NAME………………………………………………………………………………..SIGN………

545/1

CHEMISTRY

TIME: 2HRS

**UNITY SECONDARY SCHOOL**

**Uganda certificate of education**

**New lower secondary curriculum**

END OF YEAR EXAMINATION

S.3 CHEMISTRY

TIME: 2HRS

INSTRUCTIONS

Answer all items in sections A and B

**ITEM1**

Sarah a student of Unity secondary school is trying to understand the occurrence of carbon in environment. She was doing research and found out that pure carbon is found in the form of diamond and impure carbon, inform of graphite and that carbon is allotropic.

**Task**

As a S.3 learner who has studied chemistry,

1. Help Sarah to;
2. Understand the meaning of allotropes(01 scores)

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1. Point out the three allotropes of carbon(011/2 scores)

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1. Site out the properties of diamond and graphite and in each case, give the uses of

each (06 scores)

|  |  |  |
| --- | --- | --- |
| Diamond | Properties | Uses |
|  |  |  |
| Graphite | Properties | Uses |
|  |  |  |

1. Inform Sarah of any other element that has allotropes as carbon does hence give the allotropes of that element.(011/2scores)

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**ITEM 2**

Charcoal(C) and ethane (C2H6) are some of the substances that are good sources of fuel in homes and factories.

1. What is a fuel?(01 scores)

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1. Write a chemical equation for the complete combustion of ethane(011/2 scores)

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1. Suggest the disadvantage of excessive use of fuels to the world (041/2 scores)

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1. A village Health Team (VHT) in Kasambya, Kyotera is always advising his people to avoid cooking using charcoal stoves while inside rooms with closed doors and windows.

Suggest a reason for the VHT`s advise (03 scores)

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**ITEM 3**

In our everyday life at home, most of us use carbon compounds such as petroleum products, wood, charcoal and biogas as source of fuel. Research shows that continued use of these fuels has greatly affected our resources from which they are obtained.

**Task**

1. Explain any four ways how we can sustainably use the available resources.(04 scores)

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1. The main component of biogas is methane (CH4) methane is the simplest compound obtained from crude oil which contains a variety of compounds but with similar properties.
2. Identify the class and write the general molecular formula of the organic compound to which methane belongs.(01 scores)

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1. Name and write the structural formula of the next 5 members of organic family after methane.(10 scores)

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**SECTION B (ANSWER ALL ITEMS)**

**ITEM 4**

Christine a p.5 pupil was sent to Unity secondary school by his head teacher to go and inquire about the number of subjects offered at secondary level. On reaching at the school premises, she found a chemistry teacher in a S.3 class pairing students in regards to their gender. He was pairing a boy to a boy, a boy to a girl and a girl to a girl. Assume that a boy is a metal and a girl is a non-metal,

**Task**

1. Help Christine by giving at least two examples in each scenario, explain and illustrate with structures the type of bond that exist between;(18 scores)

Boy-boy

Boy-girl

Girl-girl

1. Describe the application of bonding and structure in your everyday life(02 scores)

**ITEM 5**

Polyethene bags, car tyres, buckets, iron sheets and petrol are some of the materials used in our day to day life.

**Task**

1. Describe ways how polyethene bags are dangerous to our environment(10 scores)
2. Explain ways how to prevent the effects of polyethene bags o the environment.(10 scores)

END