

STUDENTS NAME: ..... STREAM: .....

SIGNATURE: .....



## STUDYSPHERE EXAMINATION BOARD

### S.3 CHEMISTRY HOLIDAY PACKAGE

#### INSTRUCTIONS:

Attempt all the items

#### ITEM 1

The conversion of sulphur dioxide into sulphur trioxide by a contact process is a reversible reaction, which takes place in the presence of a finely divided catalyst; under low temperature and high pressure conditions.

Task:

- State what is meant by the term “reversible reaction” and write the equation to the formation of sulphur trioxide by a contact process.
- In each case, give a reason as to why formation of sulphur trioxide by contact process is favourable by low temperature and high pressure.
- Name the catalyst used in the contact process and suggest the reason why it has not to be finely divided.

## Item 2

*Kinetic theory of matter states that “**matter consists of very smallest invisible particles in the state of continuous random motion**” A teacher instructed S.2 students to come up with every day examples demonstrating the existence of particles in matter.*

*Owen; a S.2 student presented his example before the whole class. His presentation was “when **someone closes him or herself in a dark room with closed windows and doors and looks into a ray of light penetrating through one simple hole in one piece of iron sheet, dust particles are seen moving in a zig zag pattern**” the teacher confirmed Owen's findings.*

- (a) State why the dust particles are seen moving in zig zag pattern.
- (b) Give a reason for your answer in (a)
- (c) What conclusion can be drawn from Owen's simple experiment?
- (d) State what would be observed within the ray of light when the room gets hotter?
- (e) Explain your observations in (d) above.

## Item 3

Many stored building in Uganda are made in such a way that they do not collapse even during an earthquake. in building construction site, it is common to see steel bars being used. Incidents of collapsing buildings especially in Uganda have been common in Kampala. The cause has been attributed to the use of poor or wrong building materials like iron should always be used.

## Task

As a chairperson of association of engineers of Uganda, you have been selected to give a representation to all builders. explain why strong iron bars should be used

in constructing (your representation should be limited to building blocks by which matter is made)

#### Item 4

Chemistry is one of the compulsory subjects for learners in secondary schools in Uganda. You are a S.2 learner and a school is organizing a parents meeting for your class with the parents. The head teacher wants the parents and learners to appreciate the importance of chemistry in our daily lives. Bulbs, salts, cement and electric wires are some of materials made from different elements

#### Task

As a S.2 learner the head of chemistry departments has asked you to prepare a speech to these parents and learners addressing the followings:

- (i) Value of learning about the periodic table, with its components and arrangement
- (ii) The importance of the knowledge of physical properties of metals and non-metals in our daily life, write a speech you will deliver in the meeting

#### Item 5

Soap is the chief material commonly used to facilitate washing. Of recent, there has been countrywide outcries to the government about the high costs of soap for domestic use. This is partly because of the few industries producing soap in the country. To ensure efficient supply of soap, recently the government secured some land for the local investors to set up another soap production plant in one of the villages in Tororo District. However, the local people are concerned about its environmental impact and their valuable land that is about to be taken by the investor. The community members are also wondering how the process of soap production will take place. As a result, the District Chairperson has called for a meeting with the investor and the Local Representatives.

#### Task

As a chemistry learner, make a write up you will use during the presentation upon invitation.

**\*\*THE END \*\***

**MERRY CHRISMASS AND A HAPPY NEW YEAR**

