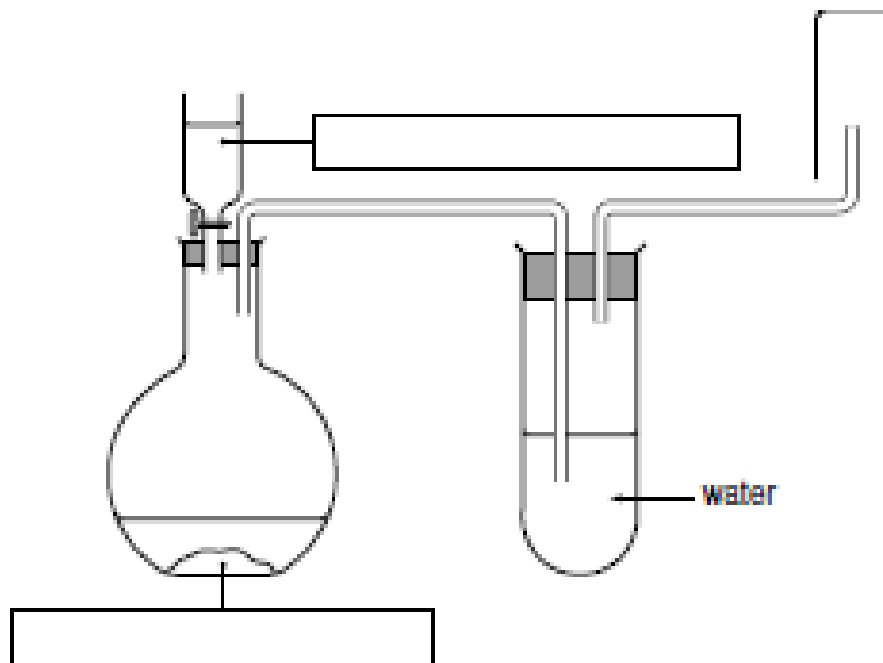


PRACTICE EXERCISE 3

Hydrogen chloride gas is strong-smelling, denser than air and soluble in water. A sample of hydrogen chloride gas can be prepared by adding concentrated sulphuric acid to sodium chloride. Study the diagram of the apparatus used.



(a) Fill in the boxes to show the chemicals used. [2]

(b) Identify and explain two mistakes in the diagram.

Mistake 1 [2]

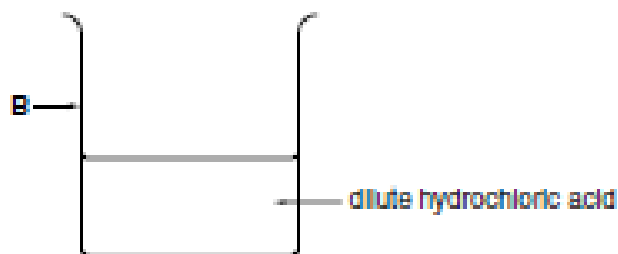
Mistake 2 [2]

(c) State one precaution that should be taken when carrying out this experiment.

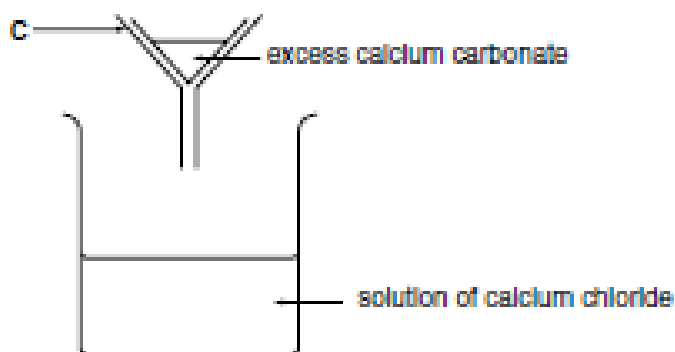
..... [1]

A student investigated the neutralisation of dilute hydrochloric acid, using an excess of calcium carbonate.

Step 1 Excess calcium carbonate was added to hydrochloric acid.



Step 2. Excess calcium carbonate was removed from the solution.



Step 3. The solution of calcium chloride was tested with Indicator paper.

