**Deadline for CH320/328M POW 1: Sep 10 @ 3:00 PM**

Multiple Choice

Circle the choice that best completes the statement or answers the question. There is only one correct response for each question. All of these topics are covered in Chapter 1 of your text.

1. What is the ground-state electronic configuration of a fluorine atom (fluorine: atomic number 9)?
   a. $1s^12s^12p^7$
   b. $1s^22s^22p^5$
   c. $1s^22s^22p^6$
   d. $1s^02s^22p^7$

2. What is the ground-state electronic configuration of a sodium cation (sodium: atomic number 11)?
   a. $1s^22s^22p^63s^1$
   b. $1s^22s^22p^53s^1$
   c. $1s^22s^22p^6$
   d. $1s^22s^22p^63s^2$

3. Which of the following is a primary amine?
   a. $CH_3CH_2NHCH_3$
   b. $CH_3CH_2NHCH(CH_3)_2$
   c. $CH_3CH_2N(CH_3)_2$
   d. $(CH_3)_3CNH_2$

4. What is the approximate C–C–C bond angle in propyne, $HC\equiv CCH_3$?
   a. 90°
   b. 109°
   c. 120°
   d. 180°

5. Which of the following elements has the highest electronegativity?
   a. N
   b. C
   c. O
   d. S

6. Which of the following bonds has the smallest dipole moment?
   a. Li–Cl
   b. C–H
   c. O–H
   d. H–Cl

7. Which of the following molecules has a molecular dipole?
   a. CO_2
   b. BF_3
   c. NH_3
   d. CH_4

8. Which of the following statements is *not* true about the carbonate anion, $CO_3{}^{2-}$?
   a. All of the oxygen atoms bear the same amount of charge
   b. All of the carbon-oxygen bonds are the same length
   c. The carbon atom bears the negative charge
   d. It is basic

9. Which of the following resonance structures is the least important contributor to the resonance hybrid of the acetate anion, CH_3COO^-?
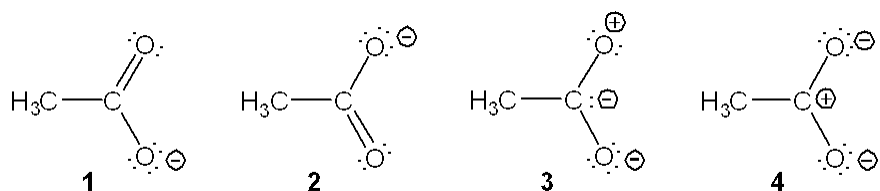
   a. 1
   b. 2
   c. 3
   d. 4

10. What is the approximate value of the H−C−H bond angles in a methyl cation, $CH_3{}^+$?
    a. 90°
    b. 109°
    c. 120°
    d. 180°