

NAME.....

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**545/1**

CHEMISTRY

PAPER 1

**NOVEMBER.2023**

2 HOURS



**SHAPTA JOINT ASSESSMENT BOARD**

**Uganda Certificate of Lower Secondary Education**

CHEMISTRY

PAPER 1

**SENIOR TWO**

TIME: 2HRS

**INSTRUCTIONS TO LEARNERS:**

- Respond to **all** items in paper.
- Answers to all items must be written in the spaces provided.

## SECTION A

### CHAPTER: ACIDS AND BASES

1. Acids and bases are substances which are use in our everyday life.

Solution X

Solution Y

(Turns blue litmus paper red)

(Turns red litmus paper blue)

(a) State the identity of;

(i) Solution X..... (01 score)

(ii) Solution Y..... (01 score)

(b) State any one other physical property of,

(i) Solution X. (01 score)

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(ii) Solution Y (01 score)

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.....

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

(i) Baking powder? (01 score)

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(ii) Lemon juice? (01 score)

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(d) Name the compound found in lemon juice that is responsible for the properties of lemon juice stated in (a) and (b) above. (01 score)

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(e) State one importance of the compounds which have the same properties as solution X in the body. (01 score)

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## CHAPTER: USING MATERIALS

2. (a) Apart from cement and sand, identify other materials used during construction of ADB. (02 scores)

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(b) 15 bags of cement and 2 tonnes of sand were used during flooring of S2 classrooms. Calculate the ratio of cement to sand in the composite used. (03 scores)

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(c) Senior Two class measures 1920cm by 650cm, the school wishes to fix tiles which measure 40cm by 40cm each, in all classes starting with S2 class. A box of such tiles contains 12 pieces and costs Ugshs 38,000. The head-teacher has selected you to advise him on **the number of tiles required, number of boxes** and the **total cost** to be spent on tiles, advise him on the above; bearing in mind that tiles are sold in boxes not pieces. (06 scores)

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(d) Why must cement be added to sand during construction of permanent structures? (01 score)

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(e) Joash's mother is a tailor, who does her work in Iceland, she sews winter jackets and rain coats and she commonly uses nylon and cotton materials. Identify the material she uses and the property that makes it suitable for;

(i) Sewing raincoats (02 scores)

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(ii) Sewing winter jackets. (02scores)

## CHAPTER: STATES AND CHANGES OF STATES OF MATTER

3. (a) Katongole Ricky wanted to celebrate his birthday with well inflated decorated balloons; he decided to inflate all the balloons, 3 days prior to the birthday and kept all of them in one room. Early in the morning on the birthday, he wanted to do the decoration but found when all the balloons had shrunk [reduced in size], this greatly left him wondering how that happened.



As a senior one student who now understands kinetic theory of matter, clearly state it and advise Carlos on why that happened. (03 scores)

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(b) In another scenario, Madam Aloba applied perfume on her clothing and everyone in Senior two class wondered how they were able to smell the perfume, shortly after he entered.

(i) Students closest by her smelled the perfume faster than those in the corners of the class, explain this experience? (01score)

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(ii) Why was everyone able to smell the perfume after sometime?

(02 scores)

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(iii) Name the process that took place with the perfume incident

(01score)

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(iv) State two other scenarios that can be related to Madam Oyeki's perfume incident. (02 scores)

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#### **CHAPTER: EXPERIMENTAL CHEMISTRY**

**4.** (a) A laboratory in school is closely related to a kitchen in home. Suggest the major role of a;

(i) Laboratory in school. (01 score)

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(ii) Kitchen in home. (01 score)

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(b) Complete the table by naming related tools in both laboratory and kitchen that are used for the same purpose, in each case state what the pair is used for. (04 scores)

| Laboratory     | Kitchen        | Use                          |
|----------------|----------------|------------------------------|
| .....          | Spoon          | .....                        |
| Beaker         | .....          | .....                        |
| .....          | Mingling stick | For stirring                 |
| .....          | .....          | For cooking and lighting     |
| Weighing scale | .....          | Measuring mass of substances |

(c) There has been a common fire outbreak in schools which has got property blazing in flames

(i) Name the two types of flames with which property burns; labelling one as X and the other as Y. (02 scores)

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(ii) Give 3 structural differences between X and Y, listed in c(i) above. (03 scores)

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(iii) Identify three ways through which fire can be put off to prevent overly damage. (03 scores)

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## CHAPTER: PERMANENT AND TEMPORARY CHANGES

5. Temporary and permanent changes in our everyday life are inevitable, both advantageous and disadvantageous

(a) What other words can you use to mean;

(i) Temporary change. (02 scores)

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(ii) Permanent change. (02 scores)

