FORM 1 CHEMISTRY 2024 NOVEMBER-DECEBER HOLIDAY ASSIGNMENT

INSTRUCTIONS:
READ AND MAKE SUMMARY NOTES OF FORM 1 CHEMISTRY
ANSWER ALL THE TOPICAL QUESTIONS BELOW IN YOUR CHEMISTRY ASSIGNMENT BOOK.

WEEK 1

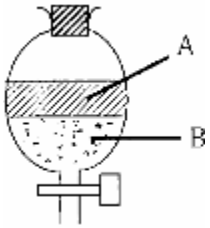
1. a) Name three illegal drugs (3 marks)

b) State three ways of preventing drug abuse. (3 marks)

2. Complete the following table (8mks)

Apparatus	name	use
i 		
ii 		
iii 		
iv 		

3. State two laboratory safety rules (2mks)
4. The apparatus below were used to separate a mixture of liquid A and B.

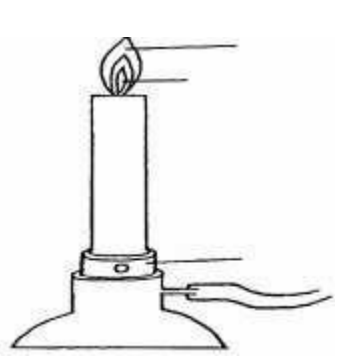


a) State two properties of liquids that make it possible to separate using such apparatus.

b) Give the name of the above apparatus. (1 mark)

5. Describe how you can separate a mixture of sand and common salt (3 marks)

6. The diagram below shows a Bunsen burner when in use



i) Name the regions labelled B and C. (2 marks)

ii) What is the function of the part labeled A? (1 mark)

7. State three differences between physical and chemical change. (3 marks)

8. i) Differentiate between an acid and base (2 marks)

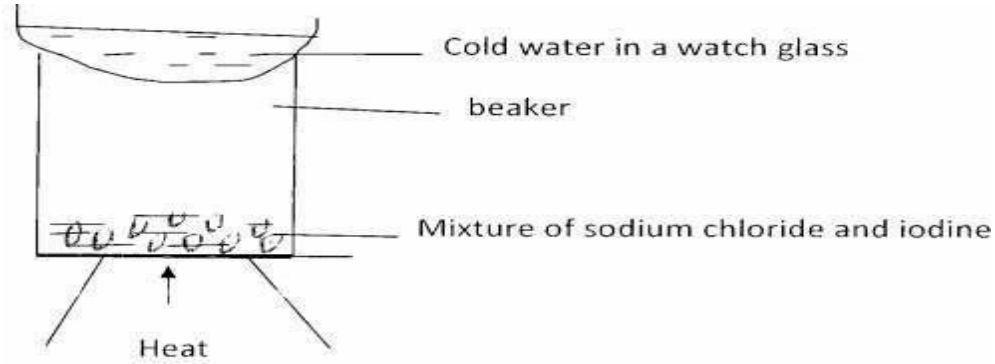
ii. The following is a list of pH values of some substance: Substance M N V X Z pH 10.6 ,7.2 ,13.2 ,5.9, 1.5 respectively Identify:

a) Strong acid

b) Weak base (1 mark)

WEEK 2

9. A form one student wanted to separate and obtain iodine and sodium chloride (common table salt) from a mixture of the two. He set the experiment set up shown below.



(a). the mixture was heated for some time and left to cool. On cooling, shiny black crystals and white crystals were observed on the surface of the watch glass and in the beaker respectively. Name:

i. Shiny black crystals (1mk)

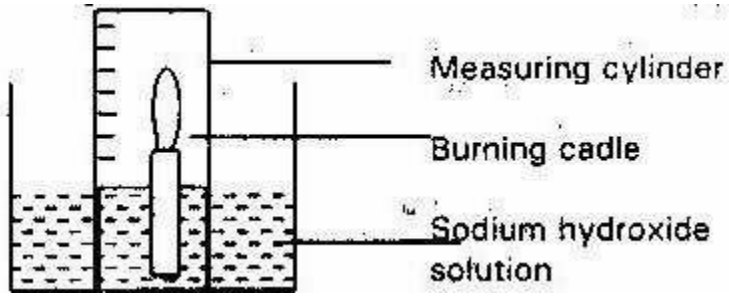
ii. White crystals (1mk)

(b). what was the purpose of the cold water in the watch glass? (1mark)

(c). what property of iodine makes it be collected on the watch glass as shown? (1mark)

(d). Explain why it is possible to separate a mixture of iodine and sodium chloride. (1mark)

10. A candle was burnt using the apparatus shown below. The initial volume of measuring cylinder was 90cm3. The apparatus was allowed to cool and the volume of air in the measuring cylinder had dropped to 70cm3.

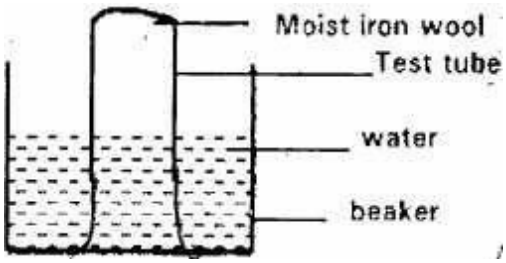


a) Why was the volume recorded when the air was cooled? (1mk)

b) What was the purpose of sodium Hydroxide? (1mk)

c) Use the results given to calculate the percentage of oxygen in air. (2mks)

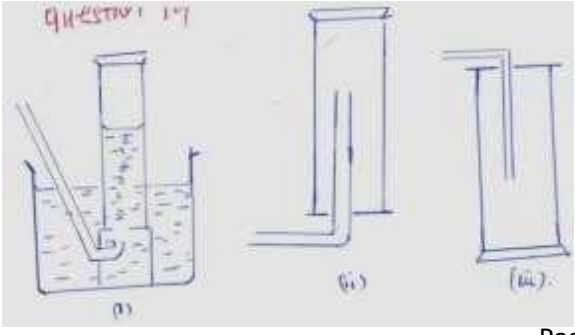
11. The set up below was used to study some properties of air



State and explain two observation that would be made a t the end of the experiment. (3mks)

12. The diagram below represents three methods for collecting gases in the laboratory

a) Name the methods shown in the diagram (3mks)



i ii iii

d) State with reasons the most suitable methods for collecting each of the following gases.

i) Oxygen (1mk)

ii) Hydrogen (1mk)

13. a) The diagram below shows spots of pure substance A, B, and C on a chromatography paper. Spot D is that of a mixture after development, A, B and C were found to have moved 8cm, 3cm and 6 cm respectively.D has separated into two spots which had moved 6cm and 8 cm

(i) Draw a well labelled diagram to demonstrate the resultant chromatogram (2mks)

I Label the baseline (origin) (1 mark)

II Show the positions of all the spots after development (3 marks)

(ii) Identify the substances present in the mixture D (2 marks)

(b) Describe how solid ammonium chloride can be separated from a solid mixture of ammonium chloride and anhydrous calcium chloride (2 marks)

14. Complete the word equations for the following reactions; (3mks)

(a) Sodium carbonate + hydrochloric acid ……..>

(b) Zinc + sulphuric acid ……..>

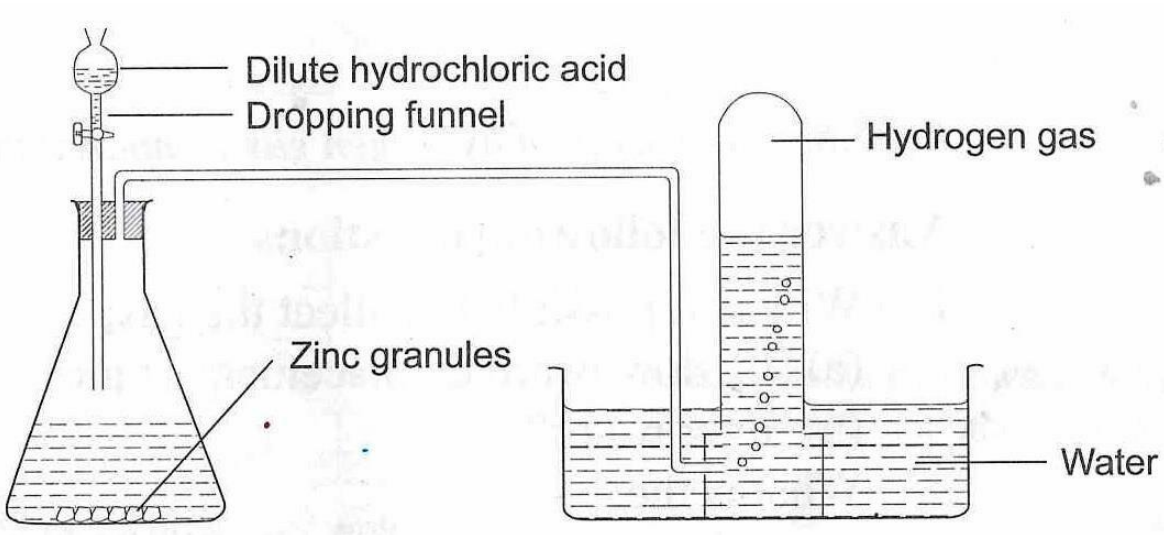
(c) Potassium hydroxide + nitric acid ……..

WEEK 3

1. What is a fume chamber/cupboard and give its use

(2mks)

2. The setup below was used to prepare and collect hydrogen gas



(a) write an equation for the reaction that produces hydrogen gas (2mks)

(b) Why is hydrogen gas collected over water

(1mk)

(c) State what is observed when a few drops of phenolphthalein indicator were added to a solution of wood ash. (1mk)

3. Fractional distillation of liquid air is a method used to separate various gaseous mixture in air. Explain how to (3mks)

i) remove carbon(IV) oxide

ii) remove water

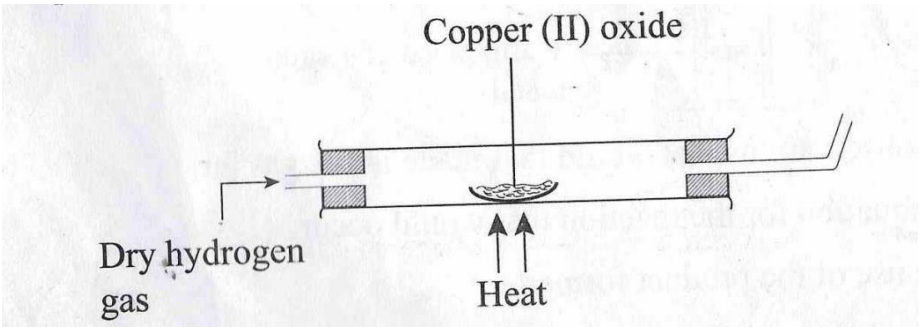
iii) obtain nitrogen

4. The following apparatus and chemicals are used to investigate the percentage of air used when iron rusts: iron fillings100ml measuring cylinder, trough and water.
   a) Draw a setup of the experiment (2mks)

5. What is the method used to obtain sunflower oil from sunflower seeds (1mk)
6. After use, non luminous flame should be put off or adjusted to a luminous flame. Explain (2mks)

7. Draw and show the electron arrangement of phosphorus (atomic number 15) (2mks)
8. Atoms are made up of subatomic particles.name them (3mks)

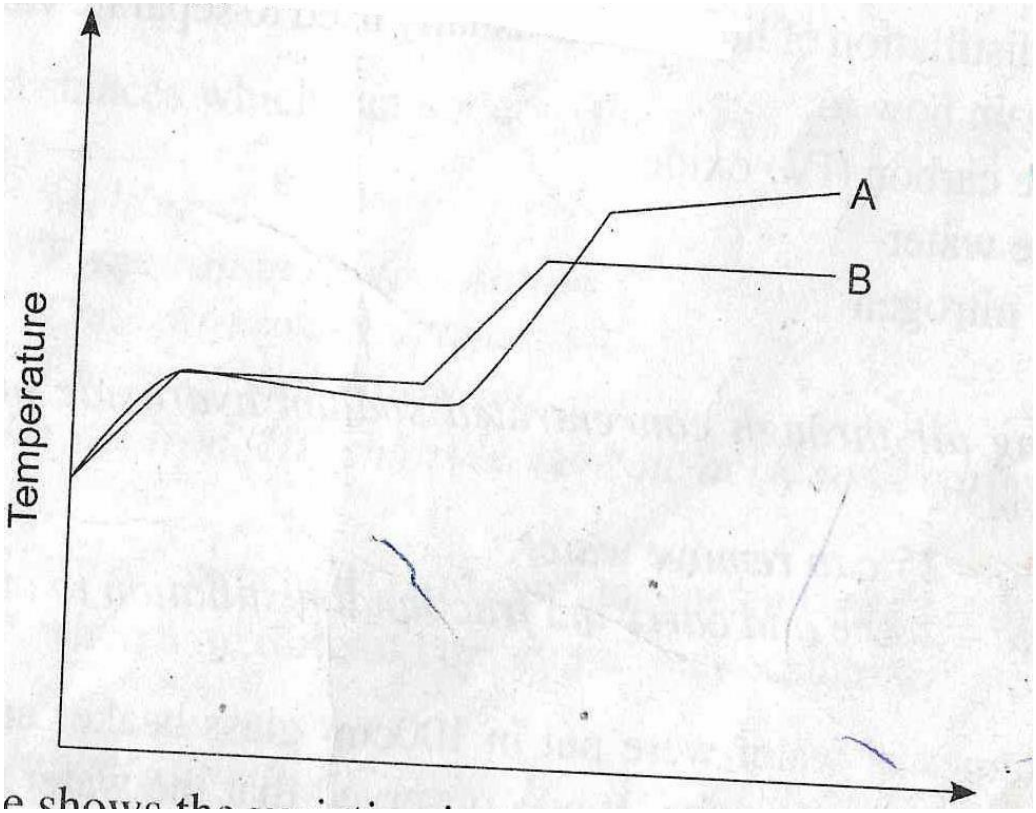
9. In an experiment hydrogen gas was passed over heated copper(II)Oxide as shown.



