**DARAJANI SECONDARY SCHOOL,**

**P.O. BOX 20-90129, NGWATA.**

**MID\_TERM 2, 2015\_ EXAMINATION**

**FORM 2**

**CHEMISTRY**

**TIME: 2HRS**

**NAME…………………………………………………………………………………………ADM. NO……………….. CLASS: ………….**

1. Name a gas which is used together with oxygen in welding. (1 mark)

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1. The diagram below represents a set up for the laboratory preparation of oxygen gas.
2. Name solid R. (1 mark)

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1. Write a word equation for the reaction in the flask. (2 marks)

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1. Give three commercial uses of oxygen gas. (3 marks)

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1. The diagram represents two methods of gas collection in the laboratory.

Gas

1. (b)

Which method is suitable for collection of dry carbon (IV) oxide gas? Give a reason. (2 marks)

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1. In an experiment to investigate the percentage of oxygen in air, 200cm3 of air was passed over heated copper turnings repeatedly until a constant volume of air remained. 160cm3 of air remained at the end of the experiment.
2. Name four gases remaining in the 160cm3 of air. (4 marks)

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1. Determine the percentage of air used during the experiment. (2 marks)

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1. Magnesium continues to burn in a gas jar of carbon (IV) oxide. Explain the observation. (3 marks)

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1. (a) Cars in Mombasa rust faster than in Kisumu. Explain. (2 marks)

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(b) Name three methods of prevent rusting. (3 marks)

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1. Study the set up below and use it to answer the questions that follow.

Metal M

Cold water

1. Name the gas N. (1 mark)

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1. Give the possible identity of metal M. (1 mark)

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1. What is the nature of resulting solution? (1 mark)

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1. The table below shows the isotopic composition of neon. Study it and answer the questions that follow.

|  |  |
| --- | --- |
| Isotope | Relative abundance |
| $$\begin{matrix}20\\10\end{matrix}Ne$$ | 90.92 |
| $$\begin{matrix}21\\10\end{matrix}Ne$$ | R |
| $$\begin{matrix}22\\10\end{matrix}Ne$$ | 0.26 |

1. Calculate the value of R. (1 mark)

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1. Determine the relative atomic mass of neon. (3 marks)

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1. Write the chemical equation for the reaction between magnesium and:
2. Steam (2 marks)

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1. Cold water (2 marks)

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1. Air (2 marks)

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1. Element A, B and C have the following electronic arrangement.

A = 2 . 2, B = 2 . 8. 2, C = 2 . 8 . 8 . 2

1. Are the elements metals or non-metals? Explain. (2 marks)

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1. Give the formula of the compounds formed when B reacts with chlorine. (1 mark)

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1. Give the formula of oxide of C and state its nature. (2 marks)

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1. (a) What are halogens? (1 mark)

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(b) The reactivity of halogens decreases down the group. Explain (2 marks)

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1. (a) What is meant by atomic radius? (2 marks)

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(b) The atomic radii of group I elements are bigger than ionic radii of the same element. Explain. (2 marks)

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1. The set up below was used to investigate the reaction with cold water.

Trough

Sodium metal wrapped in copper gauze

Gas x

water

1. (i) Give an important caution when performing the experiment. (1 mark)

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(ii) Name gas x. (1 mark)

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(iii) Why is sodium metal wrapped with a wire gauze? (2 marks)

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(iv) What would happen to red and blue litmus paper dipped into the content of the trough at the end of the experiment? Explain. (3 marks)

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1. State four uses of alkali metals. (4 marks)

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1. Explain why a mixture of copper (II) oxide and magnesium react when heated while there is no reaction when a mixture of copper and magnesium oxide is heated. (2 marks)

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1. Complete the table below given that the valency of group I elements is **one.** (9 marks)

|  |  |  |  |
| --- | --- | --- | --- |
| Elements  | Carbonate (CO2-3) | Nitrate (NO-3) | Oxide (O2-) |
| Lithium  |  |  |  |
| Sodium  |  |  |  |
| Potassium  |  |  |  |