THE UNITED REPUBLIC OF TANZANIA

PRESIDENT'S OFFICE

REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

CHUNYA DISTRICT COUNCIL

FORM FOUR - MOCK EXAMINATION

CHEMISTRY 2A

(ACTUAL PRACTICAL "A")

Time: 2:30hrs 09/04/,2025

INSTRUCTIONS

1. This paper consists of **two (2)** questions. Answer all questions
2. Each question carries **Twenty Five (25) marks.**
3. All writing must be in **Blue** or **Black Ink**, **EXCEPT** drawing which must be in **Pencil**
4. Communication devices and any unauthorized materials **Are Not** allowed in the examination room
5. Write your Examination Number on every page of your booklet(s)
6. You may use the following constants
   Atomic masses
   H=1, C=12, O=16, Na=23, Cl=35.5
   1 litre= 1dm^3=1000cm^3

1. You have provided with the following
   Solution XX: containing 2.0g of sodium hydroxide in 0.5 dm^3 of the solution
   Solution YY: Containing 3.15g of hydrated oxalic acid $(COOH)_2$ X H_2O in 0.25dm^3 of the solution phenolphalein indicator

   PROCEDURE
   Pipette 15 or 20 cm^3 of **solution XX** into the conical flask. Add tow drops of indicator and titrate it against **solution YY** from the burette to the end point. Note the reading of the burette
   Repeat the procedure to obtain three more readings and record your results in a tabular form
   Questions
   a. Find the average volume of the burette readings
   b. Write a well balanced chemical equation

c. Calculate
   i. Concentration of **XX** in mol/dm^3
   ii. Concentration of **YY** in mol/dm^3

d. i. Find the value of **X**
   iii. What is the significatizaiton of **X**

2. You are provided with the following

Solution SS: 2m hydrochlonic acid (Hcl)

Solution RR: 0.25m sodium thiosulphate ($Na_2S_2O_3$)

Stopwatch, distilled water and a white paper with a mark X

PROCEDURES

i. Use 10cm^3 measuring cylinder to measure 5cm^3 of **solution SS** and put it into 100cm^3 beaker, then place the beaker on the mark **X**

ii. Measure 50cm^3 of **solution RR** and put it into 100cm^3 beaker containing **solution SS** and immediately start the stopwatch

iii. Stop the stopwatch immediately after the disappearance of mark **X**. then record the time taken for mark **X** to disappear

iv. Repeat procedures (i) to (iii) using the data shown in the table below

EXPERIMENT	**VOLUME OF SS (CM^3)**	**VOLUME OF RR (CM^3)**	**VOLUME OF DISTILLED WATER (CM^3)**	**TIME IN SECOND(+)**	**RATE ($^1/_T$)**
1.	5	50	0		
2.	5	40	10		
3.	5	30	20		
4.	5	20	30		
5.	5	10	40		

Questions

a. Complete the table above
b. Write a balanced chemical equation for the reaction between **RR** and **AA**
c. Write a net ionic reaction for the molecular reaction in (b) above
d. What make mark **X** to be obscured
e. Plot the graph of volume of sodium thiosulplate against $^1/_t$
f. Use the graph to explain how concentration affects the rate of chemical reaction
g. Explain how to separate the substance obscured mark **X** from other products