THE KENYA NATIONAL EXAMINATIONS COUNCIL

Kenya Certificate of Secondary Education

233/1 **CHEMISTRY (Theory)** **Paper 1**

Nov. 2024 – 2 hours

Candidate's signature: ..... Date: .....

Instructions to Candidates

(a) Confirm that this question paper has your name and the correct index number.

(b) Sign and write the date of examination in the spaces provided above.

(c)

(d) **Non-programmable** silent electronic calculators and KNEC mathematical tables may be used.

(e) All working **must** be clearly shown where necessary.

(f) This paper consists of 16 printed pages.

(g) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

(h) Candidates should answer the questions in English.

For Examiner's Use Only

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

17	18	19	20	21	22	23	24	25	26	27	Grand Total	

1 Name the apparatus that can be used to:

(a) measure volume of solutions more accurately than a measuring cylinder; (1 mark)

.....

(b) lower a burning piece of magnesium ribbon into a gas jar; (1 mark)

.....

(c) store and keep substances free from moisture. (1 mark)

.....

2 A radioactive isotope decays by either emission of alpha (α) or beta (β) particles.

(a) Explain why alpha particles have a higher ionising power compared to beta particles. (1 mark)

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(b) Explain how alpha and beta particles can be distinguished in terms of their penetrating powers. (1 mark)

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3 Three bottles containing zinc nitrate, aluminium nitrate or lead(II) nitrate have their labels missing. Describe a chemical test that can be carried out using aqueous sodium sulphate and aqueous ammonia to label the bottles correctly. (3 marks)

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4 Consider the following equilibrium reaction for a mixture of gases in a gas syringe.

$$2NO_2(g) \rightleftharpoons N_2O_4(g);\ \Delta H = -ve$$

(Brown) (Yellow)

(a) Give a reason why the enthalpy change is negative, exothermic reaction. (1 mark)

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(b) State and explain the observations made when the pressure in the syringe is increased.

Observation (1 mark)

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Explanation (1 mark)

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5 Ammonia gas can be prepared using ammonium sulphate and sodium hydroxide.

(a) Write an equation for the reaction. (1 mark)

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(b) Draw a labelled diagram of a set-up of the apparatus that can be used to prepare and collect a sample of dry ammonia. (2 marks)

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6 Some properties of four metals and their oxides are shown in **Table 1**.

Table 1

Metal	Reaction with water	Colour of oxide
A	Reacts slowly with steam	Green
B	Reacts rapidly with steam	Brown
C	Reacts rapidly with cold water	White
D	Does not react	Black

(a) Arrange the metals in order of their reactivity starting with the most reactive.

.....

.....

(1 m

(b) State the observation that would be made when metal **B** is heated with:

(i) oxide of **D**;

.....

.....

(1 ma

(ii) oxide of **C**.

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(1 mar

7 In an experiment to determine the water of crystallization in sodium carbonate, $Na_2CO_3 \cdot XH_2O$, the data in **Table 2** was obtained:

Table 2

	Mass (g)
Mass of crucible	57.20
Mass of crucible + salt before heating	78.60
Mass of crucible + salt after heating	67.00

Calculate the:

(a) mass of dry salt after heating;

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(½ mark)

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(b) mass of water; (½ mark)

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(c) value of X. (2 marks)

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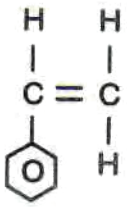
A polymer was formed using compound **M** which has the following structure.



Compound M

(a) Name compound **M**. (1 mark)

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(b) Draw a section of the polymer showing three repeat units. (1 mark)

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(c) Give **one** advantage of using this polymer over a natural polymer. (1 mark)

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9 **Figure 1** shows a set-up that was used to investigate the products of a burning candle.

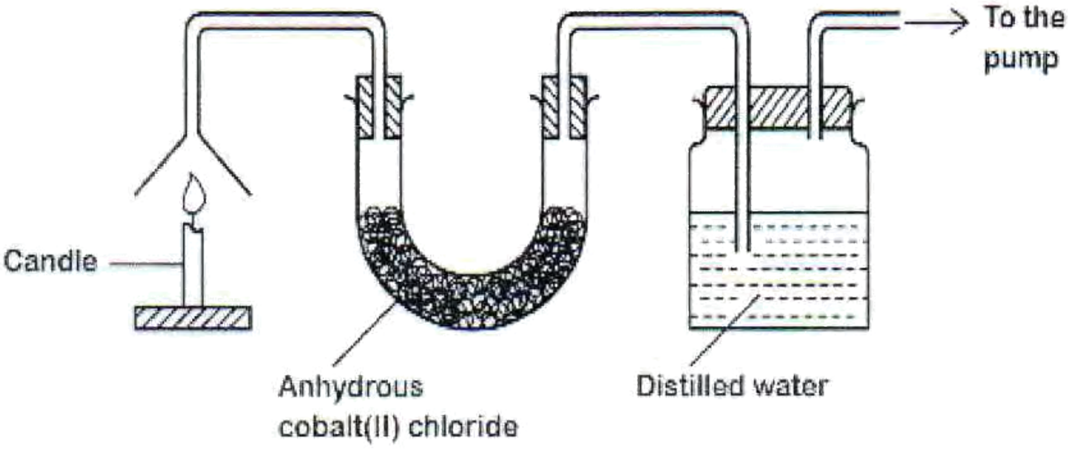

Figure 1

(a) State and explain:

(i) the observations made in the U-tube. (1 mark)

Observation ....

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Explanation ....

....

....

(ii) how the pH of distilled water changes with time. (1 mark)

Observation ....

Explanation ....