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(b) Give four scenarios which represent a;

(i) Temporary change. (02 scores)

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(ii) Permanent change. (02 scores)

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(c) Suggest and explain two advantages of named;

(i) Temporary changes (02 scores)

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(ii) Permanent changes (02 scores)

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(d) Suggest and explain two disadvantages of permanent changes. (02 scores)

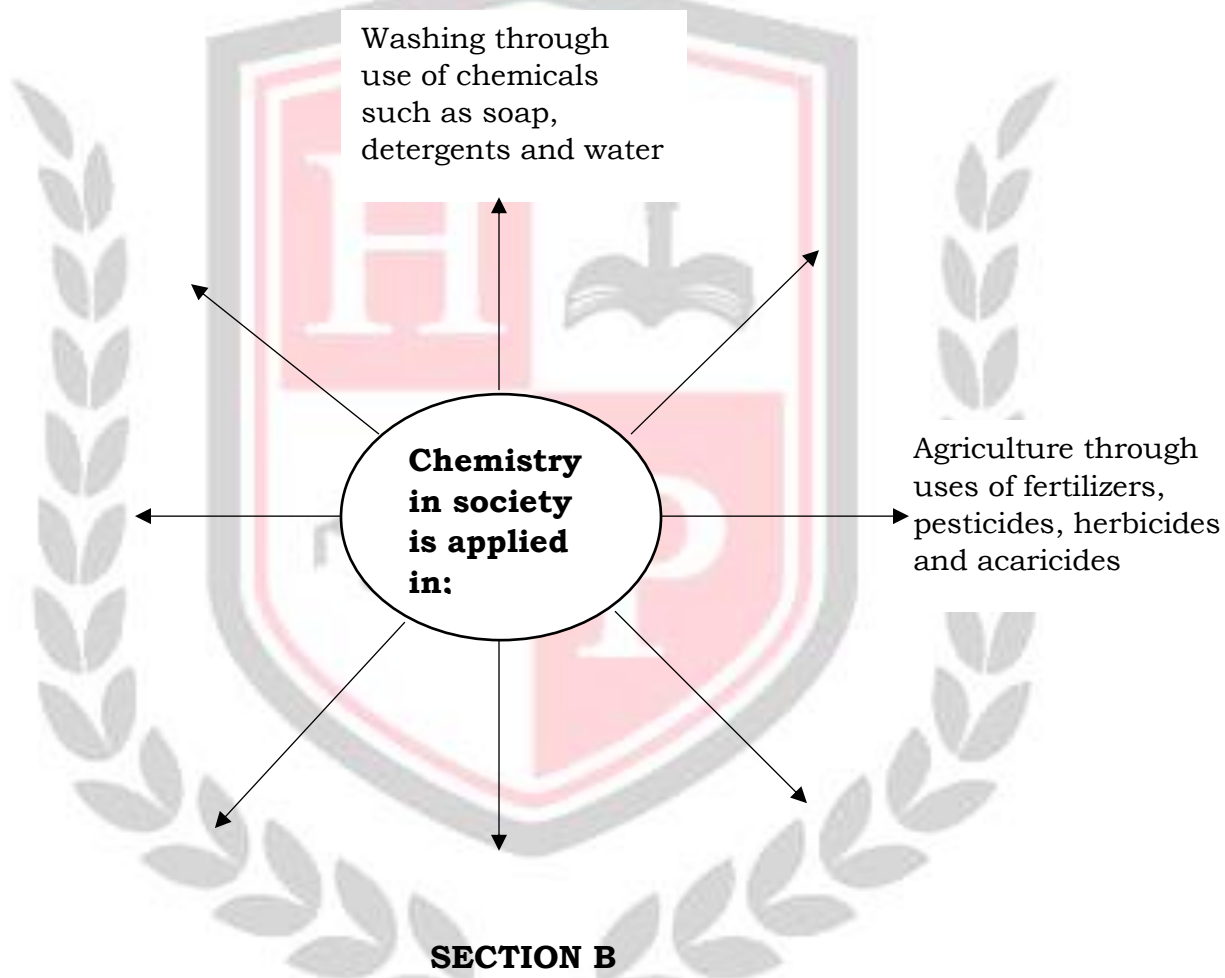
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## CHAPTER: CHEMISTRY AND SOCIETY

6. Chemistry involves the study of matter, its composition and changes that occur to it when subjected to different conditions. It is divergently involved in many aspects of our lives in the society. Complete the following mind map, relating to how chemistry applies in the society (12 scores)

