1. Identify acid or base, give its conjugate form

A) $HCO_3^- \rightarrow CO_3^{-2}$ B) $OH^- \rightarrow O^{2-}$ C) $H_2SO_4 \rightarrow SO_4^{2-}$

D) $H_2PO_4^- \rightarrow HPO_4^{-2}$

2. Compare acidity, order protons of molecules, explain what factor/effect.

a

$Hb < Hc < Ha$

b) $A < C < C < B < D <$

3. Mark the electrophilic and nucleo

A.

B. $H_2\ddot{N} - CH_3$

C.

nucleophile

3.44
CH_3 5.25

O - electrophile
CH_3 - nucleo - H_3C

CH_3 - nucleophile
H_2N - eletrophilic

CH_2 & H_2C electrophile

4 Convert between Ka and pKa

a) $Ka = 3.0 \times 10^{-6} \rightarrow PKa = 5.5$ b. $Ka = 10^{-15} \rightarrow PKa = 15$

c) $PKa = 8 \rightarrow 3.3 \times 10^{-3}$ d. $PKa = -3 \rightarrow 4.9 \times 10^{-1}$

5. Identify Lewis acid and base, draw the electron move arrow, and predict the reaction products