NAME: .....ADM.....ADM.....ADM.....

## MARANDA HIGH SCHOOL FORM TWO CHEMISTRY <u>CYCLE TWO</u> <u>Instructions to Candidates</u> TIME: 2 HOURS

- \* Write your name, index number and admission number in the spaces provided.
- Answer all the questions in the spaces provided
- \* Mathematical tables and electronic calculations may be used
- ✤ All working must be clearly shown where necessary.

	only		
Question	Maximum score	Candidates scor	
1-30	80		

1. In extraction of oil from castor oil seeds, seeds are first crushed and the propanone added instead of water.

a) Why were the seeds first crushed?(1 mk)

	~
	<u>5</u>
	b) Explain why propanone was added and not water.(1 mk)
1	$^{\circ}$ C) How is the oil separated from property $2(1 - 1)$
N.I.	c) How is the oil separated from propanone?(1 mk)
ww	
. citi	
SVIS	
Sets visit. www.fre	·······
x	
2	. The following are chemical species;
	SO <sub>4</sub> <sup>-2</sup> , H <sub>2</sub> O, O <sub>2</sub> , Fe, Ar, NH <sub>3</sub> , Fe <sup>2+</sup> , O <sup>-2</sup>
- 7	Which of the species are:
	a) Atoms (2mks)

.....

b) Ions (2 mks)	
c) Molecules (2 mks)	b) Explain how a luminous and a non-luminous flame is
	produced.
	(2 mks)
The table below shows the PH values for solution K, L, M	
and N.	i
Solution PH	
K 5.2	
L 12.0	28
M 2.0	Level and the second seco
N 9.8	
Which solution is most likely to be:	
	et
a) Aqueous ammonia? (1 mk)	5. The chart below shows the process of obtaining nitrogen by
	fractional distillation
b) Sadiya budaanida 9 (1 1-)	
b) Sodium hydroxide? (1 mk)	
c) Hydrochloric acid? (1 mk)	$\begin{array}{c c} H_{2O} \\ N_2 \end{array} \begin{array}{c c} Prod \\ N_2 \end{array} \begin{array}{c c} H_{2o} \\ Prod \\ N_2 \end{array} \begin{array}{c c} H_{2O} \\ N_2 \end{array} \begin{array}{c c} H_{2O} \\ N_2 \end{array} \begin{array}{c c} Process \\ N_2 \end{array}$
۲ <sup>۹</sup> ۲ <sup>۹</sup>	$N_2$ $I$ $N_2$ $I$ $N_2$ $I$ $N_2$ $I$ $I$ $N_2$ $I$
d) Ethanoic acid?(1 mk)	
	a) What is the purpose of process M and N? (2mks)
	a) What is the purpose of process M and N? (2mks)
orefic	
a) State two differences between luminous and non luminous	Process M
a) State two differences between luminous and non luminous flames. (2MKS)	Process M
	Process M
	Process M

i.

## Process N

•	
÷	
t	b) Identify the reagents used in processes M and (2 mks)
ľ	vf
ŀ	
1	۸
d'	
2	Natural boron contains a mixture of two isotopes, ${}^{10}B - 20\%$ and ${}^{11}B - 80\%$ . Determine the relative atomic mass of boron. (3 mks)
3	
7. 1	The paper chromatogram below is of pure substances X, Y and W.
	• note 1
	KOT Y
	•
	•
	-0

Mixture K contains substances W and Y only.

i) Indicate on the diagram the chromatogram of K. (2mks)

ii) On the diagram show the solvent front and the baseline. ( . (2 mks)

8. Hydrogen gas can be prepared by reacting a dilute acid with a metal.

a) Give one metal and an acid that can be used to prepare hydrogen gas. (2 mks)

www.reet Metal

4

Acid

b) Explain why potassium metal cannot be used in the preparation of hydrogen gas. (1 mk)

.....

