

Approach To Lower Secondary CHEMISTRY 545/1 [Paper ONE]

2024 EDITION

© Copyright: The moral rights of the author have been attached.

WARNING: Reproduction of this work in pamphlets, handouts and or any form without permission of the author may have serious legal implications.

All rights reserved.



This blank page has been left intentionally.

PREFACE

This highly successful workbook presents clear to point chapter coverage in line with basis of assessment of each element of construct in UCE 545/1.

Each element of construct has been dissected to its fullest. To the facilitator of the class, this master piece provides tips and hints on how develop lesson notes with the learners.

To my dearest item takers (testees), this book contributes to development of an independent thinking, problem solving and scientific attitude across all chapters to be examined in theory paper at the end of the four years.

The various scenarios on each element area of assessment of respective element of construct will give a fine touch in preparation for the final national examinations.

So dear item takers, let's try out the various sets of exams provided in this handbook. We shall not regret.

Download more pastpapers from www.mutoonline.com

To those reading this book, the author has given this mater piece time to come up with this master piece.

Nice reading!!!

CS CamScanner

CONTENTS

PREFACE	3
ACKNOWLEDGEMENT	4
TIPS TO THE FACILITATOR OF THE CLASS	6
ELEMENT OF CONSTRUCT_EOC	8
FIRST ELEMENT OF CONSTRUCT_ EOC 1	8
TOPICS;	
ASSESSABLE AREAS	
BASIS OF ASSESSMENT	
Summary notes on the assessable areas for EOC 1	
SECOND ELEMENT OF CONSTRUCT _ EOC 2	
TOPICS;	
ASSESSABLE AREAS	
BASIS OF ASSESSMENT	32
Summary notes on the assessable areas for EOC 2	33
THIRD ELEMENT OF COSTRUCT _ EOC 3	36
TOPICS;	36
ASSESSABLE AREAS	37
BASIS OF ASSESSMENT	37
Summary notes on the assessable areas for EOC 3	38
FOURTH ELEMENT OF COSTRUCT_ EOC 4	49
TOPICS	49
ASSESSABLE AREAS	49
BASIS OF ASSESSMENT	50
Summary notes on the assessable areas for EOC 4	51
GUIDELINES TO ITEM TAKERS (Candidates)	54
TYPICAL EXAMINATION PAPER SERIES	55

Download more pastpapers from www.mutoonline.com

TIPS TO THE FACILITATOR OF THE CLASS

What should happen during the teaching and learning process?

- ✓ Try to b ring the subject content to reality
- ✓ Show learners the applicability of the knowledge of the subject matter you are facilitating
- ✓ Use mini- scenarios that will help them to think critically and apply the knowledge learnt.
- ✓ Be knowledgeable in the subject
- ✓ Know areas where knowledge of the subject can be applied
 in real life.
- ✓ Know what is happening in your country

As a facilitator of the class upon completing your lesson plan, design a summary of the content you intend learners to concentrate on in their research/findings. This is called an activity sheet. This tool guides them to write their own notes. Prepare this tool basing on the basis of assessment of that element of construct where that topic or concept falls.

For example;

My lesson today is on extraction of iron from haematite. The following activity sheet can be developed to guide the learning process.

Activity sheet

Raw material(s)	
Process of production	
-vessel used	e tudolonale oranez accienza cantada
-chemical process involved -how can the ore be converted	and the second second second
to iron	

-how can the extracted iron be purified	de lacerene aprimend
Likely side effects during production process	
How can these side effects be mitigated?	
What can the community gain from the iron plant and the effect of the benefit to the presidents	

This activity sheet will guide learners to have main key points on what is expected of them.

New Terms Used In Assessment Of Competency Based Curriculum

Old knowledge based curriculum	New competency based curriculum
Questions	Items
Answers	Responses
Writing questions	Item development
Item writers	Item developers
Candidates	Test takers (testees)
Performance(s)	Achievement
Pass mark	Standard
Aggregates / grades	Achievement proficiency levels
Teacher	Facilitator

ELEMENT OF CONSTRUCT_EOC

Related competences (learning outcomes) that can be assessed together are grouped. This is to avoid duplication/multiple testing of competences. Each group is called an element of construct and only one item is set from that particular group. In chemistry, there are five elements of construct, four for theory and one for practical. In this book, we are to concentrate on the first four elements of construct to be set in theory.

A BREAKDOWN OF THE FIRST FOUR ELEMENTS OF CONSTRUCT.

FIRST ELEMENT OF CONSTRUCT_ EOC 1.

The learner appreciates contribution of chemistry to our economy. (For items 3 and 4 in part one of section B)

TOPICS;

- ✓ Industrial processes
- ✓ Air. (Mainly on manufacture of oxygen.)
- ✓ Chemistry and society.
- ✓ Carbon in life. (Mainly on crude oil, fermentation and saponification)
- ✓ Chemical reactions. (Mainly contact, Haber processes)
- Oxidation and reduction. (In iron extraction and for concepts of electrolysis in extraction of aluminium, copper, manufacture of sodium hydroxide and chlorine)

ASSESSABLE AREAS

(a) Manufacture of oxygen gas (b) Manufacture of chlorine gas (c) Extraction of metals (Al, Fe, Cu) (d) Manufacture of fertilizers (e) Manufacture of detergents	(f) Manufacture of sodium hydroxide (g) Manufacture of sulphuric acid (h) Manufacture of cement (i) Manufacture of Ethanol (j) Manufacture of bio gas (k) Manufacture of ammonia	Each Process involves V – vessel Cp – chemical processes Cd – conversion to desired product Ch – coherence Pr -purification
--	--	--

ASIS OF ASSESSMENT

Basis of assessment		Criteria of assessment	Score
A	Raw materials	All raw material	02
	(Rm)	any one raw material	01
	7	no raw material	00
	Process of production	Process of production with all V, Cp, Ch, Pr	03
	(Pp)	Process of production with any three of V, Cp, Ch, Pr	02
		Process of production with any one of V, Cp, Ch, Pr	01
	145 1 100 1	No process of production	00
	Side effects of the process of production	Any one danger identified, explained and mitigated	03
	and mitigation (Se)	Any one danger identified and explained OR identified and mitigated OR explained and mitigated	02
		Any one danger identified OR explained OR mitigated	01
		No danger identified, explained or	00

Approach to Lower secondary CHEMISTRY_Paper ONE (545/1) Author_Kibugo Dennis

		mitigated	
D	Social benefits (Sb)	Any one social benefit identified, effect of the benefit and impact of the benefit	03
		Any one social benefit identified and effect of the benefit OR identified and impact of the benefit OR effect of the benefit and impact of the benefit	02
		Any one soci al benefit identified OR effect of the benefit OR impact of the benefit	01
		No social benefit identified	00

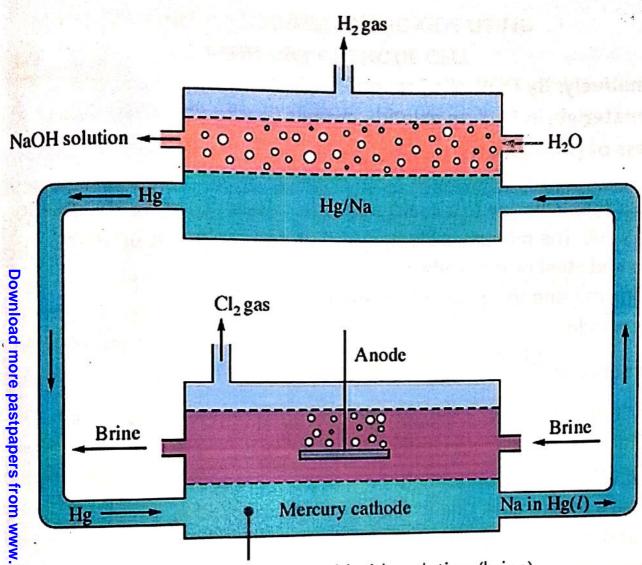
Summary notes on the assessable areas for EOC 1.

Summary notes on the assessable areas for EOC 1.

MANUFACTURE OF CHLORINE GAS USING MERCURY
CATHODE CELL

The Mercury cathode cell





Raw materials; Concentrated sodium chloride solution (brine).

Process of production

Concentrated by electrolysis of concentrated sodium chaoride solution (Brine) using graphite anode and flowing mercury as the cathode in a mercury cathode cell.

Brine contains sodium, chloride, hydroxide and hydrogen ions.

The ions migrate to oppositely charged electrodes.

At the anode chloride ions are discharged, in preference to hydroxide ions; being in higher concentration than hydroxyl ions chlorine gas is formed.

The chlorine is dried, liquefied and stored in tightly closed tank

Alternatively; By DOWN's Process

Raw material; Sodium chloride crystals (Rock salt)

Process of production

Solid sodium chloride (rock salt) and little calcium chloride are fed in Down's cell. The mixture is electrolysed using titanium or graphite anode and steel or iron cathode.

The ions migrate to oppositely charged electrodes.

At the anode

$$2 \text{ Cl}^{-} \text{ (l)} \longrightarrow \text{ Cl}_2 \text{ (g)} + 2e$$

The chlorine formed is collected and stored in tightly closed tanks
The Chlorine is dried, liquefied and stored.

Side effects and mitigation

Exposure to mercury due to leakage in the cell which is highly toxic and may cause damage to nervous and reproductive systems on long exposure to the workers and this can be mitigated by proper use of required personal protective equipment.

Social benefits

Employment opportunities; increased **income** among residents hence **improved standards of living.**

MANUFACTURE OF SODIUM HYDROXIDE USING MERCURY CATHODE CELL

Raw materials; concentrated sodium chloride solution (brine).

Process of production;

Chlorine is manufactured by electrolysis of concentrated sodium chloride solution (Brine) using graphite anode and flowing mercury as the cathode in a **mercury cathode cell**.

Brine contains sodium, chloride, hydroxide and hydrogen ions.
The ions migrate to oppositely charged electrodes.

At cathode;

Sodium and hydrogen ions migrate to the cathode however sodium ions are preferentially discharged to hydrogen ions since sodium ions are more concentrated. Sodium ions gain an electron forming sodium metal.

$$(Na^+ (aq) + e \longrightarrow Na (s))$$

The sodium metal formed reacts with mercury to form sodium amalgam.

The sodium amalgam is then dissolved in water forming **sodium** by droxide solution, hydrogen and mercury which is then recycled into the cell.

(2Na/Hg_(l) +
$$H_2O_{(l)}$$
 \longrightarrow 2NaOH_(aq)+ $H_{2(g)}$ + 2Hg_(l))

The sodium amalgam is then dissolved in water forming sodium hydroxide solution, hydrogen gas and mercury which is then recycled into the cell.

($2Na/Hg_{(l)} + H_2O_{(l)} \longrightarrow 2NaOH_{(aq)} + H_{2(g)} + 2Hg_{(l)}$)

Sodium hydroxide solution is then evaporated to saturation and the cooled to form pure pellets of sodium hydroxide and stored in tight plastic containers.

Side effects and mitigation

- * Exposure to mercury due to leakage in the cell which is highly toxic and may cause damage to nervous and reproductive systems on long exposure to the workers and this can be mitigated by proper use of required personal protective equipment.
- Poisonous fumes by waste gases which when inhaled can cause respiratory disorders. This can be mitigated by fitting catalytic converters in exhaust pipes of the machines to convert toxic chlorine to other non toxic compounds.

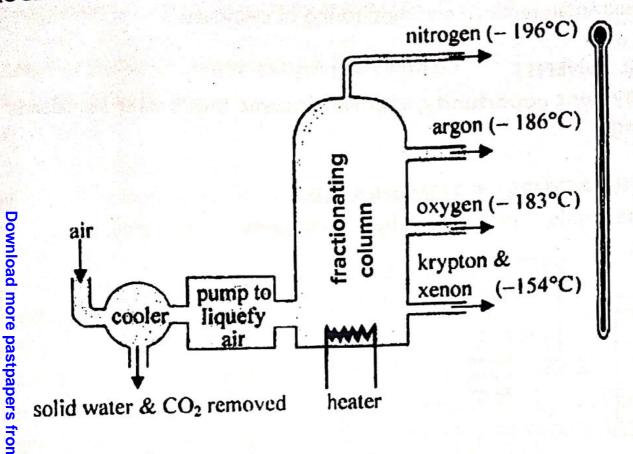
Social benefits

Employment opportunities; increased income among residents hence improved standards of living.

MANUFACTURE OF OXYGEN

RAW MATERIALS; Air.

PROCESS OF PRODUCTION



Air is passed through air filters to remove dust and smoke particles. Air is passed through concentrated sodium hydroxide solution to remove carbon dioxide.

Air is then passed through silica gel to absorb water vapour.

Calbon dioxide and water vapour are removed from air before it is liquefied because they solidify and block the apparatus.

The remaining components of air are repeated compressed at 200 atmospheres and allowed to cool at about –200° C. to obtain liquid air The liquid air is fractionally distilled using a fractionating column.

Nitrogen boils off first because it has a lower boiling point (–196° C) leaving behind oxygen with a higher boiling point (-183° C). Both nitrogen and oxygen collected obtained contain traces of noble gases. Pure oxygen is then stored under pressure in steel cylinders.