(a) Identify the pieces of apparatus labelled:

A.....[3]

B.....[3]

C.....[3]

(b) What does the term *excess* mean?

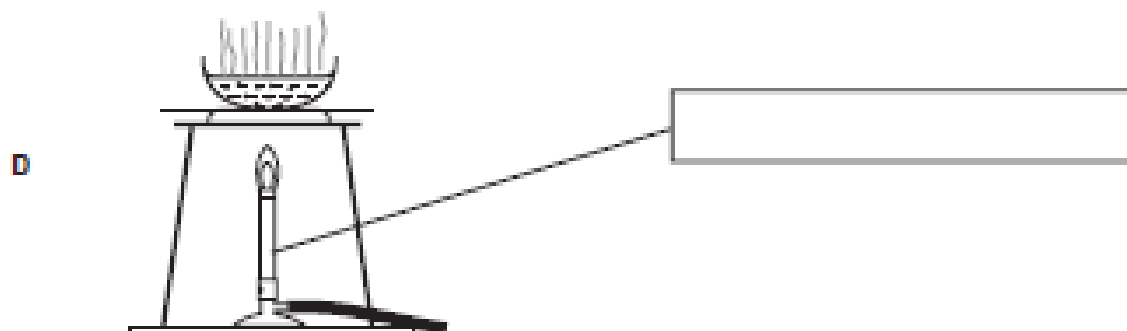
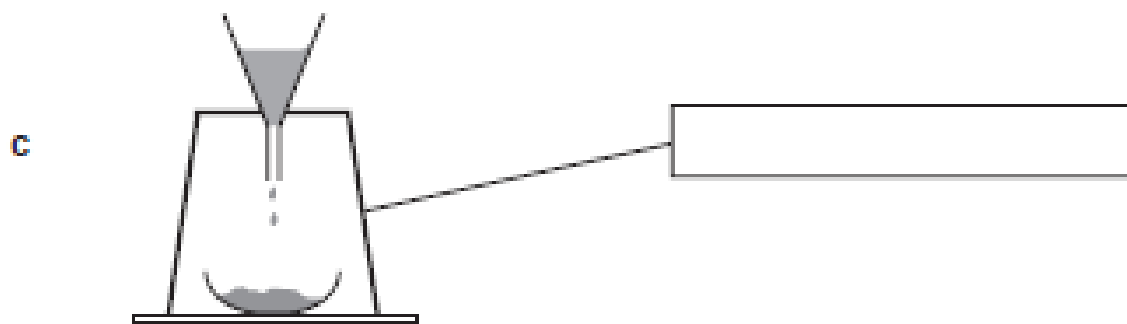
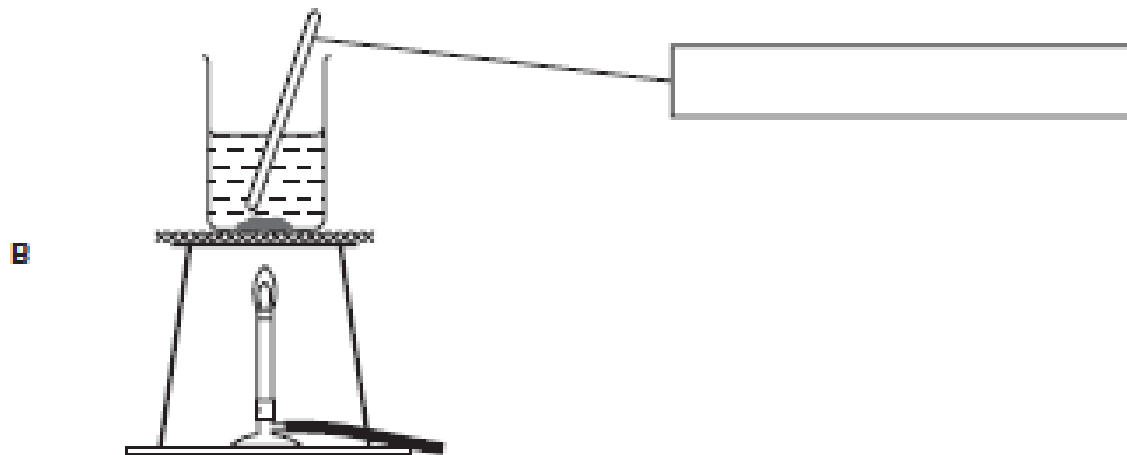
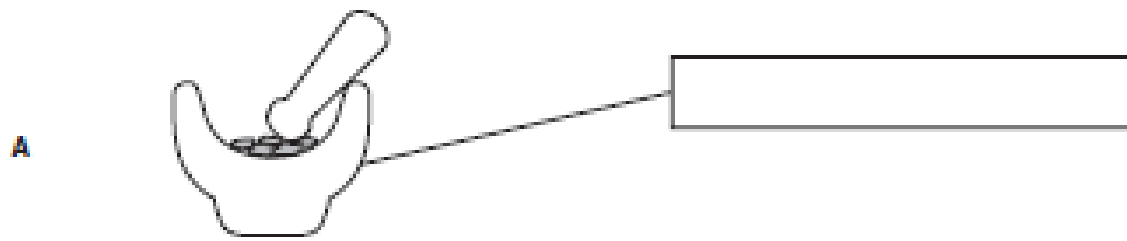
.....[1]

