

CHEM105 Quiz 9*Name on back only please.....**Please show all equations and all work to receive any credit*

- Write the reaction with water that occurs for each of these. Show the phases of all reactions and products and draw the complete Lewis structures for all products and reactants under each formula.
 - CN^-
 - H_2CO_3
 - CH_3NH_2
 - CCl_3COOH
- An HCN solution was found to have a pOH of 5.60 at a temperature of 298 K. Calculate the hydronium ion concentration and the hydroxide ion concentration for this solution. The pK_a for HCN is 9.31, the K_a for HCN is 4.9×10^{-10} .
- The pK_b for $\text{C}_2\text{H}_5\text{NH}_2$ is 3.19. Calculate the hydronium ion concentration for a mixture that contains 0.10 M of $\text{C}_2\text{H}_5\text{NH}_2$ and 0.25 M of $\text{C}_2\text{H}_5\text{NH}_3^+$. Explain whether your answer makes sense.