Approach to Lower secondary CHEMISTRY_Paper ONE (545/1)

SIDE EFFECTS AND MITIGATION

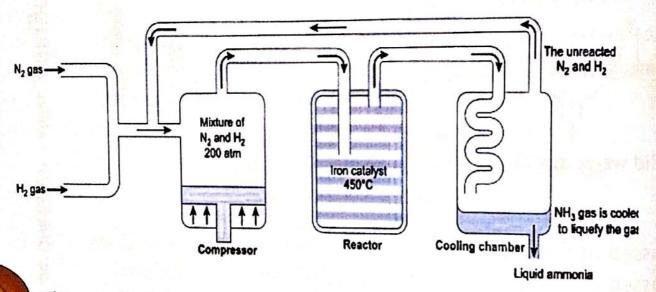
Explosion of oxygen cylinders due to high pressure. This can cause explosion of oxygen symmetric people. Mitigation can be done other materials to catch fire injury to people. Mitigation can be done by regular maintenance and monitoring of cylinders.

SOCIAL BENEFITS

Employment opportunity; improved income thus better standard of living.

MANUFACTURE OF AMMONIA GAS.

Raw materials; nitrogen and hydrogen gases.



Nitrogen and hydrogen gases are reacted in a reactor at high pressur (200atmospheres) and low temperature (450°c) in a ratio of 1:3 in presence of finely divided iron catalyst to form ammonia gas.

$$N_{2 (g)} + 3H_{3 (g)} \rightarrow 2NH_{3 (g)}$$

Ammonia is then purified by methanation process.

Side effect and mitigation.

Noise pollution from compressors that may cause discomfort and hearing problems to the residents. This can be mitigated by use of sound proof in production rooms.

Source of employment opportunities leading to increased income among residents hence improved standards of living.

MANUFACTURE OF AMMONIUM FERTILIZERS

Ammoniumfertilizers

- Urea *
- Ammoniumnitrate *
- **AmmoniumSulphate**
- Ammoniumphosphate

EXAMPLE; **MANUFACTURE OF UREA**

Download more pastpapers from www.mutoonline.com RAW MATERIALS: Liquid ammonia and carbon dioxide gas PROCESS OF PRODUCTION;

Liquid ammonia (or concentrated ammonia solution) is put in an air tight cylinder (reactor) at low temperatures of about 200°c and high pressure of 100atmospheres to form urea crystals. Urea crystals are then washed and dried to remove impurities. The crystals are ground into fine powder that is packed for storage.

$$2NH_{3(aq)} + CO_{2(g)} \longrightarrow CO(NH_2)_{2(aq)} + H_2O_{(l)}$$

side effects and mitigation

eakage of pipes leading to air pollution (chocking smell of immonia). This if inhaled can cause stomach and respiratory lisorders. This can be mitigated by regular maintenance and nonitoring of cylinders.

Author_Kibugo Dennis Approach to Lower secondary CHEMISTRY_Paper ONE (545/1)

Social benefits

Employment opportunities; increased income among residents hence improved standards of living

Note

Other ammonium fertilizers can also manufactured as below.

Ammonium nitrate;

Obtained by reacting nitric acid with ammonia gas.

$$HNO_3(aq) + NH_3(g) \rightarrow NH_4NO_3(aq)$$

Ammonium Sulphate;

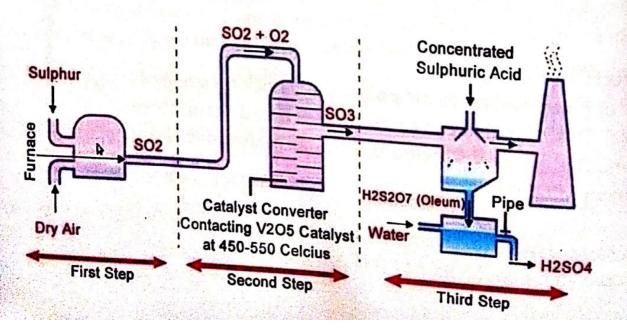
Obtained by reacting Sulphuric acid with ammonia gas.

$$H_2SO_4(aq) + 2NH_3(g) \longrightarrow (NH_4)_2SO_4(aq)$$

The respective fertilizers are further concentrated and converted to solid form and packed for storage.

MANUFUCTURE OF SULPHURIC ACID

Raw materials; Sulphur dioxide gas, oxygen gas Process of production;



Dry Sulphur dioxide gas free from impurities is heated with dry pure oxygen gas at low temperature (of about 450°C), high pressure (of about 1-3atm) in presence of vanadium(V) oxide catalyst forming Sulphur trioxide. This occurs in a **combustion cylinder.**

 $2SO_{2(g)} + O_{2(g)} \longrightarrow 2SO_{3(g)}$ Sulphur trioxide is dissolved in little concentrated Sulphuric acid Firming fuming liquid called Oleum in a tank.

H2SO4(g) $H2SO_{4(g)} \longrightarrow H2SO_{4(g)} \longrightarrow H2SO_{4(g)}$

SO3 $_{(g)}$ + H_2SO_4 $_{(l)}$ H2S207 $_{(l)}$ H2S207 $_{(l)}$ Pleum is added to a regulated volume of distilled water form concentrated Sulphuric acid.

$$H_2S_2O_7(l) + H_2O(l) \rightarrow 2H_2SO_4(l)$$

Side effects and mitigation

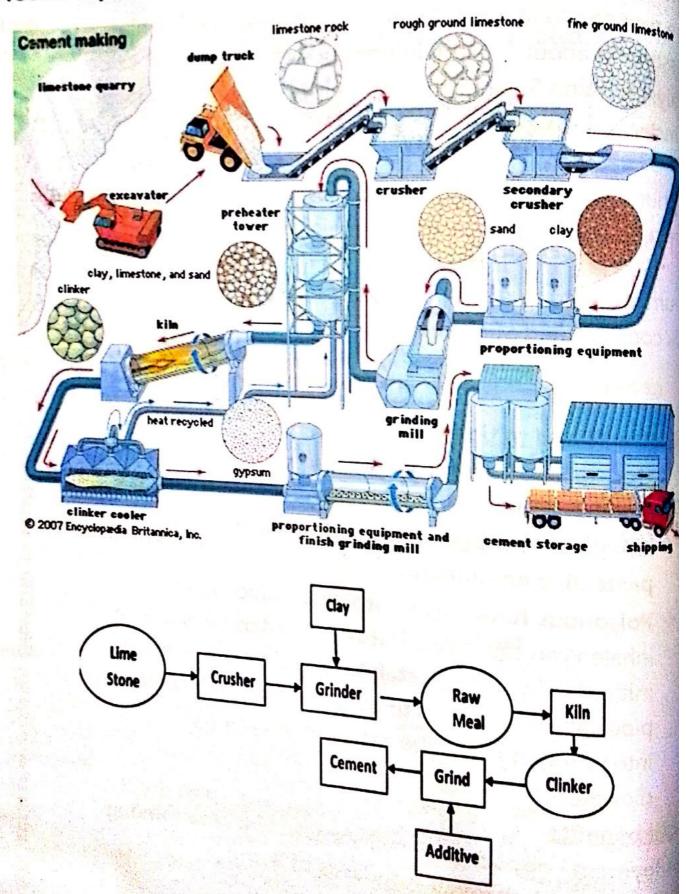
- Hot surface burns from combustion cylinder causing wounds hence pain to workers and this can be mitigated by proper use of required personal protective equipment.
- ❖ Poisonous fumes by waste gases which when inhaled can cause respiratory disorders. This can be mitigated by fitting catalytic converters in exhaust pipes of the machines to convert oxides of Sulphur into nitrogen and carbon monoxide to carbon dioxide,

Social benefits

Employment opportunities; increased income among residents hence improved standards of living.

MANUFACTURE OF CEMENT Raw materials: Limestone, clay and gypsum.

Process of production



A mixture of limestone and clay is crushed into fine powder.

The fine powder is then mixed with little water and allow to flow down into a **rotating drum** (cylinder) in which it is strongly **heated**.

Limestone decomposes forming calcium oxide and carbon dioxide.

Calcium oxide and aluminium oxide **reacts** with silicon dioxide forming lumps of calcium silicate and aluminium silicate respectively.

The lumps are crushed to **form cement** as a fine powder. **Gypsum is added during** the grinding process to moderate the getting of cement.

ement is packed in bags and ready for use.

Side effects and mitigation

Dust particles during the crushing process that cause **air pollution leading to respiratory disorders** to workers and this can be mitigated by **proper use of required personal protective equipment.**

Social benefits

Employment opportunities; increased **income** among residents hence **improved standards of living**

Or; The plant is a source of **government revenue** leading to **improved social infrastructures** like roads, health centers, and schools hence **better standards of living** among residents.

MANUFACTURE OF ETHANOL

Raw materials; Starch, malt and

yeast

Process of production

The starch containing substance is crushed (or some are roasted) to extract starch. Malt is then added to starch in a container and it is then covered. Malt contains an enzyme, diastase that catalyses hydrolysis of starch to maltose.

Yeast is then added to maltose after about 5 days at room temperature.

The maltase in yeast catalyses the hydrolysis of maltose to glucose.

Zymase enzyme in yeast catalyses the breakdown of glucose to crude ethanol and carbon dioxide.

$$C_6H_{12}O_6_{(aq)} \longrightarrow 2C_2H_5O_{(l)} + 2CO_{2(g)}$$

Crude ethanol is converted to pure ethanol by fractional distillation.

Side effects and mitigation

Hot surface burns from distillation tanks that cause wounds hence pain to workers and this can be mitigated by proper use of required personal protective equipment.

Social benefits

Employment opportunities; increased income among residents hence improved standards of living.

MANUFACTURE OF SOAPY AND SOAPLESS DETERGENTS Soapless detergents (non-soapy) A)

Raw materials; Benzene, concentrated Sulphuric acid, concentrated sodium hydroxide solution

Process of production

Benzene is reacted with a long chain alkene in presence of concentrated Sulphuric acid in a plastic container forming alkylbenzene.

The alkylbenzene is heated with concentrated sulphuric acid and then concentrated sodium hydroxide solution added to the esultant solution forming a detergent.

This mixture can be added to minimum volumes of water to form quid form detergents.

some additives such as whitening agents, biological enzymes, ragrances, stabilizers may be added during the process.

Side effects and mitigation

- Acids pills on surfaces that may cause falls/accidents leading to injuries on workers. This can be mitigated by careful handling of the acid or Posting hazard and warning information in the working area.
 - Burns from acids when in contact with the skin causing wounds. This can be mitigated by careful handling of the acid

B) Soapy detergent

Raw materials;

Vegetable oil (animal fat) and concentrated sodium hydroxide solution.

PROCESS OF PRODUCTION;

A mixture of vegetable oil or animal fat and concentrated sodium hydroxide solution is boiled while stirring until no more reaction occurs in a boiler (plastic container). The resultant soap solution is cooled. Concentrated sodium chloride solution is added to soap solution to precipitate out the soap.

Soap floats and it is skimmed off.

Additives like perfumes and dyes may now be added. Soap is baked into desired bars and it is stored.

Side effects and mitigation

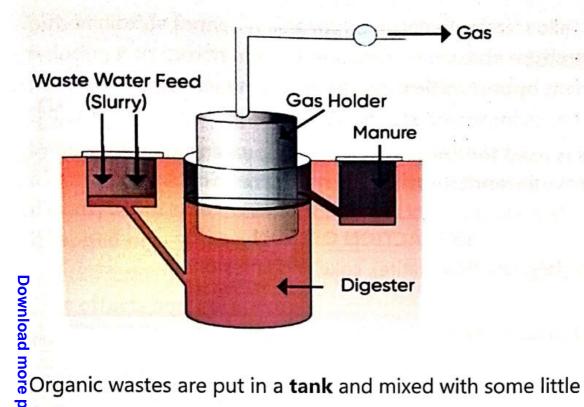
Hot surface burns during the boiling process causing wounds hence pain to workers and this can be mitigated by proper use of required personal protective equipment.

Social benefits

Employment opportunities; increased income among residents hence improved standards of living.

Raw material; organic waste, water

Process of production



water.

The tank is covered to prevent aerial oxidation. The tank and contents are maintained at room temperature for about 2 weeks. Anaerobic bacteria break down the organic matter (fermentation) to produce biogas. The biogas compressed and collected in gas cylinder for storage, by means of pipes.

Side effects and mitigation.

- * Explosion of biogas cylinders due to high pressure. This can cause other materials to ignite spontaneously/catch fire. Mitigation can be done by keeping cylinders in cool areas.
- Air pollution by waste gases (such as hydrogen sulphide and ammonia) in case of any leakage. This may cause stomach and respiratory disorders. This can be mitigated by regular maintenance and monitoring of cylinders.
- Leakage of hydrogen sulphide as a waste gas that can cause acid rain which leads to crumbling of buildings. This can be mitigated by regular maintaince and monitoring of cylinders.

Social benefits

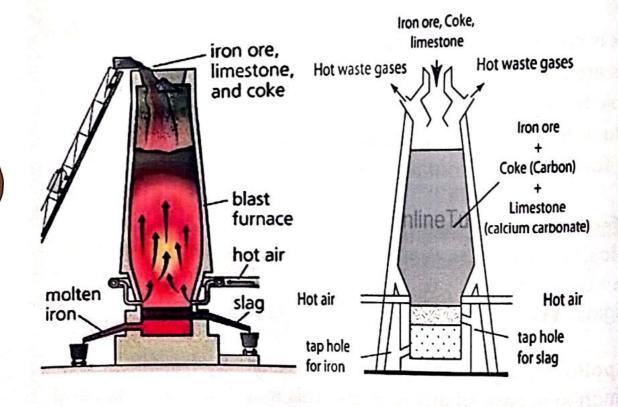
Employment opportunities; increased income among residents hence improved standards of living

Or; The gas is used for lighting and a fuel source for cooking hence improved standards of living among residents.

