**HOPE HIGH SCHOOL KIZIBAWO**

**END OF TERM II EXAMS**

**S.3 CHEMISTRY**

**TIME: 2:30 MINS**

**Instructions**

*Attempt all questions in section A and only one question in section B*

**SECTION A**

1 The atomic number of magnesium, sodium, potassium, and calcium are 12,11,19,20 respectively.

1. Which element has the same number of;

i) Energy level.

ii) Electrons on the outer most shell.

1. Identify the most reactive elements from the elements given in above basing on their electronic structure.
2. Write electronic configuration of calcium and potassium stating the group to which they belong and why

2 Charcoal burning is one of the sources of income and the main source of fuel in Uganda but recently charcoal burning has attracted a national concern where the majority of the people are against it. Explain the effects of this economic activity and how it can be prevented

3. a) Name one metal that may be reacted with hydrochloric acid to generate hydrogen gas.

b) State two conditions for the reaction

c) Write a word equation for the reaction.

d) Name suitable drying agent for hydrogen gas.

4 Aaron breathed directly to a beaker containing calcium hydroxide solution and the solution turned the color.

a(i) Name the gas that Aaron breathed which led to color of the calcium hydroxide to change.

(ii) Name the color to which the color of calcium hydroxide turned to.

b) Write the word equation between the gas and calcium hydroxide.

c) If Aaron breathed for a long time to the beaker containing calcium hydroxide. state what would be observed .

(ii) Write a word equation for the reaction.

5 T he full symbol of nitrogen atom is 147N.

a) State the number of neutrons in the atom of nitrogen.

b) Write;

i) The electronic configuration of nitrogen.

ii) The structural formula of nitrogen.

c) Suggest a reason why nitrogen is generally un reactive.

d) Burning magnesium was lowered in a gas jar full of oxygen.

i) State what was observed and write equation for the reaction.

ii) The product formed above was dissolved in water .state what was observed and write word equation for the reaction.

1. Both carbon and sulphur consists of allotropes which are either crystalline or non crystalline.

a) Define the term ‘’allotropy’’.

b) Name

(i) One crystalline allotrope of carbon.

ii) Non crystalline form of allotrope.

c) State one use of the crystalline allotrope of carbon that you named in b (i) above.

d) State one word which means relationship between carbon-12 and carbon-14.

7. Sodium was burnt in excess oxygen.

a) State what was observed.

Ii. Write a word equation for the reaction.

b) i. The product in a (ii) above was dissolved in water. State what was observed.

ii) Write the word equation for the reaction.

iii) State hat would be observed if blue and red litmus papers ere dipped in solution above.

c) How can you identify the gas produced in the above reaction?

8. Discuss the statement ‘’wood charcoal making has done more harm than than good”

9) Discuss the statement ‘’use of wood charcoal as a source of energy should be preferred to use of fossil fuel’’.

10 a) complete the following equation.

Calcium carbonate +dilute hydrochloric acid

b) How can the gas produced be identified in the laboratory?

c) Identify to uses of the gas produced.

**SECTION B**

11. The results of testing five water samples from different areas are shown in the table. The soap solution as gradually added to 25cm3 of each sample of water while shaking until a permanent lather was obtained.

|  |  |  |
| --- | --- | --- |
| Water sample | Volume of soap solution added | |
| Before boiling | After boiling |
| P | 12 | 1 |
| Q | 13 | 6 |
| R | 11 | 11 |
| S | 14 | 3 |
| T | 16 | 16 |

a) State with reason, which water sample.

i. is /are permanently hard water.

ii. is/are temporarily hard.

iii. Contains both temporarily and permanent hardness.

b) Name the compound which could be present in.

i) Sample S but not in sample T.

II) Sample R.

c) Explain who the sample you have named gets into water.

12) The amount of refined oil used by Uganda is still small compared to some other countries such as U.S.A and France. However, this amount is ever increasing day by day. Use the table below showing the data of Uganda oil consumptions(barrels per day) from 1980-2016

|  |  |
| --- | --- |
| YEAR | OIL CONSUMPTION(Barrels per day) |
| 1980 | 5,000 |
| 1983 | 3,700 |
| 1986 | 4,390 |
| 1989 | 5,416 |
| 1992 | 6,632 |
| 1995 | 6,932 |
| 1998 | 8,250 |
| 2001 | 9,886 |
| 2004 | 11,040 |
| 2007 | 19,764 |
| 2010 | 24,650 |
| 2013 | 26,120 |
| 2016 | 32,001 |

a) Use information in the table above. Plot a graph showing Uganda oil consumption from 1980-2016.

b) From your graph, state whether there is a regular or irregular increase in crude oil consumption. Give a reason for your answer.

c) From your graph predict the production and consumption. is the prediction easy or not ? Explain your answer.

**‘’WISHING YOU NICE HOLYDAY, STAY SAFE’’**