STUDENT'S NAME: ……

SCHOOL NAME: …… INDEX NUMBER ……

545/3
CHEMISTRY
Paper 3
(Practical)
July/Aug. 2022
2 Hours

ASK INTERGRATED TEACHERS' MOCK EXAMINATIONS BURREAU

AITEL JOINT MOCK EXAMINATIONS

Uganda Certificate of Education

CHEMISTRY

(PRACTICAL)

Paper 3

2 hours

INSTRUCTIONS TO CANDIDATES:

Answer **all** *questions*

Record your answers in this question paper in the spaces provided

Mathematical tables and non-programmable scientific calculators may be used

Reference books i.e. text books and books of qualitative analysis should ***not*** *be used*

FOR EXAMINERS USE ONLY		
QN 1	**QN 2**	**Total**

1. You are provided with the following

BA1 which is a solution made by dissolving 10.6g of sodium carbonate to make 1 litre.

BA2 which is a 0.1M hydrochloric acid.

You are required to determine the mole ratio of **BA1:BA2**

Pipette 20cm^3 or 25cm^3 of **BA1** into a conical flask. Add 2-3 drops of methyl orange indicator and titrate with **BA2** from the burette until the end point is reached. Repeat the titration until you obtain consistent results.

Record your results in the table below.

Volume of pipette used ……..(cm^3)

Experiment number	1	2	3
Final burette reading (cm^3)			
Initial burette reading (cm^3)			
Volume of BA2 used (cm^3)			

Titre values of **BA1** used to calculate average (01 mark)

…… (cm^3)

Average volume of **BA2** ($1\frac{1}{2}$ marks)

……

……

……

(a) Calculate the

(i) Molarity of **BA1** (Na=23, C=12, O=16) (04 marks)

(ii) Number of moles of **BA1** (03 marks)

(iii) Number of moles of **BA2** (03 marks)

(iv) Mole ratio of **BA1:BA2** ($4\frac{1}{2}$ marks)

2. You are provided with substance **R** which contains two cations and one anion. Carryout the following tests to identify them. Identify any gas(es) which may be evolved. Write your observations and deductions in the table below.

Tests	Observations	Deductions
(a) Heat a spatula endful of **R** in a dry test tube strongly until there is no further change		
(b) Dissolve a spatula endful of **R** in about $6cm^3$ of water. Shake and filter. Keep both the filtrate and the residue.		
To the filtrate, add dilute nitric acid drop by drop until the solution is just acidic. Divide the acidified solution into 2 parts (i) To the first potion ,add sodium hydroxide dropwise until in excess.		
(ii) To the second portion, add Ammonia solution dropwise until in excess		

(c) Wash the residue with dilute nitric acid and divide the resultant solution into six parts. (i) To the first part, add sodium hydroxide dropwise until in excess		
(ii)To the second part, add ammonia solution dropwise until in excess		
(iii)To the third part, add 2-3 drops of dilute sulphuric acid		
(iv)Use the fourth part to carryout a test of your own to confirm the cation present		
(v)To the fifth part, add lead (II) nitrate and heat		

Turn Over

(vi) Use the sixth portion to carryout a test of your own to confirm the anion present		

Identify the

Cations in **R** ……. and …….

Anion in **R** …….

END