Name……Stream: ……

Signature……

545/3
Chemistry
Paper 3
2 hours

Uganda Certificate of Education
PRE- MOCK EXAMINATION
CHEMISTRY PRACTICAL

Paper 3

2hours

INSTRUCTIONS TO CANDIDATES

This paper consists of **two** questions

All questions are **compulsory**

Answers to the questions must be written in the spaces provided only

Do not use a pencil

For examiners' Use Only

Q.1	Q.2	Total

1. You are provide with the following;
   BA1, which is a solution prepared by dissolving **6.2g** of an impure salt **V** in One litre of distilled water.
   BA2, which is **0.1M** hydrochloric acid.
   You are required to determine the mass of the pure sample in V and hence the percentage purity.

   Procedure:
   Pipette **20** or **25cm³** 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

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

   Titre values used to calculate the average volume of **BA2** used.
   .....

   Average volume of **BA2** used .....cm^3

   Questions
   a) Calculate the;

   i) Number of moles of **BA2** that reacted

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   .....
   .....
   .....
   .....
   .....

ii) Number of moles of **BA1** that reacted with **BA2** (**1mole of BA1 reacts with 2 moles of BA2)**

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iii) Molarity of **BA1**

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b) Determine the;

i) Mass of the pure sample of **V**. **(RFM of V is 109)**

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ii) Percentage purity of **V**

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2. You are provided with substance **Q** which contains two cations and one anion. Carry out the following test on **Q** 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.

Tests	**Observations**	**Deductions**
a) Heat **one** spatula endful of **Q** strongly until there is no further change. allow to cool.		
b) Dissolve **one** spatula endful of **Q** in about $5cm^3$ of distilled water. To the resultant solution add sodium hydroxide solution dropwise until in excess and filter. keep both the residue and filtrate.		
c) Wash the residue and dissolve it in dilute Sulphuric acid. Divide the acidic solution into two portions.		

i) To the **firs**t portion of the acidic solution, add dilute sodium hydroxide solution drop wise until in excess. **Allow to stand.**		
ii) To the **second** portion of the acidic solution, add dilute ammonia solution drop wise until in excess.		
d) To the filtrate from(b), add dilute nitric acid drop wise until the solution is just acidic. Divide the resultant solution into five portions.		
i) To the **first** portion of the acidic solution add dilute sodium hydroxide solution drop wise until in excess.		

ii) To the **second** portion of the acidic solution add ammonia solution drop wise until in excess.		
iii) To the **third** portion add 3-4 drops of potassium iodide solution.		
iv) To the **forth** portion of the acidic solution add 3-4 drops of lead(ii) nitrate solution and warm.		
v) Use the **fifth** portion of the acidic solution to carry out a test of your own to confirm the anion in Q. **Test:**		

e) i) Cations in Q …… and ……

ii) Anion in Q……