

- Rank $\text{H}_2\text{O}(\text{l})$, $\text{H}_2\text{S}(\text{aq})$ and $\text{HF}(\text{aq})$ in order of their Brønsted acid strengths. Explain your reasoning.

Marks
2

- Buffer systems are frequently used in chemistry. Briefly describe a buffer system and how it functions? Use equations where appropriate.

4

What ratio of concentrations of acetic acid to sodium acetate would you require to prepare a buffer with $\text{pH} = 4.00$? The K_a of acetic acid is 1.8×10^{-5} M.

Answer: