

NAME.....

INDEX NO.....SIGNATURE.....

545/3
CHEMISTRY PRACTICAL
PAPER 3
JULY/AUGUST 2016
2 HRS

WESTERN JOINT MOCK EXAMINATIONS

Uganda Certificate of Education

CHEMISTRY

PAPER 3

2HOURS

INSTRUCTIONS TO CANDIDATES:

- Answer **all** questions.
- Record your answers in this question paper in the spaces provided.
- Mathematical tables and non- programmable scientific electronic calculators may be used.
- Reference books(i.e text books and books of qualitative analysis) should not be used

FOR EXAMINER'S USE ONLY		
QN1	QN2	Total

1. You are provided with solutions **FA₁** and **FA₂**.

FA₁ Contain 1.7g of hydroxide ion (OH⁻) per litre of solution.

FA₂ contain 6.4g of an acid **Q** per litre of solution. **Q** is a dibasic acid H₂Y

You are required to determine the molecular mass of the acid by carrying out the following experiment.

Procedure:

Pipette 25.0 (or 20.0) cm³ of **FA₁** in a conical flask. Add 2-3 drops of phenolphthalein indicator.

Titrate the mixture with **FA₂** from the burette. Repeat the procedure three times more to get consistent results. Record all readings in the table below

Results:

Volume of pipette used =cm³

Burette readings	1	2	3	4
Final readings/cm ³				
Initial readings/ cm ³				
Volume of FA ₂ used/cm ³				

Volumes used to make average =cm³

Average volume of **FA₂** =cm³

Questions

(a) Calculate the molarity of **FA₁**

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(b). Calculate the molarity of **FA₂**

.....

.....

.....

.....

.....

.....

.....

.....

.....

(c). Calculate the molecular mass of **Q**

.....

.....

.....

(d). Calculate the value of **Y**

.....

.....

.....

.....

2. You are provided with substance **X** which contains two cations and two anions. You are required to identify the cations and anions by carrying out the following tests. Identify gases.

TEST	OBSERVATIONS	DEDUCTIONS
(a). Heat a spatula end full of X in a dry test-tube gently then strongly		
(b). Dissolve two spatula end fulls of X in about 8cm ³ of distilled water. shake well , then filter and keep both filtrate and residue		
(c). Divide the filtrate into five parts.		
(i). To first part add aqueous		

sodium hydroxide drop-wise until in excess.		
(ii). To second part, add ammonia solution drop wise until in excess		
(iii). To third part, add three drops of potassium iodide solution		
(iv). To fourth part add five drops of lead (II)nitrate solution		
(v). To the fifth part add little dilute nitric acid followed by little barium nitrate solution		
(d). Wash the residue. Then add dilute nitric acid little by little until there is no further change		
Divide into three parts (i). To first part add sodium hydroxide solution drop-wise until in excess		
(ii). To second part add ammonia solution drop-wise until in excess.		
(iii). To third part add two drops of potassium iodide solution.		

(e) The cations are.....

The anions are.....

END