
Question 21 (3 marks)

A 0.001 mol L^{-1} solution of hydrochloric acid and a 0.056 mol L^{-1} solution of ethanoic acid both have a pH of 3.0.

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Why do both solutions have the same pH?

The ethanoic acid can not completely ionise but 0.056 mol L^{-1} is more concentrated than 0.001 mol L^{-1} . In the hydrochloric acid, the molecular completely ionise. ~~It~~ It ~~have~~ has the same amount of $[\text{H}^+]$ of 0.001 mol L^{-1} ethanoic acid. ~~So~~ ~~this~~ This two acid have the same pH because they have the same concentration of $[\text{H}^+]$.