EXTRACTION OF IRON

Raw materials; Ore (Haematite), coke and limestone.

Process of production



Haematite, coke and limestone are fed into a blast furnace from the top. Hot air is blown from the bottom of the furnace.

Coke is oxidised by hot air forming carbon dioxide. The

carbon dioxide formed reacts with unreacted(excess) coke reducing it to carbon monoxide. Carbon monoxide reduces haematite to molten iron and carbon dioxide given off in the process.

Limestone decomposes to calcium oxide and carbon dioxide. The calcium oxide formed reacted with silicon dioxide, which is an impurity, forming calcium silicate that is tapped off.

Side effects and mitigation

Hot surface burns causing wounds hence pain to workers and this can be mitigated by proper use of required personal protective equipment.

Social benefits

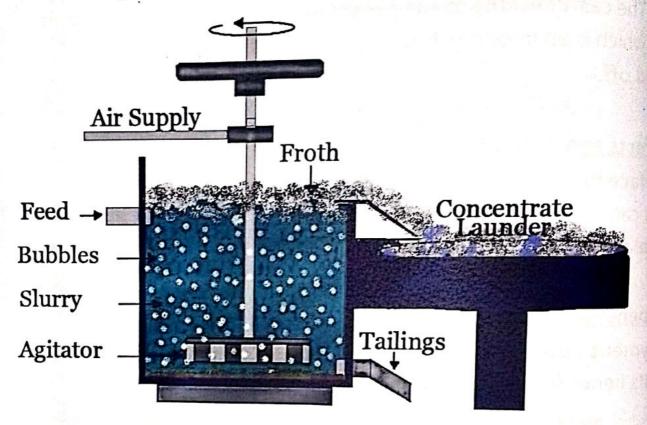
more pastpapers from www.mutoonline.com Employment opportunities; increased income among residents hence improved standards of living

CS CamScanner

EXTRACTION OF COPPER

Raw materials; Ore (copper pyrites)
Process of production

FLOTATION PROCESS

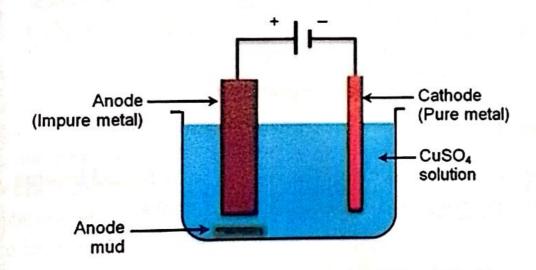


The ore is concentrated by froth floatation in a tank (container).



- The concentrated ore is then roasted in air to produce copper(I) Sulphide, iron(II) Oxide and Sulphur dioxide.
- The silicon dioxide is added to the mixture and heated in absence of air.
- The iron(II) oxide is reacted with silicon dioxide to form molten slag of iron (II)silicate.
- Copper(I) Sulphide is heated in controlled supply of air to form impure copper (blister copper).

ownload more pastpapers from www.mutoonline.com The impure copper is purified by electrolysis using acidified copper(II) Sulphate solution as the electrolyte.



The anode is made of impure copper and cathode is made of pure copper.

At cathode; Copper(II) ions are discharged to form copper which is deposited at the cathode and collected as pure copper.

$$Cu^{2+}_{(aq)} + 2e \longrightarrow Cu(s)$$

Side effects

- Toxic fumes produced from production process can lead to suffocation and hence death and this can be mitigated by fitting catalytic converters in exhaust pipes of the machines or Proper use of personal protective equipment
- Sulphur dioxide produced as a waste gas dissolves in water forming acidic rains that plants and crumbs on walls of buildings, This can be mitigated by creating a sulphuric a manufacturing plant around the area to use this Sulphur dioxide.

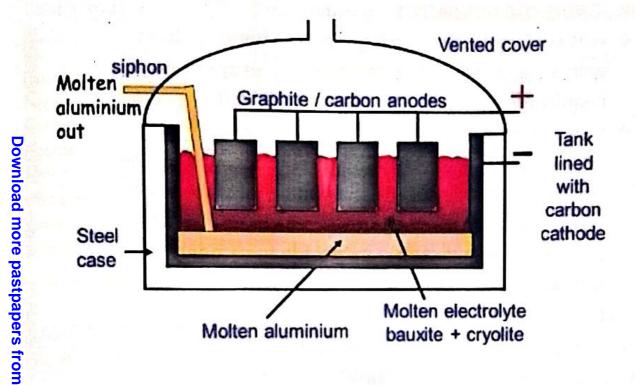
Social benefits.

Source of employment opportunities leading to increased income among residents hence improved standards of living.

EXTRACTIONOFALUMINIUM

Raw materials: Ore (Bauxite)

Process of production



The ore is first roasted in air to drive off any water in it.

the ore is then crushed into fine powder and concentrated with hot concentrated sodium hydroxide solution in a container to form turn a luminium hydroxide by Bayer's process.

The aluminium hydroxide is heated to form pure aluminium oxide. The aluminium oxide is dissolved in molten cryolite to lower its melting point to about 800°c.

The molten aluminium oxide is electrolysed between graphite electrodes

At anode

$$Al^{3+}$$
 (1) + 3e \longrightarrow $Al(1)$

Side effects and mitigation

- Hot surface burns causing wounds hence pain to workers and this can be mitigated by proper use of required personal protective equipment.
- Poisonous fumes by waste gases which when inhaled can cause respiratory disorders. This can be mitigated by fitting catalytic converters in exhaust pipes of the machines to convert oxides of nitrogen into nitrogen and carbon monoxide to carbon dioxide,

Social benefits

Employment opportunities; increased **income** among residents hence **improved standards of living**.

SECOND ELEMENT OF CONSTRUCT _ EOC 2

Appreciates the application of chemistry in daily life. (For items 1 and 2)

TOPICS;

- ✓ Chemistry and society
- Chemicals for consumers. (Mainly food additives, medicine and drugs and detergents.
- ✓ Nuclear processes.

ASSESSABLE AREAS

1.food ad	ditives		2. Drugs and medicine	3. Nuclear processes	4. Detergent
Flavour enhances Preservat s es Glazing agents Gelling agents Anti- oxidants Bulking agents	Stabi Thick Biolo enzyr	(food s) lizers eners gical mes ening ts	Antibiotics (penicillin & streptomycin) Herbal medicine Analgesics (Aspirin, paracetamol codeine)	Nuclear fission Nuclear	Soapy detergents Soapless detergents
	OF ASSES		Citaria		
Basis of	assessme		Criteria of assessr		Score
A	Category/ product	type of	Any one product of product identif		e 02
			Any one product product identified		of 01
Basis of A			no product nor ca		00
В	Function(s	s) of	Anyone function of product(s)		01
	product(s)		No function of th		00

BASIS OF ASSESSMENT

Basis of assessment		Criteria of assessment	Score
A	Category/type of product	Any one product and category/type of product identified	02
		Any one product or category/type of product identified	01
		no product nor category/type of product identified	00
В	Function(s) of	Anyone function of product(s)	01
	product(s)	No function of the product(s)	00
С	Dangers or Side effects of the	Any one danger/side effect identified explained and mitigated	03
	product and mitigation	Any one danger/side effect identified explained and mitigated	02
		Any one danger/side effect identified and explained OR explained and mitigated	01
		No danger/side effect identified OR mitigated	00
D	Evaluation of	Evaluation of products/processes	02

0	products/process	Ullefelices	
	a lagrant de la company de la	Evaluation of products/processes basing on either similarities OR	01
		No evaluation of products/processes	00

Summary notes on the assessable areas for EOC 2.

A. FOOD ADDITIVES

Basis of assessment	Expected responses
Category of the product	Food additives like flavour enhancers, food colours, food preservatives are classified as 1. Natural food additive. 2. Synthetic food additives
Functions of the product	Food enhancers; boost existing food flavours Food colour; add colour to the food Food preservatives; increase the shelf life of food
Dangers/side effects	Some people are allergic to some synthetic food additives that may lead to skin irritation or diarrhoea on prolonged use.
+ explanation	Natural food additives quicken the rate of food spoilage due to rapid growth of microbes.
+ mitigation	-use recommended amounts -limit their use
Evaluation of the product	Similarities; - both make food delicious -Both can preserve food Differences -Natural food additives are less effective in action than synthetic -Natural food additives have fewer side effects than synthetic

3. NUCLEAR PROCESSES

NUCLEAR PR asis of ssessment	Expected responses			
category of the product	Nuclear processes are classified as 1. Nuclear fission. 2. Nuclear fusion			
oroduct	Nuclear fission; - used in nuclear reactors of good nuclear energy - Used in atomic bombs. Nuclear fusion;	generate electricity from		
Dangers/side effects + Explanation	-It is a fuel -Radiations may lead to mutations in DNA leading to hereditary defects like leukemia -Radiation burns on the skinReduced fertility -Radiations damage the liver			
+ rgitigation	-Proper disposal of atomic wastes -Proper use of correct personal protective equipment			
Evaluation of the product	Similarities; - both involve a large release of energy.			
ioonline.com	Nuclear fission	Nuclear fusion		
	Heavy nuclei split to lighter nuclei	Lighter nuclei join to form heavy nuclei		
70	Can take place at ordinary temperature	Takes place at high temperature		
23.0	Very high energy released	Relatively low energy released		
	Occurs in heavy nuclei	Occurs in lighter nuclei		

C. MEDICINE AND DRUGS

Basis of assessment	Expected responses
Category of the product	Medicine and drugs are classified as; MEDICINES OR 1. modern medicine 2. traditional medicine (herbal medicine)
Functions of the product	Depending on the scenarioset Analgesics; pain killers Anti-biotics; kill bacteria
Dangers/side effects + explanation	Some people are allergic to some modern medicine that may lead to skin irritation or diarrhoea on prolonged use.
	-use recommended dose
+ mitigation Evaluation of the product	Similarities; - Both are pain killers. (Depending on the scenario) -Both are antibiotics. (Depending on the scenario) -Both are medicines (traditional vs modern)
	Differences -Herbal medicines are less effective in action than synthetic
	-Herbal medicines have fewer side effects than Modern

D. DETERGENTS

D. DETEROETTE	
Basis of assessment	Expected responses
Category of the	Detergents are classified as
product	1. soapy detergents (soap)
	2. soap less detergents
Functioning of the product	- A detergent/ soap molecule contains two parts; namely; the hydrophilic part (loves water but hates dirt) and hydrophobic part (loves dirt but hates water).
	-During washing, the surface tension between water and oil/dirt is loweredWith constant agitation, the dirt is removed off the
	cloth.

Dangers/side effects + explanation + mitigation	Skinburns and he	nemicals that can cause ence pain. pain hence loss of			
Down	Soapless detergents contain phosphates, an algorithm nutrient leading to algae bloom that cuts off oxy supply to the aquatics. Eventually, leading to suffocation and hence death Mitigation;				
Nation of the product	Proper disposal of detergents Similarities: -Both are salts of Organic acids of long carbon of a salts are effective cleansing agents in soft water				
pastpapers from www.m	Differences; Soapy detergents Forms scum with hard water.	Soapless detergents does not form scum with hard water			
n www.m	Gentle on skin when using it. Biodegradable	not gentle on skin Non-biodegradable			

THIRD ELEMENT OF COSTRUCT _ EOC 3

Appreciates the diversity and interactions of substances and their importance in everyday life. (For items 2 and 3)

TOPICS;

- ✓ Air
- ✓ Using materials
- ✓ The periodic table
- ✓ Trends in the periodic table
- Structures and bonds

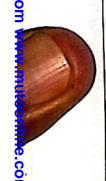
- ✓ Reactivity series
- ✓ Structure and properties of substances
- ✓ Carbon in life
- ✓ Formulae, stoichiometry and mole concept

ASSESSABLE AREAS

 (a) Elements, compounds and mixtures (b) The periodic table (c) Trends in the periodic table (d) Reactivity series 	(e) Structure and bonds (f) The mole concepts (g) Materials other than plastics (h) Polymers and Plastics
---	---

BASIS OF ASSESSMENT

Basis	of assessment	Criteria of assessment	
A	Category of element, compound, substance or material	Identified category of element, compound, substance or material with a reason and example	03
	with a reason	Identified category of element, compound, substance or material with either example OR reason	02
		Identified category of element, compound, substance OR material OR reason only OR example only	01
		No identified category of element, compound, substance OR material OR reason OR example	00
В	Properties or prediction of properties of	At least four properties or characteristics or predictions of trends	03
	element, compound, substance OR material	At least two properties or characteristics or predictions of trends	02
		Any one property or characteristic or prediction of trends	01
<u> </u>		No property or characteristic or	00



_
O
_
₻
_
Author
4
-
-
-
5
4
. 7
=:
ш
_
=
U
-
\overline{a}
×
<u>_</u>
g
Δ.
_
`
~
-
S
5
-
ш
I
$\overline{}$
$\mathbf{\circ}$
-
Ø
~
\simeq
_
0
Ü
(I)
Š
~
w
3
7
4
_
0
≈
roach to Lower secondary CHEMISTRY_Paper ONE (545/1)
J
a
0
2
_

