GATITU MIXED SECONDARY SCHOOL

CHEMISTRY FORM 3 END OF TERM 2 2013 EXAM

NAME:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ADM:\_\_\_\_\_\_\_\_\_\_\_DATE:\_\_\_\_\_\_\_\_

1. State two differences between luminous and non luminous flame 2mks
2. Explain how you would obtain pure ammonium chloride from a mixture of lead sulphate and ammonium chloride (3mks)

1. State and explain the changes in mass that occur when the following are heated separately in open crucibles. Write chemical equations for each reaction

(a)Zinc metal

1. Zinc carbonate
2. The set up below was used to study some properties of air.



1. Draw another diagram to show the level of water if the test tube after 24 hrs. Explain the observation made. 4mks
2. state and explain one observation made on moist iron after 24 hrs 2mks
3. state the disadvantage of what was observed in (ii) 1mk
4. Explain why a mixture of copper II oxide and magnesium reacts when heated while there is no reaction .when a mixture of copper and magnesium oxide is heated 1mk
5. Name a gas which is used together with oxygen in welding 1mk
6. Solution may be classified as strong base, weak base, neutral, strong acid or weak acid. The information below gives some solutions and their ph values. Study it and answer the questions that follow.

|  |  |
| --- | --- |
| Solution | Ph |
| A | 0.5 |
| B | 7 |
| C | 14 |
| D | 9 |

Classify the solutions in the table using the stated classifications 2mks

A

B

C

D

1. A student was supplied with a colourless liquid suspended to the water.
2. Describe one chemical test that could be carried out to show that the liquid was water 2mks
3. How could it have been shown that the liquid was pure water 1mk
4. What role do the following play in the commercial preparation of oxygen?
5. concentrated sodium hydroxide 1mk
6. concentrated sulphuric acid 1mk
7. The PH of the soil sample was found to be 5.5. An agricultural officer recommended the addition of lime (calcium oxide). State the function of lime in the soil. 1mk
8. Study the set up below and answer the questions that follow.
9. Identify gas x 1mk
10. write a chemical equations for the reactions liberating gas x 1mk
11. why is it NOT advisable to use calcium in this method of preparing hydrogen 1mk
12. What is the purpose of anhydrous calcium chloride in the u -tube? 1mk
13. Name another compound that could serve the same purpose as anhydrous calcium chloride. 1mk
14. Give another metal that can be used instead of zinc. 1mk
15. Name the method used to collect the gas and the property of the gas that enables it to be collected using the method. 2mks
16. Why is it necessary to discard the first jar of the gas that is a metal? 1mk
17. During the preparation of copper (ii) sulphate excess copper (ii) oxide is used. Explain 1mk
18. When lead nitrate and magnesium sulphate react, a white precipitate is formed.
19. Identify the precipitate. Give a reason 2mks
20. Write an ionic equation for the reaction. 1mk
21. Diamond and graphite are allotropes of carbon. Give two properties of each allotrope.4mks
22. An element Y has an electron arrangement 2:8:5
23. State the period and group to which the element belongs. (1mk)
24. Write the formula of the most stable ion formed when the element ionizes. (1mk)
25. Explain the difference between the atomic radius of element Y and its ionic radius. (2mks)
26. Study the flow chat below and answer the questions that follows (5mks)

(a)Identify

 A-

 B-

 C-

 D-

 E-

(b)Name process 1 (1mk)

(c) Write a balanced equation for the formation of B, C and D for solid A.(1mk)

(d)Describe the test for colourless gas C. (1mk)

(e)Write a balanced chemical equation for the formation of white precipitate E.

(f)What does process E indicate about the solubility of E (1mk)

17. (a) State Boyle’s law (1mk)

(b)If 60 cm3 of oxygen is compressed from 20 to 40 atmospheres pressure. What is the new volume of the gas at constant temperature? (2mks)

18 Work out the empirical formula of a compound of 12g of carbon and 4g of hydrogen. (2mks)

19. Calculate the mass in grams of sodium hydroxide in 80 cm3 of 0.5 M sodium hydroxide (2mks)

20. (a) What are hydrocarbons? (2mks)

 (b)Hydrocarbons can be classified into three according to the number of covalent bonds between two carbon atoms .Name three classes. (3mks)

21. Give any four characteristics of compounds of the same homologous series (4mks)

22. Name the following hydrocarbons (3mks)

 (i) H H H H H

 H - C- C –C –C – C- H

 H H H H H

 H

 H C H

 (ii) H H

 H C C C H

 H C H

23. Methane is prepared in laboratory by holding a mixture of sodium ethanoate and soda lime

 (a)Complete the following equation that leads to the production of methane

 CH3COONa + NaOH

 (b)Give any two physical properties of methane (2mks)

 (c)Write the chemical equation for the combustion of methane. (1mk)

 (d)Methane reacts with chlorine in presence of sunlight to form two products.

 (i)Write a chemical equation for the reaction. (1mk)

 (ii)Name the type of reaction in d (i) above (1mk)

 (iii)Why is sunlight necessary for the reaction? (1mk)

(e) Give any two uses of alkanes (2mks)

 \*\*THE END\*\*

 happy holiday