

PARKLANDS SECONDARY SCHOOL

SCIENCE(CHEMISTRY) ASSIGNMENT

GRADE 10

1. The experiment below is a reaction of ammonium chloride and solution X and later heated and gas Y evolves, water, and sodium chloride are product

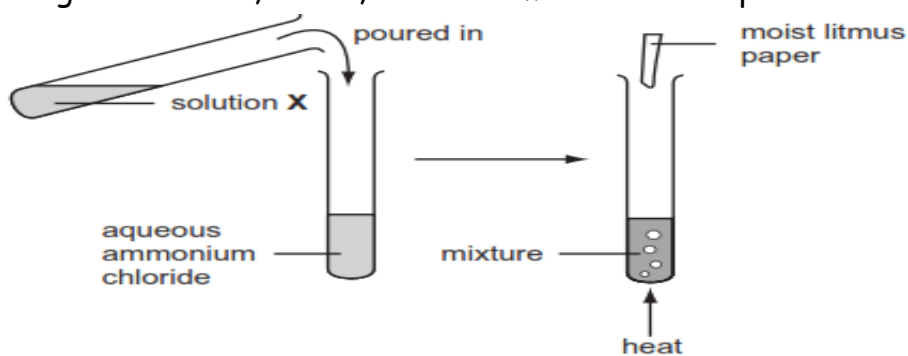


Figure.1

(a) Name gas Y and solution X in figure above

Gas Y _____

Solution X _____ [2]

Write a word equation and chemical equation for the reaction of solution x and aqueous ammonium chloride.

Word equation

_____ [1]

Chemical equation (include state symbols)

_____ [1]

Name one substance which can be used as a drying agent in the reaction in order to collect dry gas X

_____ [1]

(d) Explain the changes to be observed on moist red litmus when gas Y comes in contact with it

_____ [1]

(e) Why is gas X not collected over water?

_____ [1]

2. Study the reaction displayed in figure 2 for a metal carbonate and dilute acid in experiment A.

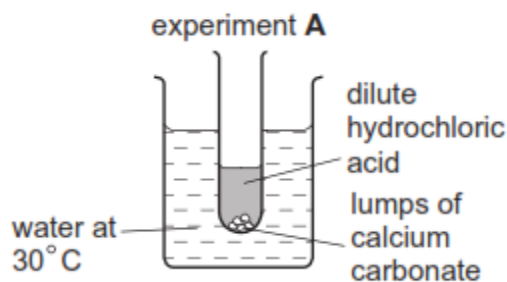


Figure.2

(a) Write a chemical equation for the reaction between lumps calcium carbonate and dilute hydrochloric acid (include state symbols)

_____ [2]

(b) Name the gas and salt produced in the figure2 .

Gas _____

Salt _____

[2]

(c) How can you test for the gas produced in figure 2?

_____ [1]

(d) What was the purpose of heating the hydrochloric acid?

_____ [1]

(d) In figure 2 above the reaction is a neutralisation reaction.

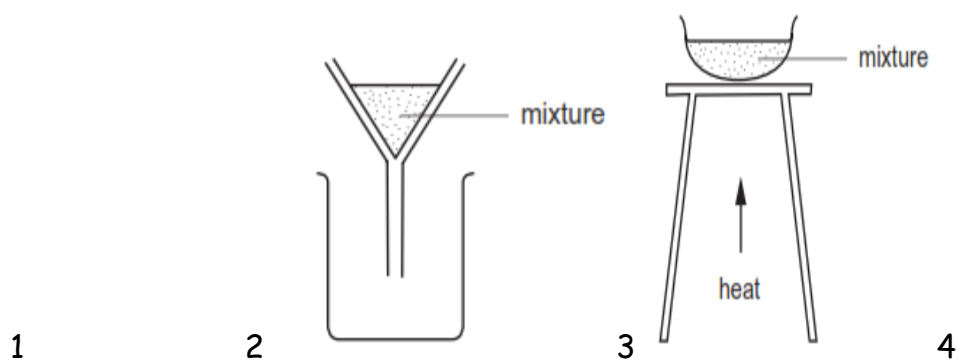
(i) What is meant by the term neutralisation?

_____ [1]

(e) Name two applications of neutralisation in everyday life.

i _____
ii _____ [2]

3. Below are stages in the preparation of a soluble salt using excess copper (ii) oxide and sulphuric acid



(a) Complete stage 1 and stage 4

(b) Name the residue collected in stage 2

_____ [1]

(c) Name the salt crystals contained in mixture in stage 3

_____ [1]

(d) What is the purpose of heating the mixture from stage 2?

_____ [1]

(e) Write a word equation for the reaction

_____ [1]

(f) Write a balanced chemical equation of reaction, include the state symbols

_____ [2]

(g) What is the purpose of stage 2 in preparation of salt?

_____ [1]

(h) Explain why excess copper (II) oxide was used

_____ [1]

4. A Grade 11 pupil dipped a strip of zinc metal into a beaker of warm dilute hydrochloric acid as shown in figure 4.

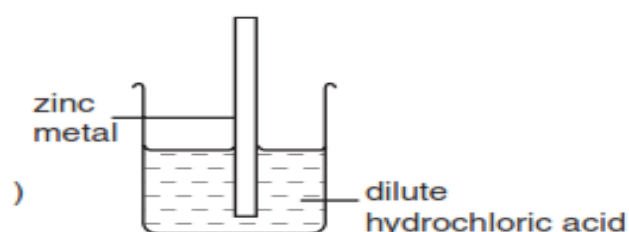


Figure 2

(a) Write a balanced chemical equation for the reaction above.

_____ [1]

(b) Write an ionic equation for the reaction above include state symbols

_____ [2]

(c) Name the gas produced

_____ [1]

(d) Give reason why was potassium metal is not used in this reaction

_____ [1]

5. Acid rains are mainly caused by human activities and natural activities such as volcanoes

(a) Name two gases which cause acidic rain

_____ [2]

(b) Name two substance which are a source of gases which cause acid rain

_____ [1]

(c) Suggest one ways in which acid rain can be controlled

_____ [1]

(d) Name two human activities which contribute to acid rain

_____ [2]

(e) Give two effect of acid rain to the environment

_____ [2]

6. Barium sulphate is an insoluble salt

(a) Define the term salt

_____ [1]

[1] (b) Describe how you can collect a dry sample of barium sulphate using potassium sulphate as one of the reagents

[5]

(b) Write a balanced chemical equation for the reaction include state symbols

_____ [1]

(c) Name the acid used to prepare potassium sulphate

_____ [1]

7. Tetrachloromethane is a covalent compound while calcium chloride is an ionic compound.

(a) Draw a structure of tetrachloromethane (CCl_4) using cross (x) and dot (•) to represent an electron

[2]

(b) Draw a structure of calcium chloride using cross (x) and dot (•) to represent an electron

[2]

(c) Compare two properties of tetrachloromethane and calcium chloride

i _____

ii _____
_____ [2]

8. Sodium hydroxide reacts with ethanoic acid (CH_3COOH) to form sodium ethanoate and water.

(a) Write a chemical equation for the reaction of sodium hydroxide and ethanoic acid

_____ [1]

(b) Write a balanced ionic equation for the reaction of sodium hydroxide and ethanoic acid

_____ [1]

(c) Give the reason why ethanoic acid is a weak acid

_____ [1]

(d)(i) Is ethanoic acid a dibasic acid or monobasic acid ?

_____ [1]

(ii) Give reason for your answer in d (i)

_____ [1]