

- 1) What is the name for ZnCrO_4 ?
A) zinc(II) chromate **B)** zinc chromate **C)** zinc(II) tetrachromate
D) zinc chromium tetroxide **E)** zinc(I) chromite **F)** zinc(II) chromite
- 2) Naturally occurring europium has two isotopes: Eu-151 with a mass of 150.92 amu and Eu-153 with a mass of 152.92 amu. What is the percent abundance of Eu-151?
A) 43.8 % **B)** 46.0 % **C)** 54.0 %
D) 56.2 % **E)** 48.3 % **F)** 51.7 %
- 3) Which of the following does not agree with Rutherford's nuclear theory as it was originally stated?
A) Most of the volume of a carbon atom is due to its protons and neutrons.
B) All of a nitrogen atom's positively charged particles are in the nucleus.
C) A neutral atom of chlorine has 17 electrons and 17 protons.
D) An oxygen atom's protons and neutrons account for most of the atom's mass.
- 4) What is the name for $\text{H}_2\text{S}(\text{aq})$?
A) sulfurous acid **B)** hydrosulfurous acid **C)** hyposulfuric acid
D) hyposulfurous acid **E)** sulfuric acid **F)** hydrosulfuric acid
- 5) Which of the following is true only for ionic compounds (not molecular compounds)?
A) Contain only elements that are non-metals.
B) Occur because elements want the same number of electrons as the nearest noble gas.
C) Involves a transfer of electrons.
D) Are also called covalent compounds.
E) Results in neutral molecules.
- 6) What is the symbol for the isotope that has 28 neutrons and a mass number = 51?
A) ^{51}Ni **B)** ^{28}Sc **C)** ^{51}Sb
D) ^{28}V **E)** ^{51}V **F)** ^{28}Ni
- 7) What is the name for SO_4 ?
A) monosulfur tetroxide **B)** sulfur(VIII) oxide **C)** sulfate
D) sulfite **E)** sulfur tetroxide **F)** sulfur oxide
- 8) Which of the following is not typically considered to be a diatomic element?
A) nitrogen **B)** hydrogen **C)** fluorine
D) oxygen **E)** sulfur **F)** iodine
- 9) What is the symbol of the alkaline earth metal in period 4?
A) Ti **B)** Sr **C)** Ca **D)** K **E)** Rb
- 10) Which of the following isotopes has the greatest number of neutrons?
A) Ga-69 **B)** Se-77 **C)** Ge-76 **D)** Cu-65
- 11) Iridium (Ir) has two naturally occurring isotopes, Ir-193 has a mass of 192.94 amu and Ir-191 has a mass of 190.96 amu. Without performing any calculations, which of the two isotopes is present in the largest percent abundance?
A) Ir-193 **B)** Ir-191 **C)** Not enough information is provided
- 12) What is the name for $\text{Sn}(\text{C}_2\text{O}_4)_2$?
A) tin oxalate **B)** tin(II) dicarbonate **C)** tin(IV) oxalate
D) tin(II) oxalate **E)** tin(IV) dicarboxide **F)** tin dicarbonate

- 13) What is the formula for iron(III) hypoiodite?
A) $\text{Fe}(\text{IO})_3$ **B)** $\text{Fe}(\text{IO}_4)_3$ **C)** FeIO_3
D) Fe_3IO **E)** Fe_3IO_4 **F)** FeIO
- 14) What needs to happen to an atom of N to turn it into a N^{3-} ion?
A) it must gain 3 protons **B)** it must gain 3 neutrons **C)** it must lose 3 electrons
D) it must lose 3 protons **E)** it must lose 3 neutrons **F)** it must gain 3 electrons
- 15) Which of the following is an example of a chemical property of a sample of hydrogen gas?
A) compressible **B)** flammable **C)** colorless
D) mass **E)** density **F)** boiling point
- 16) How many total atoms are present in 1 unit of $\text{Al}(\text{C}_2\text{H}_3\text{O}_2)_3$?
A) 21 **B)** 22 **C)** 12 **D)** 18 **E)** 8
- 17) A particular compound is found to have 5 g of carbon for every 2 g of hydrogen. How many grams of hydrogen would there be in 35 g of this compound?
A) 7 g **B)** 10 g **C)** 14 g **D)** 17.5 g
- 18) Which of the following is a molecular compound?
A) N_2H_4 **B)** N_2 **C)** NH_4^+ **D)** NH_4Cl **E)** NaCl
- 19) Which of the following statements is true with regards to the element with $Z = 16$?
A) The element is oxygen. Oxygen must have 16 neutrons in the nucleus.
B) The element is oxygen. Oxygen has a total of 16 protons and neutrons.
C) The element is oxygen. A neutral atom of oxygen must have 16 electrons.
D) The element is sulfur. Sulfur must have 16 neutrons in the nucleus.
E) The element is sulfur. Sulfur has a total of 16 protons and neutrons.
F) The element is sulfur. A neutral atom of sulfur must have 16 electrons.
- 20) What is the correct chemical formula for the compound that forms when aluminum reacts with sulfur?
A) Al_2S **B)** S_2Al **C)** S_3Al_2
D) AlS_3 **E)** AlS **F)** Al_2S_3
- 21) What is the formula for cobalt(II) fluoride?
A) Co_2F **B)** Co_3F **C)** Co_3F_2
D) Co_2F_3 **E)** CoF_2 **F)** CoF_3
- 22) If one sample of rust (Fe_2O_3) contains 13.5 g Fe and 5.80 g O, how many grams of Fe can be recovered from a second sample of rust that with a mass of 98.5 g?
A) 229 g **B)** 29.6 g **C)** 68.9 g
D) 141 g **E)** 42.3 g
- 23) What is the name for Ag_3PO_3 ?
A) silver phosphite **B)** silver(I) phosphite **C)** silver phosphate
D) silver(I) phosphate **E)** silver(II) phosphite **F)** silver(III) phosphide

24) Which of the following statements is false?

- A)** Ionic compounds always contain cations and anions in a ratio that cancels out their charges.
- B)** Oxygen is an example of an atomic element.
- C)** Losing one or more electrons results in the formation of a positively charged ion.
- D)** Positively charged ions are called cations; negatively charged ions are called anions.
- E)** Ionic compounds are typically formed from one metal and one or more non-metals.
- F)** Molecular compounds are formed from two or more non-metals.

25) What is the formula for chloric acid?

- A)** $\text{H}_2\text{ClO}_4(\text{aq})$
- B)** $\text{HCl}(\text{aq})$
- C)** $\text{HClO}_2(\text{aq})$
- D)** $\text{HClO}_3(\text{aq})$
- E)** $\text{HClO}(\text{aq})$
- F)** $\text{H}_2\text{ClO}_3(\text{aq})$

Answer Key

Each Question is Worth 4 pts

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