.....[1]

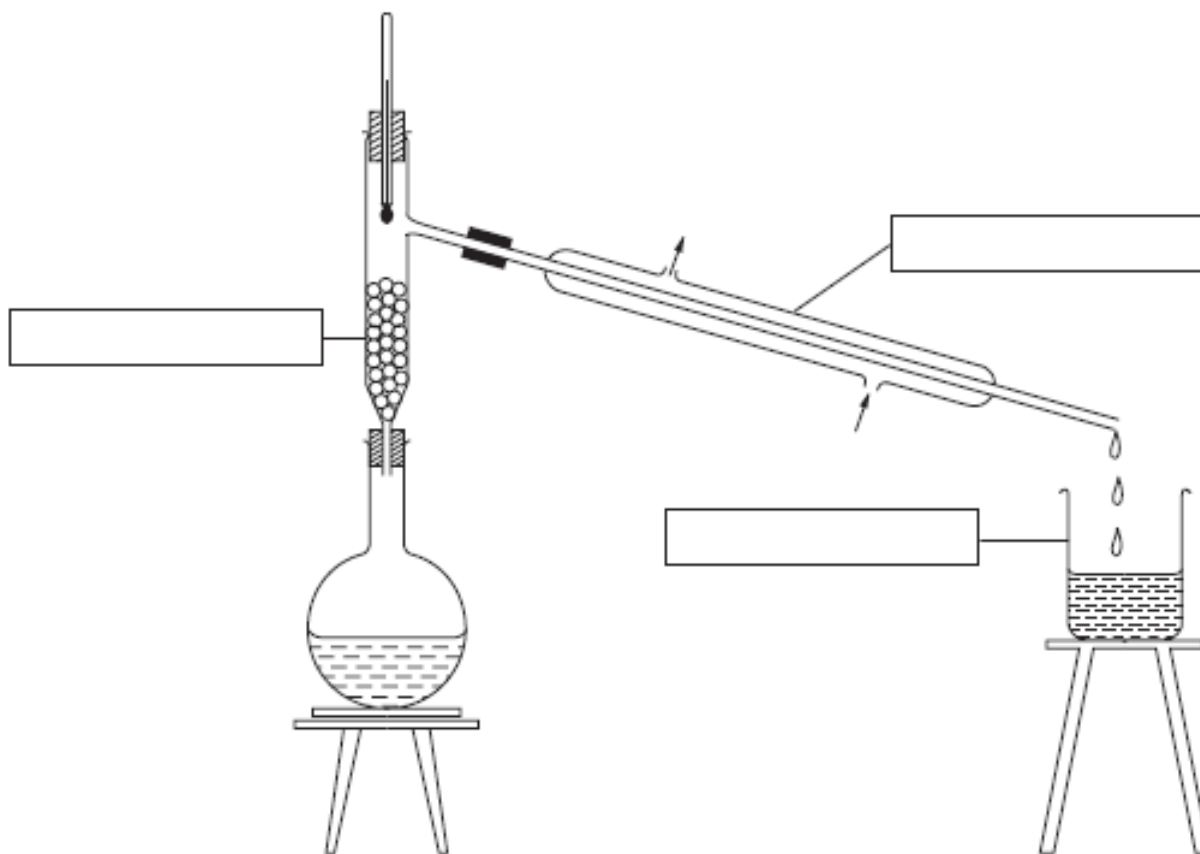
(c) Suggest the pH value of the solution of calcium chloride.

