

Covalent Bonds Review

Name: _____

Date: _____

- Which kind of bond is formed when two atoms share electrons to form a molecule?
A. ionic B. metallic
C. electrovalent D. covalent

- The bonds present in silicon carbide (SiC) are
A. covalent B. ionic
C. metallic D. van der Waals

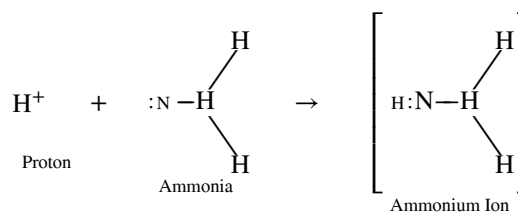
- Which molecule contains a nonpolar covalent bond?
A. HCl B. F₂ C. CO₂ D. NH₃

- Which compound contains both covalent and ionic bonds?
A. KCl B. NH₄Cl
C. MgCl₂ D. CCl₄

- Which types of bonds and solids are characteristic of organic compounds?
A. ionic bonds and ionic solids
B. ionic bonds and molecular solids
C. covalent bonds and ionic solids
D. covalent bonds and molecular solids

- When phosphorus and chlorine atoms combine to form a molecule of PCl₃, 6 electrons will be
A. shared equally B. shared unequally
C. lost D. gained

7. Given the reaction:



Which type of bond is formed between the proton (H⁺) and the ammonia molecule?

- A. ionic B. network
C. coordinate covalent D. nonpolar covalent

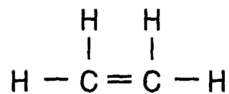
8. What is the maximum number of covalent bonds that a carbon atom can form?

- A. 1 B. 2 C. 3 D. 4

9. Which pair of atoms will share electrons when a bond is formed between them?

- A. Ba and I B. Br and Cl
C. K and Cl D. Li and I

10. Given the compound:



The symbol = represents

- A. one pair of shared electrons
B. two pairs of shared electrons
C. a single covalent bond
D. a coordinate covalent bond

11. Which pair of atoms is held together by a covalent bond?

- A. HCl B. LiCl C. NaCl D. KCl

12. What occurs when a coordinate covalent bond is formed between nitrogen and hydrogen in the ammonium ion, NH_4^+ ?

- A. Hydrogen provides a pair of electrons to be shared with nitrogen.
B. Nitrogen provides a pair of electrons to be shared with hydrogen.
C. Hydrogen transfers a pair of electrons to nitrogen.
D. Nitrogen transfers a pair of electrons to hydrogen.

13. Which molecule contains a triple covalent bond between its atoms?

- A. N_2 B. O_2 C. F_2 D. H_2

14. Which element has atoms that can form single, double, and triple covalent bonds with other atoms of the same element?

- A. hydrogen B. oxygen
C. fluorine D. carbon

15. The bond between Br atoms in a Br_2 molecule is
- A. ionic and is formed by the sharing of two valence electrons
 - B. ionic and is formed by the transfer of two valence electrons
 - C. covalent and is formed by the sharing of two valence electrons
 - D. covalent and is formed by the transfer of two valence electrons

16. What is the total number of electron pairs that are shared between the two carbon atoms in a molecule of ethyne?

A. 1 B. 2 C. 3 D. 4

17. What is the total number of electrons shared in a double covalent bond between two atoms?

A. 1 B. 2 C. 8 D. 4

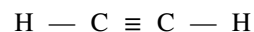
18. The multiple covalent bond in a molecule of 1-butene is a

- A. double covalent bond that has 6 shared electrons
- B. double covalent bond that has 4 shared electrons
- C. triple covalent bond that has 6 shared electrons
- D. triple covalent bond that has 4 shared electrons

19. What is the total number of electrons shared in the bonds between the two carbon atoms in a molecule of $\text{H} - \text{C} \equiv \text{C} - \text{H}$?

A. 6 B. 2 C. 3 D. 8

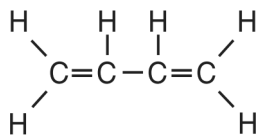
20. Given the structural formula:



What is the total number of electrons shared in the bond between the two carbon atoms?

A. 6 B. 2 C. 3 D. 4

21. Given the formula of a substance:



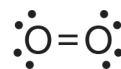
What is the total number of shared electrons in a molecule of this substance?

- A. 22 B. 11 C. 9 D. 6

22. As a bond between a hydrogen atom and a sulfur atom is formed, electrons are

- A. shared to form an ionic bond
B. shared to form a covalent bond
C. transferred to form an ionic bond
D. transferred to form a covalent bond

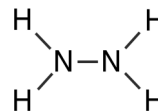
23. Given the formula for oxygen:



What is the total number of electrons shared between the atoms represented in this formula?

- A. 1 B. 2 C. 8 D. 4

24. Given the formula for hydrazine:



How many pairs of electrons are shared between the two nitrogen atoms?

- A. 1 B. 2 C. 3 D. 4

Covalent Bonds Review 11/23/2014

1.
Answer: D
2.
Answer: A
3.
Answer: B
4.
Answer: B
5.
Answer: D
6.
Answer: A
7.
Answer: C
8.
Answer: D
9.
Answer: B
10.
Answer: B
11.
Answer: A
12.
Answer: B
13.
Answer: A
14.
Answer: D
15.
Answer: C
16.
Answer: C
17.
Answer: D
18.
Answer: B
19.
Answer: A
20.
Answer: A

21.
Answer: A
22.
Answer: B
23.
Answer: D
24.
Answer: A