CHEM 1032 – Week 10 Questions

1. True or False: A weak base is weaker than it's conjugate acid.

2. If $Ca(NO_2)_2$ were added to water, would the solution be acidic, neutral, or basic?

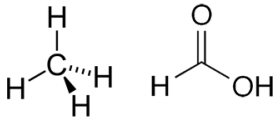
3. If NH_4Cl were added to water, would the solution be acidic, neutral, or basic?

4. If NH_4F were added to water, would the solution be acidic, neutral, or basic?

5. Which acid would be the weakest?
   a. H-X BE 565 kJ/mol
   b. H-Y BE 431 kJ/mol
   c. H-Z BE 364 kJ/mol

6. Which is the strongest weak acid?
   a. HOI
   b. HOCl
   c. HOBr

7. What is the only acidic proton in the two molecules below?



8. Which of the below is a polyprotic acid?
   a. CH_4
   b. $H_2C_2O_4$
   c. C_2H_6

9. What is the primary species in a H_3PO_4 solution?
   a. H_3PO_4
   b. $H_2PO_4^-$
   c. HPO_4^{2-}
   d. PO_4^{3-}

10. Which compound could accept the most protons?
    a. Cl^-
    b. SO_4^{2-}
    c. CO_3^{2-}

11. Which pair would be a buffer?
    a. NaOH + HCl
    b. CH_3COOH + $NaCH_3COOH$
    c. HNO_3 + KNO_2

12. What is the pH of a 100 mL solution which contains 0.100 M CH_3COOH and 0.100 M $NaCH_3COOH$? (Ka 1.754 x 10^{-5})