Name:……………………………………..………...……………Adm No………………………...

Signature:…………….……………

**CHEMISTRY**

**THEORY** Date:………………….......

**COMBINED PAPER**

**JULY/AUGUST 2016**

**TIME: 2 HOURS**

**TOP EVALUATION EXAM – 2016**

***FORM 1***

**Chemistry**

2 hours

**INSTRUCTIONS TO CANDIDATES**

* Write your name and admission number in the spaces provided.
* Mathematical tables and non-programmable calculators may be used.
* Attempt all the questions in the spaces provided.
* ALLOW working MUST be clearly shown.

**For Examiner’s Use**

|  |  |  |
| --- | --- | --- |
| **QUESTION** | **MAXIMUM SCORE** | **STUDENT’S SCORE** |
| **1** | **08** |  |
| **2** | **08** |  |
| **3** | **11** |  |
| **4** | **10** |  |
| **5** | **08** |  |
| **6** | **12** |  |
| **7** | **16** |  |
| **8** | **07** |  |
| **TOTAL** | **80** |  |

*This question paper has 9 printed pages. Check to ascertain that all pages are printed as indicated and that no question is missing.*

1. (a) What is a mixture? (1 mark)

**…………………………………………………………………………………………………………………………………………………………………………………………………………………...**

(b) Name the method of separation you would use in separating: (3 marks)

1. Beans from maize beans mixture.

**……………………………………………………………………………………………….**

1. Water from sand.

……………………………………………………………………………………………..

1. Cream from milk.

**…………………………………………………………………………………………..**

(c) State **four** areas in which the knowledge of chemistry is used. (4 marks)

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1. (a) Define the following terms as used in chemistry. (5 marks)
2. Drug

**……………………………………………………………………………………………………………………………………………………………………………………**

1. Medicine

…………………………………………………………………………………………………………………………………………………………………………………..

1. Prescription

…………………………………………………………………………………………………………………………………………………………………………………….

1. Dosage

……………………………………………………………………………………………………………………………………………………………………………………

1. Over the Counter drug

…………………………………………………………………………………………………………………………………………………………………………………….

(b) Name **three** illegal drugs that are normall abused. (3 marks)

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1. (a) State three reasons why most chemistry laboratory apparatus are made of glass. (3 marks)

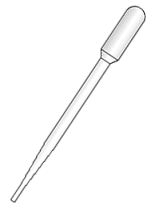
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(b) Name each of the apparatus below and state what it is used for. (8 marks)

(i) 

**…………………………………………………………………………………………………………………………………………………………………………………………………………………..**

(ii) ………………………………………………………………………………………………………………………………………………………………………………………………………………….



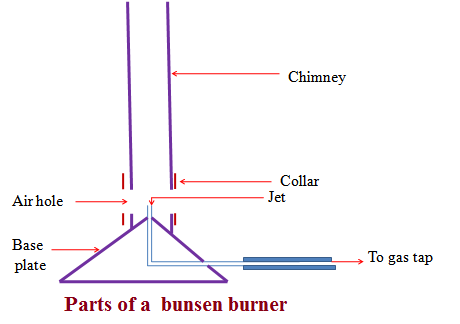
(iii)……………………………………………………………………………………………………………

1. **………………………………………………………………………………………………………………………………………………………………………………………………..**



**Thistle funnel.Direct liquid solution into stoppered container.**

1. Draw a Bunsen burner and label all its parts. (3 marks)



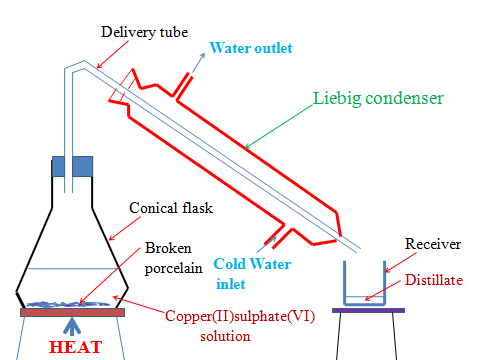
(b) Outline the procedure for lighting a Bunsen burner. (4 marks)

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(c) State three characteristic differences between luminous and non-luminous flame (3 marks)