   i. State the observations made in the combustion tube after the experiment (2mks)
   ii. Write the equation for the reaction between copper(II)oxide and hydrogen gas (1mk)
   iii. Explain why heat is necessary in this experiment. (1MK)

WEEK 4

10. The curves below represent the variation in temperature with time when pure and impure samples of a solid were heated separately.



i. Which curve shows variation in temperature of a pure solid. Explain

(2mks)

ii. state the effect of an impurity on the melting and boiling points of a pure

11(a) Define the term matter? (1 mark)

(b)Complete the table below

Substance	Physical State
Copper	
Water	
Oxygen	

12. Name the most suitable apparatus for carrying out the following tasks in the laboratory

(a)Measuring exactly 0.5g of sodium chloride solid (1 mark)

……

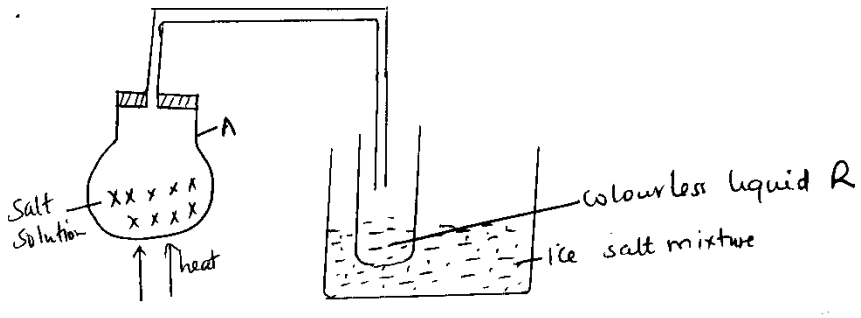
(b)Measuring exactly $85cm^3$ of water (1 mark)

……

(c)Measuring exactly 1 litre of water (1 mark)

……

12. Study the diagram and answer the questions that follow



(a)Identify the method of separation of the mixture shown above (1 mark)

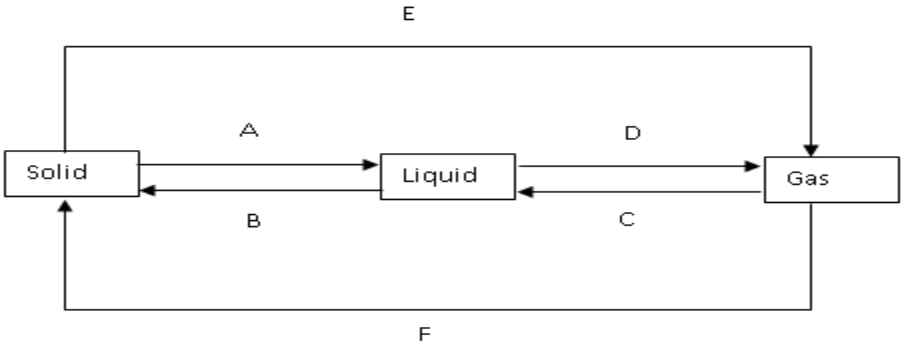
(b)Name the colourless liquid R and state its physical test (2 marks)

(c) Name the apparatus labelled A (1 mark)

(d)What is the purpose of ice salt mixture? (1 mark)

(e)Name substance that can be used as ice salt mixture (1 mark)

13. The diagram below shows charges on physical states. When substances are subjected to different conditions of temperatures, study it to answer the questions that follows



(a)Identify the physical process labeled (4 marks)

A ……..

