NAME:.....

Centre/Index No:...../.....Signature .....

545/3

CHEMISTRY PRACTICAL

PAPER 3

July / August, 2023

2 HOURS

ERETA EDUCATION CONSULTS

JOINT MOCK EXAMINATIONS 2023

Uganda Certificate of Education

Chemistry practical

PAPER 3

2 Hours

INSTRUCTIONS TO CANDIDATES

- Answer both questions in space provided
- Write answers only in blue or black ink and **Not** in pencil
- Work in pencil shall **Not** be marked.

Turn Over

1. You are provided with the following solutions
BA1 is a solution of dibasic acid H_2X made by dissolving 6.3g of acid in water to make 500cm^3 of solution.
BA2 is 0.1M Sodium hydroxide solution
You are required to determine valve of X in H_2X.

(H-1)

Procedure.
Pipette 25.0 or 20.0 cm3 of BA2 into a clean conical flask. Add 2 or 3 drops of methyl orange indicator and titrate with BA1 from burette till end point.
Record your results and repeat the procedure till you obtain consistent results.

Volume of pipette.....cm^3

Final burette readings (cm^3)		
Initial burette reading (cm^3)		
Volume of BA1 used (cm^3)		

Values used to calculate average
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Average volume of BA1 used
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.....

Questions.
Calculate

a) Moles of BA2 that reacted

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b) Moles of BA1 per Littre of solution

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c) Molar mass of H_2X and hence value of X in H_2X.

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2. You are provided with substance Y which contains three cations and one anion.
Carry out the following tests to help you identify the cations and anions in Y.
Identify any gas(es) that may be given off.
Record your observations and deductions in the table below.

Test	Observation	Deduction
(a) Heat a spatula endful of Y in a dry test-tube first gently then strongly until no further change.		
(b) Dissolve two spatula endful of Y in water to make about 5cm^3 of solution. Add dilute sodium hydroxide dropwise till excess		

Filter. Keep both filtrate and residue. Warm to about 1cm^3 of filtrate.		
(c) To the rest of the filtrate, add dilute hydrochloric acid until just acidic and divide the resultant solution into three parts.		
i) To the first part add dilute sodium hydroxide solution dropwise until in excess		
ii) To second part, add Barium Nitrate solution		
iii) To third part, add Ammonia solution dropwise until excess		
(d) Dissolve the residue from (b) in dilute hydrochloric acid and divide solution into two parts. i) To the first part, add dilute sodium hydroxide solution dropwise until in excess.		
ii) To second part, add dilute ammonia dropwise till excess		

e) Identify

i) cations in Y

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ii) anion in Y

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END

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CHEMISTRY 545/3

Paper 3

Confidential Information

Qn1.

BA1 - Dilute 5.5cm^3 of conc H_2SO_4 to 1L of solution.

BA2 - 0.1M sodium hydroxide methyl orange indicator.

Qn2.

Mix $Al_2(SO_4)_3$ + $FeSO_4$ + NH_4SO_4 in the ratio of 2:2:1

END