1

c) Write an equations for the reaction between the metal and the dilute acid in (a) above.(2 mks)

1			

·······		•••••••••••••••••••••••••••••••••••••••
d) State two properties of hydrogen that make it possible for it	10. Chlorine is element number	17 in the periodic table of
to be collected over water. (2 mks)	elements.	
	a) Write down the electron cor	ifiguration of its:
	i) Atom	(1 mk)
	i) moni	(T IIIK)
	5.°	
······································	R	
	ii) Ion	(1 mk)
9. Study the figure below and answer the questions that follow:	-cel'a	
	ex Co	
a) Write the equation for the reaction taking place:	b) When Chlorine gas is disso	lucin water it former a
") I al continue take (2mlm)	solution.	ived in water it forms a
i) In the combustion tube .(2mks)	a solution.	
	i) What is the name given to the	a chloring solution? (1 mk)
	i) what is the name given to the	
		1
ii) At the flame (2 mks)	ii) White on equation for the se	
	chlorine dissolves in water.	eaction which takes place when
	chlorine dissolves in water.	(2 mks)
b) Why should hydrogen be passed over copper (H) oxide for		
sometime before heating starts? (1 mk)		
	***************************************	

- \* e is element number 17 in the periodic table of
  - lown the electron configuration of its:
  - thapers.com (1 mk)

11. Sodium reacts with oxygen to give sodium oxide (Na<sub>2</sub>O) and sodium peroxide (Na<sub>2</sub>O<sub>2</sub>). Write equations to show the formation of each of the two oxides of sodium.

Sodium oxide (2 mks)

 and the second second second second second

Sodium peroxide (2 mks)

...

12. Name the method one would use to separate the following mixtures:

a) Calcium carbonate and am	nonium Chloride.(1mks)
-----------------------------	------------------------

b) Oil and water (1 mk)

c) Kerosine and Crude Oil. (1 mk)

13. An element X, whose atomic number is 11, reacts with Chlorine gas to form a compound.

a) Write the electronic configuration of element X. (1mks)

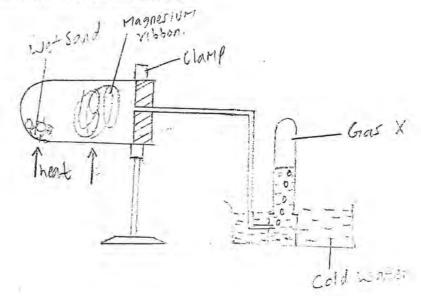
b) Name the group and compound to which X belongs. (2 mks)

Group \_\_\_\_\_ Period

8

c) Write an equation for the reaction between X and Chlorine gas

14. The set-up in the diagram below shows a reaction between a Magnesium ribbon and Steam.



(1

Identify gas X.

mk) b) Write an equation for the reaction between Magnesium (2 mks) ribbon and steam.

c) What property of gas X makes it possible to be collected as shown in the diagram? (1 mk)

.....

15. The grid below is part of the periodic table. Use it to answer the questions that follow. (The letters are not the actual symbol of the elements)

	1.				A	B
С	D		- 11	G		E
F						

a) Write down the formula of the compound formed between C and D. (1 mk)

b) Which element has the same electron arrangement as the stable ion of:

i)F (1 mk) ii) A. (1 mk)

c) Element Q has atomic number 15, indicate its position on the the grid. (1 mk)

N <sup>N</sup>	d) Explain	how the atomic rad	ii of the following compare;
	i) C and F	(2 mks)	

Ii) C and D (2 mks)

...... 

e) Write an	equation for the	reaction betwe	en C and oxygen
gas.	(1 mk)		

	<b>A</b>
16) Using dots(.) and cross(x) draw then structure of the	c.O`
following compounds	Set 2
(a)magnesium chloride (2mks)	A CONTRACT OF CONTRACT.
	29 <sup>20</sup> 3
	NCSOL
	£10 <sup>0</sup>
	an.
	·×····································
	ist
(b)Ammonium ion (2mks)	isit. www.treekcsepastpapers.com
KOT ROL	
***************************************	

17.explain the following observations

12

1

÷۲.