Rewarding Learning

Centre Number

71	

Candidate Number

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2014

Chemistry

Assessment Unit AS 3

assessing

Module 3: Practical Examination

Practical Booklet A

[AC133]

WEDNESDAY 7 MAY, MORNING

ML

TIME

1 hour, plus your additional time allowance.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Answer **both** questions.
Write your answers in the spaces provided.

INFORMATION FOR CANDIDATES

The total mark for this paper is 22.
Question 1 is a practical exercise worth 8 marks.
Question 2 is a practical exercise worth 14 marks.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
A Periodic Table of Elements (including some data) is provided.
You may not have access to notes, textbooks and other material to assist you.

Question Number	Marks	
	Examiner Mark	Remark
1		
2		
Total Marks		

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1 Titration exercise

Examiner Mark	Remark

Calcium carbonate is present in some indigestion tablets.

You are required to carry out a back titration to find the mass of calcium carbonate in an indigestion tablet.

You are provided with:

Solution **A** made by reacting **two** indigestion tablets with 25 cm^3 of 2.0 $mol\,dm^{-3}$ hydrochloric acid and then making the solution up to 250 cm^3

A solution of 0.10 $mol\,dm^{-3}$ sodium hydroxide

Phenolphthalein indicator

To carry out the titration:

- rinse out the burette with the 0.10 $mol\,dm^{-3}$ sodium hydroxide solution
- fill the burette with the 0.10 $mol\,dm^{-3}$ sodium hydroxide solution
- transfer 25.0 cm^3 of solution **A** to the conical flask
- add 2–3 drops of phenolphthalein indicator to the solution in the conical flask and titrate until the end point is reached

Present your results in a suitable table and calculate the average titre.

Results table

[8]

2 Observation

Examiner Mark	Remark

Safety glasses should be worn at all times and care should be taken during this practical examination.

(a) You are provided with a mixture of two salts, labelled **B**, which have a common cation. Carry out the following tests on the mixture. Record your observations in the spaces below.

	Test	Observations
1	Place a spatula measure of **B** in a test tube and heat strongly. Bubble any gas given off through limewater.	[2]
2	Make a solution of **B** by dissolving a half spatula measure of **B** in a test tube one third full of dilute hydrochloric acid. Add 1 cm^3 of barium chloride solution to the test tube.	[1] [1]
3	Make a solution of **B** by dissolving a half spatula measure of **B** in a test tube one third full of deionised water. Add 1 cm^3 of magnesium sulfate solution to the test tube.	[1]
4	Make a solution of **B** by dissolving a quarter spatula measure of **B** in a test tube one third full of dilute nitric acid. Add 1 cm^3 of silver nitrate solution and then, in a fume cupboard, 1 cm^3 of concentrated ammonia solution.	[2]
5	Dip a nichrome wire loop in concentrated hydrochloric acid; touch **B** with the wire and then hold it in a blue Bunsen flame.	[1]

Examiner Mark	Remark

(b) You are provided with an organic liquid **C**. Carry out the following tests on the liquid. Record your observations in the spaces below.

	Test	Observations
1	Place 1 cm^3 of **C** in a test tube and add 1 cm^3 of deionised water.	[1]
2	Place 10 drops of **C** on a watch glass placed on a heatproof mat and ignite it using a burning splint.	[2]
3	In a fume cupboard add approximately 0.5 cm^3 of **C** to a test tube one quarter full of bromine water and mix well.	[2]
4	Place 1 cm^3 of **C** in a test tube. Add 2 cm^3 of potassium dichromate solution acidified by adding 2 cm^3 of dilute sulfuric acid. Warm the mixture gently, swirl, and leave to stand for 5 minutes.	[1]

THIS IS THE END OF THE QUESTION PAPER

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