.....[1]

1 Look at the diagrams of common laboratory apparatus.



1 The apparatus below was used to separate ethanol from water.

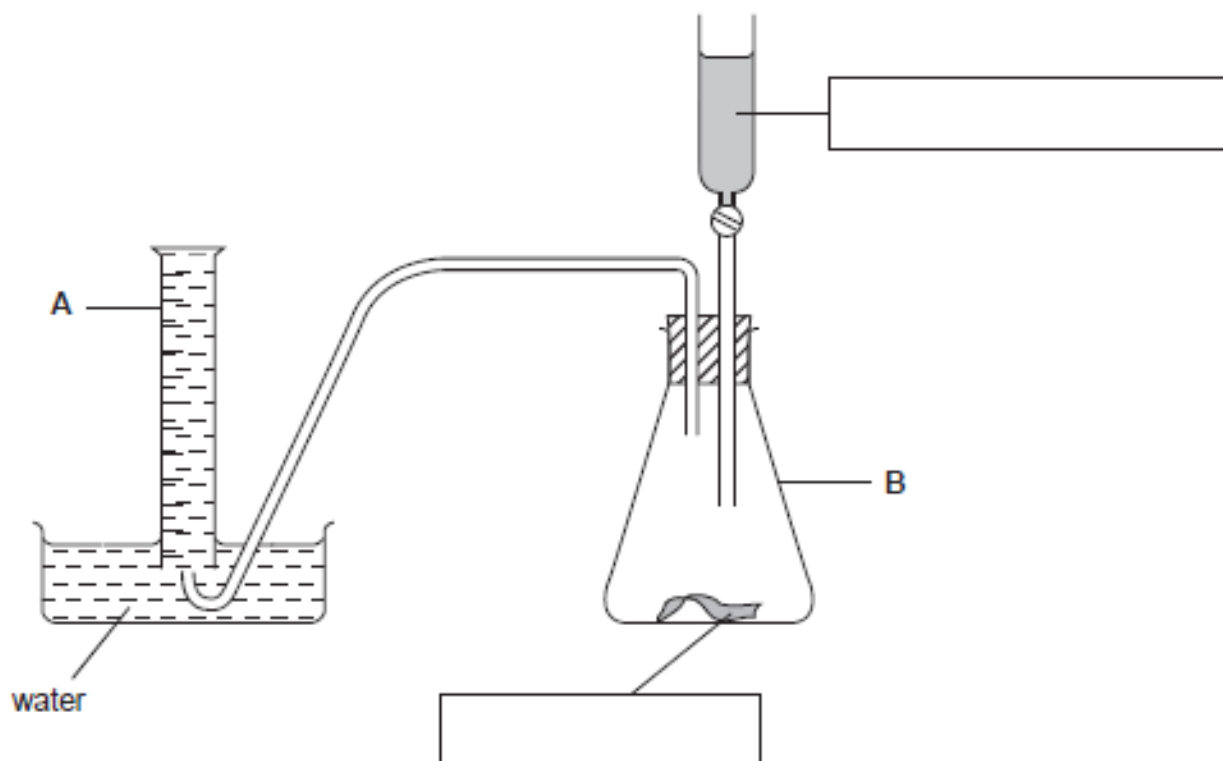


(a) Complete the empty boxes to name the pieces of apparatus. [3]

(b) Indicate by an arrow where heat is applied. [1]

(c) Name this separation process.
.....[2]

The apparatus below was used to make hydrogen. Dilute hydrochloric acid was added to zinc.