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(b) State the role of the pump. (1 mark)

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10 In an experiment to determine the molar heat of neutralisation, 100 cm^3 of 1.0 M sodium hydroxide was added to 100 cm^3 of 1.0 M hydrochloric acid. The data obtained is shown in the **Table 3**.

Table 3

	Temperature (°C)
Initial temperature of hydrochloric acid	20.4
Maximum temperature of the mixture	26.5

(a) Calculate the:

(i) heat change; (1 mark)

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(ii) molar heat of neutralization of hydrochloric acid. (1 mark)

(Specific heat capacity of the solution = 4.2 $Jg^{-1}deg^{-1}$; Density of the solution = 1.0 gcm^{-3})

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(b) The molar heat of neutralization obtained in 10(a)(ii) differs from that obtained using aqueous ammonia and hydrochloric acid. Explain. (1 mark)

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11 Iron is extracted from its ore in a blast furnace. The raw materials used are: iron ore, coke, air and limestone.

(a) State the role of each of the following in the extraction process.

(i) Limestone. (1 mark)

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9 Fig

(ii) Coke. (1 ma

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(b) State and explain why the iron obtained is **not** suitable for making bridges. (1 ma

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12 **Table 4** shows some properties of three substances. Complete the table by filling in the types of forces and structures in each substance .

(a)

Table 4

Substance	Melting point (°C)	Boiling point (°C)	Electrical conductivity		Type of forces	Structure
			Solid	Molten		
X	-101	-35	Poor	Poor		
Y	650	1110	Good	Good		
Z	714	1142	Poor	Good		

(3 ma

13 Describe how the presence of sulphite ions in aqueous sodium sulphite can be confirmed using:

(a) aqueous barium nitrate and dilute nitric(V) acid; (2 ma

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(b)

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(b) acidified potassium dichromate(VI). (1 mark)

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Use the bond energies in **table 5** to calculate the enthalpy change for the combustion of ethene.

$C_2H_4(g) + 3O_2(g) \rightarrow 2CO_2(g) + 2H_2O(l)$

Table 5

Bond	C = C	O = O	C - H	C = O	O - H
Bond energy (kJ mol^{-1})	612	412	496	743	463

(4 marks)

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15 Hydrogen gas can be prepared by electrolysis of acidified water.

(a) Explain why the water is acidified before electrolysis. (1 mark)

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(b) Calculate the volume of hydrogen gas produced when a current of 12 amperes is used for 2 hours (Faraday = 96,500 coulombs, Volume of 1 mole of gas = 24,000 cm^3) . (2 marks)

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16 Ethanol can be prepared from glucose ($C_6H_{12}O_6$) according to the following equation:

$$C_6H_{12}O_6(aq) \xrightarrow{30\,^{\circ}C} 2C_2H_5OH(aq) + 2CO_2(g)$$

(a) Explain why temperatures of more than 30 °C are **not** used. (1 mark)

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(b) The concentration of ethanol in the product is about 12%. State how the concentration of ethanol in the product can be increased. (1 mark)

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(c) State **one** use of ethanol in hospitals. (1 mark)

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17 The following steps are followed when carrying out paper chromatography of a dye.

1. The solvent is placed in a beaker.
2. A baseline is drawn with a pencil on the paper.
3. The sample is spotted on the baseline.
4. The paper is carefully placed in the beaker with the baseline above the surface of the solvent.
5. The beaker is covered and allowed to stand for sometime.

Give a reason for the following:

(a) the baseline is drawn with a pencil; (1 mark)

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(b) the paper is carefully placed in the beaker with the baseline above the surface of the solvent; (1 mark)

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(c) the beaker is covered. (1 mark)

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18 6.12 g of hydrogen peroxide were dissolved in 100 cm^3 of water. The peroxide was allowed to decompose in the presence of a catalyst and oxygen gas produced collected.

$$2H_2O_2(aq) \longrightarrow 2H_2O(l) + O_2(g)$$

(a) Name a suitable catalyst for the reaction. (1 mark)

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(b) Calculate the:

(i) number of moles of hydrogen peroxide in the solution (H = 1.0; O = 16.0); (1 mark)

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(ii) volume of oxygen gas produced (Volume of 1 mole of gas = 24,000 cm^3). (1 ma

(a) .....

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(b) **19** Describe how a sample of ammonium nitrate can be prepared starting with ammonia as the only nitrogen containing compound. (3 ma

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16 Etha **20** The set-up in **Figure 2** is used to prepare carbon(II) oxide from ethanedioic acid. The equati for the reaction is:

C_6H

$$H_2C_2O_4(s) \longrightarrow CO(g) + CO_2(g) + H_2O(l)$$

(a)

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(b)

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(c)

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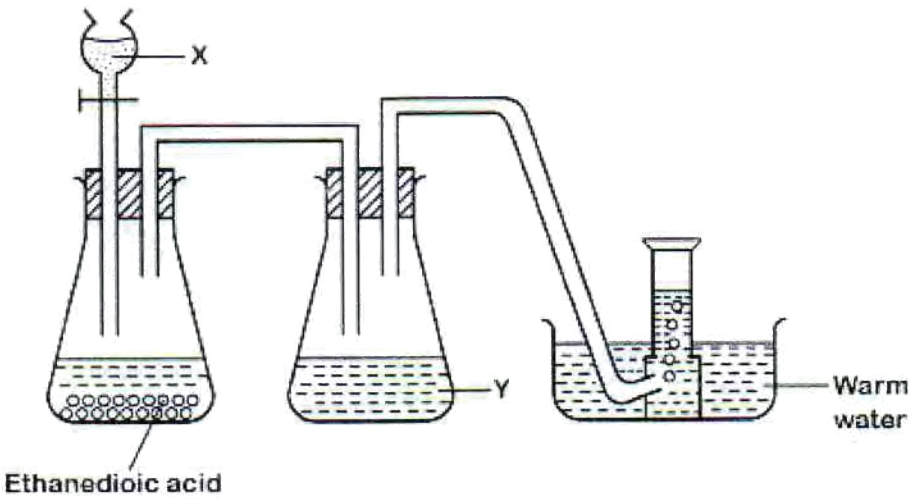

Figure 2

(a) Identify **X** and **Y** and give the role of each. (2 marks)

(i) **X**: .....