467	in the settings	prediction of trends	12.12.1467
C	Uses of element, compound,	Any one use/application	01
	substance or material/applications/ quantity of matter i.e moles	No use/ application	00
D	Impact/ pollution of	Identified impact and mitigation	02
	environment by element, compound,	Identified impact OR mitigation	01
	substance or material and mitigation	No Identified impact OR mitigation	00

	element, compound, substance or material		No Identified impact OP mitigation			00
	and mitigation		No Identified impact OR mitigation			00
Summ		the ass	sessable are	eas for EOC 3.		
Polyme	r Category + reason	Proper	ties	Uses	Impact enviror + mitig	ment
Nylon	Syntheti c polymer ;man- made	 Stron Flexit Toug Dura Light Chenresist Elasti 	ole h ble weight nical	Making clothes, ropes, curtains, carpets, parachutes and car seat belts	Mitigat Recyc • Non- biode	ices fumes ion; ding. gradab
Perspex	Syntheti c polymer; man- made	• Chem	her resistant iical ant resistant	 Making lenses and reflectors. Making protective screens 	If bur produ toxic Mitiga recycl	ices fumes ation;

olythene	c/artifici •	Insoluble in all solvents	 Making polyethene plastics As an insulator 	 Non-biodegradable; Are flammable and can produce toxic fumes when burned; Mitigation; Reduce, reuse
Wool	Natural polymer; exists in nature thus God-made Natural polymer; exists in nature	 Absorbs and releases moisture quickly Durable Is an insulator and thus very warm Soft Light weight (low density) Smooth strong Shines Good insulation 	 Making coats, socks, and sweaters Making blankets, rugs and carpets As insulation material in building mattresses, and pillows. Making clothes 	and recycle. Sheep farming produces greenhouse gases such as methane hence global warming; Mitigation; Implement pasture managemen

Natural rubber	Natural polymer; exists in nature	 Soft Sticky Not elastic Low tensile strength Can be improved by a process called vulcanization of rubber. Properties of vulcanized rubber are; Greater tensile strength Strong Durable Elastic 	• Making tyres, shoe soles, erasers, carpets, gloves, condoms, belts and tubes.	
Cotton	Natural polymer; exists in nature	• Can easily be	 Making bandages, gauze, sanitary products Making threads, ropes and canvas Making paper products such as currency, stationary, banknotes etc. Making clothing 	

Polyester	Syntheti c polymer; man- made	 Strong Water resistant Wrinkle resistant Dries quickly when wet Moisture 	 Making rain jackets, umbrellas. Making sportswear. 	produces toxic fumes Mitigation; Recycling
		wickingChemical resistant	general e pa entire e transpiritante	

USING MATERIALS

Material	Category of material	Properties of material	Uses of material	Impact of environment by material + mitigation
Wood	Natural material; exists in nature.	 Readily available Cheap Strong Light when dry Easy to smoothen Can rot or be eaten by termites when not treated 	 Making shutters for doors and windows. Making door flames and window flames. Making struts and ties during roofing. Making poles, pillars and beams. 	Unsustainable logging practices can lead to deforestation, loss of biodiversity, and habitat destruction. Mitigation; -Selective logging, - reforestation.

Glass	Artificial material; man-made.	 Transparent Strong Fire resistant Reflective, attractive Tinted glass allow light to pass through it in only one direction 	 Making shutters for doors and windows. Making walls 	 Glass solid wastes can harm the environment if not properly managed. Mitigation; recycling
ricks nd lock more pastpapers from www.m	Artificial material; man- made	• Strong • Fire resistant	Constructing walls	 Clay and stones are mined from the earth, leading to habitat destruction and soil erosion. Mitigation; incorporate recycled materials into brick production
nuteonline.com				

Iron	Artificial material; man- made	 Very strong (can support heavy load) High tensile strength (resists breakage) Ductile and malleable (easy to mould) High melting points (resists fire) 	 Making shutters for doors and windows. Making door flames and window flames. Iron nails used to fix/join objects like timber, iron sheets. Used for plumbing. 	 Deplete soil fertility when it accumulates. Being a heavy metal can cause cancer. Non-biodegradable Mitigation; promote use of recycled iron products
Alumini u-m	Artificial material; man- made	 Low density (lightweight) Strong Durable Has bright appearance High electrical/he at conductivity High melting point (resists fire) 	 Making shutters for doors and windows. Making door flames and window flames. Reinforcing. Electrical installations, wire. Making roofing materials (struts and ties). 	 Deplete soil fertility when it accumulates. Non-biodegradable. Mitigation; promote use of recycled aluminium products

Plastic	Artificial material; man- made	 Flexible Water proof Light and strong Low melting points (can be easily attacked by fire) 	 Making pipes for plumbing. Making door and window shutters. 	 Non- biodegradable spoils the soil. Mitigation; -recycling
ortar bownload more pastpape	Artificial material; man- made	 Hard Adhesive (can join bricks together) 	 Joining and binding bricks Making concrete for floors Plastering walls 	 Bulky and take long to decompose and so can spoil the soil. Mitigation; should be crushed for reuse.
हित्युक्त www.mutoonline.com	Artificial material; man- made	 Water proof Brittle (easy to break) Good looking Cannot be attacked by chemicals. 	 Making bricks Making tiles (floor tiles) Making roofing tiles 	Clay used in ceramic production are often mined from the earth, leading to habitat destruction, soil erosion and land scape alteration. Mitigation; incorporate recycled materials into ceramic production.

FLEMENTS

ELEMENT Element	Category of element with reason	Properties of element	Uses of element	Impact of environment + mitigation
Sodium	Metal; -loses outermost electron to form a cation.	 Low melting point Ductile Lightweight Conducts electricity Soft Shiny appearance 	 Used as a coolant in nuclear reactor. Used to make alloys like sodium amalgam. Used as a reducing agent in the extraction. 	High level of sodium can disrupt natural ecosystems in area where plants and animals are adapted to salty conditions leading to change in biodiversity. Mitigation; Reduced use of sodium-based fertilizers.
Magnesiu	Metal; - loses outermost electrons to form a cation.	High melting point Conducts electricity High density Strong Shiny appearance	 Used as a fertilizer to replenish soil nutrients and promote plant growth. Used to make alloy like duralumin Used in electronic devices such as laptops, smartphon es and 	 Overapplication of magnesium-containing fertilizers can lead to soil contamination and nutrient imbalances, affecting plant growth and soil health. Mitigation; Adopt nutrient management practices.

Aluminiu m Download more pastpapers from www.mu	Metal; Loses electrons to form a cation.	 Lightweigh t Conducts electricity Strong Ductile Malleable Sonorous Corrosion resistant 	 Used in packaging materials such as foil wraps. Used in construction i.e. roofing, window frames, doors. Used in electrical transmission. Making cookware, furniture, sporting equipment and electronic casings 	Aluminium productssuch as packaging materials contributeto landfill waste. Mitigation; recycling
<u> </u>				
A STATE				
_				

Silicon	Metalloid; shows both characteristic s of metals and non- metals	High melting point	 Used in production of semiconductors for electronics like computer chips, solar cells. Used to make alloy like ironsilicon alloy. Used in medical implants such as pacemakers and joint replacements 	Disposal of silicon-based products can contribute to e-waste; Mitigation; reuse, recycling silicon-based materials,
Phosphor	Non-metal; gains electrons to form anion.	Soft Waxy solid that glows in the dark	 Used to make match heads. Used to make alloy. Used in production of phosphoric acid which is used to make fertilizers, detergents. 	Excess phosphorous runoff causes eutrophication in water bodies which leads to algal blooms, oxygen depletion, fish kills, and degradation of aquatic habitats; Mitigation; Upgrade wastewater treatment plants to remove phosphorous effectively before discharge in water bodies.

Download mu	Metal; loses electrons to form negative ion (anion).	Yellow crystalline solid.	 Used in vulcanization of rubber. Used in paper production and pulp to bleach the pulp. Used in production of gun powder and other explosives. 	 Sulphur; containing compounds can leachinto soil and water, affecting ecosystems and aquatic life; Mitigation; Manage Sulphurcontaining wastematerials
che pastpapers from www.mutoonline.com	Metal; loses electron to form negative ion (anion).	• Exist as a greenish-yellow gas.	 Used in water treatment. Used in production of bleaching agents for textiles, paper and pulp industry. Used in production of PVC. 	 Exposure to chlorinecan harm terrestrial and aquatic ecosystem. Chlorine form toxic by-products such dioxins and furan that bioaccumulate inthe environment; Mitigation; Substitute chlorinewith safer alternatives.

Argon	Inert gas; neither gains nor loses electron(s).	Exist as gas Non- reactive	 Used as a filler gas in incandescent light bulbs. Used in 	Production processmay contribute to greenhouse gas emissions;
		etik disami	beverages and food industry for packaging perishable goods such as wine to	Mitigation; • Reduce on energyusage.
			displace oxygen and extend shelf life. • Used in welding.	

FOURTH ELEMENT OF COSTRUCT_EOC 4

Appreciates the existence of natural resources in the environment and their importance in life. (For items 5 and 6)

TOPICS.

- ✓ Air
- ✓ Water
- ✓ Rocks and minerals
- ✓ Carbon in the environment
- ✓ Fossil fuels

ASSESSABLE AREAS

- (a) Air (b) Water
- (c) Rocks and mineral resources

- (d) Carbon based fuels
- (e) Fossil fuels



MASIS OF ASSESSMENT

Ras	sis of assessment	Criteria of assessment	Score
A	Identity of category of natural resource,	Identified category of natural resource with a reason and example	03
	reason and example	Identified category of natural resource with a reason OR Identified category of natural resource	02
		with example Identified category of natural resource	01
В		OR example No identified category of natural resource	00
В	Composition of	Any two components of natural resource	02
	natural resource	Any one component of natural resource	01
		No component of natural resource	00
C	Impact of the natural resource on the environment,	Anyone Impact of the natural resource on the environment, how it occurs, and its mitigation	03
C	how it occurs, and mitigation	Anyone Impact of the natural resource on the environment and how it occurs OR Anyone Impact of the natural resource on the environment, and its mitigation	02
		Anyone Impact of the natural resource on the environment OR how it occurs OR its mitigation	01
	entre a destruction	No Impact of the natural resource on the environment, how it occurs, and its mitigation	00
D	benefit/importance	Any one benefit/importance of natural	01
1000	of natural resource	No benefit/importance of natural resource	00

Approach to Lower secondary CHEMISTRY_Paper ONE (545/1) Author_Kibugo Dennis

Summary notes on the assessable areas for EOC 4.

Basis of assessment	Expected responses
Category +Reason/explanation +example Composition of natural resources	 Renewable Natural resources; can be replenished e.g. Air, water. Non-renewable resources; cannot be replenished(get used up) e.g. fossil fuels, rocks/minerals. Air contains Nitrogen, Oxygen Carbon dioxide, raregases, Water contains; Hydrogen and oxygen. Fossil fuels contain Carbon, Hydrogen. Rocks contain Iron, copper, calcium carbonate, andother minerals like Gold, Cobalt. Trees and natural vegetation is made up of carbon, hydrogen, oxygen and magnesium
Impact of natural resources on the environment how it occurs / chemicals and physical reactions + MITIGATION	 Air Some components of Air pollute environment and cause global warming, and carbon dioxide because it's a greenhouse gas thus traps heat in the atmosphere. Mitigation: Increased Afforestation to replace the cut trees which absorb CO2 from the atmosphere to reduce global warming.
	 Water -Water contains dissolved gases like O₂ and CO₂. The CO₂ in it forms carbonic acid that makes water acidic. The acid rains dissolve or deplete rocks. - Mitigation: Re-afforestation
	-Hot water as an effluent from industries when introduced into the water bodies, increase the temperature of the water bodies affecting the life of aquatic organisms. - Mitigation: Hot water reservoirs and effluent deposit points from



-Water pollution caused by farming and Agriculture. So, the use of fertilizers results in Eutrophication of nearby water bodies and Algae blooms/algal bloom.

- Mitigation:

Use of organic fertilizers e.g. manure from both animal and plant waste which are Biodegradable

Benefits of the hatural resource

Air

- facilitates respiration, during respiration carbohydrates combine with oxygen in order to release energy and carbon dioxide used for properbody functioning.
- facilitates photosynthesis. During photosynthesis, carbon dioxide from air combines with water in presence of sunlight trapped by chlorophyll to formglucose, carbohydrates and oxygen.

Water

- habitat for many aquatic organisms; water bodies like lakes, dams, pools contain necessary conditions for survival of aquatic animals
- -Water from the water bodies evaporates and eventually cools and condenses on the clouds, these results into precipitation.
- -Water bodies like rivers can be used to generate electricity, fast moving waters to the rivers drives turbines at waterfalls which produce kinetic energy into electrical energy

SCENARIO

A scenario is a set of information that a learner needs in order to mobilise his or her learning (knowledge, skills and values) to solve a real-life problem / task/challenge. In this, a problem or realistic or hypothetical situation presented to a test taker to see if the test taker can mobilise resources and tackle a real-life challenge.

Tools of communication

- ✓ Letter
- ✓ Speech
- ✓ Report
- ✓ Leaflet
- ✓ Write-up
- ✓ Live videos

GUIDELINES TO ITEM TAKERS (Candidates)

Chemistry subject has two papers at the end of the cycle. These are paper one(theory) and paper two (practical) In this book our concentration is on theory. The theory paper chemistry 545/1 consists of two sections, A and B. it has six examination items.

Section A has two compulsory items.

The two scenario items require fill in responses from the item aker. And these come from 2ndelement of construct and 3rd element of construct for items 1 and 2. These can be nterchanged depending on item writer of the day.

Section B has two parts; I and II.

t has four scenario items that require extended responses from the item taker.

A candidate is supposed to answer one item from each part. tems from part I (item 3 and 4) are from the 1st element of construct while those from part II (item 5 and 6) are from 4th element of construct.

