

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

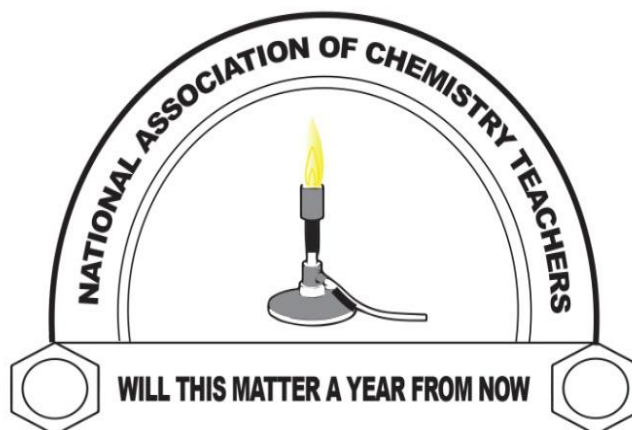
SIGNATURE:.....

2023

CHEMISTRY

Paper

2 Hours



NATIONAL ASSOCIATION OF CHEMISTRY TEACHERS
UGANDA CERTIFICATE FOR LOWER SECONDARY EDUCATION
BEGINNING OF TERM II EXAMINATIONS 2023
CHEMISTRY PAPER
S.3
TIME: 2 HOURS

CANDIDATE'S NAME:STREAM:.....

SIGNATURE:

INSTRUCTIONS

- This paper consists of two sections, A and B. Section A consists of 10 structural question, Section B has Essay or Semi structured.
- Answer all questions in section A in the space provided and attempt only two questions in section B.
- Answer each question on a fresh answer sheet provided.
- Use a blue or black ink pen only and pencil for illustrations.

SECTION A

Answer all questions in this section in the spaces provided.

- State how the following chemical processes have contributed to our country.
 - Manufacture of cement (1 mark)
.....
.....
 - Manufacture of Sugar (1 mark)

.....
.....
c) Sewage treatment (1 mark)
.....
.....

.....
.....
d) Manufacture of fertilizers (1 mark)
.....
.....

2. Explain the following observations by using the idea of moving particles.

a) Wet clothes hanging on a line become dry even in cold weather
.....
.....
.....

b) If you put some sugar in tea, the tea will become sweet even when you don't stir.
.....
.....
.....

c) If you place a balloon over the top of a test tube that contains water then you heat the water, the balloon blows up.
.....
.....
.....
.....

3. A group of S.1 students at Eagle's Nest Secondary School Kampala carried out an investigation to find out what happens to materials when hammered and heated. Study the table below fill answers to the questions. (4 marks)

Material	Observation when hit with a hammer	Observation when heated
a. Wood		
b. Glass		
c. Concrete		
d. Metal		

4. Argon, oxygen and nitrogen are obtained from air by fractional distillation of liquid air at - 250°C where liquid air is warmed up and the gases are collected one by one.

a) State whether liquid air is a mixture or a pure substance? (1/2 marks)
.....
.....

b) Explain why fractional distillation is used instead of simple distillation. (1½ marks)

.....
.....

c) During the distillation, nitrogen gas is obtained first then argon and oxygen. Explain this phenomenon. (1 mark)

.....
.....

d) Name the gases which are not collected through the fractionating column during the above process. (1 mark)

.....
.....

5. i) Define the term air pollution (1 mark)

.....
.....

ii) Name any 4 sources of air pollution you know. (2 marks)

.....
.....
.....

iii) State any two gases that are produced by car engines that act as pollutants (1 mark)

.....
.....

6. The cook left knife outside the compound for a winter night, it was found that the knife turned dark brown on the surface the following day.

a) What is the chemical name for the dark brown coating? (1 mark)

.....

b) What conditions led to the formation of the dark brown coating? (1 mark)

.....
.....

c) State any two advantages of the above process to the economy (2 marks)

.....
.....

7. i) State the difference between a radical and an element (2 marks)

.....
.....
.....

ii) Name any two examples of radicals you know. (2 marks)

.....
.....

8. a) What do you understand by the term “rocks”? (1 mark)

.....
.....

- b) Mention any three importances of rocks to the economic development of a country like Uganda. (3 marks)

.....
.....
.....

9. Classify the following statements as TRUE or FALSE.

a) Digesting sugar with the amylase in saliva is a chemical change (1 mark)

b) Electro plating a metal is a physical change. (1 mark)

c) All physical changes are reversible (1 mark)

d) All the chemical changes are irreversible. (1 mark)

10. i) Describe what an acid is?(2 mark)

.....
.....

- ii) Name the acid found in the following substances. (04 marks)

i) Tea ii) Urine

ii) Lemon Juice iv) Digestive juice in stomach.....

SECTION B

Answer only two questions in this section and any additional question will not be marked.

11. a) Use the particles theory of matter and explain the following observations

- An inflated balloon expands and eventually bursts on leaving it exposed to sunshine
- An inflated balloon eventually sinks when left on a cemented floor for 3 days
- You can easily squeeze a plastic gas syringe that is completely filled with air, than squeezing the one which is filled with water
- When tea bag is put in a cup of hot water, colorless water changes to dark brown

- b) Explain why the rain water is always slightly acidic

12. a) Name five sources of natural water. (5marks)

- b) Describe the process of purification of the tap water that we normally receive in our communities (10marks)

- c) Explain how natural water is recycled (5marks)

13. Look at the chemicals listed below and answer the questions about them. You can use the table below showing the periodic table to help you.

Iron	Water
Sand	Oxygen
Gold	Carbon dioxide
Helium	Carbon
Rust	Sea water

- a) Name the two metals (2marks)
- b) Name two compounds (2marks)
- c) Name a mixture (1marks)
- d) Name a non-metallic element that is a solid (1mark)
- e) You have a solution of sugar in water. You want to obtain the sugar from it
 - i. Explain why filtering will not work (4marks)
 - ii. Which method will you use instead (1mark)

g) How would you separate salt and sugar?

- h) Mention any special safety precautions you would take (4marks)

Differentiate between mixtures and compounds (5marks)

14. a) What is a rock? (1mark)

b) i) Name three types of rocks (3marks)

ii) Describe the formation of the named rocks above (16marks)

END