Role .....

(ii) **Y**: .....

Role .....

(b) State a property of the gas that allows it to be collected as shown. (1 mark)

.....

2.0 g of hydrogen gas was reacted with 2.0 g of oxygen gas to form water. (H = 1.0; O = 16.0).

Calculate the:

(a) mass of water produced; (2 marks)

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(b) mass of unreacted gas. (1 mark)

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22 Activation energy is the energy required to initiate a reaction.

(a) Explain why reactions differ in their activation energies. (1 mark)

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(b) **Figure 3** shows energy against progress of reaction carried out in the presence of a catalyst.

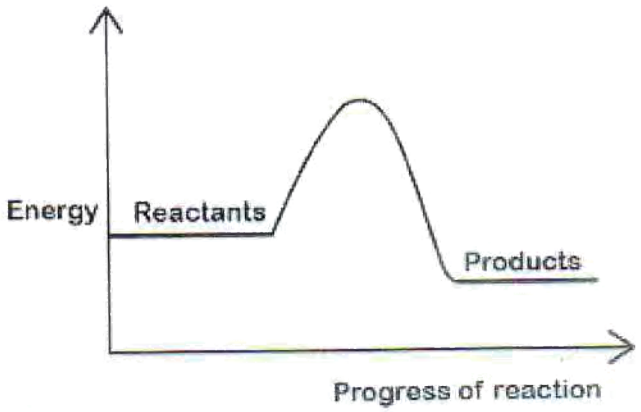

Figure 3

(i) Sketch on the same axis, the curve obtained if the reaction was carried out without a catalyst. Give a reason. (2 marks)

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23 (a) Complete **Table 6** by filling in the missing information for phosphorus and iron . (2 marks)

Table 6

Ions	Number of electrons	Number of protons	Number of neutrons
$^{31}_{15}P^{3-}$			
$^{56}Fe^{2+}$			30
$^{x}_{y}O^{n}$	10	8	9

(b) Determine the value of x, y, and n in $^{x}_{y}O^{n}$. (1 mark)

x: .....

y: .....

n: .....

24 (a) Using oxidation numbers, identify the oxidising and reducing agents in the following reaction and give a reason. (2 marks)

$2I^-(aq) + Br_2(aq) \rightarrow I_2(s) + 2Br^-(aq)$

Oxidising agent .....

Reason .....

Reducing agent .....

Reason .....

(b) Write an ionic equation for the following reaction. (1 mark)

$CaCO_3(s) + 2HCl(aq) \rightarrow CaCl_2(aq) + CO_2(g) + H_2O(l)$

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25 The flow chart in **Figure 4** shows some reactions.

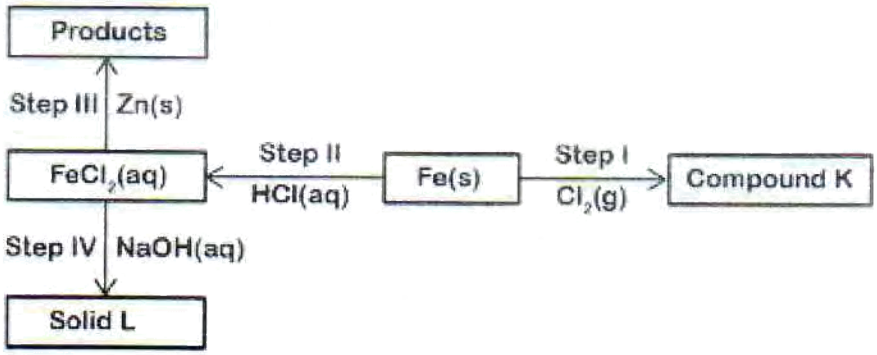

Figure 4

(a) Name compound **K**. (1 mark)

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(b) Give the formula of solid **L**. (1 mark)

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(c) Write the ionic equation for the reaction for step **III**. (1 mark)

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THE KENYA NATIONAL EXAMINATIONS COUNCIL

Kenya Certificate of Secondary Education

233/2 **CHEMISTRY (Theory)** **Paper 2**

Nov. 2024 — 2 hours

Candidate's signature: ..... Date: .....

Instructions to Candidates

(a) Confirm that this question paper has your name and the correct index number.
(b) Sign and write the date of examination in the spaces provided above.
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For Examiner's use only

Question	Maximum Score	Candidate's Score
1	**11**	
2	**11**	
3	**13**	
4	**12**	
5	**13**	
6	**10**	
7	**10**	
Total Score	**80**	

1 **Figure 1** shows part of the periodic table of elements. The letters are not the actual symbols of elements.

