

**HEIGHTS SECONDARY SCHOOL –THIKA**  
**END OF YEAR EXAMINATION 2016**  
**FORM TWO CHEMISTRY**  
**2 1/2hrs**

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NAME.....

ADMISSION NO.....DATE...../...../.....SIGNATURE.....

**Answer All Questions**

**(100 marks)**

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1. Study the table below and answer the questions that follows (letters do not represent the actual symbols of the element)

<b>ATOM</b>	<b>ATOMIC NO</b>	<b>MASS NO</b>
A	8	16
B	11	23
C	13	26
D	13	27
E	17	38

a) Write the electronic configuration of ion of A & D

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.....  
.....  
.....(2mks)

b) Which are the non metallic elements ? Give a reason

.....  
.....  
.....  
.....(2mks)

c) Which elements belongs to different period from the rest? Explain.

.....  
.....  
.....  
.....(2mks)

d) In which group of the periodic table does A belong to.? Give a reason.

.....  
.....  
.....  
.....(2mks)

e) Write the formulae of the most stable ion of B & E.

.....(1mk)

f) Write the formula of the compound that formed between B&E

2. The electronic arrangement of ION  $X^{3+}$  and  $Y^{2-}$  are 2:8 and 2:8:8 respectively.

a) Write the electronic arrangement of X and Y .

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 .....  
 .....(2mks)

b) Write the formula of the compound that would be formed between x and y

.....  
 .....  
 .....(2mks)

3. The grid below shows part of the periodic table. The letter do not represent the actual symbols of the elements

<b>X</b>								<b>A</b>	
	<b>F</b>				<b>R</b>			<b>S</b>	<b>B</b>
<b>Y</b>	<b>C</b>							<b>Q</b>	
<b>Z</b>	<b>P</b>								

a) Which element is the most reactive metal ?

.....(1mk)

b) Which element is the most reactive non metal.?

.....(1mk)

c) Which name is given to the group of element to which C and F belong to?

.....(1mk)

d) What name is given to the family of elements including A and B.

.....(1mk)

e) Element Q forms a compound with P ,write the formula of the compound.

.....(1mk)

f) On the grid indicate the position of element which is in the third period and forms ions with formula  $W^{3+}$

.....(1mk)

g) What does the shaded region represents?

.....(1mk)

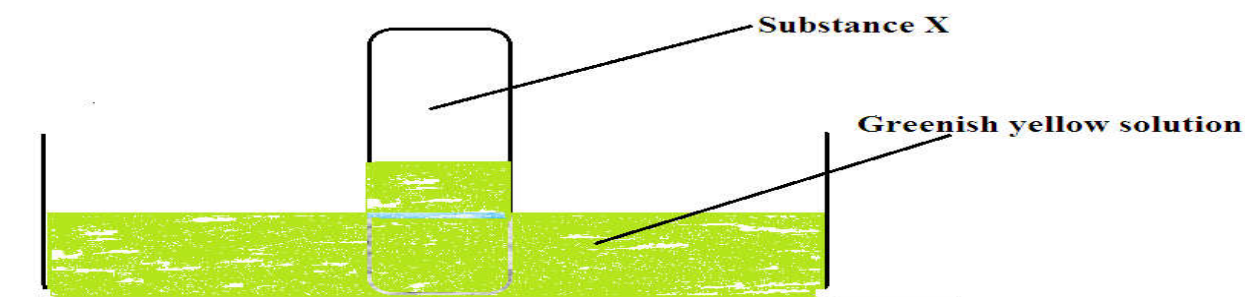
i) What elements are free in nature ,?Explain.

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.....  
.....(2mks)

j) What is the general name of the elements where Z belongs?

.....(1mk)

4. Chlorine gas was bubbled through water for some times, the greenish yellow solution formed was transferred into boiling as shown in the diagram below.



a) Write the equation for the reaction between chlorine and water.

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.....  
.....(2mks)

b) What is responsible for the greenish yellow color?

.....  
.....(1mk)

c) What condition is necessary for the formation of substance X.

.....  
.....(1mk)

d)(i) Identify substance X.

.....  
.....(1mk)

(ii) Write an equation to show how substance X is formed.

(2mks)

e) Write an equation to show how chlorine water bleaches.

(2mks)

5. Study the table below and answer the below and answer the questions that follows.

Element	Electron Arrangement
P	2:8:2
Q	2:8:8:2
R	2:7
S	2:8:1
T	2:8:8

a) Which elements belong to the same group? Explain.

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.....  
.....  
.....(2mks)

b) Which element is an alkaline earth metal? Give reasons.

.....  
.....  
.....  
.....(2mks)

c) Which element is the highly reactive gas? Give the name of the group in which it belongs.

.....  
.....  
.....  
.....(2mks)

d) Which element is most un-reactive? Give a reason for your answer.

.....  
.....  
.....  
.....(2mks)

e) Which of the elements are metals? Explain.

