	Marks
	5

- Consider the following equation.

$$HBrO(aq) \ + \ NH_3(aq) \ \rightleftharpoons \ BrO^-(aq) \ + \ NH_4^+(aq)$$
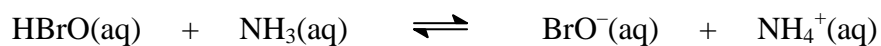
Name all of the species in this equation.

HBrO	
BrO$^-$	
NH$_3$	
NH$_4^+$	

Complete the following table by giving the correct pK_a or pK_b value where it can be calculated. Mark with a cross (✗) those cells for which insufficient data have been given to calculate a value.

Species	HBrO	NH$_3$	BrO$^-$	NH$_4^+$
pK_a of acid	8.64			
pK_b of base		4.76		

Determine on which side (left or right hand side) the equilibrium for the reaction above will lie. Provide a brief rationale for your answer.