Na	me		idex Number//	•••
PR Pa AU	5/3 Ido muibos lo endx ar a IEMISTRY ACTICAL per 3 GUST, 2023 zonova muibo ours	Simp Of	BA1, which is a solusoding by solusoding the solusoding solusod in BA2, which is a 0.03 Year are required to hence its percentage	
	JINJ.	A JOINT EXAMINATIONS B	Pipette 20 CRAO	
		Uganda Certificate of Educatio	phenolphthalein in	
	nest restriction or restriction	K EXAMINATIONS – AUGUS	ST. 2023 no eat lime	
			Record your results	
		CHEMISTRY		
		PRACTICAL		
		Paper 3		
		2 hours		
INS	TRUCTIONS TO CAND	IDATES:		
	Answer All questions.			
	You are not allowed to a All working must be clea	arly shown.		
	Mathematical tables, slie	de rules and non-programmable	silent electronic calculators m	aj
	be used. [H=1, 0=16]			
	- [11 1, 0 10]			
		For Examiner's use only		
	Q1	Q2	TOTAL	

Q1	Q2	TOTAL
	a.	
	*	

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1.	You	are provided	with	the	following;	

BA1, which is a solution made by dissolving 6.0g of a mixture of sodium chloride and sodium hydroxide in 1dm³ of water.

BA2, which is a 0.05M solution of sulphuric acid.

You are required to determine the concentration of sodium hydroxide in gdm⁻³ and hence its percentage composition in BA1.

4	_					4					
1	μ	20	0	C	0	d	1	1	20	0	0
			w			N.	u			•	

Pipette 20.0 or 25.0 cm³ of BA1 into a clean conical flask, add 2-3 drops of phenolphthalein indicator and titrate the contents in the flask with BA2 from the burette until the end point. Repeat the titration 2-3 times until you obtain consistent results. Record your results in the table below.

FF 1	1 1		C		114
9	n	0	OT	resu	ITC
10			UL	ILOSU	TILD.

Volume of pipette used cn	JADITDAR cm	used	pette	fpi	0	Volume
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Final burette reading (cm ³)			
Initial burette reading (cm ³)			
Volume of BA2 used (cm ³)	18.1(T)	I CARDI	TIONS TO see All gee

Titre	values	used	for	calcu	lating	the	avera	ge vo	lume	of BA	12 us	sed	 	
		• • • • • •		• • • • • •			• • • • • •	• • • • • •					 	

:. Average volume of BA2 used......cm³

Questions:

(a) Calculate the

(i) Number of moles of sulphuric acid in BA2 that reacted.

*	ě	

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(ii) Number of moles of sodium hydroxide in BA1 that reacted

(iii) Molarity of sodium hydroxide in BA1

(b) Determine the:

(i) Concentration of sodium hydroxide in BA1 in gdm-3 (Na = 23, 0 = 16, H=1)

(ii) Percentage composition of sodium hydroxide in the mixture.

(ii) that is indicated as something drawing in BAT that reacted as one

2. You are provided with substance R which contains two cations and one anion. You are required to identify the cations and anion in R. Carry out the following tests on R and record your observations and deductions in the table below. Where a gas(es) is evolved, it must be identified.

TEST	OBSERVATIONS	DEDUCTIONS
(a) Heat two spatula endfuls of R in a hard glass test tube, first		
gently and then strongly until there is no further change		
(b) To two spatula endfuls of R in a boiling tube, add		ali enim a d
about 3cm ³ of water and shake vigorousl to dissolve.		
(c) To the resultant solution in (b), add dilute ammonia solution dropwise until is excess. Shake and Filter. Keep both the filtrate and the residue.		
(d) To the filtrate from (c), add dilute nitric acid dropwise until the solution is just acidic Divide the acidic		

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filtrate into four portions. To the second part (i) To the first portion of the acidified filtrate, add sodium hydroxide potassium indide solution dropwise until in excess. (ii) To the second the acidic solution, add portion of the dilute ammonia solution acidified filtrate, add dronwise until ia excess dilute ammonia solution dropwise until in excess. (iii) To the third portion of the acidified filtrate add 4-5 drops of lead(II) nitrate solution and heat gently. (iv) Use the fourth portion to carry out a test of your own choice to confirm the anion in R. Record Test and observations. (v) Test: (e) Wash the residue and dissolve it in dilute sulphuric acid. Divide the acidic solution into three parts. (i) To the first part of the acidic solution, add sodium hydroxide

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solution dropwise until	ne om esuill
in excess.	.236.11.604
(ii) To the second part	to compared an of (3).
of the acidic solution,	the sughthed "Brase".
add 3-4 drops of	, shporpy Grunica: bar
potassium iodide	*lithing arity good not to a
solution.	in excess.
(iii) To the third part of	, iii lotheselma
the acidic solution, add	portion of the
dilute ammonia solution	acidifica filuere, add
dropwise until in excess	dilais emations
Identity the:	solution dropwied
(i) cations in R	and says as the little
(ii) anion in R	
	Ne saidthed Burge

(f)