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545/3 CHEMISTRY PRACTICAL Paper 3 AUGUST, 2022 2 hours



JINJA JOINT EXAMINATIONS BOARD

Uganda Certificate of Education

MOCK EXAMINATIONS – AUGUST, 2022

CHEMISTRY CHEMISTRY

PRACTICAL

Paper 3

2 hours

INSTRUCTIONS TO CANDIDATES:

- Answer All questions.
- Answers are to be written in the spaces provided.
- You are not allowed to use any reference books.
- All working must be clearly shown.
- Mathematical tables, slide rules and non-programmable silent electronic calculators may be used.
- \bullet [H=1, 0=16]

For Examiner's use only

Q1	Q2	TOTAL
	BAZ USEU.	Average volume o

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1. You	are provided with the following:				
BA1.	which is a solution made by disso	lving 1.0g of sodi	um hydroxi	de to make one 2	250
	of solution.			CHEMISTRY	
	, which is a solution made by disso	lving 4.9g of an a	icid, H _n X pe	r dm ³ of solution	Ĭ.
You	are required to			AÚGUST, 20 12	
100	(i) determine the basicity	of the acid, n in	H_nX .	sanos s	
	(ii) Write equation for the	reaction between	the acid, I	H_nX and sodium	2
	Ohydroxide!OFTAMMA				
	•				
Pro	ncedure: notherally seems of Education	Vzanda Cerii			
	Pipette 20.0 or 25.0 cm ³ of BA1 in	to a clean conical	flask.		
Ta	the table below. ACTO Epeat the procedure until you obtain E rags able of results: 22000 colume of pipette used	in consistent resu ्		cm³(0½ m	ark)
	Titration number	1	2	3	
	Final burette reading (cm ³)	namenta e estado e	w sdiet i		
ales as	Initial burette reading(cm ³)	: flict	od same		
	Volume of BA2 used (cm ³)				
S	tate the volumes of BA2 used to calc	culate the average	volume.	(7½ m (0 ½ mark)	ıarks)
Ā	Average volume of BA2 used.		. 7	(2 ½ n	— narks)
_			-		_cm ³

a) Calcula	te the number of moles of:	e value of n in the acid, H_nX .	orlî
(i)	Sodium hydroxide in BA1 that r	eacted. (Na=23; O=16: H=1)	(5 marks)
		,	and a commence of a state of
	The second secon		in the continue of the contract of the contrac
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			And the second s
			nama katawa paman
WATER TRANSPORT AND A STREET A	** * * * * * * * * * * * * * * * * * * *		
	a between the acid. H _e X and sodi	Irite the equation for the reaction	N-{e}
(1)	a between the acid. H _e X and sodi	Irite the equation for the reaction	<i>N</i> (3)
	a between the acid. H _e X and sodi	Frite the equation for the reaction	Af (3)
	Acid, H _n X in BA2 that reac		(3 ½ marks
	Acid, H _n X in BA2 that reac		
	Acid, H _n X in BA2 that reac		
	Acid, H _n X in BA2 that reac		
	Acid, H _n X in BA2 that reac		
	Acid, H _n X in BA2 that reac		
	Acid, H _n X in BA2 that reac		
	Acid, H _n X in BA2 that reac		



the value of n in the acid, H _n X.	hydroxide. Hence
	(4 marks)
(c) Write the equation for the reaction between the said U. X and as disc	
(c) Write the equation for the reaction between the acid, H_nX and sodium	m nydroxide.
	(1 ½ marks
• • • • • • • • • • • • • • • • • • • •	
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You are provided with substance Q which contains two cations and a common anion. Carry out the following tests to identify the cation and anions in Q.
Identify any gas(es) that may be involved. Record your observations and deductions in the table below.

(25 marks)

TESTS	OBSERVATIONS	no.	DEDUCTIONS
(a) Heat two spatula end-fuls of Q, gently and then			w । -ूर्ड-त.म
strongly			o mor singeas office (ii)
308.7			an email is stibus
			nice druk s simentua
			Locación de Dit. presidente.
		ī	
(b) To two spatula end-fuls of			
Q, in a boiling tube, add dilute			acidrou bands off o [11]
nitric acid dropwise until there			Professional Establishment
is no further change.			depend diame sulph
(c) To the resultant mixture		sid.	VB-1 Table and All the
from (b), add dilute sodium			us of Thomas and
hydroxide solution dropwise until in exces. Shake and filter			na rjesta šet
the mixture. Keep both residue			renoting all out of the interest
and filtrate.			teono adlentil neo
(d) To the filtrate, add dilute nitric acid dropwise until the		-	Juliere Sc

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parts.	Identify any gas(es) that may be involved. Record
(i) To the first part of the	table below.
acidified filtrate, add dilute	TESTS OBSERVATIO
drop-wise until in excess.	a) Heat two spatula end-fuls of Q. gently and then
(ii) To the second part of the acidified filtrate, add dilute ammonia solution dropwise until in excess.	strongly
(iii) To the third portion of the acidified filtrate, add 3-4 drops of dilute sulphuric acid	b) To two spatula end-fuls of the aboiling tube, add dilute itric acid dropwise until there are further change.
(iv) Use the forth part of the acidified filtrate to carry out a test of your own choice in order to confirm the one of the cations in Q	Fo the resultant relature from (b), add dilute sodium ydroxide solution dropwise solition dropwise solition exces. Shake and filter he mixture. Keep both residue and filtrate.
	d) To the filtrate, add dilute

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(e) Wash the residue with		
distilled water and then		
dissolve it in dilute nitric acid.		
		,
Divide the acidic solution		
into three parts. (i) To the first part of the		
(i) To the first part of the acidic solution, add dilute		
sodium hydroxide solution		
dropwise until in excess.		
·		
(ii) To the second part of the		
acidic solution, add 3-4		
drops of dilute sulphiric		
acid.		
	~	
(m) = 1		
(iii) To the third part of the		
acidic solution, add dilute		
ammonia solution drop		
wise until in excess.		•
(f) (i) The cations in Q	are	
(ii) The anion in Q is		
•		
		-
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