

Candidate's Name:

Signature:

545/1
CHEMISTRY
Paper 1
S.2 2024
2 hours



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END OF TERM TWO (2)

CHEMISTRY

Paper 1

2 hours

INSTRUCTIONS TO CANDIDATES:

This paper has six examination items which are divided into two sections; A and B.

Section A has two compulsory items. Answers to section A must be written in the spaces provided.

*Section B has two parts; I and II. Answer one item from each part.
Answers to section B must be written in the answer booklet(s) provided.*

Answer four items in all.

Any additional item answered will not be scored.

For Examiner's Use Only						Total
1	2	3	4	5	6	

Section A

Item 1

Children of P.E class make balls for soccer out banana fibers. Jota "O", a senior footballer claims that it is better to make the balls out of polyethene bags and used straws and use straws because they are fun to play with than those made out of banana fibres.



The boys in the P.E class want to know more about the choice of polyethene bags as a material to make their toys.

Task:

Using the knowledge of chemistry

a) Help the P.E children know

i. The categories of materials

(04 scores)

ii. Suitability of the materials

(03 scores)

b) Advise them about the choice of the material

(02 scores)

Item 2

A team of engineers in Uganda is designing a new light weight air-craft structure for a local airline. They are considering using duralumin, a type of aluminium alloy.



However, they are concerned about material's performance in the harsh weather conditions and heavy use.

Task:

As a chemistry learner:

a) Explain

- i. Category of the material. (03 scores)

- ii. Suitability of the material. (04 scores)

- b) Advise on the choice of the material. (02 scores)

Section B

Part I

Item 3

At Katosi landing site, residents use Lake Vitoria as their main source of water which provides water that is not clean enough for use. The leaders urged the government to set up a treatment plant in order to provide safe water. However, leaders were requested to employ a skilled resident who is acquainted with how water is made safe for use, stages involved in purification and the challenges the project may face in the town.



Task:

As a chemist, provide the residents with the information they need to be employed.

(11 scores)

Item 4

The Village Health Team (VHT) in Bembe village carried out research to find out the major causes of typhoid and diarrhea. They found out that a lot of sewage comes from St. Mary's institution, through the trenches from the premises of smans via the shamba. This has led to diseases like diarrhea and typhoid amongst the people of bembe village near the forest after shamba due to the sewage (from smans) that runs down into their water bodies/well.



Task:

As a chemistry student, if you are appointed as a technical person at a sewage treat plant, briefly explain the steps you would use to treat sewage so that the problem of typhoid and diarrhea can be minimized. **(11 scores)**

Part II

Item 5

Air which is a mixture of different components contains 21% oxygen. In 2020, there was a wide spread of respiratory illnesses caused by COVID-19, there was an increased demand for oxygen by patients in hospitals. The government supply of oxygen was not enough and it planned to set up an oxygen production plant with minimal environmental impact. However, the science club members in your school would like to know how the process of production will be carried out.



Task:

As chemistry student, make a write up you will use during the presentation. **(11 scores)**

Item 6

Hydrogen gas makes up the biggest percentage of the fuel gas used for welding, cutting and brazing metals, and gas cookers. Hydrogen gas is becoming is becoming very low despite of

the increasing demand for fuel gas. The government has cleared an investor to set up the manufacturing plant for hydrogen gas without affecting the environment.



Tasks:

As a chemistry learner, you have been selected to guide the investor on the process of production and related materials.

Make a write up you will follow during the presentation.

(11 scores)

END!

Your education is your life, guard it well - Prov 4:13