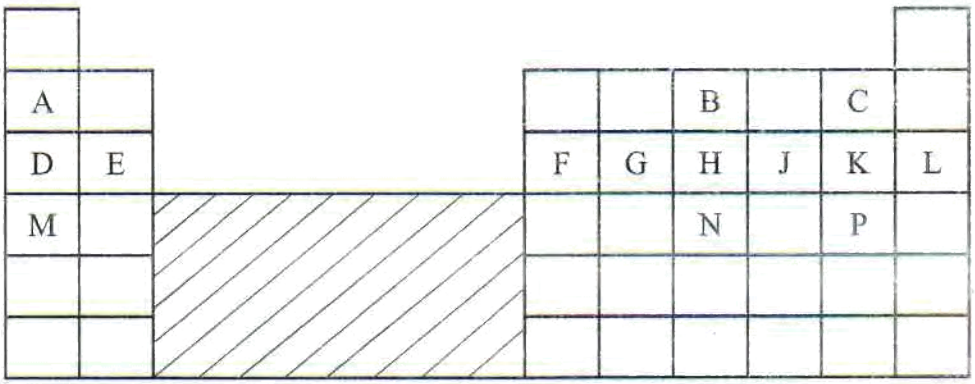

Figure 1

(a) Element **Q** belongs to period 5 and group VI. Place the element in the correct position in **Figure 1**. (1 mark)

(b) Consider the following ions: J^{2-}, K^{-} and M^{+}.

(i) Write the electron arrangements for each. (2 marks)

I. J^{2-}

.....

II. K^{-}

.....

III. M^{+}

.....

(ii) Select the ion with the largest ionic radius. Give a reason. (2 marks)

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(c) Complete **Table 1** by filling in the formula of the compound formed and the type of bond between the elements shown.

Table 1

Element	Formula of compound	Type of bond	
A and **B**			($1\frac{1}{2}$ marks)
G and **C**			($1\frac{1}{2}$ marks)

(d) Explain the following observations.

(i) Electrical conductivity of element **F** is higher than that of element **E**. (1 mark)

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(ii) Element **M** is a stronger reducing agent than element **D**. (1 mark)

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(iii) The melting point of element **H** is lower than that of element **N**. (1 mark)

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2 **Figure 2** shows the steps in the Contact process.

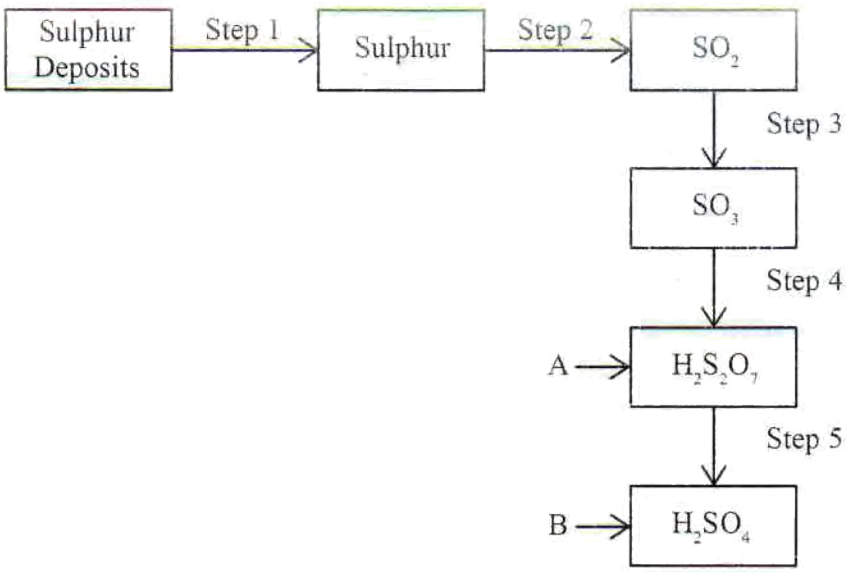

Figure 2

(a) Step **1** is known as the Frasch process. Describe how the process is carried out. (3 ma

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(b) State the optimum conditions used in step **3**. (3 ma

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(c) Identify substance:

(i) **A**; (1 m

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(ii) **B**. (1 m

.....

(d) Name the process that occurs in step **2**. (1 m

.....

(e) When concentrated sulphuric(VI) acid is added to glucose, a black solid is formed.

(i) Identify the black solid. (1 m

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(ii) State the property of concentrated sulphuric(VI) acid illustrated in this reacti (1 m

.....

The formulae of three organic compounds, each having two carbon atoms are:

Compound	A	B	C
Formula	C_2H_4	C_2H_2	C_2H_6

The compounds belong to different homologous series.

(a) State what is meant by the term *homologous series*. (1 mark)

.....

.....

(b) Compound **B** is the first member of its homologous series. Write the formula of the fifth member of the same series. (1 mark)

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(c) Explain why compound **A** is described as being unsaturated. (1 mark)

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(d) The flowchart in **Figure 3** shows reactions involving compound **B**.

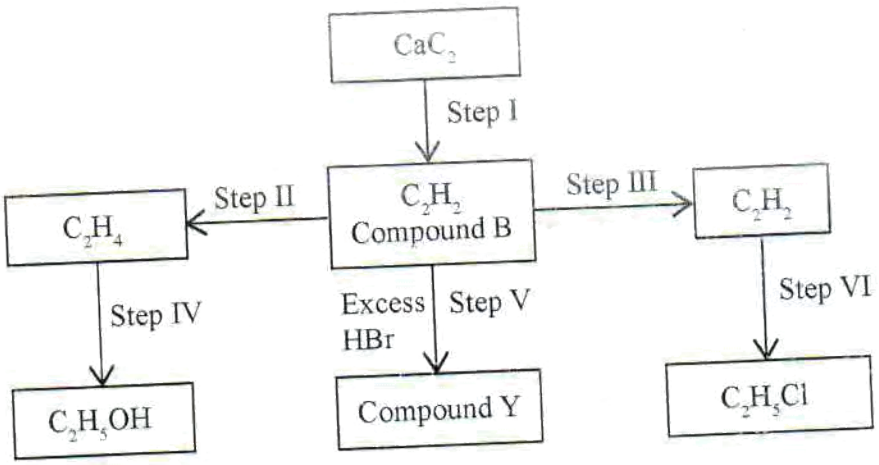

Figure 3

(i) Give the name of the reagent used in:

I. Step **I**; (1 mark)

.....

