1.	You	are	provided	with	the	following;
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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.

Procedure:

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.

	_	_			
Tab	10	of.	TAC	11	te.
I au	ıc	UΙ	103	u	w.

Volume of pipette used	cm
Volume of pipelle used	V

Final burette reading (cm ³)		
Initial burette reading (cm ³)		
Volume of BA2 used (cm ³)	eri.	

ues used for calculating the average volume of BA2 used	
 	· · · · · · · · · · · · · · · · · · ·

∴ Average volume of BA2 used......cm²

Questions:

(a) Calculate the

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

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(ii) Number of moles of sodium l	3
	ydroxide iii BAT that reacted
	t a nomine i Lichte brisklogg soch i Y
	Just a mitorial mitembies home +)
	and our manufacture of broom
(iii) Molarity of sodium hydroxide	
	Alaman caspania
) Suriger Mit weitber
	Puft, door at a vois
	gamly and then
	i stadt films vignows
	elutaç $e \mapsto (\neg T - (d))$
(b) Determine the:	endfuls of it in a
(i) Concentration of sodium hydrox	vide in BA1 in odm-3
	and sheke vigorous v
(Na = 23, 0 = 16, H = 1)	and snead argorons v
	(c) To the resultant
	solution in (b), add
	dilute ampronia
	solution dropwise
	until is excess all it
	and Filters Korn Lott
	the fillents at the
(ii) Percentage composition of sodiu	m hydroxide in the mixture.

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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		atricement of the
boiling tube, add		
about 3cm ³ of water	shaanbar taalbar to naile a	5.3830 °,
and shake vigorously	(1.7) 3.5 (1.7)	- 621
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.	⁴ muibos to rein-comes, aus	no with Table
(d) To the filtrate from		
(c), add dilute nitric		
acid dropwise until the		
solution is just acidic.		
Divide the acidic		

and all browns of the		
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filtrate into four portions. (i) To the first portion of the acidified filtrate, add sodium hydroxide solution dropwise until in excess. (ii) To the second portion of the acidified filtrate, add 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:	ting been and one of a particular property of the control of the c
(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	
in excess.	
(ii) To the second part	
of the acidic solution,	
add 3-4 drops of	
potassium iodide	•
solution.	
(iii) To the third part of the acidic solution, add	
dilute ammonia solution	
dropwise until in excess	
(f) Identity the:	
	· · · · · · · · · · · · · · · · · · ·
	and
(ii) anion in R	
	. H7 40 mm Sa
	h.

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End