D……..

E……..

F……..

(b)Name the condition necessary for these process to occur

A ……..

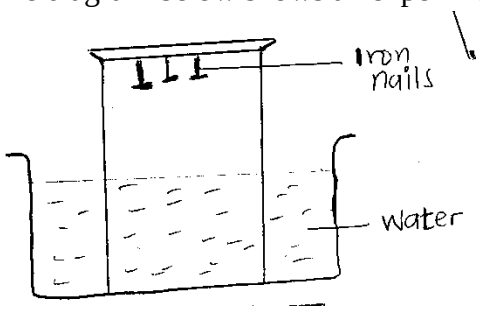
C……..

(c)Name two substances that undergo process E and F (3 marks)

14(a) Define the term drug (1 mark)

(b)State three commonly abused harmful drugs in Kenya today (3 marks)

15. The diagram below shows an experiment performed to study a chemical process



(a)State two observations made after five days (1 mark)

(b)What is the name of the chemical process

(1 mark)

(c)Write a word equation for the above process (1 mark)

(d)Give the conditions necessary for the process above to take place (2 marks)

17.Solutions P,Q,R,S T and U have PH values as shown in the table below

Solution	p	Q	R	S	T	U

PH value	9.0	6.5	11	4.5	7	2

(a)Identify from the table above the PH value of the solution which is most likely to be;

(i) Weak acid (½ mark)

……

(ii)Neutral solution (½ mark)

……

(iii) Strong base (½ mark)

……

(b)Identify the solution which is likely to be

(i)Lemon juice solution (½ mark)

……

(ii)Tooth paste solution (½ mark)

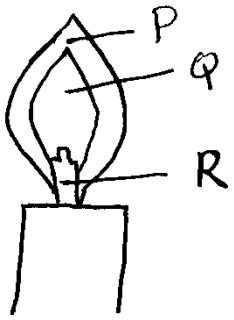
……

(iii)Hydrochloric acid solution (½ mark)

(iv}Rain water (½ mark)

WEEK 5

18. Study the diagram below



(a)Label the regions represented by P and Q (2 marks)

……

……

(b)Name the type of flame above (1 mark)

……

(c)Under which condition is the above type of flame produced in a bursen burner (1 mark)

……

(d)Which of the part labelled P, Q and R is the hottest? Explain (2 marks)

……

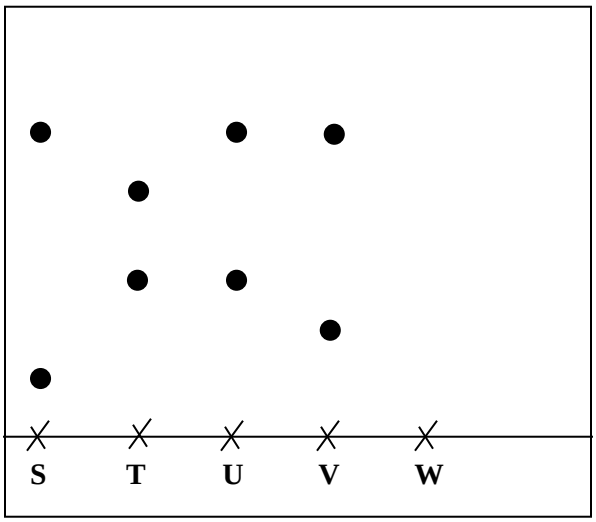
……

……

(e)State the other type of flame produced by a bursen burner (1 mark)

……

19. The diagram below represents paper chromatogram of four brands of cosmetics suspected to contain banned ingredients



(a)On the diagram, label the baseline and solvent front (2 marks)