II. Step **II**. (1 mark)

.....

(ii) Identify the type of reaction that takes place in:

I. Step **IV**; (1 mark)

.....

II. Step **VI**. (1 mark)

.....

(iii) State the conditions necessary for carrying out:

I. Step **III**; (1 mark)

.....

.....

II. Step **VI**. (1 mark)

.....

(iv) Draw the structure of compound **Y**. (1 mark)

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(e) The following is a structure of a soap.

$$CH_3(CH_2)_n\,\underset{\displaystyle O}{\overset{\displaystyle \|}{C}} - O^- Na^+$$

(i) Give the name of the main raw material used in making soaps. (1 mark)

.....

(ii) Given two soaps, one with n = 16 and the other with n = 10, explain which one of the soaps is more effective in washing clothes. (2 marks)

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4 **Table 2** shows standard reduction potentials for given half cells.

Table 2

Half cell reaction		E^{θ}, Volts
I	$Ni^{2+} + 2e \longrightarrow Ni$	– 0.25
II	$Cd^{2+} + 2e \longrightarrow Cd$	– 0.40
III	$Al^{3+} + 3e \longrightarrow Al$	–1.66
IV	$MnO_4^- + 8H^+ + 5e \longrightarrow Mn^{2+} + 4H_2O$	+1.52
V	$Fe^{2+} + 2e \longrightarrow Fe$	– 0.44
VI	$Ag^+ + e \longrightarrow Ag$	+ 0.80

(a) (i) Draw a labelled diagram of an electrochemical cell using half cells **II** and **III**. (2 marks)

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(ii) Calculate the e.m.f of the cell. (1 mark)

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(iii) Write the equation for the electrochemical cell. (1 mark)

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(b) **Table 3** shows colours of aqueous ions.

Table 3

Ions	Colour
Manganese(II)	Almost colourless
Manganate(VII)	Purple
Nickel(II)	Green

State the observations made when a nickel rod is left standing in a beaker containing aqueous potassium manganate(VII). Explain. (2 marks

Observations:

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Explanation:

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(c) (i) One of the uses of electrolysis is in electroplating. State **one** other use. (1 mar

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(ii) Silver is used to electroplate metals such as iron. State **two** properties of silve that make it suitable for this application. (2 mar

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(iii) **Figure 4** shows a set-up of an electrolytic cell used to electroplate an iron rod using silver.

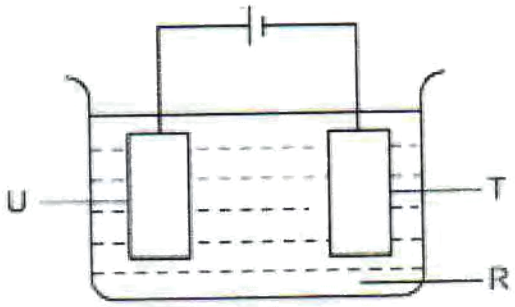

Figure 4

Identify **R**, **T** and **U** in **Figure 4**. (3 marks)

R:

.....

T:

.....

U:

.....

(a) Explain how each of the following affects the rate of reaction:

(i) decrease in temperature; ($1\frac{1}{2}$ marks)

.....

.....

.....

(ii) increase in surface area. ($1\frac{1}{2}$ marks)

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(b) Using a 250 ml volumetric flask, a burette and 12.0 M hydrochloric acid, describe how a standard solution containing 250 cm^3 of 0.5 M hydrochloric acid can be prepared. (3 marks)

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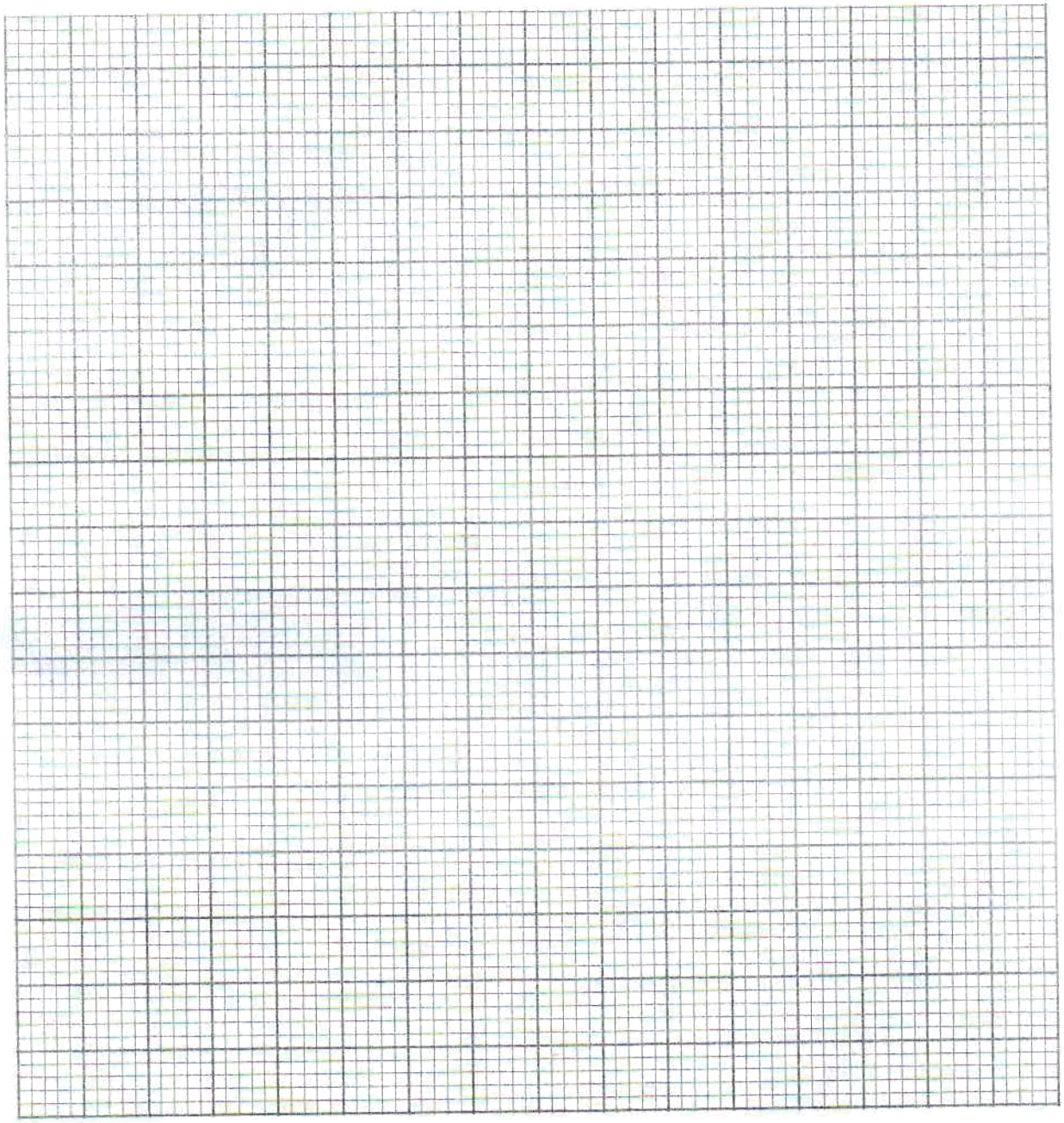
(c) 5.0 g of zinc powder was reacted with 25.0 cm^3 of 0.5 M hydrochloric acid. The volume of gas produced was measured every 10 seconds. **Table 4** shows the data obtained.