**…………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………..……………………………………………………………………………………..**

1. Study the setup below of an experiment and then answer questions that follow.



1. State the purpose of the experiment. (1 mark)

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1. Give a reason for each of the following.
2. The solution is heated. (1 mark)

**………………………………………………………………………………………………………………………………………………………………………………………………….**

1. Using pieces of broken porcelain (2 marks)

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1. Liebig condenser has a cold water **inlet** near the receiver and cold water **out** let. (1 mark)

…………………………………………………………………………………………………………………………………………………………………………………………………

1. Other than b(ii) above, what else can be used. (2 marks)

**……………………………………………………………………………………………………………………………………………………………………………………………………………………………..**

1. Name the method of separation illustrated by the setup. (1 mark)

…………………………………………………………………………………………………………

1. The procedure below was followed when using commercial indicators to determine acidic and basic/alkaline and neutral solutions

Procedure

1. Place 5cm3 of the solutions in the table below.
2. Add three drops of litmus solution to each solution.
3. Repeat with phenolphthalein indicator, methyl orange, and bromothymol blue.
4. Complete the table by showing the colour change. (6 marks)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Substance/  solution | **Indicator Used** | | | |
| **Litmus** | **Phenolphthalein** | **Methyl orange** | **Bromothymol**  **blue** |
| wood ash | **Blue** | **Pink** |  |  |
| soap solution |  | **Pink** |  | **Blue** |
| ammonia solution | **Blue** |  | **Yellow** |  |
| sodium hydroxide |  |  | **Yellow** | **Blue** |
| hydrochloric acid |  |  |  |  |

1. Ferdinand placed 5cm3 of dilute hydrochloric acid in a small test tube. He then added 1cm length of polished magnesium ribbon. He stoppered the test tube using a thump. After this, he lit a wooden splint and Placed it on top of the stoppered test tube. He then released the thump stopper.
2. Write down **two** observations he made. (2 marks)

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1. Why wouldn’t Ferdinand use copper in stead of magnesium ribbon? (2 marks)

**……………………………………………………………………………………………………………………………………………………………………………………………………………….**

1. Write a word equation for the reaction that happens. (2 marks)

1. Sodium carbonate is reacted with an acid A to produce chloride B, gas C and water.
2. Name: (3 marks)
3. Acid A

……………………………………………………………………………………….

1. Chloride B

………………………………………………………………………………………..

1. Gas C

………………………………………………………………………………………

1. State the observations made in the experiment when:
2. Test tube holding the mixture is directed into lime water. (2 marks)

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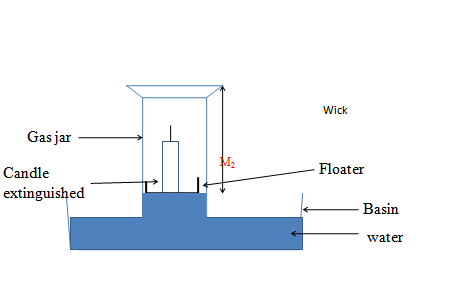
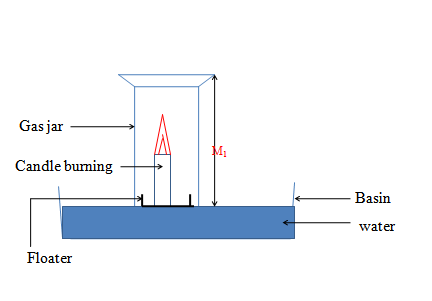
1. Write word equation of the reaction in above. (2 marks)
2. Write word and chemical equations for the reactions if the following would have been used in stead of sodium carbonate(acid remains the same). (6 marks)
3. Copper carbonate
4. Potassium hydrogen carbonate
5. Sodium hydrogen carbonate
6. State **three** physical properties of acids. (3 marks)

**…………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………….**

1. (a) Giving the approximate their percentage composition by volume, identify **two** main gases present in the atmosphere/air. (2 marks)

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b) the set up apparatus below was used to find out the composition of air that support combustion.



(i) What happens to the candle after a while? (1 mark)

**…………………………………………………………………………………………………………………………………………………………………………………………………………………..**

1. If the length of M1 is 20 cm, M3 (length of the glass jar after igniting candle) is 12 cm while M2 is 15cm, determine:

I. the active part of the air. (2 marks)

II. The inactive part of the air. (2 marks)