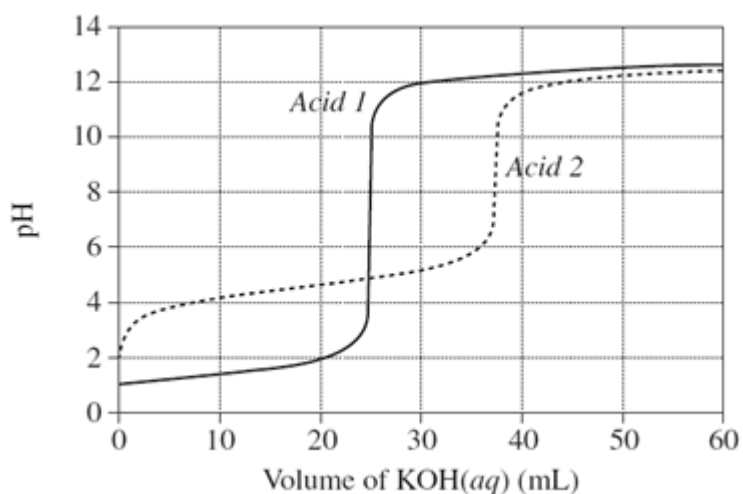


Friday Worksheet

Name:

Volumetric 2

1) The graph below shows changes in pH for the titrations of equal volumes of solutions of two monoprotic acids, Acid 1 and Acid 2.



a) Explain the differences between Acid 1 and Acid 2 in terms of their relative strengths and concentrations.

Acid 1 is a relatively strong acid and its solution is not as concentrated as the solution with acid 2

Acid 2 is a relatively weak acid and its solution is more concentrated than the solution with acid 1

b) Name the salt produced by the reaction of ethanoic acid with KOH(aq).

potassium ethanoate (CH₃COOK)

c) Calculate the concentration of hydrogen ions when 20 mL of KOH(aq) has been added to Acid 1.

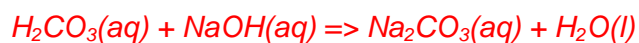
The pH of the solution is 2

The [H₃O⁺] = 10⁻² = 0.01M

d) Why would phenolphthalein be a suitable indicator for both titrations?

Because the pH range in which phenolphthalein changes colour is where the equivalence points of both titrations are situated within.

e) A student was heard to say "At the end of the titration we have reached the "neutral point" . Explain why is this term best avoided using the titration of a solution of carbonic acid against a 0.100M NaOH.



At the equivalence point the pH of the solution will be higher than pH 7 because of the presence of CO_3^{2-} ions which act as a weak base.

f) What is the difference between a strong acid and a concentrated acid?

The term strong refers to the extent of ionisation while the term concentrated refers to the amount, in mol, of acid molecules per volume of solution.

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