Table 4

Time (seconds)	0	10	20	30	40	50	60	70	80
Volume of hydrogen gas (cm^3)	0	52	86	110	128	136	140	140	140

(i) On the grid provided, plot a graph of volume of hydrogen gas against time. (3 marks)



(ii) From the graph, determine the rate of reaction at:

I. 5 seconds; (1 mark)

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II. 37 seconds. (1

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(iii) Give a reason for the difference in the rates calculated in (c)(ii) I and II. (1

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(iv) State **one** observation that would be made if the experiment was repeated using 5.0 g of zinc powder and 25.0 cm^3 of 0.25 M hydrochloric acid. (1

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6 (a) State the meaning of the term *standard molar heat of combustion*? (1

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(b) **Table 5** gives the standard enthalpies for three reactions.

Table 5

Reaction	**Equation**	**ΔH, kJmol^{-1}**
I.	$H_2(g) + \frac{1}{2}O_2(g) \longrightarrow H_2O(l)$	–286
II.	$Si(s) + O_2(g) \longrightarrow SiO_2(s)$	–911
III.	$SiH_4(g) + 2O_2(g) \longrightarrow SiO_2(s) + 2H_2O(l)$	–1517

Silicon and hydrogen react as shown in the following equation:

$$Si(s) + 2H_2(g) \longrightarrow SiH_4(g)$$

Calculate the enthalpy change for this reaction using the information in **Table 5**. (3 marks)

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Determine the amount of energy change when 1 kg of water is formed.

(H = 1.0; O = 16.0). (1 mark)

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Heating value of a fuel is the amount of heat energy released when 1 g of a substance undergoes combustion. Calculate the heating value of carbon and hydrogen using the following information.

$C(s) + O_2(g) \longrightarrow CO_2(g)$; $\triangle H_C^{\theta} = -393$ kJmol^{-1}

$H_2(g) + \frac{1}{2}O_2(g) \longrightarrow H_2O(l)$; $\triangle H_C^{\theta} = -286$ kJmol^{-1}

C = 12.0; H = 1.0; O = 16.0).

(i) Carbon. (1 mark)

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(ii) Hydrogen. (1 mark)

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ark)

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(e) Metals **V**, **W** and **X** displace copper from its compounds. Describe an experiment that can be carried out to arrange the three metals in order of their reactivity with copper using aqueous copper(II) sulphate and a thermometer. (3 marks)

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7 (a) There are two types of water hardness. One type is permanent hardness caused by the presence of calcium and magnesium ions.

(i) I. Give the name of the other type of water hardness. (1 mark)

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II. Name the ion responsible for the type of water hardness named above. (1 mark)

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(ii) State **one** natural source of calcium ions in river water. (1 mark)

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(iii) Describe how ion exchange can be used to remove permanent hardness in water. (2 marks)

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(b) **Figure 5** shows solubility curves of KNO_3 and KCl in grams per 100 g of water.