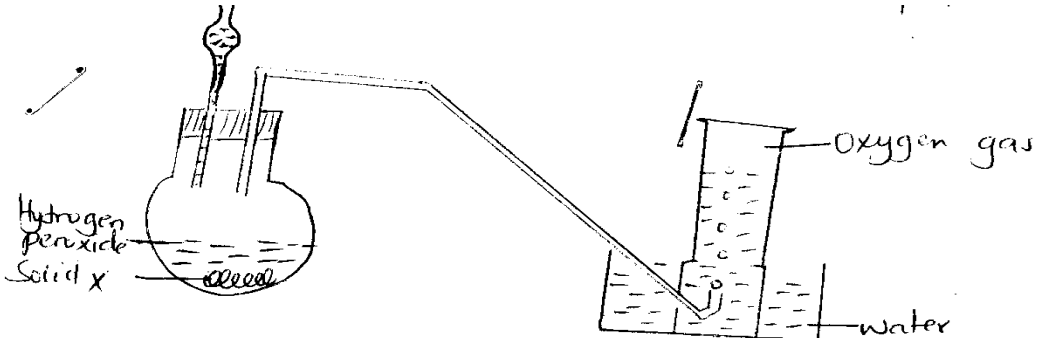
(b)Name a possible solvent that can be used (1 mark)

(c)A manufacturer intends to make a new brand of cosmetic W which will contain ingredients found in S and U. On the diagram show the chromatogram of W (1 mark)

(d)Name two practical application of the process indicated by the diagram above (2 marks)

20. Sodium chloride is contaminated with copper II oxide. Explain how pure sodium can be obtained from the mixture (3 marks)

21. The diagram below is a set-up of apparatus used by a student in an attempt to prepare oxygen gas



(a)Identify one mistake in the set-up of apparatus above

(b)i) Name solid X (1 mark)

(ii)What is the role of solid X (1 mark)

(c)Write a word equation for the reaction taking place in the experiment (1 mark)

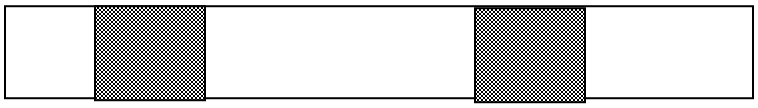
(d)Name the method of gas collection shown above (1 mark)

(e)State the test for oxygen gas (1 mark)

(f)State two industrial uses of oxygen gas (2 marks)

WEEK 6

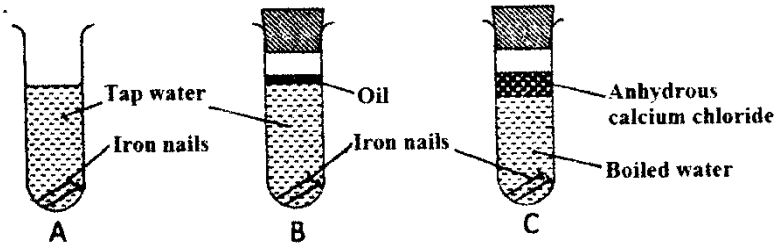
22. The diagram below shows a wooden splint that was placed horizontally across the middle part of a non-luminous flame.



a) Explain the observation made. (2 marks)

b) Give two reasons why non-luminous flame is preferred for heating over luminous flame. (2 marks)

23. The following set up was used to investigate rusting in iron. Study it and answer the questions that follows.



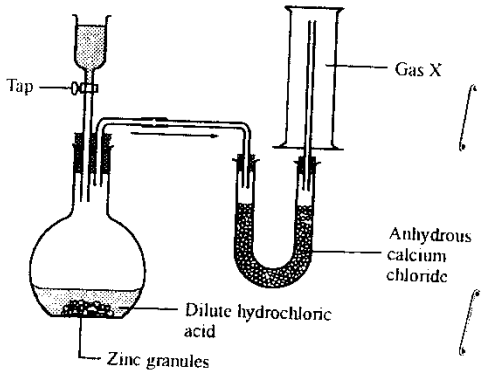
a). Name 2 conditions that accelerate rusting process. (2 marks)

b) Give why rusting did not occur in test-tube C. (1 mark)

c) Aluminum is used to protect iron from rusting. Explain two ways in which aluminum protect iron from rusting.

(2 marks)

24. Study the set-up below and answer the questions that follows.



a. Identify gas x (1 mark)

b. Write the equation for the reaction that leads to liberation of gas x. (1 mark)

c. Why is it not advisable to use sodium in this method of preparing hydrogen gas?

d. (1mark

e. What is the purpose of anhydrous calcium chloride in the u-tube? (1 mark)

f. Name other compound that can serve the same purpose as anhydrous calcium chloride. (1 mark)

g. Name the method of gas collection in the above setup and state the property that enables the gas to be collected using the method.

(2 marks)

h. Why is it necessary to discard the first jar of the gas collected? (1 mar

i. State the industrial use of gas x. (2 marks)

MERRY CHRISTMAS AND A PROSPEROUS 2025