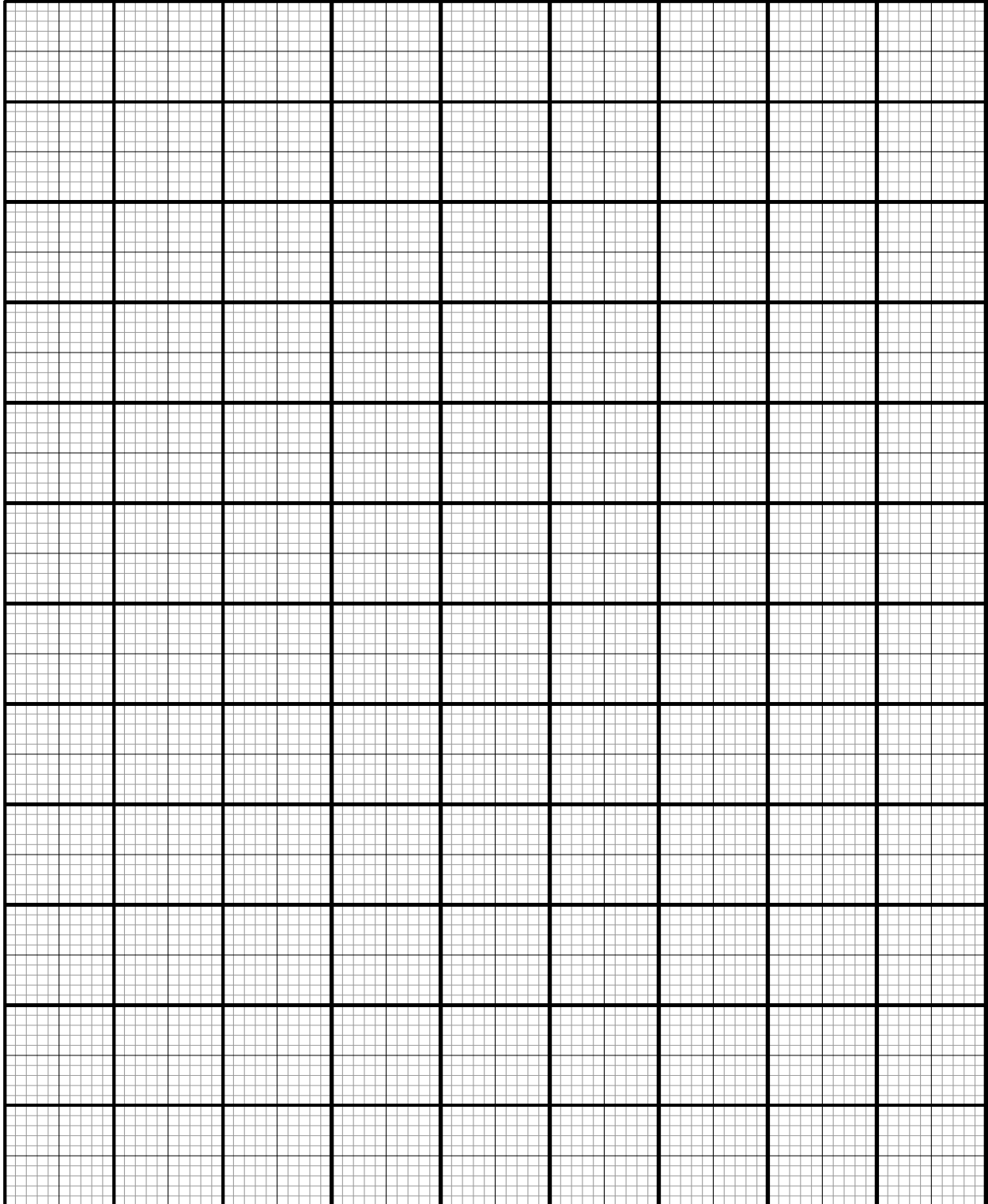


## CHAPTER: STATES AND CHANGES OF STATES

7. During an experiment to investigate what happens when solid substance P is heated by senior one student, Grace's group obtained and recorded the following results of temperature changes together with time taken.

|                  |     |   |   |    |    |    |    |    |    |    |    |    |    |
|------------------|-----|---|---|----|----|----|----|----|----|----|----|----|----|
| Time [minutes]   | 0   | 1 | 2 | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 |
| Temperature [°C] | -10 | 0 | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 80 | 80 | 80 | 90 |

(a) Plot a graph of temperature of the substance [on vertical axis] against time [on horizontal axis] (06 scores)



(b) Use the graph to determine the;

(i) Freezing point of substance P.....

(01score)

(ii) Boiling point of substance P.....

(01 score)

(c) Draw and comment on the arrangement of particles of substance P at;  
(06 scores)

-10°C

90°C

20°C

**END**