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545/2 CHEMISTRY Paper 2 July / August, 2022 2 hours



JINJA JOINT EXAMINATIONS BOARD

Uganda Certificate of Education

MOCK EXAMINATION – JULY / AUGUST, 2022

CHEMISTRY

Paper 2

2 hours

INSTRUCTIONS TO CANDIDATES:

SECTION A: Consists of 10 structured questions.

Answer all questions in this section.

Answers to questions in section A should be written in the spaces provided on this question paper.

SECTION B: Consists of Semi - structured questions.

Attempt any TWO questions from this section.

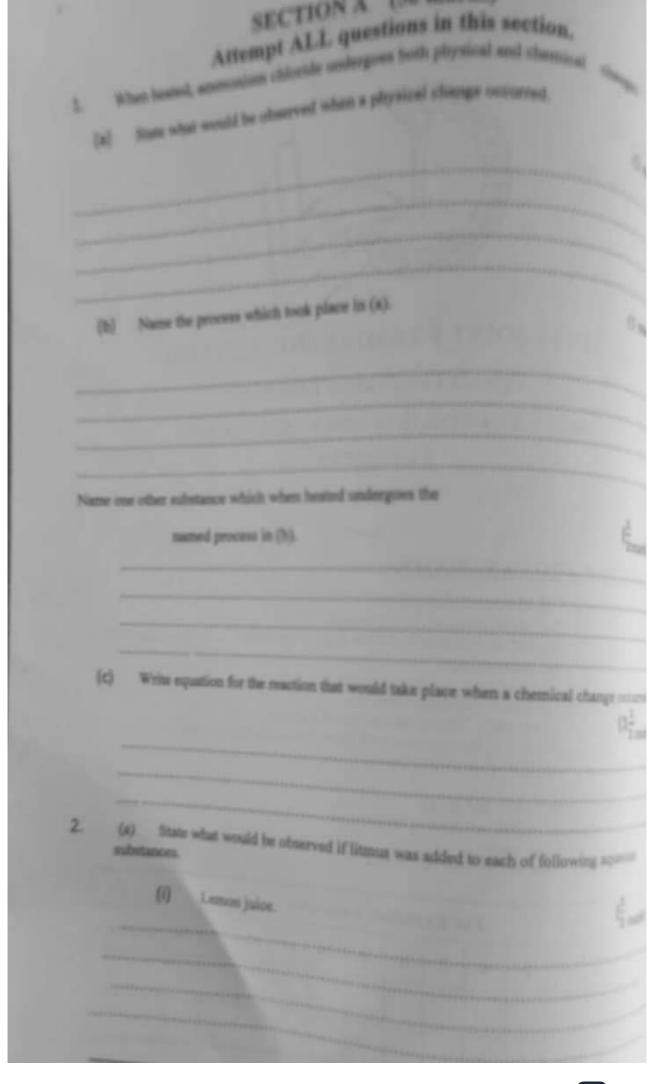
Answers to the questions must be written in the answer sheet provided.

In both sections, all working must be clearly shown.

I mole of a gas occupies 22,400 cm³ at s.t.p I mole of a gas occupies 24,000 cm³ at room temperature. Use the following where necessary

H=1, C=12, O=16, Mg=24, Fe=56, Pb= 207, S = 32

19	OTT S				Fo	r Ex	amin	er's i	ise oi	nly	a ii	1113	9	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	TOTAL
											17			
										-	1			

