STRONG AND WEAK ACIDS

1. Use hydrochloric acid and ethanoic acid, CH_3COOH, to help you to explain what is meant by a strong acid and a weak acid.

2. a) Define pH.

   b) Work out the pHs of the following solutions of strong acids

      (i) 0.200 mol dm^{-3} hydrochloric acid

      (ii) 0.0100 mol dm^{-3} nitric acid

      (iii) 1.00 mol dm^{-3} hydrochloric acid

3. a) Write an equation showing the equilibrium which occurs when ethanoic acid dissolves in water.

   b) Write an expression for K_a for ethanoic acid.

   c) Define pK_a.

   d) The value for K_a for ethanoic acid is 1.74×10^{-5} mol dm^{-3} (to 3 significant figures). What is the value of pK_a?

   e) Two acids have the following values for K_a:

      acid A: 6.32×10^{-5} mol dm^{-3}
      acid B: 1.50×10^{-4} mol dm^{-3}

   Which is the stronger acid?

   f) Two different acids have the following values for pK_a:

      acid C: 3.24
      acid D: 5.66

   Which is the stronger acid?