

Buffers

Pre-lesson assignment: Textbook page 332-334

Define the following terms

- Buffer solution

Make notes on buffer solutions

Use the following questions as guidance

1. What are the main components of a buffer solution?
2. Outline how a buffer solution can be made
 - a. From a weak acid and its salt
 - b. From neutralisation of the weak acid.
3. Referencing le Chatelier
 - a. Show that in a buffer solution an equilibrium is set up between the two components.
 - b. Explain the effect of increasing the concentration of H^+ on the other components.
 - c. Explain the effect of decreasing the concentration of H^+ on the other components.
 - d. Explain why a buffer solution causes the H^+ concentration to remain more or less the same.
 - e. What causes the buffer solution to lose its ability to buffer?
4. What is the relationship between pK_a and pH in a buffer system?
5. What is the operating pH of a buffer?