

NAME:.....SIGNATURE:.....

**DAYSTAR SECONDARY SCHOOL, WAKISO**  
**UGANDA CERTIFICATE OF LOWER SECONDARY EDUCATION**  
**CHEMISTRY**  
**PAPER 1**  
**1HR: 40MIN**

***Instructions***

Answer all questions in section A and any one in section B

All your answers should be clear in a neat handwriting to avoid loss of marks.

Answers in section A should be properly written in the spaces provided

All drawings included should be in pencil

Pay attention to the number of marks available for each question

For examiners use only

**SECTION A**







Question	1	2	3	4	5	Total
Marks scored						

**SECTION B**



Question	6	7				total
Marks scored						

## SECTION A

1. In an investigation to find out the changes which occur to substances under different conditions; Mr. Mayanja an S.3 chemistry teacher illustrated these changes using the examples in the pictures below;

Change type A	Change type B
<p><b>Before</b> Wood log</p>  <p><b>During</b> Log getting burned</p>  <p><b>After</b> (new substance) Pile of ash</p> 	<p><b>Before</b> Whole lemon</p>  <p><b>During</b> Lemon getting sliced</p>  <p><b>After</b> (same substance) Slices of lemon</p> 

On addition to the above illustration; after class involvement, they found out that other changes of type B also exist and are commonly done in everyday life among which were the following

	
Process x	Process y

- (a) Identify the change type A and B happening to matter (2 marks)

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- (b) State four differences between the types of changes you have identifies in (a) (4 marks)

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- (c) Identify the processes occurring to matter in processes (2 marks)

- (i) X:.....  
 (ii) Y:.....

- (d) Mention other examples in daily life where changes of type A and B occur apart from the ones identified above (2 marks)

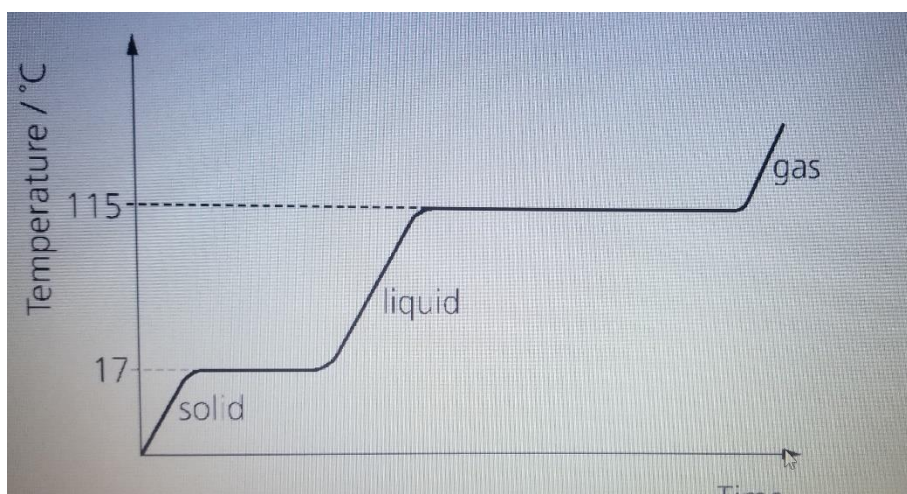
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2. Your young brother bought ice from the shop, on reaching home, mum sent him to the Centre to buy sugar and he forgot his ice on the veranda, which is directly heated by the sun. On returning, he found out that all the ice had turned to liquid and flowed, after some time he noticed that the veranda he did not mop was dry and he wondered how it came about.

Briefly explain to him what caused the changes he saw using your knowledge of the kinetic theory of matter (6 marks)

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3. Below is a heating curve for a pure substance. It shows how the temperature rises over time, when the substance is heated until it melts, then boils.



- (a) What is the melting point of the substance? ( $\frac{1}{2}$  mark)

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- (b) What happens to the temperature while the substance changes state? (1 mark)

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(c) The graph shows that the substance takes longer to boil than to melt. Suggest a reason for this.  
(2 marks)

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(d) How can you tell that the substance is not water? ( $\frac{1}{2}$  mark)

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(e) Sketch a rough heating curve for pure water (1 mark)

4. In case of a fire outbreak in the school laboratory, a fire extinguisher can be used to stop the fire.

(a) Briefly describe the steps that can be followed when using a fire extinguisher when stopping fire.  
(4 marks)

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(b) Identify three incidences that may cause fire in the school laboratory (3 marks)

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5. Chemistry is of great importance in many fields such as pharmaceuticals, agriculture, education, mineral extraction and many others. In a single write-up, describe the contribution of chemistry in the named fields. (7 marks)

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**Section B.**  
**Attempt any one question (15 marks)**

6. You are a chemist working in a research lab studying the behavior of water. You have a sample of water at  $25^{\circ}\text{C}$  and want to investigate its changes of state under different conditions.
- (a) At  $25^{\circ}\text{C}$ , explain the state of matter of the water sample and the intermolecular forces involved.
  - (b) If you increase the temperature of the water sample to  $100^{\circ}\text{C}$  while maintaining constant pressure, describe the changes of state that occur.
  - (c) Now, if you decrease the temperature of the water sample to  $-10^{\circ}\text{C}$  while maintain constant pressure, explain the changes of state that occur.
  - (d) Sketch the heating curve for the changes of state described in parts (b) and (c), and label the different regions of the curve with the corresponding state(s) of matter.
  - (e) Based on the data collected, discuss the effect of temperature and pressure on the changes of states of water, and relate it to the kinetic theory of matter.
7. You are a chemistry teacher conducting a laboratory session to demonstrate the safe and effective use of the Bunsen burner a heating apparatus.
- (a) Explain the structure and working principle of the Bunsen burner. Include the different parts of the burner and how it regulates the flow of the gas and air to archive different types of flames.
  - (b) Outline the safety precautions and guidelines that students should follow when using the Bunsen burner, including lighting and extinguishing the flame.
  - (c) Describe the different type of flames produced by the Bunsen burner and explain the appropriate applications for each type of flame in the laboratory work.