 4 pts

1) E	2) D	3) C	4) B	5) C
6) D	7) B	8) E	9) B	10) D
11) B	12) A	13) D	14) B	15) C
16) C	17) A	18) D	19) E	20) B
21) A	22) C	23) A	24) A	25) B