

HOME WORK 8
CHAPTER 8

Name _____

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

- 1) Lattice energy is _____. 1) _____
A) the energy required to convert a mole of ionic solid into its constituent ions in the gas phase
B) the sum of electron affinities of the components in an ionic solid
C) the energy required to produce one mole of an ionic compound from its constituent elements in their standard states
D) the sum of ionization energies of the components in an ionic solid
E) the energy given off when gaseous ions combine to form one mole of an ionic solid
- 2) The type of compound that is most likely to contain a covalent bond is _____. 2) _____
A) a solid metal
B) one that is composed of a metal from the far left of the periodic table and a nonmetal from the far right of the periodic table
C) one that is composed of only nonmetals
D) held together by the electrostatic forces between oppositely charged ions
E) There is no general rule to predict covalency in bonds.
- 3) In which of the molecules below is the carbon-carbon distance the shortest? 3) _____
A) $\text{H}_3\text{C}-\text{CH}_3$
B) $\text{H}_2\text{C}=\text{CH}_2$
C) $\text{H}-\text{C}\equiv\text{C}-\text{H}$
D) $\text{H}_3\text{C}-\text{CH}_2-\text{CH}_3$
E) $\text{H}_2\text{C}=\text{C}=\text{CH}_2$
- 4) The Lewis structure of N_2H_2 shows _____. 4) _____
A) each nitrogen has one nonbonding electron pair
B) each hydrogen has one nonbonding electron pair
C) a nitrogen-nitrogen triple bond
D) each nitrogen has two nonbonding electron pairs
E) a nitrogen-nitrogen single bond
- 5) In the nitrite ion (NO_2^-), _____. 5) _____
A) both bonds are single bonds
B) there are 20 valence electrons
C) one bond is a double bond and the other is a single bond
D) both bonds are the same
E) both bonds are double bonds
- 6) Based on the octet rule, boron will most likely form a _____ ion. 6) _____
A) B^{3-} B) B^{2-} C) B^{2+} D) B^+ E) B^{3+}
- 7) A valid Lewis structure of _____ cannot be drawn without violating the octet rule. 7) _____
A) CO_2 B) ICl_5 C) SO_2 D) SiF_4 E) NI_3

- 8) Of the bonds C-C, C=C, and C≡C, the C-C bond is _____. 8) _____
- A) weakest/shortest
 - B) strongest/shortest
 - C) strongest/longest
 - D) intermediate in both strength and length
 - E) weakest/longest
- 9) As the number of covalent bonds between two atoms increases, the distance between the atoms _____ and the strength of the bond between them _____. 9) _____
- A) increases, increases
 - B) decreases, decreases
 - C) increases, decreases
 - D) decreases, increases
 - E) is unpredictable
- 10) Of the possible bonds between carbon atoms (single, double, and triple), _____. 10) _____
- A) a single bond is stronger than a triple bond
 - B) a double bond is longer than a triple bond
 - C) a single bond is stronger than a double bond
 - D) a triple bond is longer than a single bond
 - E) a double bond is stronger than a triple bond