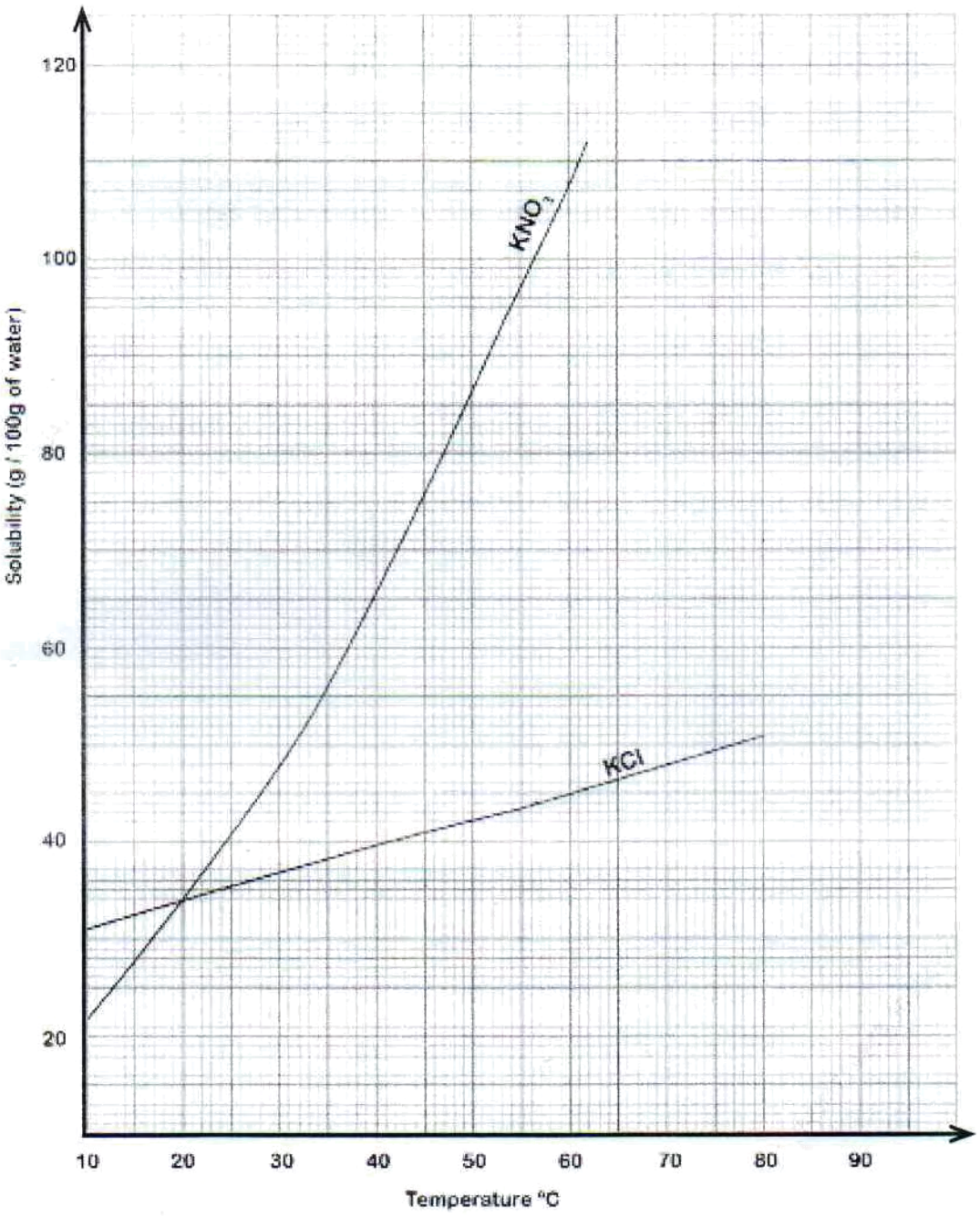

Figure 5

(i) State the temperature at which the solubility of potassium chloride is the same as that of potassium nitrate. (1 mark)

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THE KENYA NATIONAL EXAMINATIONS COUNCIL

Kenya Certificate of Secondary Education

233/3 **CHEMISTRY (Practical)** **Paper 3**

Nov. 2024 — 2¼ hours

Candidate's signature: ..... Date: .....

Instructions to Candidates

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(b) Sign and write the date of examination in the spaces provided above.
(c) Answer **all** the questions in the spaces provided in the question paper.
(d) You are **not** allowed to start working with the apparatus for the first 15 minutes of the 2¼ hours allowed for this paper. This time is to enable you to read the question paper and make sure you have all the chemicals and apparatus that you may need.
(e) All working **must** be clearly shown where necessary.
(f) KNEC mathematical tables and non-programmable silent electronic calculators may be used.
(g) This paper consists of 8 printed pages.
(h) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
(i) Candidates should answer the questions in English.

For Examiner's use only

Question	Maximum Score	Candidate's Score
1	**24**	
2	**10**	
3	**06**	
Total Score	**40**	

1 You are provided with the following:

Solution **A** - aqueous sodium hydroxide
Solution **B** - 0.10 M of a monobasic acid B
Solid **C** - metal C
Solution **D** - 2.0 M hydrochloric acid

You are required to determine the:

- concentration of aqueous sodium hydroxide, solution **A**.
- molar heat of reaction between metal **C** and hydrochloric acid.

PROCEDURE I

(i) Using a pipette and pipette filler, place 25.0 cm^3 of **solution B** in a 250 ml conical flask.
(ii) Fill the burette with aqueous sodium hydroxide, **solution A** and use it to titrate solution B using 2 drops of phenolphthalein indicator. Record the results in **Table 1**.
(iii) Repeat the titration and complete **Table 1**.

Retain the remaining amount of solution A for use in procedure III.

(a) **Table 1**

	I	II	III
Final burette reading			
Initial burette reading			
Volume of solution **A** used, cm^3			

(3 marks)

(b) Calculate the:
(i) average volume of solution A used; (1 mark)

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(ii) number of moles of the monobasic acid, solution B used; (1 mark)

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(iii) concentration in moles per litre, of aqueous sodium hydroxide, solution A. (1 mark)

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PROCEDURE II

(i) Using a 100 ml measuring cylinder, place 50 cm^3 of the hydrochloric acid, **solution D** in a 100 ml plastic beaker.

(ii) Measure the temperature of the solution at ½ - minute intervals and record in **Table 2**.

(iii) At the exactly 1½ - minute interval, add **all** of **solid C** and stir with the thermometer.

