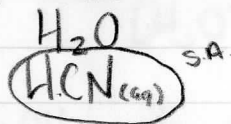


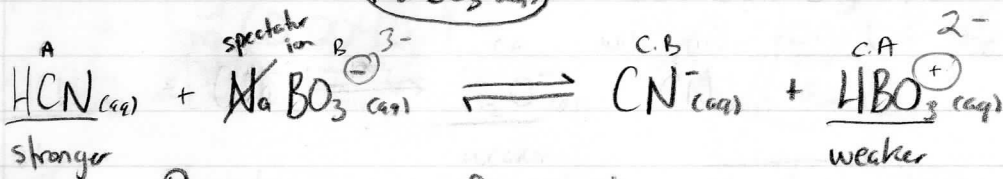
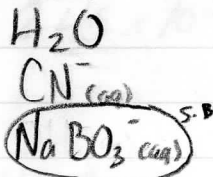
11. In the first reaction above the reaction will shift to the left, favouring the reactants. This is because equilibrium always shifts towards the weaker acid which in this case  $\text{H}_2\text{S}$  is weaker than  $\text{H}_3\text{O}^+$ .

In the second reaction above the reaction will shift to the right, favoring the products. This is because HF is the stronger acid than  $\text{H}_2\text{PO}_4^-$ .

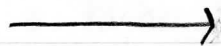
12. a) Acids



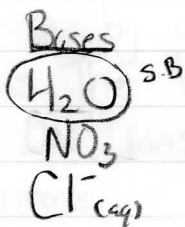
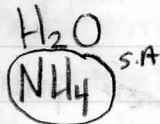
Bases



Products are favoured



b) Acids



Reactants are favoured.

