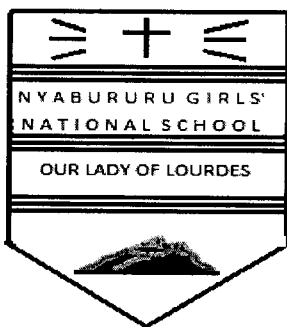


NAME.....CLS.....C.NO.....ADM.....



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DATE REVISED.....	

**233/1CHEMISTRY  
FORM TWO CAT I  
TERM TWO 2016  
TIME: 2 HOURS**

**INSTRUCTIONS.**

- Write your name, class number and admission number in spaces provided.
- This paper consists of two sections. Section A and Section B.
- Answer **ALL** questions in the spaces provided.
- Candidate should check the question papers to ensure that all the papers are printed as indicated and no questions are missing.

**FOR EXAMINER'S USE ONLY**

QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE

**SECTION A (40 MARKS)**

1. Name three frequently abused drugs. (3 Mks)

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 .....  
 .....

2. Explain why most laboratory chemicals are made of glass. (3 Mks)

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 .....

3. Write balanced chemical equations for the reactions between;

(i) Copper and Oxygen (1 Mk)

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 .....

(ii) Zinc and hydrochloric acid. (1 Mk)

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 .....

4. Give the formulae of the hydroxides of Sodium, Magnesium and aluminium. (3 Mks)

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 .....  
 .....

5. (a) The table below gives the elements with atomic numbers 3 to 18. The letters are not the actual symbols of the elements.

<sup>3</sup> A	4	5	6	7	<sup>8</sup> E	9	10 <sub>G</sub>
<sup>11</sup> B	<sup>12</sup> C	13	<sup>14</sup> D	15	16	<sup>17</sup> F	<sup>18</sup> N

(a) Choose from A to H only:

(i) a halogen. (1 Mk)

.....

(ii) an alkaline earth metal. (1 Mk)

.....

(iii) an alkali metal. (1 Mk)

.....

(iv) The most reactive metal. (1 Mk)

.....

(v) The most reactive non-metal. (1 Mk)

.....

(b) Give the formula of the oxide of A. (1 Mk)

.....

.....

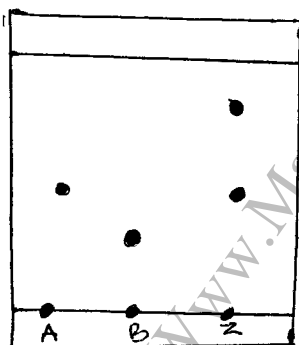
5. A non-luminous flame is preferred for heating. Explain. (2 Mks)

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6. Spots of pure pigments A and B and a mixture z were placed on a filter paper and allowed to dry. The following chromatogram was obtained.



(a) (i) Which is the baseline? (1 Mk)

.....

(ii) Solvent front? (1 Mk)

.....

(b) Which of the pure pigments was a component of Z? Explain. (3 Mks)

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.....

7. Name three elements found in each of the following chemical families.

(i) Alkaline earth metals.

(3 Mks)

.....  
.....  
.....

(ii) Noble gases.

(3 Mks)

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.....  
.....

8. Hydrogen can be placed in group I or group VII. Explain.

(2 Mks)

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9. Write balanced chemical equations for the reactions between

(i) Sodium and water.

(1 Mk)

.....  
.....  
.....

(ii) Magnesium and hydrochloric acid.

