Acids Practice 1

State and explain whether the species in **bold** in each equation is acting as an acid or a base.

1 $NH_3(aq)$ + **$H_2O(l)$** ⇌ $NH_4^+(aq)$ + $OH^-(aq)$

$H_2O(l)$ is a(n)…… because……..

……..

2 $CH_3COOH(aq)$ + **$H_2O(l)$** ⇌ $CH_3COO^-(aq)$ + $H_3O^+(aq)$

$H_2O(l)$ is a(n)…… because……

……..

3 $CH_3COOH(aq)$ + **$NH_3(aq)$** ⇌ $CH_3COO^-(aq)$ + $NH_4^+(aq)$

$NH_3(aq)$ is a(n)…… because……...

……..

4 $H_2SO_{4(aq)}$ + **$H_2O(l)$** ⇌ $HSO_4^-(aq)$ + $H_3O^+(aq)$

$H_2O(l)$ is a(n)…… because……..

……..

5 **$HSO_4^-(aq)$** + $H_2O(l)$ ⇌ $SO_4^{2-}(aq)$ + $H_3O^+(aq)$

$HSO_4^-(aq)$ is a(n)…… because……..

……..

6 **$HCO_3^-(aq)$** + $HSO_4^-(aq)$ ⇌ $H_2CO_3(aq)$ + $SO_4^{2-}(aq)$

$HCO_3^-(aq)$ is a(n)…… because……..

……..

7 **$NH_4^+(aq)$** + $H_2O(l)$ ⇌ $H_3O^+(aq)$ + $NH_3(aq)$

$NH_4^+(aq)$ is a(n)…… because……

……..

8 **$CN^-(aq)$** + $H_2O(l)$ ⇌ $HCN(aq)$ + $OH^-(aq)$

$CN^-(aq)$ is a(n)…… because……

……..

9 **$CH_3COO^-(aq)$** + $HCl(aq)$ ⇌ $CH_3COOH(aq)$ + $Cl^-(aq)$

$CH_3COO^-(aq)$ is a(n)…… because……

……..

10 **$HPO_4^{2-}(aq)$** + $HSO_4^-(aq)$ ⇌ $H_2PO_4^-(aq)$ + $SO_4^{2-}(aq)$

$HPO_4^{2-}(aq)$ is a(n)…… because……..

……..