

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) If a neutral atom loses one electron, what is the electrical charge of the atom? 1) B
 A) -2 B) +1 C) -1 D) +2
-
- 2) Which of the following does *not* describe ionic compounds? 2) A
 A) They have a tendency to melt easily.
 B) They are held together by electrostatic attraction.
 C) They consist of positive and negative ions.
 D) They are usually very ordered.
- 3) What is a molecule? 3) C
 A) pair of shared valence electrons
 B) group of covalent compounds held together by ionic bonds
 C) a group of atoms that are held together by covalent bonds
 D) a group of atoms that are held together by ionic bonds
- 4) How many valence electrons does gallium (Ga, atomic no. = 31) have? 4) A
 A) 3 B) 1 C) 70 D) 6
- 5) Which of the following is a *covalent compound* composed of *nonpolar covalent bonds*? 5) B
 A) NaF B) H₂ C) CF₄ D) H₂O
- 6) If you mix a typical aluminum ion (Al, atomic no. = 13) with a typical oxygen ion (O, atomic no. = 8), what compound is formed? 6) B
 A) Al₃O₂ B) Al₂O₃ C) Al₃O D) Al₂O₂
- 7) What is the compound that forms if you react potassium and sulfur? 7) B
 A) KS B) K₂S C) PS₂ D) SP
- 8) Which of the following is the correct electron dot structure for chlorine (atomic no. = 17)? 8) D
- $\cdot\ddot{\text{Cl}}\cdot$
a

$\cdot\ddot{\text{Cl}}\cdot$
b

$\cdot\ddot{\text{Cl}}\cdot$
c

$\cdot\ddot{\text{Cl}}\cdot$
d

$\cdot\ddot{\text{Cl}}\cdot$
e
- A) a B) b C) c D) d E) e

9) What is the valence shell?

- A) It is the shell of electrons in element V (atomic no. = 23)
- B) It is the outermost shell of electrons in an atom.
- C) It is the same as the orbital configuration.
- D) It is the shell of electrons in an atom that is the least reactive.

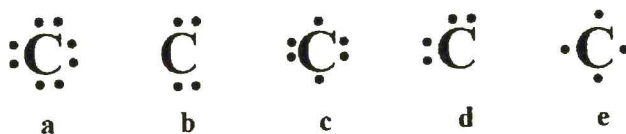
9) B

10) What is the main difference between an ionic and a covalent bond?

- A) One is the sharing of a pair of electrons, the other is the transfer of **at least one** electron.
- B) One involves electrons, the other does not involve any electrons.
- C) Both bonds are the same, but named different to describe different **atoms** involved.
- D) The electrons in both types of bonding undergo an exchange.

10) A

11) Which of the following is the correct electron dot structure for carbon (atomic no. = 6)?



- A) a B) b C) c D) d E) e

11) E

12) If a neutral atom gains two electrons, what is the electrical charge of the **atom**?

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

12) D

13) The concept of a chemical bond is _____.

- A) how two or more atoms are held together
- B) how much energy it takes to remove an electron from a set of atoms
- C) the sharing of nucleons
- D) how two or more electrons reside in an orbital

13) A

14) Which of the following best describes ionic bonding?

- A) two atoms sharing a set of electrons
- B) two atoms exchanging a set of electrons
- C) when two elements with same charge are held together by **electrostatic** forces
- D) one atom giving up some of its electrons to another atom

14) D

15) Which of the following elements has two valence electrons?

- A) Na B) Li C) Mg D) H

15) C