Duration of the paper is **2hours.** Total score will be 60.





Answer all the items in this section.

The laundry department of a new cleaning service unit in one village where they use spring water has failed to raise profits inthe project. They use too much of the detergent during The det sks; the washing process. Their manager keeps purchasing the same detergent, and still no change. They keep making loses and are frustrated.



g(a) As a chemistry student, guide the branch manager to understand the problems he makes while choosing the product.

(02 score	es)
-----------	-----

-> Llala him to undo	rstand how the product works.	(02 scores
) Help nim to unde	Istalia novi trio p	
in the second		
AND TO AND LOSS THE REAL		
AN ALLES FOR		
• •	allenges associated with long te	
(c) Advise on the cha product.	allenges associated with long te	
• •	allenges associated with long te	rm use of the
• •	allenges associated with long te	
• •	allenges associated with long te	
• •	allenges associated with long te	

2. A business lady owns a flower farm in ADUK village in Uganda. She is in the process of searching for quality plastic boots that are environmentally friendly. There are various boots of different quality and composition in the nearby shops. However, she does not know the quality of the boots to purchase.



However, the business lady knows that quality boots depend on the nature material and here she comes for some advice from you.

Task;

Download more pastpapers from www.mutoonline.com

As a chemistry student,

As a citerinotify	
(a) Explain	
(i) Category of the produc	ct. (02 scores)
()	r e
TR.	
7.	
(ii) The suitability of the pr	roduct. (02 scores)
76E	

_	
4	
1	
-	
-2/4	
7	
7	
7	
7	
*	
W.	
THE PARTY OF	
A MANANA	
WANTE !	
MANNA &	
WWW.	
WWW.	
WWW.	
N.WWW.n	
TI. WWW.IT	
m.www.m	
m.www	
m.www.mu	
M.WWW	
um.www.mu	
mul www.mut	
www.mut	
www.mut	
www.muto	
www.muto	
www.muto	
www.mutoo	
www.mutoc	
www.mutoo	
www.mutoo	
www.mutoor	
www.mutoor	
www.mutoon	
www.mutoon	
www.mutoonl	
www.mutoonli	
www.mutoonli	
www.mutoonlin	
www.mutoonlin	
www.mutoonlin	
www.mutoonling	
mutoonline	
www.mutoonline	
www.mutoonline	
mutoonline.	
www.mutoonline.	

				ne should go (04 s	core
		*3		8	
	•				
	- A	10 M			
farje ,	1.02.81. 2.10	100 400	Walley Service		316
			Party State of	The religion of	

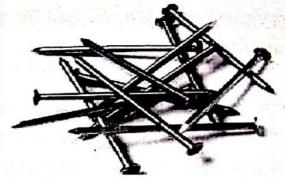
SECTION B

Part I

Answer one item from this part.

3. Uganda Builders' Forum raised a concern of high revenue imposed on imported iron nails to parliament of Uganda. The government of Uganda has provided some land in Tororo district to an investor as an alternative to set up an iron extraction plant However, the community is concerned about its environmental effects and how the process will occur. Some are protesting the proposal that there is no importance of the plant to them. This is the talk of the town where your school is located.





The new president of chemistry club has appointed you to sensitize the other learners.

Tasks;

As a chemistry student, prepare a write up you will use during the plenary. (11 scores)

Government has contracted a local investor to expand the bridge on Karuma falls in bid to reduce accidents on that bridge. The engineering team has quoted a huge bill on bags of cement required for the construction process.

n a management meeting, the investor has suggested to set up a cement producing plant with minimal environmental hazards.

Residents are against the idea claiming that there is no



The editor of a national newspaper is a member of the community and wishes to publish an article on the matters raised.

as a chemistry student, make ar publication to sensitize the comm	nunity. (11 s
Use the booklet below to respon	nd to items in section B – P
	and the late of th
et earth e	and the second of the second o
	1. 11 [1]
	i de la companya de



SECTION B **PART II**

Attempt one item from this part.

Download more pastpapers from In the Albert region of western Uganda, extraction of petroleum and natural gas is due to commence. The area is traditionally known for fishing, crop husbandry and animal husbandry and part of it covers a national park. Many trees havebeen cut to clear land for the project.

The community is concerned that the operations of oil and gas extraction are going to interfere with the traditional activities of the area, displacement of people and others expect some environmental effects.



Answer two items from this part.

1. Okuma was feeling some headache on his way from school. He complained to his uncle Mr. Musoke. He gave him a Author_Kibugo Dennis streptomycin since they were the only available tablets in his cupboard. He rested for few hours. On waking up, the headache was beyond. The uncle was restless and thought of giving more tablets to the boy. Task e pastpapers from www.mutoonline.com As a chemistry learner, a) Cite out the problem Mr. Okuma made when choosing the (02 scores) product. b) Guide Mr. Okuma to understand how the product works. (02 scores)

Approach to Lower secondary CHEMISTRY_Paper ONE (545/1)







Task;

Using the knowledge of chemistry, you have attained, guide the community chairperson on his way to the annual community meeting on the above operations.

(11 scores)

6. In Namutumba Sub County, most of the youth ride motorcycles (boda boda) as their source of income and the burn petrol. Their wives use charcoal as the main fuel for cooking. The source of a fuel.

These happenings have left many of the residents wondering why



The area member of parliament has organized a sensitization workshop with a theme 'MY ENVIRONMENT MATTERS' to explain the existing situation to the community. mask; pask; As a chemistry student, write a message you will display (11 scores) upon invitation. Use the booklet below to respond to items in section B - Part II]



c) Advise him on the challenges associated wouse of the product.	ith the long-term (04 scores
4.786/FDEZ -	

2. Most farmers in Luwero District have been are using manure in their fields. The District Agricultural Officer (D.A.O) in a recent workshop advised them to use fertilizers in their fields as one of the ways of increasing yield per acre. Nitrogen nutrients are key for maize to grow well. He added.

A new Agricultural store in the district sells fertilizers in sacks A, B and **C**. Sack **A** consisting of Ammonium nitrate while sac **B** consists of Ammonium sulphate and C consists of Urea,

Where necessary use [N=14, O=16, H=1, C=12, S=32].

Mr. Mugasi, a known maize farmer is planning to switch from use of manure to one of the brands on market. He has contacted you chemistry chemistry Task;

- (a) Explain
 - (i) category of the product.

(03 scores

ii) the suitability of	the product.		(03 scores)
II) the			
			ran di
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
		A	
Advise him on the	choice of the pr	oduct he sho	ould go for. (04 scores)
Advise him on the	choice of the pr	oduct he sho	ould go for. (04 scores)
Advise him on the	choice of the pr	oduct he sho	ould go for. (04 scores)
Advise him on the	choice of the pr	oduct he sho	ould go for. (04 scores)
) Advise him on the	choice of the pr	oduct he sho	ould go for. (04 scores)
			A Property
	choice of the pr		A Property
Daving a	Company of the second		
Daving 1	Company of the second		
Landard Control of the Control of th			
The state of the s			
A TOUR DESCRIPTION OF THE PARTY			

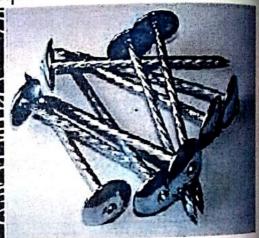


SECTION B PART I

Answer two items from this part.

3. Uganda builders' forum raised a concern of high revenue imposed on the imported iron nails. Government has cleared an investor to set up an iron and steel production plant in Tororo investor. However, the community is concerned about its district. However, the community is concerned about its environmental effects and how the environmental process will be environmental effects and how the environmental process will be residents are protesting the establishment of the plant in their locality claiming that the plant is not important to them.





You have been appointed by the president of the science club to represent your school in the forthcoming forum workshop with the community.

Task

Prepare a presentation you will make during the workshop.

(11 scores)

4. Wang swung Uganda is a company that imports Aluminum to manufacture aluminum door flames. The management is frustrated with the high revenue imposed. In response, the operations manager has cleared an Aluminum extraction unit in Yumbe district which is rich of aluminum deposits. Unfortunately, the residents are concerned about the

environmental effects of the process and are inquisitive whether it is going to be beneficial to them.



As part of the community, the manager has contacted you to guide him on what he is about to deliver to the community in the incoming community meeting.

Task

Download more pastpapers from www.mutoonline.com

Prepare a report that will guide him on his presentation.

(11 scores)

Use the booklet below to respond	d to items in section B - Part I
----------------------------------	----------------------------------

CS CamScanner



SECTION B

Part II

Answer one item from this part.

5. Jumaya is a rocky village in Mitoma district, western Uganda. Most youth in this region make bricks and cut down the trees to burn them in the kilns as their source of income. Their wives work in stone quarries to raise school fees while their children are involved in cattle keeping. Recently, there is low water level in the community and the little available in some wells is dirty. Residents are frustrated and do not know what to do.



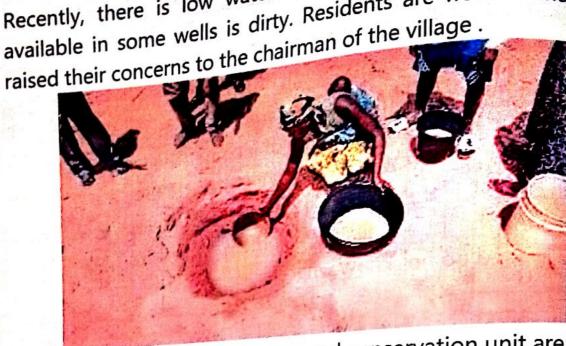
load more pastpapers from www.m

the members of district environment committee are planning to reate an awareness message to the residents through a workshop. You have been invited to be part of the workshop. ₹ask;

As a chemistry student, make a write up you will display upon (11 scores)

90% of men in Buntaba a rocky village in Mukono district practice charcoal burning and crop husbandry as their main activities. Their wives are involved in stone quarrying. Of late their crops have started drying out.

Recently, there is low water in the community and the little available in some wells is dirty. Residents are worried and have available in some wells is dirty.



The members of village environmental conservation unit are planning to create an awareness message to the residents through a community workshop.

Task;

As a chemistry student, make a write up you will display upon invitation. (11 scores)

		11 11 11	
E CONTRACTOR OF THE CONTRACTOR	out on 23 MA I	Pint 199	
	1 7 V 1 7 V	atianaus ni	
	Marie Di Marie M	is promise	

		(a) 4-1113				
		e server	And the second	1657	L(A(E5)	
	Jess of		The second			
	Ta Tolda	arrastra.	s e migrain	ar weder		-
gali la se su divis	and the second	to come one	Translate Inc.	3 -	J. 11. 14	-
And the fact of the	What Trans	Torrest Co.				1
part Bull	L CLEEK			P () P () ()		-
				•		
				r	1	-
na i ĝ	10.1	1200				
1 8						_
						-
Asia 1 .					¥ .	_
•				1209	* 1	_
-						
		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
						_
	The All Property					_
	in the state of					1
			re legal x			in and





Answer all items from this part.

Sarah was running in a compound and accidentally stepped into a hole. She cried endlessly as she was feeling a lot of pain. Maria, her friend, gave her some garlic extract medicine and after a few hours of rest, her leg was still paining her. She complained to her auntie who gave her paracetamol and in a short time, she got relieved.

Task

As a chemistry learn	stry learne	try learner,
----------------------	-------------	--------------

- a) Point out the problem Sarah made when selecting theproduct
- (02 scores) Guide Sarah on how the product works. b)

c) Explain the challenges associated with continuoususe of the (02 scores) product.



2. Sodium chloride is a table salt used by many Ugandans. In their project on environmental management, 3 boys of Wakatayi Primary School are curious to know the structure, composition and properties of the crystals of this table salt. However, one of the boys claims that the crystals can do more harm than good when exposed in their environment.

Download more pastpapers from www.mutoonline.com



The boys have to come to you for some advice.	
Task;	
As a chemistry student;	
(a) Explain;	(03 ee
(i) Category of the product.	(03 score
	eveluation and
(ii) Likely properties of the product.	(O3 score
(b) Help to guide them on the uses of the product.	(02 score
	72
	91 <u>2</u>
c) Settle the boy's worries on whether the product is	
environmentally friendly or not.	(02 scort
	*



SECTION B PART ONE

Answer one item from this part.

3. The soap production unit of one group of industries in Uganda uses Sodium hydroxide as the chief raw material in soap production. To ensure that Sodium hydroxide is readily available and at a cheaper cost, the company is planning to set up Sodium hydroxide production plant near Lake Katwe in Kasese region. Unfortunately, the residents have raised concerns about its environmental effects and how they will socially benefit from the proposal.

Download more pastpapers from www.mutoonline.com



A team of five students have been appointed from your school to attend the community workshop.

Prepare a presentation you will make during the workshop, as the (11 scores) leader of the team.

4. Uganda Battery Limited (UBL) uses Sulphuric acid as the main electrolyte in their batteries. In a bid to cut the costs on importing the acid, the management has contracted a production unit to set up a sulphuric acid production plant near Kilembe mines in Kasese region. The community is not convinced about its likely environmental impacts and how the environmental process will be achieved. Some claim that the plant will not benefit them at all So, they should not go ahead with the proposal.



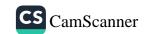
The science club members in your school would like to know the how the production process will be carried out. They are seeking for your guidance before the school assembly is held.

Task;

As a chemistry learner, make a write up you will use during the (11 scores) presentation while addressing the assembly.