(iv) Continue measuring and recording the temperature of the mixture and complete **Table 2**.

Retain the mixture for use in procedure III.

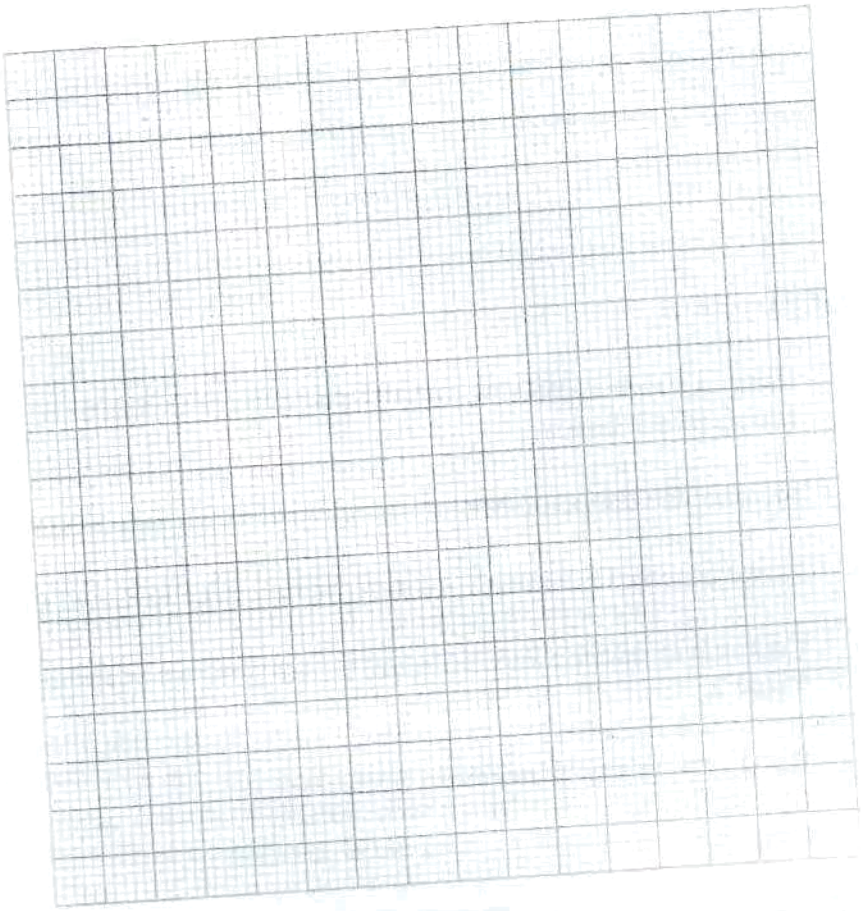
(c) **Table 2**

Time, minutes	0	½	1	1½	2	2½	3	3½	4
Temperature, °C				-					

(3 marks)

(d) On the grid provided, plot a graph of temperature (vertical axis) against time.

(3 marks)



(e) (i) Using the graph, determine the temperature change, ΔT;

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(ii) Calculate the heat change for the reaction (Assume that for the solution, specific heat capacity = 4.2 Jg^{-1} degree $^{-1}$ and density = 1.00 gcm^{-3}). (1 ma

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PROCEDURE III

(i) Transfer **all** of the solution obtained in procedure II into a 250 ml volumetric flask. Add distilled water to the mark and label this as **solution E**.

(ii) Fill a clean burette with solution E.

(iii) Using a pipette and pipette filler, place 25.0 cm^3 of sodium hydroxide, solution A into a 250 ml conical flask.

(iv) Titrate the sodium hydroxide with solution E using 2 drops of phenolphthalein indicator. Record the results in **Table 3**.

(v) Repeat the titration and complete **Table 3**.

(f) **Table 3**

	I	II	III
Final burette reading			
Initial burette reading			
Volume of solution E used, cm^3			

(3 marks)

(g) Calculate the:

(i) average volume of solution E used; (1 mark)

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(ii) number of moles of sodium hydroxide in 25.0 cm^3 used; (1 mark)

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(iii) number of moles of hydrochloric acid in the 250 cm^3 solution E; (1 mark)

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(iv) initial number of moles of hydrochloric acid in the 50 cm^3 of solution D used; (1 mark)

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1

(v) number of moles of hydrochloric acid that reacted with metal C. (1 mark)

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(h) Given that the reaction ratio of hydrochloric acid with metal C is:
HCI : metal **C** = 2 : 1,

Calculate the:

(i) number of moles of metal C that reacted; (1 mar

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(ii) heat of reaction between hydrochloric acid and one mole of metal C. (1 mar

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2 You are provided with **solid F**. Carry out the following tests and record the observations and inferences in the spaces provided.

(a) Place about one-quarter of solid F in a **dry** test tube. Heat the solid strongly and test any gases produced with blue litmus paper.

Observations	Inferences
(1 mark)	(1 mark)

(b) Place the remaining amount of solid F in a boiling tube. Add about 15 cm^3 of distilled water and shake to dissolve the solid. Use about 2 cm^3 portions of the solution in a test tube, for each of the following tests.

(i) To the first portion, add aqueous sodium hydroxide dropwise until in excess.

Observations	Inferences
(1 mark)	(1 mark)

(ii) To the second portion, add aqueous ammonia dropwise until in excess.

Observations	Inferences
(1 mark)	(1 mark)

(iii) To the third portion, add about 1 cm^3 of aqueous sodium chloride.

Observations	Inferences
(1 mark)	(1 mark)

(iv) To the fourth portion, add 3 drops of aqueous barium nitrate. Shake the mixture and then add 5 drops of dilute nitric(V) acid.

Observations	Inferences
(1 mark)	(1 mark)