Ch. 10 Practice Questions

1) How many bonding electrons are in the Lewis structure of N_2?
   A) 4
   B) 3
   C) 6
   D) 2
   E) none of the above

2) What is the correct Lewis structure for CN^-?
   A) $[C–N]^-$
   B) [: C≡ N :]$^-$

   ..   ..
   C) [: C – N :]$^-$
   ..   ..

   ..   ..
   D) [C = N :]$^-$
   ..

   E) none of the above

3) Which one of the following molecules is NOT capable of having resonance structures?
   A) SeO_2
   B) SO_2
   C) O_3
   D) H_2O
   E) none of the above

4) What is the angle between electron groups in the linear electron geometry?
   A) 120°
   B) 180°
   C) 90°
   D) 109.5°
   E) not enough information

5) What is the electron geometry if you have 3 electron groups around the center atom?
   A) tetrahedral
   B) linear
   C) trigonal bipyramidal
   D) trigonal planar
   E) not enough information

6) What is the molecular geometry if you have a double bond, a single bond and 1 lone pair around the central atom?
   A) bent
   B) linear
   C) tetrahedral
   D) trigonal pyramidal
   E) not enough information

7) What is the molecular geometry of ozone, O_3?
   A) bent
   B) linear
   C) tetrahedral
   D) trigonal pyramidal
   E) not enough information

8) The electron geometry and the molecular geometry of ammonia (NH_3) are, respectively:
   A) tetrahedral, trigonal pyramidal.
   B) trigonal planar, bent.
   C) tetrahedral, tetrahedral.
   D) tetrahedral, bent.
   E) none of the above

9) The elements with the highest electronegativity values tend to be found in the:
   A) lower right–side of the periodic table.
   B) upper right–side of the periodic table.
   C) upper left–side of the periodic table.
   D) center of the periodic table.
   E) lower left–side of the periodic table.

10) Which molecule listed below has a nonpolar covalent bond?
   A) H_2
   B) NaCl
   C) H_2O
   D) all of the compounds
   E) none of the compounds

11) Which of the following statements about the water molecule is TRUE?
   A) A water molecule is symmetrical and therefore is nonpolar.
   B) A water molecule is asymmetric and therefore is polar.
   C) The electronegativities of hydrogen and oxygen are equal and therefore a water molecule is nonpolar.
   D) A water molecule has two dipole moments and they cancel each other.
   E) none of the above

12) Which of the following statements are TRUE about the BF_3 molecule?

A) BF_3 violates the octet rule for the central atom.

B) BF_3 has a trigonal planar molecular geometry.

C) BF_3 is nonpolar.

D) All of the above statements are true.

E) None of the above are true.

13) Consider the following electronegativity values: H = 2.1 , Cl = 3.0 , F = 4.0
Which molecule below would you expect to have the more polar bond?

A) HF B) F_2 C) HCl D) Cl_2 E) H_2

Answer Key
Testname: PRACTICEQ_CH10

1) C
2) B
3) D
4) B
5) D
6) A
7) A
8) A
9) B
10) A
11) B
12) D
13) A