(1 Mk)

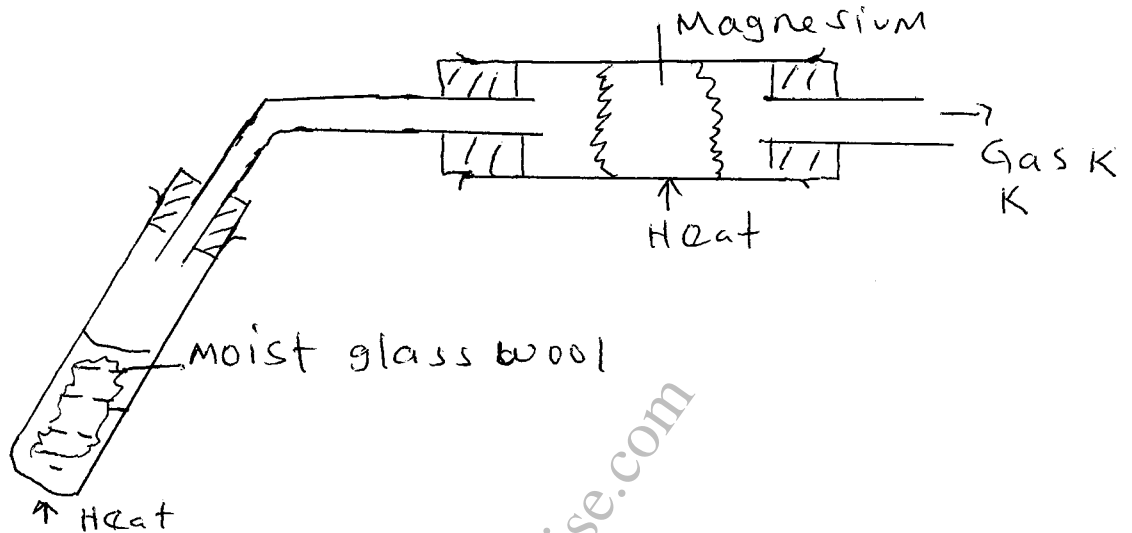
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(iii) Chlorine and potassium.

(1 Mk)

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.....

10. A student set – up the experiment below to collect gas K. The glass wool was heated before heating the magnesium coil



(a) Explain why it was necessary to heat the moist wool before heating the magnesium. (3 Mks)

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 .....  
 .....

(b) Identify gas K. (1 Mk)

.....

(c) What property of gas K makes it possible to be collected that way? (1 Mk)

.....

**SECTION II (40 MARKS)**

11. The grid below is part of the periodic table. The elements are not represented by their actual symbols. Use the information to answer the questions that follow.

K							
A				L		J	
	D						
C	E						

(a) Which is the most reactive,  
(i) Metal? Explain. (2 Mks)

.....  
.....  
.....

(ii) Non-metal? Explain. (2 Mks)

.....  
.....  
.....

(b) What is the name of family to which elements D and E belong? (1 Mk)

.....  
.....

(c) Write the formula of the compound formed when element K and L react. (1 Mk)

.....  
.....

(d) Name the type of bond formed when A and J react. (1 Mk)

.....  
.....

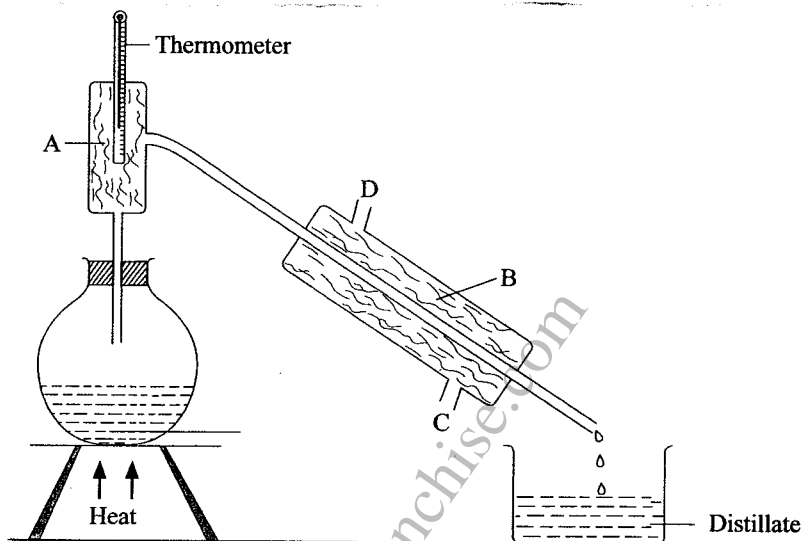
(e) Element w does not form ions. Give a reason. (2 Mks)

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.....  
.....