.....  
.....  
.....  
.....(2mks)

6. Use dot and cross diagrams to show how these compounds are formed.

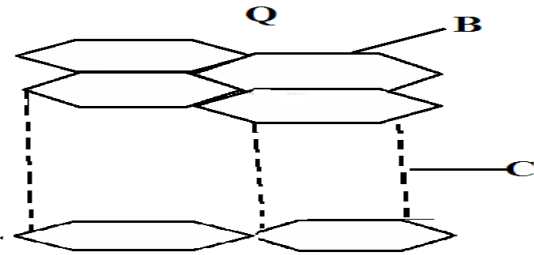
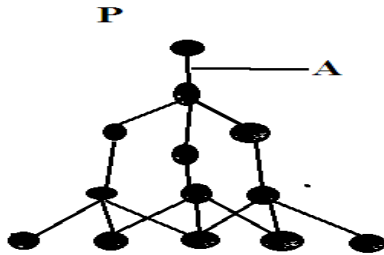
a) Magnesium Chloride.

(3mks)

b) Ammonia.

(3mks)

7. The diagram below shows the allotropes of carbon study them and answer the questions that follow.



a) Name the allotropes represented by letter P and Q

.....  
.....(2mks)

b) State the nature of the bonds labeled A,B, and C.

.....  
.....(3mks)

c) Q has a greasy and is used as a lubricant where p is the hardest, natural substance known .Explain

.....  
.....(2mks)

d)Which of the following allotropes is a good conductor of electricity? Explain.

.....  
.....(2mks)

8. Starting with copper describe how a solid sample of copper II sulphate would be prepared.

.....  
.....(4mks)

9. Define the following terms.

a)Deliquesence.....  
.....(2mks)

b)Hygrosocopy.....  
 .....  
 .....(2mks)

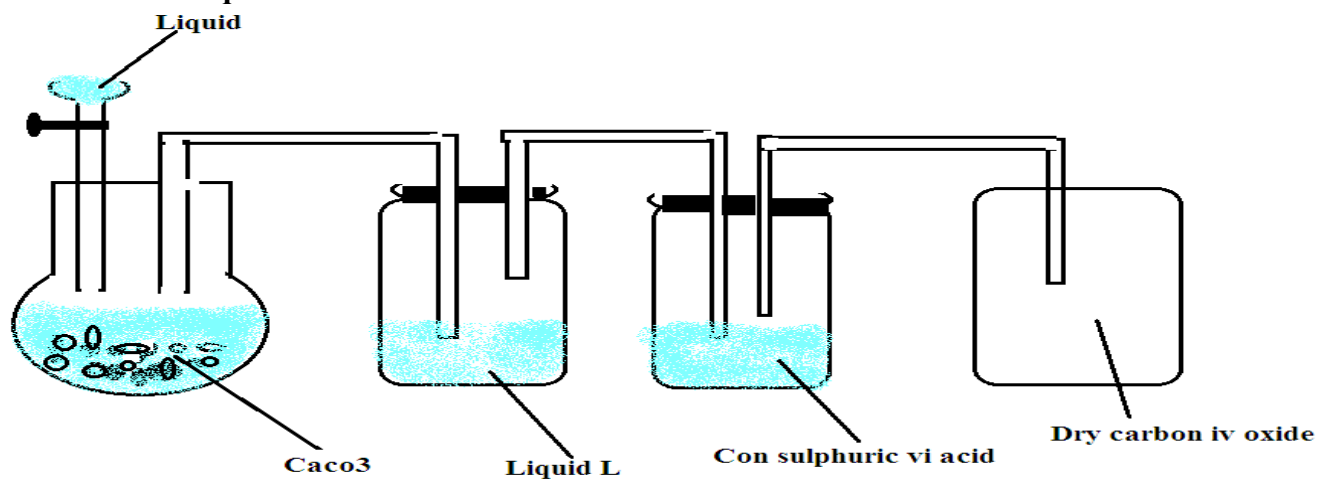
c)Efflorescence.....  
 .....  
 .....(2mks)

10. The tables below gives the products of electrolysis of different electrolytes complete it.

Electrolytes	Observation at the	
	Carthode(-)	Anode(+)
Molten calcium bromide	A	B
C	Potassium	Chlorine
Molten sodium chloride	D	E
F	Lead	Bromine
Molten potassium iodide	G	H

(8mks)

11. The following is a set up used to prepare and collect dry carbon(iv)oxide gas in the laboratory study it and answer the questions that follows.



a) Identify liquid S.....(1mk)

b) Write the equation of the reaction leading to production of carbon (iv) oxide.

(2mks)

**c)Identify Liquid L and state its role.**

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.....  
.....(2mks)

**d) List three physical properties of Carbon (iv) oxide.**

.....  
.....  
.....  
.....(3mks)

**e)List three uses of carbon (iv)oxide.**

.....  
.....  
.....  
.....(3mks)

\*\*\*\*\*WISH YOU ALL THE BEST\*\*\*\*\*