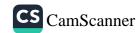


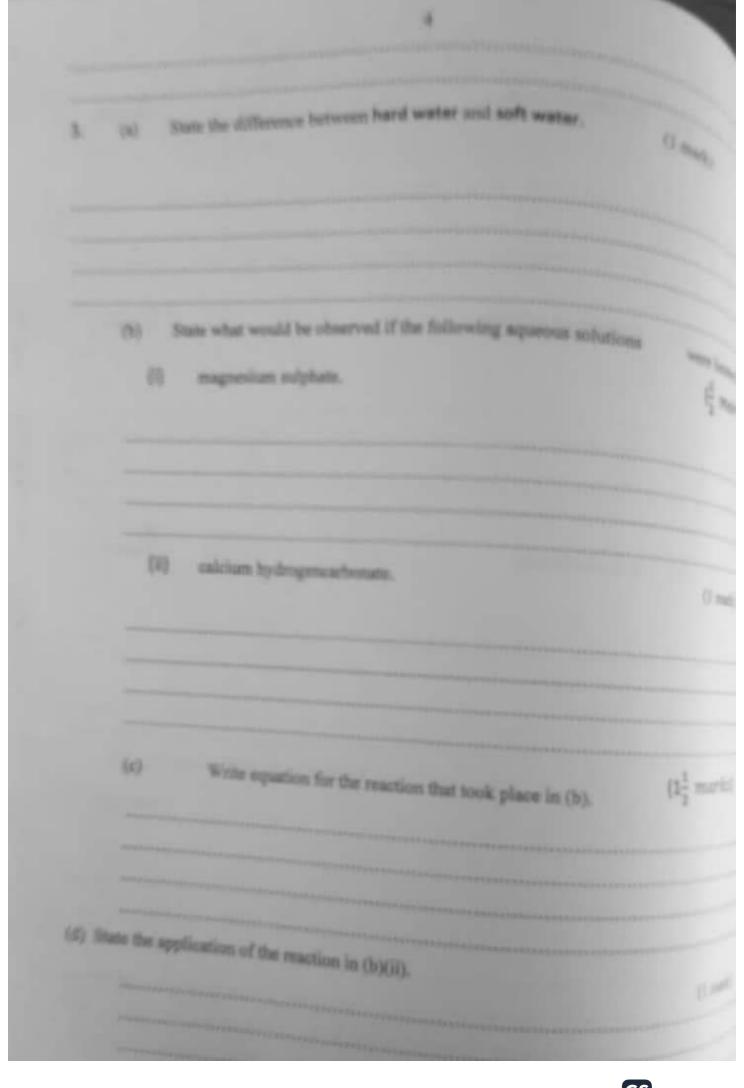


	,	
(ii)	Sodium carbonate,	$(\frac{1}{2} \text{ mark})$

(iii)	Ammonium sulphate.	(1/2 mark)
********	***************************************	,1
(iv)	Sodium chloride.	$(\frac{1}{2} \text{ mark})$

	Acc	ount for the observations in (a)(ii).
(b)		(3 marks)







A.	dilute acid V.	
(a)	dilute acid V. Identify V.	bonate with a suitable
	**************************************	(1 mark)

		ниполициина
Meiro	ionic equation for the reaction to	
WHITE		
	**************************************	Zmarks)
	The state of the s	
When		
forme	excess carbon dioxide was passed through concentrated sodium bydros	side, a white solid W was
	(i) Identify W.	
		(Imark)

	(ii) Write equation for the reaction that took place.	$(1\frac{1}{2}marks)$

5.	When sucrose, C12H22O11, was reacted with sulphuric acid, a black	k solid Q was formed.
-	(a) Name solid Q.	(1mark)

	(b) State the conditions for the reaction to take place. (1 mark)	

				(1 mark)
	*****	*******		***************************************
(b)	When	X and	Y each react with	oxygen separately, they form an oxide. Write the formula of
- 2	the ox	ide for	med by:	on separately, they form an oxide. Write the formula of
	(1)	×		
- 4	176	0		(1 mark)
2000	******			

*****	*******	*******		***************************************
55555			*****************	***************************************
	m	43		***************************************
	(11)	Y		(imark)

*****	******	*******		***************************************
******	******		***************************************	***************************************
******	*****	*******	***************************************	***************************************
			Name the two	classes of oxides formed when Z combines with oxygen.
				(1 mark)

*****				***************************************
PARTE DE LA				***************************************
******				***************************************
20.0 c	m³ o	f 0.5M	f copper (ii) sulph	***************************************
20.0 c	m³ o	0.5M	f copper (ii) sulph	***************************************
20.0 c	e mi	ture s	haken.	***************************************
and th	e mi	ture s	haken.	***************************************
and th	e mi	ture s	f copper (ii) sulph haken. at was observed.	***************************************
and th	e mi	ture s	haken.	***************************************
and th	e mi	ture s	haken.	***************************************
and th	e mi	ture s	haken.	***************************************
and th	e mi	ture s	haken.	***************************************
and th	e mi	ture s	haken.	***************************************
and th	e mi	ture s	haken.	***************************************
and th	e mi	ture s	haken.	***************************************
and th	Sta	te wha	haken.	nate solution was added to excess sodium hydroxide solution $(\frac{1}{2} \text{ mark})$
and th	Sta	te wha	haken.	nate solution was added to excess sodium hydroxide solution $(\frac{1}{2} \text{ mark})$
and th	Sta	te wha	haken.	***************************************
and th	Sta	te wha	haken.	nate solution was added to excess sodium hydroxide solution $(\frac{1}{2} \text{ mark})$
20.0 c and th	Sta	te wha	haken.	nate solution was added to excess sodium hydroxide solution $(\frac{1}{2} \text{ mark})$
and th	Sta	te wha	haken.	tion that took place. $(\frac{1}{2}_{mark})$