[Use the booklet below to respond to items in section B - Part I]

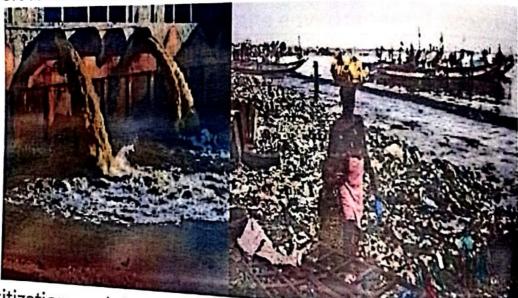
	11346773			
	Tangerty Art was in the con-			
A A A A A A A A A A A A A A A A A A A		Charles of the second	the second second	
The state of the state of			with the art	resize à
			A A	er cuit
100				- 1 m
				2
				_ 2
				
				£
				77.0
				;
= 7				
				á
				-
	-		Professional State of the Control of	
The state of the s				a story
Aug Maria				
Lipper to the com-				A CONTRACTOR Dance
		i di e de di e		
		er mantet de d		3.00 St.
er extragration	in a stractive of the			



SECTION B PART TWO

Answer one item from this part.

5. Kitubuulu village, Entebbe, Wakiso district is located on the shores of Lake Victoria. Most of the men are fish mongers and ladies practice weaving for commercial purposes and these get their raw materials from the nearby forests. Recently residents are complaining to the chairman over industrial wastes released directly into the lake by a new factory. Fish has reduced. All these have left local authorities worried.



A sensitization workshop is to be organized to explain the existing situation in the village. The theme of the workshop is "VICTORIA" MY LAKE "

Task;

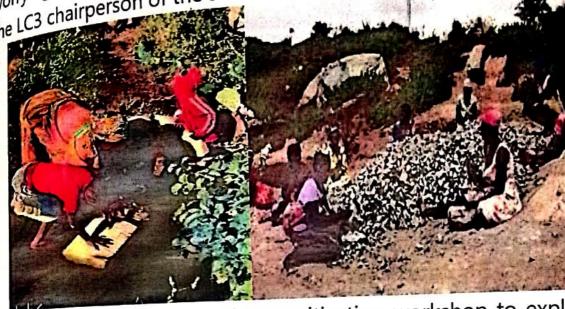
Using the knowledge of chemistry, you have acquired, make a write up you will display upon invitation in this workshop.

(11 scores)

6. In Mutamba sub county, there is a new trending design in house construction by many house construction by many of the youths. This involves use



stones to construct the walls of the buildings. Stone quarrying is stones to construct the day. The springs which are the only available the order of the day started producing dirty water the order of the residents And many have raised the water source water source the residents. And many have raised their complaints to the LC3 chairperson of the sub county.



Download more pastpapers from The chairman has organized a sensitization workshop to explain the ongoing situation in the village. The theme of the workshop is

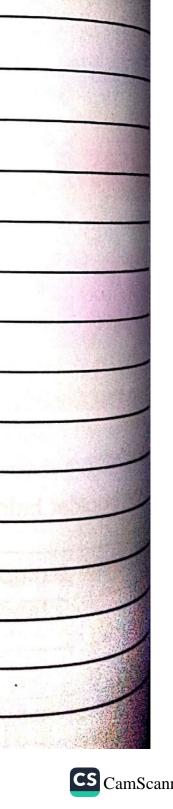
"SAFE WATER IN MUTAMBA"

Task;

www.mutoonline.com Using the knowledge of chemistry, you have acquired, make a write up you will display upon invitation in this workshop.

(11 scores)

[Use the booklet below to respond to items in section B – Part II]			
	and the second second second second		







Answer all items from this part.

1. After digging a trench, Okopa felt some pain in the hand
muscles. He went to a nearby bush and got some leaves of one
plant. Using water, he prepared an extract from the leaves. He
took some and bathed the rest. Four hours later, the pain was
still too much and was frustrated. He later visited a drug shop
still too much and was frustrated. He later visited a drug shop and was given codeine tablets and got relieved in a short time. Task
Using the knowledge of chemistry, you have attained
a) Cite out the problem Okopa made when choosing the
a) Cite out the problem Okopa made when choosing the product. (02 scores)
ers f
from
N. T.
mutoonline.
b) Help him to understand how the product functions.

a) Cite out the problem Okopa made product.	e when choosing the (02 scores)
b) Help him to understand how the p	product functions.

c) Advise him on the likely challenges he will get for continuous use of the product.	(02 scores)
there are the transfer of the terms of the t	
tone to the latest and the latest an	
d) Guide him to evaluate the products.	(02 scores)
2. The Ministry of Energy and Mineral development, had discovered some traces of sodium in Karamojong regi	1000
North Eastern Uganda.	
Residents have heard about the information are curio know its composition and properties.	us to





The area Member of Parliament has organized a sensitization workshop to be guided on environmental concerns of this product. You have been contacted to give some views as chemistry student.

Task;

Using the knowledge of chemistry, you have attained

(a) Expla		y of the product.	(03 scores)
Ö	T. 1865		6 - 1 1 1 1 1 1 1 1 1 1

(ii) Likely properties of the product.	(03 scores
ty amely properties of the product.	(03 300103



SECTION B PART ONE

Answer one item from this part.

3. Ethanol is one of the main raw material in the manufacture of sanitizers. Due to the wide spread of red eye illness in schools, there is an increased demand for the sanitizers among the school proprietors. Government is facing a problem of low supply of sanitizers and is planning to set up an ethanol production plant with minimal environmental impact. The locals are doubting its impact to their well-being.



wnload more pastpapers from www.mutoonline.



ask; As a learner of chemistry, make a write up you will use before the lenary. (11 scores)

4. Government has contracted a local investor to expand the bridge on Karuma falls in bid to reduce accidents on that bridge. The engineering team has quo ted a huge bill on bags of cement required for the construction process.

In a management meeting, the investor has suggested to set up a cement producing plant with minimal environmental hazards.

Residents are against the idea claiming that there is no



The editor of a national newspaper is a member of the community and wishes to publish an article on the matters raised. He has visited your school. You have been selected to represent the chemistry club.

Task

As a chemistry student, make an article you will that in the publication to sensitize the communication	will be used
in the publication to sensitize the community. [Use the booklet below to respond to items in secti	(11 scores)
in secti	on B – Part I]

wthor_Kibugo Dennis

State Augilian L		AN I	Anti and		N Contract	ione la
	- 1982 A 198		and the second second			
		Acres Const.			and the same	
				mento de la		-
A STATE OF THE STA	The state of	1111 30	11 11	Sea of the sea		6
The state of the s					1 11年 海安村	Teluta con 6
			and the specimen	21 10 10 10 10		
					E. J. IN	
5						۵
						<u>e</u>
						ğ
					1 10	
						of the
	19					— ₹
						ONE (545/1)
<u> </u>						—— (Ş
						NO
						Pa
					2.	R
						— .SI
	L. L.					里
E. S.			-		1.8	2
TO STATE OF THE ST		<u> </u>		11.75.20	1-157	Ō
						s
	The letter states of	and the second	And the Story			OWe
1	- A - 3441	Alexa N	- Proposition	n en i	THE WATER THE	
	n day of sets	good for a few realizations				
			-	The state of the s	ido- girtos et	<u>o</u>
	Art Property			and the second second		

SECTION B PART TWO

Answer one item from this part.

5. Many factories have mushroomed in Matuga areas along 5. Many factories nave massive fumes to the environment. There is an increase in population due to many people coming to the an increase in population and increase in the factories. Much of the region for employment opportunities in the factories. vegetation is being cut while clearing land for construction of their buildings. Recently, the wells have dried up and the little water is not fresh. Drought conditions have started sprouting up in the region. All these have left many of the residents wondering why. This has attracted the attention of the environmental protection committee of the region.



The officials are planning to organize a workshop and sensitize the members in the read and sensitize the members in the region over the matter.

As a chemistry learner, make a write up you will use to present (11 scores)

6. Lutete village in Luwero district is developing at a fast pace. 6. Lutere many shops, primary schools and markets that have There are many swamps and forests are now filled with been put in place. Many swamps and forests are now filled with been put in Figure 1. Recently the wells are drying up and yet the little water buildings. Recently is not fresh. The few that practice creek that is available is not fresh. The few that practice crop husbandry that is also say that seasons have changed and this has caused famine in the area Theses happenings have left many wondering why

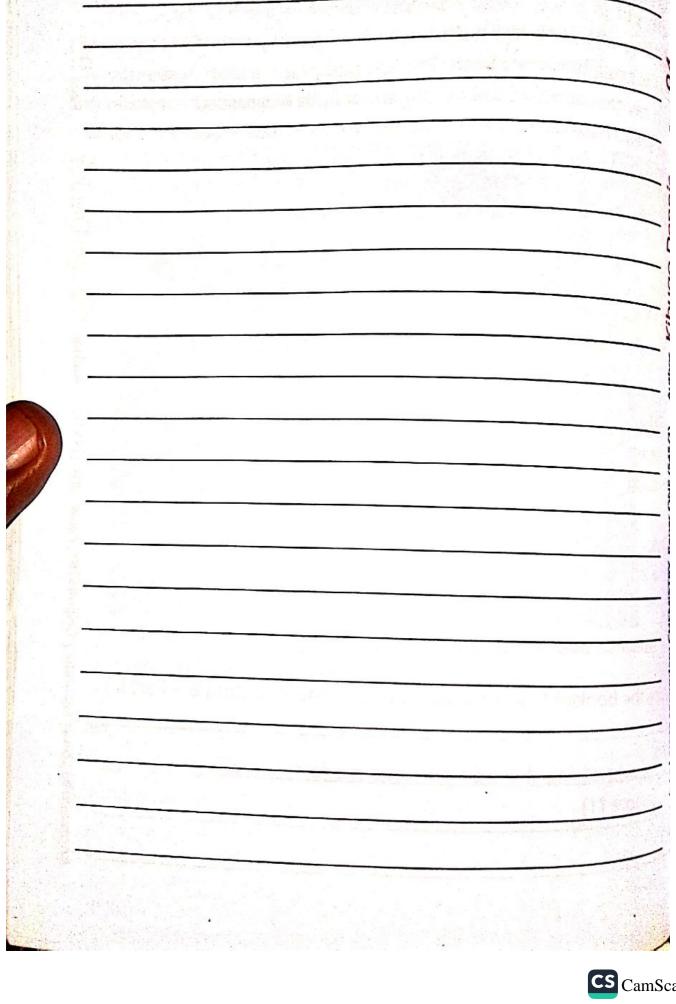


A sensitization workshop is to be organised by the government through National Environmental Management Authority (NEMA).

STask:

As a learner of chemistry, present your message upon invitation. (11 scores)

[Use the booklet below to respond to items in section B – Part II]









Answer all items from this part.

A new restaurant in Kakindu village in Entebbe has a myriad of customers during lunch time because of the good taste of the food. The restaurant uses **MSG** in its food. Mrs. Mutamba owns a restaurant in the same locality and one day she added some lemon extract to her food. Unfortunately, she did not receive any client to her restaurant andshe was frustrated. This has created jealousy and regular fights among the two proprietors. The village cell leader has scheduled a meeting to solve the issues at hand. He has contacted you prior to the meeting.

Task

As a learner of chemistry,

a) Assist the leader to know the	
a) Assist the leader to know the proble	em she made when
choosing the product.	The section of the section of
	(02 scores)

D)	Help her to know how u		
	Help her to know how the product works	s. (02 s	cores)

A new juice company in Kireka is in need of plastic bottles for packaging their juice. The production manager is yearning for good quality bottles that are environmentally friendly. Then are various plastics available on market. Unfortunately, he beseechs more clarity on the quality of plastics for his brands



He is aware that selecting a quality plastic depends on the nature

Task:

As a learner of chemistry;

(a) Explain

(ı)	Category	of	Du- I
	50.9	U	product

(03 scores)



			des district	
Variation of the	to reside a second	1 12 112	_(_2/8app	
	narrie e e	an institution (Sept.). Se	ift is voletick	
	er,			tub miller
- 1:	led it was			

SECTION B PART ONE

Answer one item from this part.

3. The results from National Agricultural research Organization have revealed that Urea is one of the most effective Nitrogen rich fertilizer to Uganda farmers. The government has cleared an investor to set up a Urea production plant in Nama village with minimal environmental impact. Many of the locals are against the proposal claiming that government wants to take up their valuable land and that the plant is of no use to them.





Members of the new Chemistry club in your school would like to know how the process of production will be carried out as part of their first research.

Download more pastpapers from

Tine.com As a chemistry learner, make a write up you will use during the presentation in plenary while addressing the new members in the chemistry club as their newly elected club vice president.

(11 scores)

4. The chairperson of Ntuuka village in Mityana district has banned their home their homesteads. The idea was to reduce deforestation trends in the region of the reg the region. She has heard of biogas as a better alternative and would like. Would like to set up a biogas production unit at her residence as a

demonstration point for the community but with minimum environmental impact. Many of the residents have less interest in this unit and some have gone beyond saying it will be of no use to their community.



She has contacted you as an educated member of the community to sensitize the residents in a community meeting on how the process of production can be carried out.

Task

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

[Use the booklet below to resp	ond to items in section B - Part I
---------------------------------	------------------------------------



				The state of the s	
			respectives to		
				ANG G	10x 3
ON THE RESERVE OF THE PARTY OF		and the said	1940 5 121		
Maj. č	100	· 图 1			
- 4					
					- 11 - 7
					21 V
					3,54
			, 1961 Eg. :		
					10
					H 199
			-		
		The state of the			
		4	The second		19
					in the
	and the	ACT AND A PLAN			

SECTION B PART TWO

Answer one item from this part.