(f) How do the atomic radii of elements A and L compare? Explain. (2 Mks)

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12. A form one student crushed banana leaves with water and left the mixture for some days. He found that the mixture had fermented. He suspected that the mixture had been contaminated with ethanol which has a boiling point of  $78^{\circ}\text{C}$  while the boiling point of water is  $100^{\circ}\text{C}$ . The student then set up the apparatus below to separate the ethanol water mixture.



- (i) Name the piece of apparatus labeled B. (1 Mk)

.....

.....

- (ii) State the purpose of the thermometer. (1 Mk)

.....

.....

- (iii) At what point in apparatus B should cold tap water be connected? Explain. (2 Mks)

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.....

.....

- (iv) Name the part labeled a and state its function. (2 Mks)

.....

.....

.....

(v) Which liquid was collected first? Explain. (2 Mks)

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 .....  
 .....

(vi) What is the name given to the above method of separating mixtures? (1 Mks)

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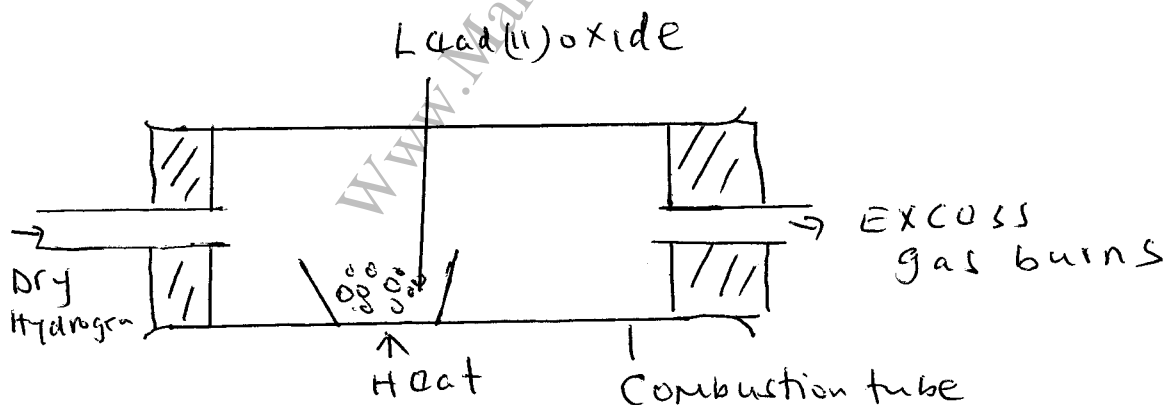
(vii) What property of the components of the mixture make it possible for the components to be separated using the above method. (2 Mks)

.....  
 .....

(viii) State two applications for the above method of separation. (2 Mks)

.....  
 .....

3. Study the diagram below and use it to answer the questions that follow.



(a) Name the reagents used in the laboratory to prepare hydrogen gas. (2 Mks)

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 .....  
 .....



(b) Draw a set <sup>wf</sup> showing how to collect dry hydrogen gas. (3 Mks)

(c) Why is it necessary to burn excess gas as shown in the diagram. (1 Mk)

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.....

(d) State and explain observations made in the combustion tube. (2 Mks)

.....  
.....  
.....

(e) Write an equation for the reaction taking place in the combustion tube. (1 Mk)

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.....

(f) Dry hydrogen is passed through the apparatus before heating the apparatus. Explain. (2 Mks)

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(h) What would be expected if magnesium oxide was used instead of lead (II) Oxide?  
Explain. (3 Mks)

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(i) State two industrial uses of hydrogen. (2 Mks)

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