



Uganda Certificate Of Lower Secondary Education
END OF YEAR EXAMINATIONS 2023
CHEMISTRY
SENIOR THREE
TIME: 2Hrs and 15 minutes

INSTRUCTIONS;

- ❖ This paper consists of two sections A and B.
- ❖ Attempt all questions in section A and only **one** question from section B
- ❖ Answers for section A should be written in the spaces provided and those for section B should be written on answer sheets.

SECTION A

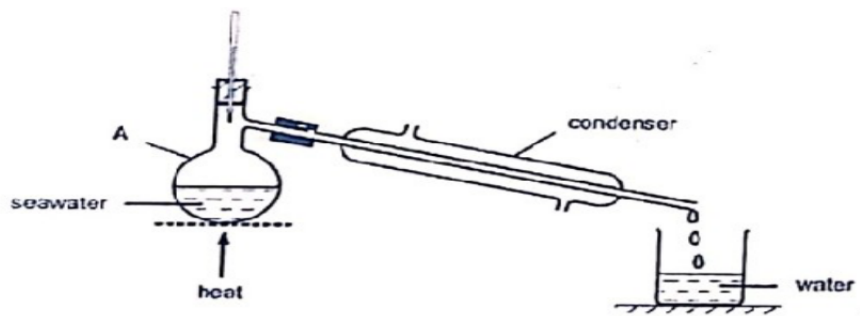
1. The agricultural sector is a bedrock of Uganda 's economy. In 2021, agriculture contributed around 23.8 % to the economic growth of Uganda. Chemistry plays a pivotal role in the strength of Uganda 's agricultural sector through improved agricultural productivity.



Explain briefly 2 ways how chemistry has enabled the presence of such variety of quality fruits in Nakasero market.

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2. Sea water is said to be salty and does not quench thirsty, students took a sample of sea water and heated it using the apparatus shown below

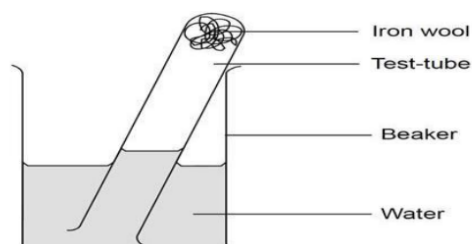


i) What is the name of the process shown in the figure above

ii) State the name of the apparatus labelled A

iii) State the function of the condenser

3. Below is a set up apparatus that was used to investigate the most active component of air. Study it and answer the questions that follow



a) (i) Identify the component of air being investigated

(ii) State the approximate percentage of the component of the air being investigated in the experiment above

(iii) Name the process that took place in set up apparatus above

(iv) State the type of change that took place leading to the process named in (iii) above

4. Acids and bases are substances which are used in our everyday life. Study the set up diagrams below and answer the questions that follow

SOLUTION X

SOLUTION Y



(Turns blue litmus paper red)



(Turns red litmus paper blue)

(a) State the identity of;

(i) solution X

(ii) Solution Y.....

(b) Which of solutions X and Y is similar in properties as,

(i) baking powder?

(ii) lemon juice?.....

(c) Name the compound found in lemon juice that is responsible for the properties of lemon

Juice stated in (a) and (b) above.....

5.(a) Iron is a commonly used metal. Give the properties of iron which makes it suitable for use as

(i) A roofing material

.....

(ii) A school gong/bell

.....

(b) Your friend Paul work in at a construction site where he comes back with nails everyday in the pockets of his overall . Yesterday he came back with nails and some were crushed into very small pieces. On opening the pockets of the overall to remove the nails, these tiny iron pieces were accidentally poured into your sugar. Briefly describe how you can separate these small pieces of iron from sugar.

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6 .a) Using the knowledge of acids, alkalis and salts, state the names of the salts obtained from the following reactions and also write well balanced equations for each.

(i) Zinc metal + dilute hydrochloric acid

Equation.....

Name of salt.....

(iii) Calcium carbonate + Dilute nitric acid

Equation.....

Name of salt.....

7. Write the chemical formulae of the following compounds

Compound	Formula
Iron (III) sulphate	
Sodium nitrate	
Potassium oxide	
Lead (II) Carbonate	
Aluminum hydroxide	

8. Soap and detergents are used at home for laundry work and for washing clothes.

(a) Explain how dirt is removed from a dirty cloth.

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(c) Give one disadvantage of using detergents.

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(d) Distinguish between hard water and soft water.

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9. (a) Determine the RFM of the following compounds

(i) Ammonium chloride

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(ii) Calcium carbonate

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(b) Calculate the number of moles contained in the following

(i) 40g of Zinc nitrate

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.....
.....
(c) Calculate the mass of the following

(i) 0.05 moles of Calcium carbonate

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.....
(ii) 0.25 moles of sodium chloride

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10. (a) State the method used in the manufacture of Ethanol on large scale.

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(b) Give two uses of Ethanol

(c) Write down one effect of Ethanol in your societies.

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SECTION B

11. (a) Domestically most of us use carbon compounds such as wood, charcoal, biogas and petroleum products as fuels. Research shows that continued use of these fuels has greatly affected our environment from which they are obtained.

The main component of biogas is methane (CH_4). Methane is the simplest compound obtained from crude oil that contains a variety of compounds with similar structures.

(i) Identify the class and write the general molecular formula of the organic compounds to which methane belongs. (02marks)

(ii) Name and write the structural formula of the next member of the organic family after methane. (02marks)

c) A house wife who had used a lit charcoal stove for cooking on her small closed room was the following day found dead in that room. Using your knowledge about combustion, explain what could have led to her death. (03mks)

(d) Explain any three ways how we can sustainably use these fuels. (3 marks)

12. Plants absorb mineral elements from the soil in solution with water however these elements exist in the soil as compounds or non-charged atoms. Rain water also dissolve some of these elements to form dilute acids that also react with the mineral compound to release these metallic

ions and radicals that plants need for proper growth.

(a) Using free metals such as Magnesium, Zinc and Calcium write well balanced equations to show how they react with dilute hydrochloric acid. (03mks)

(b) Using oxides of the metals in (a) above, write well balanced equations to show how they react with dilute hydrochloric acid. (03 marks)

(c) Describe one chemical reaction that can be used to remove soil acidity. (03mks)

(d) What do you understand by neutralization (01 mark)

END

I WISH U SUCCESS AND NICE HOLIDAYS

Merry X-mas & Happy New Year !!!!