KCSE 2025 SMARTGRADE MOCKS

ALL SUBJECTS

To promote academic excellence, top-performing national schools collaborate on this joint mock exam compilation. The goal of this collaborative effort is to push students and enhance their readiness for national exams through the use of challenging tests.

SUBJECTS TESTED;

Mathematics, English, Kiswahili, Biology, Chemistry, Physics, CRE, IRE, Geography, History, Home-science, Agriculture, Business & Computer Studies.

NATIONWIDE COMPETITION

For Marking Schemes

Mr Isaboke 0746-222-000 / 0742-999-000

MWALIMU CONSULTANCY

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

CHRISTIAN RELIGIOUS EDUCATION

313/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

*1) **Write** the Name, Admission number and Index number in the spaces provided above.*

*2) **Sign** and write the Date of the examination in the spaces provided above.*

*3) **Answer** any five questions.*

*4) **Each** question carries 20 marks.*

*5) **Candidates** should answer the questions in English.*

FOR EXAMINER'S USE ONLY

QUESTION	1	2	3	4	5	6	CANDIDATES TOTAL SCORE
CANDIDATES SCORE							

Answer Any Five Questions

1. (a) Identify the national goals of education that the study of Christian Religious Education helps to achieve **(7mks)**

(b) State seven characteristics of God demonstrated in Genesis 3 **(7mks)**

(c) Outline six ways in which Christians show respect to God in society today **(6mks)**

2. (a) Describe the covenant ceremony between God and Abraham in genesis 15:1-19 **(8Mrks)**

(b)State **six** ways through which Abraham demonstrated his faith in God **(6 Mrks)**

(c)Give **seven** ways through which Christians portray themselves in society today **(7Mrks)**

3. (a) How did King Ahab fail in upholding the covenant way of life during his rule in Israel?**(7mks)**

(b) Outline **seven** signs performed by Elijah to prove that Yahweh was the true God **(7mks)**

(c) State **six** reasons why Christians should fight against the spread of devil worship in the society **(6mks)**

4. (a)Describe the call of Amos to become a prophet of God in Amos 1:1, 3:8,7:10-15 **(6mks)**

b) State **seven** ways through which the rich oppressed the poor during the time of prophet Amos. **(7mks)**

c) Give **seven** ways through which the church in Kenya punishes errant members. **(7mks)**

5. (a) Describe the religious background of Prophet Nehemiah **(6mks)**

b) Compare **four** Nehemiah's experiences to the life of Jesus as shown in Saint Luke's gospel. **(8mks)**

c) What **six** lessons can a Christian learn from Nehemiah's leadership qualities? **(6mks)**

6. (a) State **seven** ways in which the African sought reconciliation with God **(7mks)**

(b) List **seven** Traditional African practices, which show that life is sacred **(7mks)**

(c) How are the youth prepared for the adult life in the church in Kenya today? **(6mks)**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

CHRISTIAN RELIGIOUS EDUCATION

313/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

1) Write the Name, Admission number and Index number in the spaces provided above.

2) Sign and write the Date of the examination in the spaces provided above.

3) Answer any five questions.

4) Each question carries 20 marks.

5) Candidates should answer the questions in English.

FOR EXAMINER'S USE ONLY

QUESTION	**1**	**2**	**3**	**4**	**5**	6	**CANDIDATES TOTAL SCORE**
CANDIDATES SCORE							

Answer any five questions in the booklet provided

1. a) Outline Isaiah's prophecy on the suffering servant. **(7marks)**

b) Describe the activities that took place on the night when Jesus was born Luke2:6-20 **(7marks)**

c) State **six** ways in which Christian couple should respond to the challenge of being childless. **(6marks)**

2. a) With reference to sermon on the plain outline six teachings of Jesus on how human beings should relate to one another. **(6mks)**

b)Describe the incident in which Jesus forgave the sinful woman. Luke 7:36-50 **(7 marks)**

c) State **six** lessons Christians learn from the miracle of the feeding of the five thousand people **(6marks**)

3. a) Outline six teachings of Jesus about a committed follower from the story of the good Samaritan **(6marks)**

b) Outline **seven** teachings of Jesus on wealth from the story of the rich man and Lazarus **(7marks)**

c) What is the relevance of the resurrection of Jesus to Christians today **(7marks)**

4.a) State the teachings of Jesus on the role of the holy spirit. **(7marks)**

b) Outline the teachings of St Paul on the unity of believers as expressed in the image of the body of Christ **(8marks)**

c) Identify **five** causes of conflict between the youth and the old in the church today **(5marks)**

