

THE PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT
UKEREWE DISTRICT COUNCIL



FORM FOUR MOCK EXAMINATION

032/2A

CHEMISTRY 2A
ACTUAL PRACTICAL2A

(For Both School and Private Candidates)

Time 2: 30 HOURS

Year 2025

INSTRUCTIONS

1. This paper consists of **two (2)** questions. Answer **ALL** the questions.
2. Each question carries **twenty five (25)** marks.
3. Qualitative Analysis Guide sheet authorized by NECTA and non-programmable may be used
4. Cellular phones and any unauthorized materials are not allowed in the examination room.
5. Write your **Examination number** in every page of your answer booklet (s)
6. You may use the following constant

Atomic masses H = 1, O = 16, N = 14, Cl = 35.5

1 litre = $1\text{dm}^3 = 1000\text{cm}^3$

1. You are provided with the following solutions

S: Containing 36.5g of hydrochloric acid in 1 litre solution

E: Containing 4.0g of impure ammonium hydroxide per 0.25cm³ of solution

X : Methyl orange indicator

Y: P.O.P indicator

PROCEDURES

i. Measure exactly 10cm³ of S by using 10cm³ measuring cylinder and pour into 100cm³ measuring cylinder. Carefully add distilled water to 100cm³ mark then stir. Fill the resulting into the burette.

ii. Titrate S against E using two drops of indicator (methyl orange) obtain three accurate values. Record your results in tabular form

Questions

a) What if P.O.P indicator was used instead of M.O indicator for the titration of the given solution? Give reasons for your answer.

b) (i) _____ cm³ of E required _____ cm³ of S for complete reaction.

(ii) Write balanced chemical equation for the reaction between E and S

c) Showing your procedure clearly, calculate the percentage by weight of the impurity in ammonium hydroxide.

2. Sample T is a simple salt containing one cation and one anion. Carry out experiments described in the experimental table. Carefully record your observations and make appropriate inference to identify the cation and anion present in the sample T.

S/N	Experiment	Observation	Inference
A	Appearance of sample T		
B	To a small portion of a dry sample in a test tube add enough amount of distilled water, warm if insoluble		
C	To a small portion of a dry sample in a test tube add concentrated H ₂ SO ₄ acid		
D	To a small portion of a dry sample in a test tube, heat gently and then strongly until no further change		
E	Put a small portion of a sample in a dry test tube followed by dilute HCl acid. Divide the solution into three portion		
	(i) To one portion add NaOH till in excess		
	(ii) To the second portion add nitric acid drop by drop until in excess then add 1cm ³ of 0.1M Barium chloride solution		
	(iii) To the third portion add few drops of 0.1M Potassium hexacyanoferrate (II) solution		

Conclusion

a) (i) The cation in sample T was _____ and anion was _____.

(ii) The name of sample T was _____

(iii) The chemical formula of sample T was _____

(b) Explain the effect of Barium chloride solution to sample T.

(c) Write the chemical equation took place in addition of Barium chloride in sample T.