

Unit 2 Bonding AP chem solutions MCQ -set 2

Molecular and Ionic Compound Structure and Properties

Multiple Choice VI

Name: \_\_\_\_\_

**CALCULATORS CANNOT BE USED IN THIS SECTION**

1. A bond between which two elements is most polar?  
(A) N – O  
(B) B – F  
(C) F – F  
(D) B – O  
—
2. Which of the following molecules has the largest dipole moment?  
(A) CO<sub>2</sub>  
(B) NF<sub>3</sub>  
(C) PH<sub>3</sub>  
(D) H<sub>2</sub>O  
—
3. Which of the following compounds has the highest melting point?  
(A) LiF  
(B) NaF  
(C) KF  
(D) BeF<sub>2</sub>  
—
4. The central atom in a molecule displays sp<sup>2</sup> hybridization. What shape do the charge clouds make?  
(A) Linear  
(B) Trigonal Planar  
(C) Tetrahedral  
(D) Trigonal pyramidal  
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5. Which of the following structures has two lone pairs around the central atom?  
(A) BrF<sub>3</sub>  
(B) XeF<sub>2</sub>  
(C) BrF<sub>5</sub>  
(D) O<sub>3</sub>  
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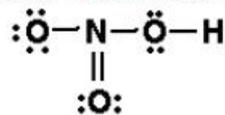
6. A single bond between which two atoms would have the longest bond length?  
(A) Si – N  
(B) Si – Cl  
(C) Si – Br  
(D) Si – I
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7. Which of the following compounds is most ionic in character?  
(A)  $\text{Al}_2\text{Cl}_3$   
(B)  $\text{NO}_2$   
(C)  $\text{PF}_3$   
(D)  $\text{KF}$
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Questions 8 – 10 refer to the following choices.

- (A) Bonds result from electrostatic forces of attraction between cations and anions.  
(B) The entire structure is held together with sigma bonds.  
(C) The structure is held together with sigma bonds and a  $\pi$  bond.  
(D) The structure contains two double bonds.
8.  $\text{C}_2\text{H}_4$
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9.  $\text{CO}_2$
- 
10.  $\text{RbF}$
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11. Calculate the formal charge on the nitrogen atom in the following structure.



- (A) +2  
(B) +1  
(C) 0  
(D) -1