

## **SNEAK PEAK OF THE NEW ULTIMATE CBC CHEMISTRY ITEM**

### **WORKBOOK**

## **SECTION A TYPE**

### **Item 12.**

A group of women have been making cotton floor carpets to earn a living. However, many customers complained that these carpets easily decomposed by moisture and carpet beetles. One of the lady in the group suggested that they should look for an alternative material but they lack knowledge of what material to go for without affecting the environment.

You have been contacted as learner with knowledge about chemistry to help them out.

### **Task:**

Using your knowledge of chemistry;

a. Classify the materials.

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b. Identify the suitable alternative material with reasons.

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c. Advise on the choice of the material.

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### **Item 4**

Jona, an architectural engineer deals in building statues, monuments and sculptures. Recently, he has received complaints from his former clients that the statues he made for them a few months ago are starting wear off, have become dull and have started to develop cracks.

Jona is worried about losing clients and he attributes this to the materials he uses. You have been consulted to give advice to Jona and your choice is bronze.

**Task:**

Using the knowledge of chemistry;

a. What category of materials will Jona use including their composition?

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b. Help him understand the suitability of the materials.

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c. Explain the negative impacts of the materials on the environment and suggest how they can be mitigated.

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**Item 7 .**

In the university laboratory, students were investigating the nature of the substances obtained from some hair chemicals used by Rubanda district ladies . Some residents had complained about breakage of hair and turning brown . The results obtained were recorded in the table below.

Substances	<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>	<i>T</i>
Atomic number	3	6	8	12	13

**TASK.** As a chemistry learner,

a. Explain

i. The categories of substances above.

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ii. The properties of one the substances identified.

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iii. Daily life application of substance T

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b. Give the dangers to the environment associated with using substances made from T and mitigation.

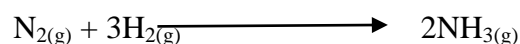
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**Item9.**

During production of ammonia gas by Haber process, nitrogen and hydrogen are reacted in a volume ratio of 1:3 respectively in reaction chambers in presence of a catalyst. The reaction follows the equation below.



Your teacher is interested in knowing the quantities of particles of ammonia so that they know clearly the volume of the containers needed for proper storage.

An experiment was conducted using 0.5 moles of hydrogen gas.

*(Where necessary you may use; N=14, H=1. 1 mole of a substance contains  $6.02 \times 10^{23}$  particles).*

**Task: As a chemistry learner;**

a. Explain the category substances the product belongs to.

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b. Write down the properties of substances in the same category as the product.

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- c. Find out the number of particles of the product formed from the above equation.

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- d. What are the impacts to the environment of the product and mitigation?

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**Item 11.**

Musanje found a warning on a tin containing a white crystalline solid; common salt saying “*not advised to take when row and large quantities*”. He became interested on the nature of substances that make common salt and if they can affect the environment in any way.

He has come to you for advice.

**Task: As a learner of chemistry;**

- a. Explain the categories of the substances making up the white crystalline solid.

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- b. What are the properties of the solid that make it useful in daily life?

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- c. Illustrate how the substances in solid join during bonding using outermost energy levels.

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- d. What is the impact to the environment does one of the substances in the solid has and suggest a mitigation?

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### Item 10

While investigating the reaction of Period 3 elements with water, Tom first considered two elements A and B and the results of their reactions with water is summarized in the table below,

Element	Observation
A	Reacted violently while floating on surface of cold water forming an alkaline solution with evolution of hydrogen gas
B	Reacted slowly with cold water forming an alkaline solution and hydrogen gas but when heated with steam formed a white solid and hydrogen gas

Task: As a chemistry learner:

a) Give the category of element A and B

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b) Predict the reaction of other elements in Period 3 with water.

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c) Suggest one application of the product formed when element(s) in Period 3 react violently with cold water.

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d) Advise Tom about the dangers associated with the reaction of these elements with water.

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### Item 5.

Both Jenina and Joan make home own shops that sell homemade cookies and bread. People in the community prefer Joan's cookies. To save her business, Jenin decided to buy some cookies and bread from Joan and realized that they had an appealing aroma and taste as compared to hers. She is desperately seeking for help to improve her sales.

### Task:

As a chemistry learner;

- a. Explain the category of ingredients lacking in Jenina's cookies and bread.

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- b. Describe the suitability of the ingredients.

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- c. What advice would you give to daily customers of Joan about their choice of her product?

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## SECTION B

### Item 20

After discovery of aluminium containing rocks in Busia, the government is considering expanding the mining industry to boost economic growth with minimal environmental effects. However, the majority of the locals are wondering how that can be achieved and thus resistant.

The chairperson has then called for sensitization meeting to address the challenge at hand.

[illegible]

**Item 34**

**Task: using your knowledge of chemistry, prepare a write-up highlighting why NEMA needs to alert the community.**

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper has a slight shadow on its right side, suggesting it's resting on a surface.

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