5. Akalo village in Lira district is developing at a fast pace. Thereare many shops and markets that have been put in place. Many swamps and forests are now filled with buildings. Recently the wells are drying up and yet the little water that is available is not fresh. The few that practice crop husbandry also say that seasons have changed and this has caused famine in the area Theses happenings have left many wondering why



A sensitization workshop is to be organised by the government through National Environmental Management Authority (NEMA) Task;

As a learner of chemistry, present your message upon invitation.
(11 cores)

6. Fresh water bodies like lakes and rivers have been heavily encroached on as a result of increasing Uganda's population. On this year's **World Environment Day**, National Environmental Management Authority (NEMA), wishes to raise public awareness among the Ugandans on the matter.

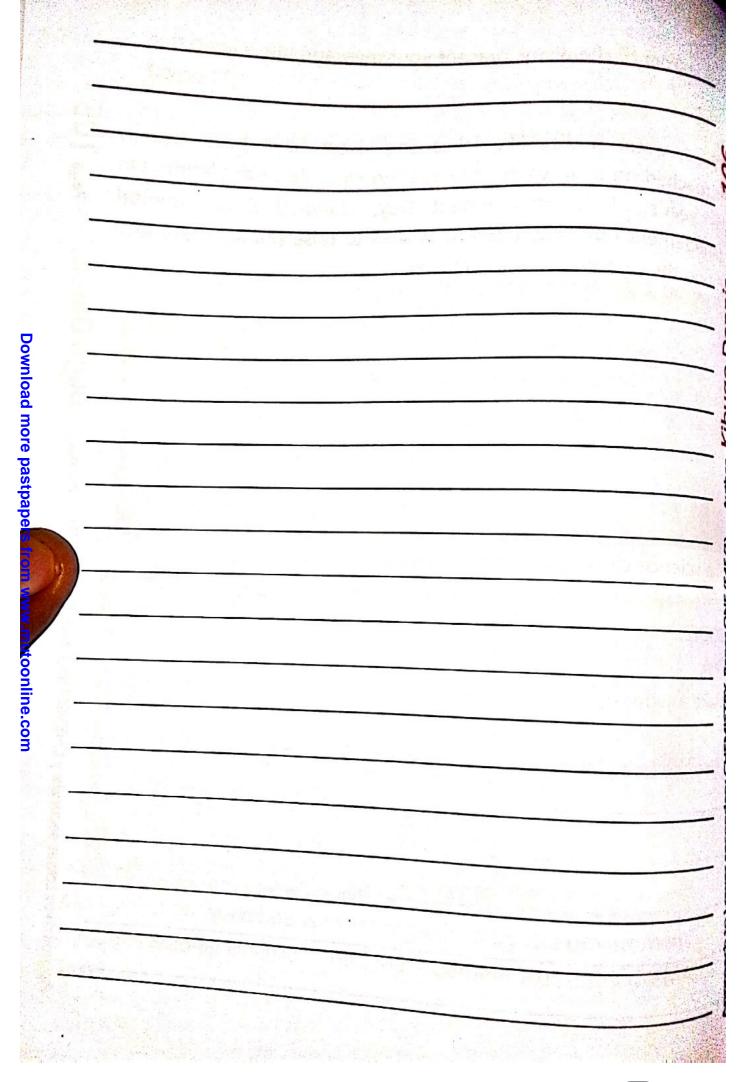


The science club at your school has selected you to give a presentation on that day following a theme "SAVE MY WATER BODIES".

Task

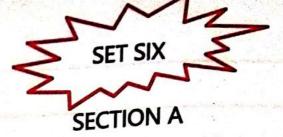
Make a write up you will use upon the invitation. (11 scores)

[Use the booklet below to respond to items in section B - Part II]









Answer all items from this part.

1. In a certain town, people are concerned about the waste disposal from the factory into the nearby lake which is their source of water for home use. During the disposal, residents claim that water always becomes hot. They raised this issue to the chairperson Local Council 1 (LC1) who directed the management of the factory to stop disposing waste into the lake. A scientist was contacted to investigate the presence of radioactive material in the water. The scientist found out that there were many more nuclei produced by the radioactive component that was disposed. His findings showed that the water was indeed radioactive as shown in Table 1.

Time (days)	0	5	10	15	20	25	30
Activity (counts	1200	740	440	260	160	90	60
per day)							-

Although the water from the lake remains radioactive for a long time, the scientist recommended that water will be safe for use again when the activity is less than 38 counts per minutes. This report shocked the chairperson and she was restless. A village meeting was scheduled and she has contacted you prior to the meeting.

Task:

As a learner of chemistry;

- (a) Explain the
- (i) Category of the process undergone by the product. (02 scores)



Download more pastpapers from www.mutoonline.com

(a) Explain	
(i) the category of the product.	(03 sc
	33
(ii) suitability of the product.	(03 sco
(b) Advise him on the choice of the product	ho about the for
me product	(04 score



SECTION B PART ONE

Answer one item from this part.

3. In Wagagi community Arua district, one women's group is planning to manufacture a Soapless detergent as a new project to increase annual gross sales from group sales. The chairperson is planning to set up a detergent production unit with minimal environmental concerns. Some of the representatives in the group pastpapers from www.mutoonline.com are however protesting the establishment of the unit claiming that is not that beneficial to them.



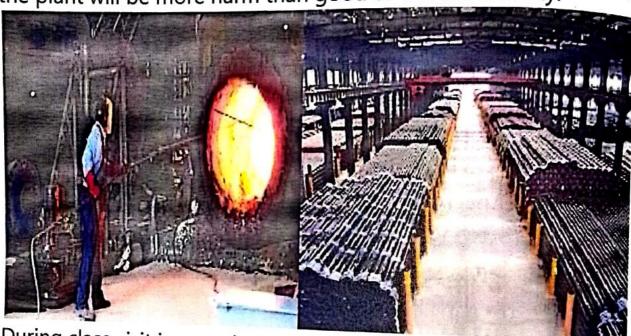
The deputy head teacher has appointed you to sensitize other learners on how the production process will be achieved Task;

Prepare a mini presentation you will make during the assembly. (11 scores)

condary CHEMISTRY_Paper ONE (545/1)

Download more pastpapers in

4. Roofings Uganda Limited is a company dealing in the production of steel from iron using Oxygen which is used in the construction of houses. The Oxygen supply to the production department is not enough. It is planning to set up an Oxygen production plant in Nama subcounty, Mukono district. However, the residents are against the proposal and some pointing out that the plant will be more harm than good to the community.



During class visit in a study tour to the company, the production manager has contacted you to sensitize your fellow students on how the production process will be done.

Task

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

Use the booklet below to	
TO DOIOW LO	respond to items in and
2 30	respond to items in section B – Part I]

					1
					1
				-	
					-
Taken Kiris					
				-	
		100			
M. Special					1
				- 10	
		-11,0.11		365-71	* ***
Employe Salagons on	geri sing pr	10 9 0			-
	A company of the second				
March 1997 Bergera	A CONTRACT LAST SERVICES SERVICES	वर शहर हो है।	New York	5-11-95	
dian su a	7 (3.37)-171-276	metal ass	n Water	11 11 11 11	
	14 A				



	F			
А				
	-			ı
я.			a	
			а	
			Ε	
		٧		
. 0	и			
т				
			۰	
			۰	۲
			•	
		d		
•	•	•		
4				
		ŧ		
		4		
		3		
		•		
4				
- 3	-			
		z		
	-	٠	۰	
-	•			
ı		,		
	-			
1	_	٩		
М	-	,		
		3		
		•		
		3		
	-	•		
	я	٠		
ц	Ţ	,		
	_			
-	_	٦		
	٠	•		
4	C	۱		
ч		,		
- 2	_	_		
	-	₹		

A THE RESERVE OF THE PROPERTY	
<u></u>	

SECTION B **PART TWO**

Answer one item from this part.

5. Kisoro district in western parts of Uganda has many mineral reserves and rocks. Due to the rapid population growth natural resources have been exploited causing proportional environmental degradation in the region. Government through media houses wants to make public awareness on the matter.





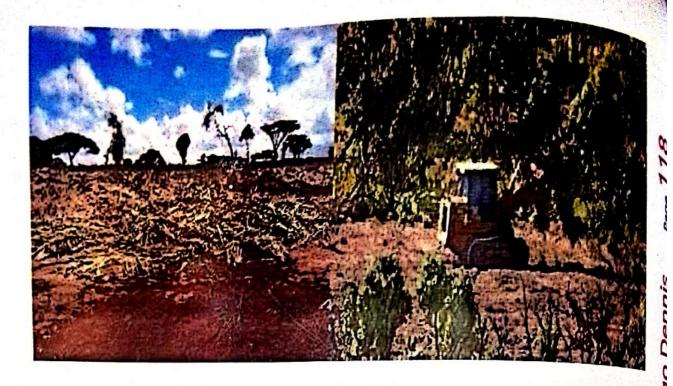
our school has been chosen to lead the environmental onservation awareness team in the district on the theme EXPLOITAION OF ROCKS AND MINERALS IS A NECESSARY EVIL."

you have been selected for a radio talk show on behalf of the entire students community.

🖺 ask; As a learner of chemistry,

Write down the information you are to use during the presentation. (11 scores)

5. Natural resources have been destroyed as a result of increasing population and human activities. This has attracted the attention of the officials from the National Environment Management Authority (NEMA).



The officials are planning to create awareness to the people of the country through sensitization workshops organized in different district communities.

Task:

deliver during the workshop upon invitation. [Use the booklet below to respond to items in section.	
	TORRESTAN



	(-b) (1)				6
A de Adda III	ted at the f			S Salton	- =
mod Pandra	Charling the		an to		Bade
			urās i 1 — pie rectu.		S
C	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	176 274	All and All States	no en la	- iu
e me ada	ein die Marin De englische voor	nu il e garn		W. St.	- OC
	ne a la figura que	Active to		drw - ra	bno
				0.00(2)	Author_Kibugo Dennis
				· 1977年 1 秋梅上春	uthor
	1,211,00	a hay a		Artestil (a	
1.3 1.1		61		N. 65 TE	VE (545/1)
				in the same of the	
				To a long.	Paper
100,0					 STRY_
					HE -
					dary (
				8 a 1	Secor
				The second second second	Approach to Lower secondary CHEMISTRY_Paper O
				and the second of the second o	ch to
					pprog





Answer all items from this part.

1. A new factory in Nakasongola district uses fuel obtained from splitting of the radioactive substances as their alternative to hydroelectric power. There is a large amount of heat given off during the process. Many of its employees have succumbed to cancer. The production manager is worried. The district spokesperson is interested in the matter and has scheduled a meeting with the company administration. The manage has contacted you for some guidance prior to the meeting Task,

As a learner of chemistry,

a) Identify the problem the factor product.	y made when selecting the
The state of the s	(02 scores
The state of the s	
The second secon	
The same of the sa	
b) Help the production man	
b) Help the production manager o	n function of the product.





Download more pastpaper

2. Scientists in the ministry of technology are faced with an unknown component X, aimed to comprehend its behavior throughinitial observations and experiments, systematically recording procedures, observations, and results. component X was placed in a pre-weighed crucible, re-weighed andthe new mass recorded. The crucible with X was heated. intermittently exposed to air until no further change. After cooling, the crucible with its contents was re-weighed, and the mass recorded.

Atomic number X= 12

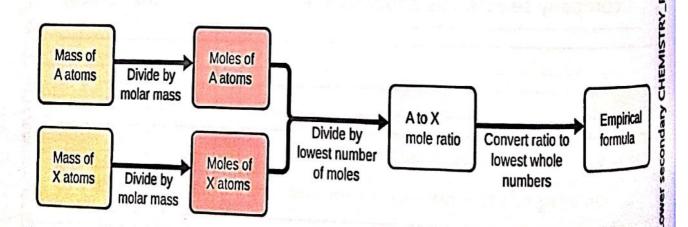
Relative atomic mass of X = 24

Relative atomic mass of O = 16

Mass of empty crucible = 25.8g

Mass of empty crucible + X before reaction = 28.2q

Mass of empty crucible + X after reaction = 29.79



They have brought a combination of these methods and results to uncover the properties and behavior of the component.

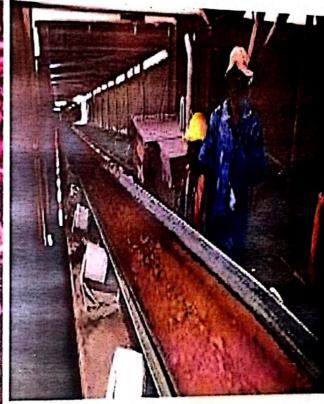
ou have been called upon as a learner of chemis	stry to provide
ne valuable information about the component to	the scientific
ommunity.	
a) Explain the Category of the product.	(03 scores)
(b) Give your take on the predicted properties of	the product (03 scores)
(c) is the product environmentally friendly? Advic	e the panel
To the product environmentally menally trace	e a de malas de mente tanaman de
The training are related with the process.	
	1,500 100

The state of the s
SECTION B
PART ONE
Answer one item from this part.
Answer one item nom this part.
3. Bio Bloom Uganda limited is a leading manufacturer of urea fertilizer in Uganda. The factory uses ammonia as the chief raw material in the production process. Recently, there's increased revenue imposed on imported ammonia. As a resolution, the production manager is planning to set up an ammonia production plant with minimal environmental impact in Nama village, Mukono district.
However, the residents through their chairperson would like to know how the process of production would be carried out and some claiming that the plant will be no use to them at all. You have been appointed by the president science club to represent your school in the fourth coming community workshop of which Task; Prepare a presentation
Prepare a presentation you will make during the workshop (11)

4. Uganda electrical engineers' forum has raised a concern to the floor of parliament, of reduced copper wires in the country.