(a) Identify the pieces of apparatus labelled

A,

B, [2]

(b) Complete the boxes

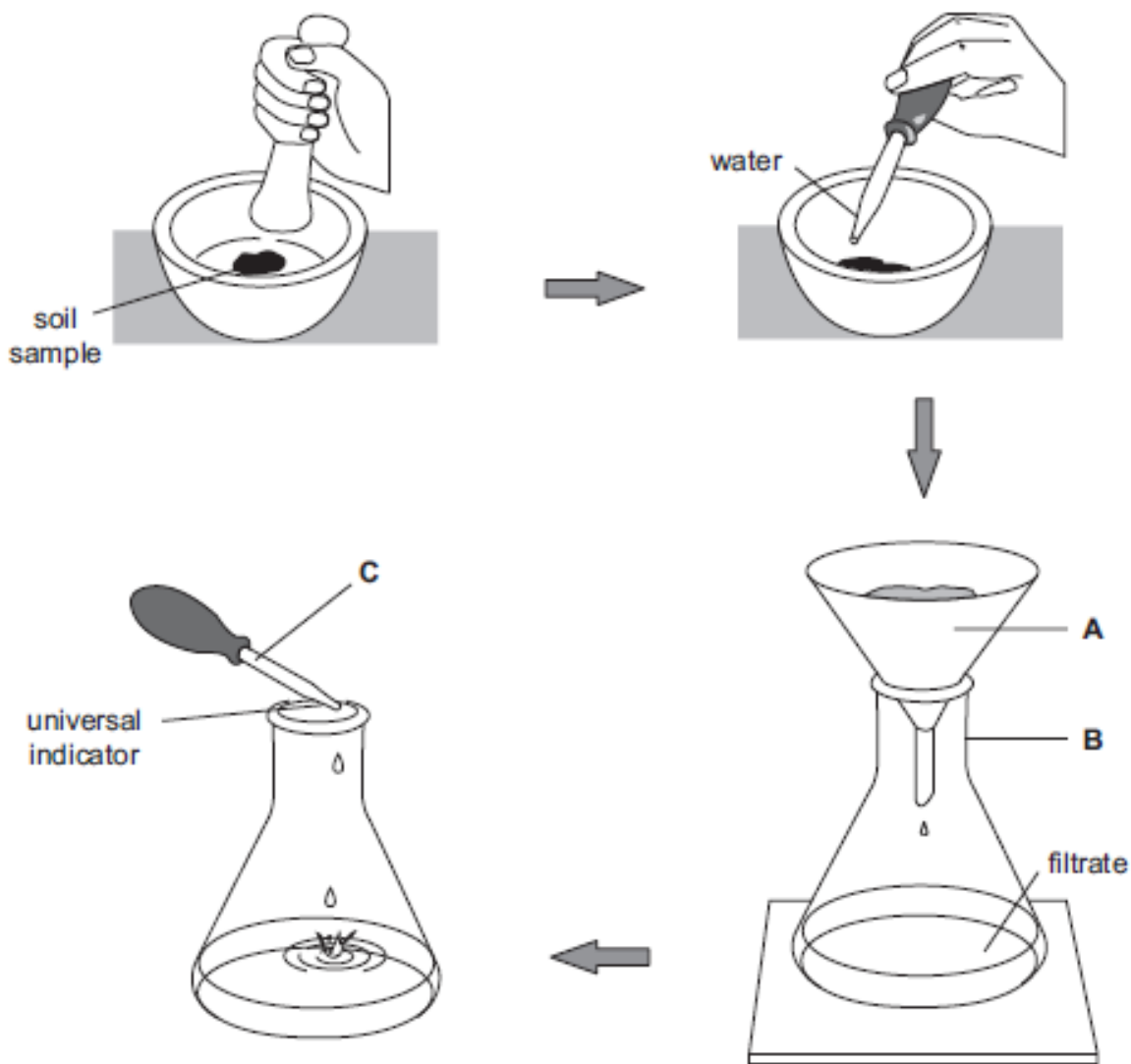
[1]

(c) Give a test for hydrogen.

test

result [2]

An experiment was carried out to find the pH of samples of soil from a farmer's field.



(a) Identify the pieces of apparatus labelled

A,

B,

C, [3]

(b) Why was the soil crushed?

.....

..... [2]

(c) Why should soil samples be taken from different parts of the field?

.....
..... [1]

(d) Suggest why it is important to know the pH of soil.

..... [1]