Question 21 (3 marks)

A 0.001 mol L^{-1} solution of hydrochloric acid and a 0.056 mol L^{-1} solution of   **3**
ethanoic acid both have a pH of 3.0.

Why do both solutions have the same pH?

HCl and ethanoic acid are both acids which
means they have a high concentration of
hydronium ions. Their molar concentrations –
0.001 mol L^{-1} and 0.056 mol L^{-1} are very close
to each other, so therefore you would
expect the pH to be around the same, if
not exactly the same. Also because they
are both acids, that means that both will
be in the low half of the pH scale.