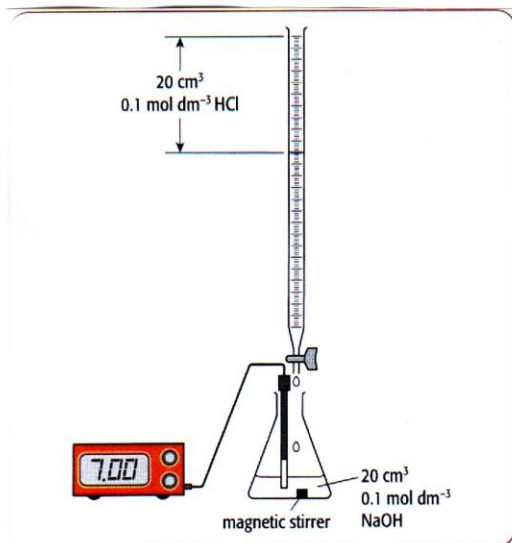


Monitoring pH change (A2)

The apparatus used to follow the changes in pH when a base is titrated with an acid are as below:



Measuring the pH change during the titration of sodium hydroxide with hydrochloric acid.

The procedure:

- set up the apparatus with the pH electrode connected to the computer via a data logger.
- switch on the magnetic stirrer.
- deliver the acid at a constant slow rate from the burette to the alkali in the conical flask.
- stop the titration when the pH has reached a nearly constant low value.

The pH of the reaction mixture can also be monitored manually.

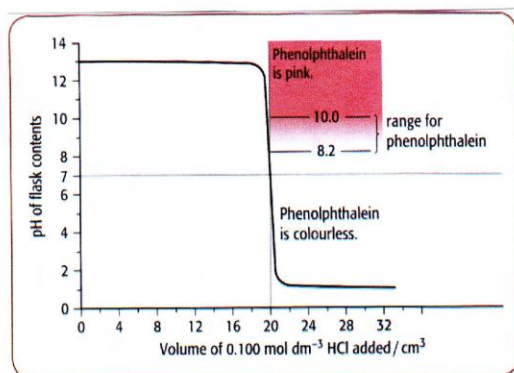
Record the pH of the content in the conical flask after fixed volumes of acid have been added.

The graphs recorded on the computer or drawn by hand show how pH varies with the volume of acid added.

The shapes of these graphs are characteristic and depend on whether the acid and base used in the titration are strong or weak.

Example:

The pH changes when $0.100 \text{ mol dm}^{-3}$ sodium hydroxide (a strong base) is titrated with $0.100 \text{ mol dm}^{-3}$ hydrochloric acid (a strong acid)



A strong acid-strong base titration