In response, the government has contracted an investor to set up a new copper extraction plant with minimal environmental concerns in Kasese





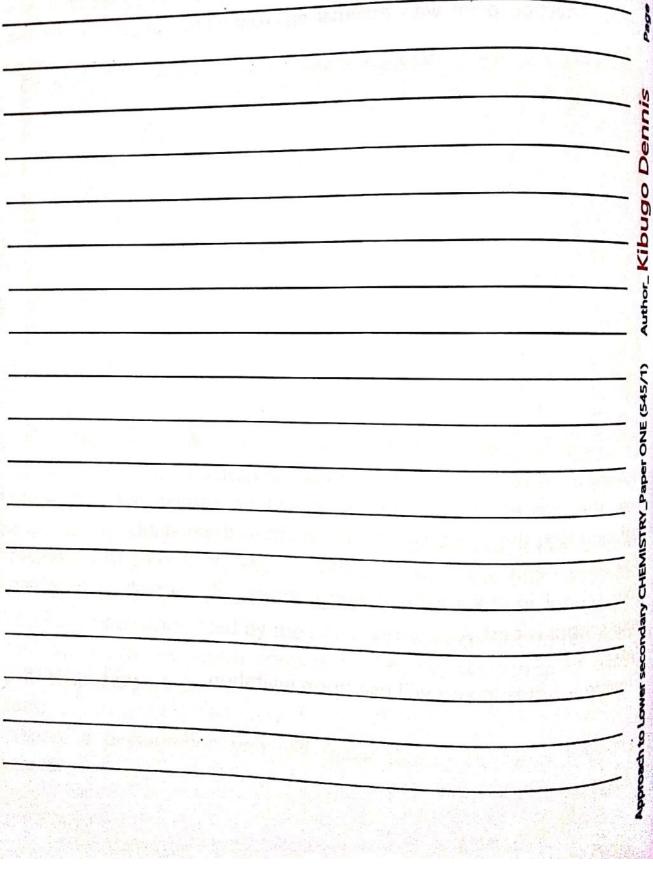
lowever, the residents through their chairperson would like to know you the process of production would be carried out and some plaiming that the plant will be no benefit to them at all.

your school in the fourth coming community workshop of which your school is part.

Task;

Prepare a write-up you will use upon invitation.

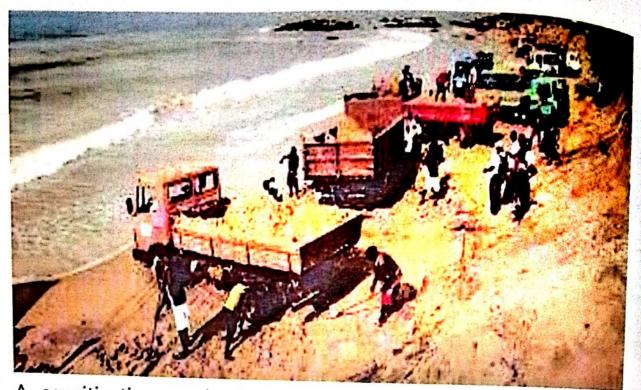
(11 scores)





CS CamScanner

Download more pas



A sensitization work shop is to be organized by the Marine protection unit of Uganda People's Defense Forces (UPDF) to explain the existing situation in the village. The theme of the workshop is "MY LAKE, MY RESPONSIBILITY "

Task;

Using the knowledge of chemistry, you have acquired, make a write up you will display upon invitation in this workshop.

(11 scores)

6. Fresh water bodies like lakes and rivers have been heavily encroached on as a result of increasing Uganda's population. On this year's World Environment Day, National Environmental Management Authority (NEMA), wishes to raise public awareness among the Ugandans on the matter.



	A COLUMN TO THE PARTY OF THE PA	で対域に対して	
	3.1 4.3.	JO A	N /
The science clu	b at your schoo	l has selected year	ou to give a
presentation of	n the occasion. (on theme SAV i	E WIT WATER
Task			
Make a write u	p you will use u	oon the invitatio	on. (11 scores
make a mile a	T ((74)		
	let below to resp		
[Use the book	let below to resp	oond to items in	section B – P
[Use the book	let below to resp	oond to items in	section B – P



SECTION A

Answer all items from this part.

1. After digging a trench, Onesmus realized his white shirt had become dirty. He went to the well to fetch water. He picked a detergent to clean his shirt. The shirt had dirty marks yet he had rinsed it many times. He was frustrated.	Dennis Page
Task Sing the knowledge of chemistry, you have attained,	obi
a) Cite out the problem Onesmus made when choosing the product. (02 scores)	Author_Kibugo
Dapers f	_
	HEMISTRY_Paper ONE (545/1)
	aper
	STRY_P
b) Guide him to know how the product operates. (02 scores)	U
	Approach to Lower secondary
	wer se
	ch to Lc
	Approa
	100

	The section of	r arms the may	*****	04 scor
	A CHEST AND AND	engal disent		
. e bessie d	Ser Bleste			The second
			50.60	
	- 2 - 2ks			7
A Removal				A. A.
			(02 s	scores)
V207002-5-8		Y Visit		
2. A new beverage far of manufacturing a p friendly. The manage bottles. There are var properties trending of	or priories	erial that is env	vironmer	ntally



The manager has approached you as a chemistry learner to guide him while making a selection.

Task;

Download more pastpapers from www.mutoonline.com

As a learner of chemistry;

(a) Explain

(i) Category of product.	(02 scores
(i) Category of product.	(UZ SC

(ii) the suitability of the material for the product.

(02 scores)

	Yes					
	The same			4		
and the same of th		A Section	1900			
The second second						
1						
		: 41.	a abaisa	of the	product	(04 score
(iii) 	Advise h	im on th	e choice	Of the	product.	(0+300)6
(iii))Advise h	im on th	e choice	Or the	product.	(0 + 300)
(iii))Advise h	im on th	e choice	or the	product _i	(0+300)6
(iii))Advise h	im on th	e choice			(OT SCORE
(iii))Advise h	im on th	e choice			(O + 3COTE
(iii))Advise h	im on th	e choice			(O T SCOTE
)Advise h	im on th	e choice			
(iii)		im on th	e choice			

SECTION B

Answer one item from this part.

2. Uganda Bati Limited is a company dealing in the production of steel from iron. Steel is used in the construction of buildings in



many parts of the country. The iron supply to the production department is not enough and management is planning to set up an iron extraction plant with minimal environmental concern in Rushekye hills in Kisoro district Uganda. Kisoro residents are against the proposal claiming that the company wants to take up the valuable land and the plant yet to be constructed is not important to them.



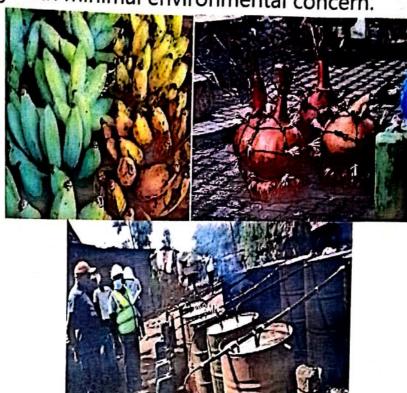
The production team has organized a workshop with the gresidents in the region.

Task:

Sa learner, with the knowledge of chemistry you have attained, make a write up you will use to sensitise your fellow members in the class. (11 scores)

4. Residents in Butanga village have been saving money monthly to buy drinks for their annual party celebrations. Their chief whip has visited various brewing brands and all seem to be expensive according to their proposed budget. A suggestion has been

brought that it's possible to create an ethanol production plant in their locality with minimal environmental concern.



The chief whip has contacted you as a student with the knowledge of chemistry in your village to provide the relevant information.

Task

Download more pas

Make a write up to use upon meeting him.

[Use the booklet below to respond to items in section B - Part I]

				- 2
The second second				—
11 7000	ilstra 9 karer ya	2		_
	A SAN TO SAN			Author Kibugo Dennis
		n of the sale	N 100 Char	_ P
	a Principal and	and the Control	W. Commercial	_ 5
			ins a	_ 💆
\$100 mg			and the second	Autho
				- 5
				 NE (545/1)
				_ aper O
				TRY P
				HEM!
70 M 62000			1000	_ ndary (
	5.			
				Approach to Lower secondary CHEMISTRY Paper OF
				- roach



SECTION B PART TWO

Answer one item from this part.

5. Kibalama village in Mubende district is rocky area. People of this village for a long time have practiced charcoal burning, crop husbandry and stone quarrying, recently the animals have started dying and wells are drying up yet the little water available is not fresh. The locals are now wondering why all these are happening.



A sensitization workshop is to be organized to explain the existing A selision in the village. The theme of the work shop is 'THE NEW situation in KIRAI ANAA' ENVIRONMENT IN KIBALAMA'.

As chemistry student, write a massage you will deliver upon Task invitation.

6. In Nyendo, Masaka district, many trees and shrubs have been cut. The community has stated encroaching on the remaining wetland in the region. And all this has been as a result of increasing population. This has attracted the attention of the officials from the National Environment Management Authority (NEMA).



The officials are planning to create awareness to the people of the country through sensitization workshops organized in different district communities.

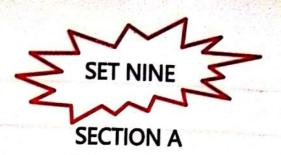
Task.

As a chemistry student, prepare a short presentation you will deliver during the workshop upon invitation.

[Use the booklet below to respond to items in section B - Part II]







Answer all items from this part.

1. Okoche a senior one student of TAP college school, on his way back home accidentally knocked by a bicycle and fell down. He developed mild pain and headache but had no bruise. He decided to use penicillin tablets because it was the only option available in his handhad

T			and the second		
					-
A control for the same			ENTERNO LA MENTANCIA DE LA		le les
40.00					
				0	T record
A	For any Agent			1-	117.15
				1 - 800 (-0.00)	
Help him	understand	t how the	orodust we		





d) Evaluate the cho				
			The state of the s	
		velo the se be		
	Service Control		N. A.S. Marian	
	THE PERSON NAMED IN COLUMN TO SERVICE AND ADDRESS OF THE PERSON NAMED IN COLUMN TO SE			744

2. In one village in Nakasongola district, residents are concerned about the waste disposal from one factory into the nearby pond which is their main source of water for their animals. Water temperatures in the pond would suddenly rise every time the wastes were disposed. They raised issue to the chairperson who directed the factory management to stop disposing waste into the pond. However, the management claims that all those accusations on their factory were false. A scientist was contacted to investigate the presence of radioactive material in the water. The scientist report showed the following equation.

$$^{207}_{81}Ti + ^{1}_{0}n \longrightarrow ^{207}_{82}Pb + ^{106}_{51}Sb + ^{86}_{21}Sc + ^{15}_{9}F + Energy$$

The chairperson has contacted you prior to her annual village meeting on the matter.

Task;

As a chemistry learner,

a) Explain the category of the product	(02 scores)
	a binapakan ayan kalan da a a a a a a a a a a a a a a a a a
	the straight for the straight
b) Help her on the function of the product	t. (02 scores)
	exteri.

SECTION B PART ONE

Answer one item from this part.

3. A new factory deals in manufacture aluminum door flames. The management is frustrated with the high revenue imposed on their imported aluminium. In response, the operations manager has cleared an Aluminum extraction unit in Yumbe district which is rich of aluminum deposits. Unfortunately, the residents are concerned about the environmental effects of the process and are inquisitive whether it is going to be beneficial to them.



As part of the community, the manager has contacted you to guide him on what he is about to deliver to the community in the incoming community meeting.

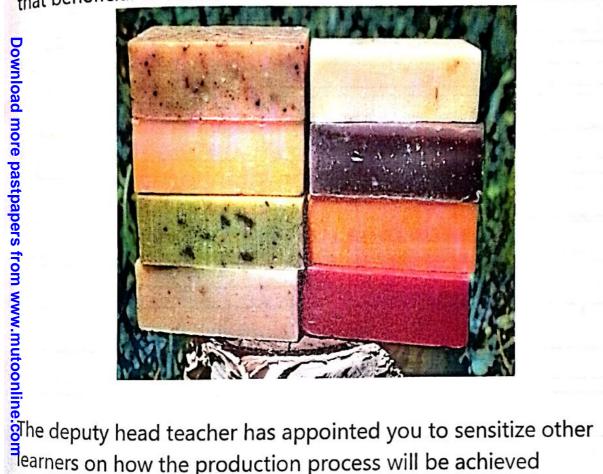
Task

Prepare a report that will guide him on his presentation.

(11 Scores)



4. A women's group in town is planning to manufacture a Soapy detergent as a new project to increase annual gross sales from group sales. The chairperson is planning to set up a soapy detergent production unit with minimal environmental concerns. Some of the representatives in the group are however protesting the establishment of the unit claiming that it is not that beneficial to them.



learners on how the production process will be achieved Task;

Prepare a mini presentation you will make during the assembly. (11 scores)

[Use the booklet below to respond to items in section B - Part I]





APPROAH TO LSC CHEMISTRY Paper ONE

Ву **KIBUGO DENNIS** [+256 750 732 031 / +256 760 954 033]

Download more pastpapers from www.mutoonline.com

