Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2015

Centre Number

Candidate Number

Chemistry

Assessment Unit AS 3
assessing
Module 3: Practical Examination

Practical Booklet A

ML

[AC133]
FRIDAY 8 MAY, MORNING

TIME

1 hour 15 minutes, 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 24.
Question 1 is a practical exercise worth 8 marks.
Question 2 is a practical exercise worth 16 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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Safety glasses should be worn at all times and care should be taken during this practical examination.

Examiner Mark	Remark

1 Titration

You are required to titrate sodium hydroxide solution of unknown concentration against standard sulfuric acid solution.

You are provided with:

0.1 mol dm^{-3} sulfuric acid solution

sodium hydroxide solution of unknown concentration

phenolphthalein indicator

- Rinse out a burette with the 0.1 mol dm^{-3} sulfuric acid solution.
- Fill the burette with the 0.1 mol dm^{-3} sulfuric acid solution.
- Rinse out a pipette with the sodium hydroxide solution.
- Use the pipette and a pipette filler to put 25.0 cm^3 of the sodium hydroxide solution in the conical flask.
- Add 3 drops of phenolphthalein to the conical flask, and titrate with the 0.1 mol dm^{-3} sulfuric acid solution until the end point is reached.

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

[8]

Examiner Mark	Remark

2 Observation

You are provided with three unknown substances, solution **A**, solid **B** and liquid **C**. Carry out the tests described below and record your observations.

(a) Tests on solution **A**

	Test	Observations
1	Transfer 1 cm^3 of the solution **A** into each of three separate test tubes. **(a)** Add 5 drops of sodium hydroxide solution to the first test tube. **(b)** Add 5 cm^3 of sodium hydroxide solution to this test tube.	[2] [1]
2	Add 5 drops of barium chloride solution to the second test tube.	[2]
3	Add 5 drops of silver nitrate solution to the third test tube.	[1]

(b) Tests on solid **B**

	Test	Observations
1	Describe the appearance of **B**.	[1]
2	**(a)** Quarter fill a test tube with dilute ethanoic acid. Now add half a spatula measure of solid **B** to this test tube. **(b)** Use limewater to test any gas that is produced.	[2] [1]
3	Add a spatula measure of **B** to a dry boiling tube and heat.	[1]
4	Dip a clean nichrome wire loop into concentrated hydrochloric acid. Touch sample **B** with the wire, then hold it in a blue Bunsen flame.	[1]

(c) Tests on liquid **C**

Examiner Mark	Remark

N.B. The water bath should be filled with hot water from a kettle.

	Test	Observations
1	To 1 cm^3 of **C** in a test tube add 1 cm^3 of water.	[1]
2	Put 10 drops of **C** on a watch glass on a heatproof mat. Ignite it using a burning splint.	[1]
3	Add 10 drops of **C** to 2 cm^3 of acidified potassium dichromate solution in a test tube. Warm the mixture gently in a water bath.	[2]

THIS IS THE END OF THE QUESTION PAPER