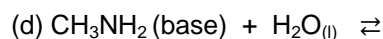
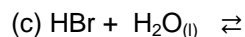
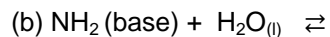
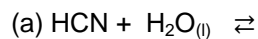


Brønsted/Lowry Theory Practice Acid Base Questions

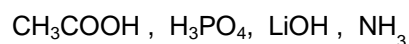
1. In a weak acid (HA) solution, how do the number of HA molecules compare to the number of H^+ ions present?

2. Write a balanced equation for the ionization of :



3. Arrange the following 1.0 M solutions in order of **decreasing** pH.

(Hint: what are their K_a 's? *When molarities are equal, stronger acid = lower pH*)

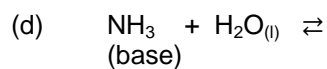
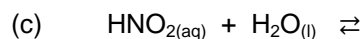
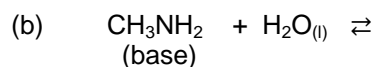
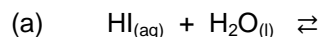


Highest pH

Lowest pH

4. What kind of relationship is there between the $[H^+]$ and $[OH^-]$? Explain...

5. Complete the following ionization reactions:



6. Give an example of :

(a) a strong acid _____

(b) a strong base _____

(c) a weak base _____

7. Give the conjugate base for:

(a) H_3PO_4 _____

(b) HCO_3^- _____

8. Give the conjugate acid for:

(a) OH^- _____

(b) SO_4^{2-} _____

9. Rank the following 1.0 M solutions in order of **increasing** pH:

LiOH, HF, H₂S, HBr

_____ *lowest* *highest* _____

10. Give the conjugate base for:

(a) H₂SO₄ _____

(b) HCOOH _____

11. Give the conjugate acid for:

(a) NH₃ _____

(b) CO₃²⁻ _____

12. Rank the following 1.0 M solutions in order of **increasing** pH:

HClO₄, HF, NH₃, H₂CO₃

_____ *lowest* *highest* _____