	(2=
Calculate the mass of the solid product formed.	(22 2marks)
Calculate the mass of the solid product formed.	
***************************************	************
***************************************	***************************************

***************************************	*********************
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***************************************	*************************
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***************************************	***************************************
When excess dry ammonia was passed over 0.80g of a heated ox formed.	kide of iron,0.56g of iron was
(a) Calculate the formula of the oxide.	$(2\frac{1}{2\text{marks}})$
***************************************	***************************************
***************************************	***************************************
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***************************************	***************************************
	4
***************************************	***************************************
***************************************	***************************************



	(b) S	State the chemical name of the oxide.		
			(1	mark)
		***************************************	***************************************	**********
	(c)	Write equation for the reaction that took place.		$(1\frac{1}{2\text{marks}})$

			amphite electrode	es.
9)	(a)	Aqueous copper (ii) sulphate was electrolyzed between	i grapinie electros	$(\frac{1}{2} mark)$
	(i)	State what would be observed at the cathode.		2
	********	***************************************		

			$(1\frac{1}{2} \text{ marks})$	
thrule.	aquation	n for the reaction that would take place at the cathode.		***************************************
WIN	equation		********	

		***************************************	$(\frac{1}{2}$ mark)	
		Cake setaUD.		
State	the appl	lication of the set-up.		**************

			THE RESERVE OF THE PARTY OF THE	



(6)		observed years for (as) years requested verlage expenses according	$(\frac{1}{2}mark)$
	(1)	Name what would be observed at the anothe	
	(10)	Write equation for the reaction that would take place in(b)(l).	$(1\frac{1}{2}marks)$
			(mark)
	(iii)	State the application of this set-up.	*
			er nitrate solution.
A	Exces	a aqueous sedium chloride was added to 25.0 cm ³ of 0.1M silv	er nitrate solution. (-1 mark)
Α.	Exces		
A	Exces	a aqueous sedium chloride was added to 25.0 cm ³ of 0.1M silv	
) 8	Excess State who	a aqueous sedium chloride was added to 25.0 cm ³ of 0.1M silv	(-mark)
) 8	Excess State what	a aqueous sedium chloride was added to 25.0 cm² of 0.1M silv it would be observed.	(-mark)
) 8	Excess State what	a aqueous sodium chloride was added to 25.0 cm² of 0.1M ally a would be observed.	(-mark)
) 8	Excess State what	a aqueous sodium chloride was added to 25.0 cm² of 0.1M silve would be observed.	(=mark)
) 8	Excess State what	a aqueous sodium chloride was added to 25.0 cm² of 0.1M silve would be observed.	(2 mark)
) 8	Excess State what	a aqueous sodium chloride was added to 25.0 cm² of 0.1M silve would be observed.	(=mark)
) 8	Excess State what	a aqueous sedium chloride was added to 25.0 cm² of 0.1M silv it would be observed.	(=mark)
) S	Excess State what	equation for the reaction that would take place.	(1½ marks)
) S	Excess State what	a aqueous sedium chloride was added to 25.0 cm² of 0.1M silv it would be observed.	(1½ marks)
Wh	State what	equation for the reaction that would take place.	(1½ marks)
With	Excess State what	equation for the reaction that would take place.	(1½ marks)



Calculate the m	nass of the solid product formed.	(2 ¹ marks)
240000000000000000000000000000000000000	***************************************	
***************************************	***************************************	
	.,	

	***************************************	***************************************

	2	mark)
	tical application of the reaction.	

