Name …… **Centre/Index No**……

Signature……

545/3
Chemistry Practical
Paper 3
July/Aug 2022
2hours

BUGANDA EXAMINATIONS COUNCIL MOCKS 2022

Uganda Certificate of Education

CHEMISTRY PRACTICAL

PAPER 3

TIME ALLOWED: 2HOURS

INSTRUCTIONS TO CANDIDATES

- ✓ *Attempt **ALL** questions. Answers are to be written in the spaces provided.*
- ✓ *All working must be clearly shown*
- ✓ *Mathematical tables, slide rulers and silent non-programmable calculators may be used.*

FOR EXAMINERS USE	
QUESTION 1	
QUESTION 2	
TOTAL	

1. You are provided with the following;

BA1, which is a solution made by dissolving **1g** of sodium hydroxide in 250 cm^3 of water.

BA2, which is a **0.005M** solution of a strong acid **X**.

You are required to determine the basicity of **X** by finding the moles of sodium hydroxide that reacted with one mole of **X**.

Procedure;

Pipette **20** or **25 cm^3** of **BA1** into a clean conical flask. Then add 2 -3 drops of phenolphthalein indicator and titrate the solution with solution **BA2** from the burette until the end point.
Repeat the titration 2-3 times to obtain consistent results. Enter your results in the table below.

Results
Volume of pipette used …… Cm^3. (½ mk)

Titration number	**1**	**2**	**3**
Final burette reading /cm^3			
Initial burette reading /cm^3			
Volume of **BA_2** used /cm^3			

(7 ½ mks)

Titre volumes used to calculate the average volume of **BA2** used. (01mk)

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Average volume of **BA2** used …… cm^3 (2 ½ mks)

Question

a) Calculate the;

i) Molarity of **BA1 (Na=23, O=16, H=1)** (4 ½ mks)

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ii) Number of moles of sodium hydroxide in **BA1** that reacted. (03mks)

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iii) Number of moles of **BA2** that reacted. (03mks)

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b) Determine the number of moles of sodium hydroxide that reacted with one mole of X. (03mks)

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2. You are provided with substance **M** which contains **two cations** and **one anion**.

   Carry out the following tests on **M** to identify the cations and anion. Where any gas is evolved, it must be identified and tested. Record your observations and deductions in the table below. (25mks)

Tests	**Observations**	**Deductions**
a) Heat **two** spatula endfuls of **M** strongly until there is no further change		
b) Dissolve **two** spatula endfuls of **M** in about $5cm^3$ of water. Divide the resultant solution into six portions.		
i) To the first portion add sodium hydroxide solution drop wise until in excess and warm		
ii) To the second portion ass ammonia solution dropwise until in excess.		
iii) To the third portion add 2-3 drops of sodium sulphate solution.		

iv) To the fourth portion, carry out a test of your own to confirm one of the cations in **M**. **Test;**		
v) To the fifth portion add an equal volume of dilute nitric acid followed by 3-4 drops of lead (II) nitrate solution.		
vi) To the sixth portion, carry out a test of your own to confirm one of the onions in **M**. **Test:**		

c)(i) Cations in **M**…… and……

ii) Anion in **M**…….

END