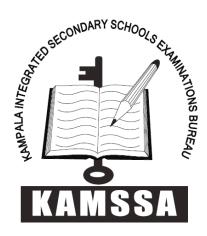
CANDIDATE'S NAME		
545/4		
CHEMISTRY		
(PRACTICAL)		
Paper 4		
July- August 2023		
2 ¹ / ₄ hours		



KAMSSA JOINT MOCK EXAMINATIONS

Uganda certificate of education CHEMISTRY PAPER 4

2 ½ hours

- INSTRUCTIONS TO CANDIDATES:
- Answer all questions
- Record your answers on this question paper in the spaces provided.
- Mathematical tables and silent non-programmable calculators may be used.
- Reference books (i.e. text books, books on qualitative analysis, etc) should not be used.
- Candidates are **not** allowed to start working with the apparatus for the first 15 minutes. This time is to enable candidates to read the question paper and make sure they have all the apparatus and chemicals that they may need.

FOR EXAMINER'S USE ONLY					
Q.1					
Q.2					
Total					

1.	You are provided with the following; BA ₁ which is a solution containing a carbonate Y _n CO ₃ made by dissolving 7.42 g in a litre. BA ₂ which is 0.2 M hydrochloric acid solution.			
Yo	ou are required to determine the valu	e of n in Y _n CO	3•	
Pr	ocedure:			
Pi	pette 20 or 25.0 cm ³ of BA ₁ into a clear	n conical flask.		
	ld 2-3 drops of phenolphthalein indicat til the end point is reached.	or and titrate th	e solution with	BA2 from the burette
Re	peat the titration to obtain consistent re	esults.		
Re	ecord your results in the table below.			
Re	esults:			
Vo	lume of pipette used	cm ³ .		(½ Marks)
	Titration Number	1	2	3
	Final Burette Reading (cm ³)			
	Initial Burette Reading (cm ³)			
_	Volume of BA ₂ used (cm ³)			
				(07 ½ Marks)
Ti1	ere values used to calculate the average	volume of BA ₂		(01 Mark)
 Av	verage volume of $\mathbf{BA_2}$ used			(2 ½ Marks)
	restions: Calculate the number of moles of; (i) BA ₂ that reacted.			(02 Marks)

`	/	loric acid).	of BAI. (I mole of The	(03 Marks)
	• • • • • • • • •			
(b))Detei	rmine (i) the molar mass of $\mathbf{Y}_{\mathbf{n}'}$	CO ₃ .	(05 Marks)
• • •				
(ii) Valu	e of n in Y_nCO_3 . (Y = 38, C = 3)	12, O = 16).	(02 Marks)
•••				
···· 2.		are provided with substance Q		
		ollowing tests on Q . Identify ar		•
	table	below.		(25 marks)
	No:	TEST	OBSERVATION	DEDUCTION
	(a)	Heat one spatula endful of		
		Q strongly until there is no		

further change

(b)	Dissolve two spatula endful of Q in about 3cm ³ of water. To the mixture add ammonia solution dropwise until in excess. Filter and keep both the filtrate and the residue	
(c)	To the filtrate, add dilute nitric acid dropwise until the solution is just acidic. Divide the solution into five portions.	
(i)	To the first portion of the acidified solution, add 2-3 drops of lead (ii) nitrate solution.	
(ii)	To the second portion of the acidified solution, add 2-3 drops of silver nitrate solution	
(iii)	To third portion of the acidified solution add 2-3 drops of barium nitrate solution	

(iv)	To the fourth portion of the acidified solution, add dilute sodium hydroxide solution dropwise until in excess.	
(v)	To the fifth portion of the acidified solution, add ammonia solution dropwise until in excess	
(d)	Wash the residue with distilled water and dissolve it with dilute sulphuric acid. Divide the resultant solution into three portions.	
(i)	To first portion of the solution, add dilute sodium hydroxide solution dropwise until in excess	
(ii)	To the second portion of the solution, add ammonia solution dropwise until in excess.	

(iii	To the third portion of the solution, add 2-3 drops of potassium iodide solution.		
	-	and	

END