*************	***************************************	
	SECTION B	
	Attempt any two questions from this section	
	Attempt any two s	
11. When heated	d strongly copper (ii) nitrate gives a black solid G.	
	State the other observations made during the decomp	position.
(9) (6)	State the other observant	(1½ marks)
	to to formation of t	5.
(ii) V	Write equation for the reaction leading to formation of	$(1\frac{1}{2} \text{ marks})$
(4)		& marks)
		12
		$(\frac{1}{2} \text{ mark})$
m.	Identify G. no with G describe how pure crystals of a salt can be pr	and using sulphuric acid.
(iii) 1	identify 6.	(5 marks)
(b) Startis	ng with G describe how pure	No. of the Contract of the Con



		hat would be observed if to the aqueous solution of the salt pracess;	epara.
(0)	State w	hat would be observe	to (b) w
(c)	ndded e	sodium hydroxide solution.	
	(i)	sodium hydroxide	(1 man
	(ii)	ammonia solution	(2 man
		ammonia solution Write ionic equation for the reaction that would take place in	
	(iii)		(13
		(c)(i). Write the chemical name and formula of the compound in the	e final prod
	(iv)	Write the chemical name and	
		(c)(ii).	(1 1 2 mar
	-dium is extr	racted from its ore by electrolysis where the ore is mixed with	calcium che.
2. S		State what is meant by the term "ORE."	0
(a)	(i)	State what is mean a	(1=4)
	(ii) Wr	ite the name and formula of the ore from which sodium is extra	racted. (2mm
	(iii) Star	te why sodium is extracted by electrolysis but not reduction of	Fits oxides
			(1mark)
	(iv) Stat	te the role of calcium chloride in the extraction of sodium.	,
(b)	(ii) Nan	the substance that is used as the anode and cathode respectively on of sodium. The the electrode at which sodium is formed and describe the respectively.	(2marks) eaction that wo
	take	place.	(3marks)
	(iii) State	e one use of sodium.	$(\frac{1}{2}$ mark)
(c)	(i) N	Nama tha bi t	
		Name the bi-products obtained during the extraction of odium from its ore.	
(iii)	State th	ne industrial use of the bi-products obtain a second	(1mark)
(d)	When so	from its ore.	ion of
	showing	dium reacts with oxygen, it forms two different products. With how sodium reacts with oxygen.	rite equations (3marks)
(a)	In the lab	oratory, pure chlorine can be	
	hydrochlo	oratory, pure chlorine can be prepared at room temperature b	y reacting
	(i)	Identify L.	
			1.0
	(ii)	State the other condition for the reaction.	(1 mark)

			(111)	Write equation for the reaction that would take place.	(1 ¹ / _{2marks)}
		(b)	The gas	evolved in (a)(iii) was purified using some substances. Name the substances.	(2marks)
			(ii)	Explain the role of the substances named in b(i).	(3marks)
		(c)	Iron(ii	orine obtained in (b) was passed through aqueous) nitrate .	(1 mark)
			(1)	State what was observed.	
			(ii)	Explain the observations made in (c)(i).	(3marks)
		(d)	Aqueo	ous chlorine was exposed to sunlight and a colourless gas	
			Mw	as evolved.	
			(i)	Identify M.	(¹ / _{2mark)}
			(ii)	State the other observations made.	(1mark)
			(iii)	Write equation for the reaction that would take place.	(1½marks)
				ric acid reacts with sodium chloride, two types of salts are f	formed.
14.	(a)	Whe			(lmark)
		(i)		what is meant by the term "salt"	(2marks)
		(ii)	Write	the name and formula of each of the salts formed.	
		(iii)	Name	the class of salts to which each of the salts named in (a)(ii	(2marks)
	(b)	Duri	ng the pred to obta	eparation of lead(ii)nitrate starting with lead(ii)carbonate, to ain compound R which was later reacted with a dilute acid	
					(2marks)
	(i)	- 1	Identify 1	he substance R and T.	ead(ii)nitrate.
	(ii)			equations for the reactions leading to formation of R and I	
	(c)	W	hen heat	ed, excess sulphuric acid reacts with ethanol to form gasE.	(1mark)
		(i)	Identi	fy E.	(2marks)
		(ii)		the conditions for the reaction.	(1½marks)
		(iii)		equation for the reaction that would take place.	(1/2mark)
		(iv)	State	one application of sulphuric acid.	