5.a) identify five sources of christian **ethics** **(5marks)**

b) State **seven** similarities between traditional and christian understanding of marriage **(7marks)**

c) outline **eight** ways through which christian parents should demonstrate responsible parenthood **(8marks)**

6a) Outline the rights of a Kenyan citizen **(8marks)**

b) State **six** effects of pollution on the environment in Kenya today **(6marks)**

c) Explain the causes of poverty in the society today **(7marks)**

For Marking Schemes Contact 0746 222 000 / 0742 999 000

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

HISTORY AND GOVERNMENT

311/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

(a) *Write your* ***name, index number*** *and the* ***name*** *of your school in the spaces provided above.*

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

(c) *This paper consists of THREE sections A, B and C*

(d) *Answer all questions in section A, choose three questions in section B and two questions in section C*

(e) *Answers to all questions must be written in the answer booklet provided*

FOR EXAMINER USE ONLY

SECTION A	SECTION B				SECTION C			GRAND TOTAL
1-17	18	19	20	21	22	23	24	

SECTION A (25MKS)

Answer all questions in this section

1. Identify **one** branch in the study of History and Government of Kenya. **(1mrk)**

2. Name **one** community in Kenya that belongs to River Lake Nilotes. **(1mrk)**

3. State **two** economic activities of the Abagusii in Kenya during te Pre-Colonial Period. **(2mrks)**

4. Apart from the Maasai, name **two** other Plain Nilotes found in Kenya**.** **(2mrks)**

5. Name the type of the constitution used in Kenya. **(1mrk)**

6. Identify **two** communities which resisted the British Occupation in Kenya. **(2mrks)**

7. Give the **main** reason why poll tax was introduced in Kenya during the colonial period. (1mrk)

8. Identify **two** development rights of children. **(2mrks)**

9. Name the **first** African to be nominated to the Legislative Council in 1944 in Kenya**.** **(1mrk)**

10. Identify **two** methods used by Trade Unionists to demand to their rights during the colonial periods. **(2mrks)**

11. Identify **one** method used by the British to administer Kenya colony between 1920 and 1963**.** **(1mrk)**

12. States **two** problems which the Imperial British East Africa Company faced in the administration of the protectorate. **(2mrks)**

13. Name the treaty which marked the Colonial Sphere of Influence in East Africa in 1886**. (1mrk)**

14. State **two** grievances of the Kikuyu Central Association (KCA) against the colonial government in Kenya. **(2mks)**

15. Identify **one** philosophy adapted at Independence to promote social justice in Kenya. **(1mrk)**

16. Who was the **first** Vice President of the Republic of Kenya after Independence? **(1mrk)**

17. Name **two** African leaders who were detained in 1952 at the declaration of a State of Emergency**.** **(2mrks)**

SECTION B (45 marks)

Answer three questions in this section

18.(a) Give **five** reasons as to why the Highland Nilotes migrated from their original homeland during the Pre-colonial Period**.** **(5mrks)**

(b) Explain five results of the migration and settlement of the Highland Nilotes in Kenya. **(10mrks)**

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19. (a)Identify **five** factors that led to the growth of towns along the coast of Kenya before the 19th Century**.** **(5mrks)**

(b)Describe **five** ways of life in the coastal towns of Kenya before the 19th Century **(10mks)**

20. (a) State **three** reasons as to why the colonial government denied the Africans the right to to grow.The cash crops in Kenya before 1954. **(3mks)**

(b)Explain **six** problems faced by Africans in Urban centres during the colonial period in Kenya. **(12mks)**

21. (a) Identify **five** methods that the colonial government used to discourage the activities of the Mau Mau Movement. **(5mks)**

(b) Explain **five** reasons why the Mau Mau Movement was able to last for a long time. **(10mks)**

SECTION C (30 MARKS)

Answer any two questions in this section

22. (a)Identify **five** elements of a good citizenship in Kenya. **(5mrks)**

(b) Explain five ways in which the Harambee Philosophy has promoted the development of Education in Kenya since Independence. **(10mks)**

23. (a) Apart from High Court, identify **five** other types of courts in Kenya. **(5mks)**

(b) Explain **five** reasons as to why there should be a separation of powers between Legislature, Executive and Judiciary in Kenya. **(10mks)**

24. (a) List **five** importance of National Integration in Kenya. **(5mks)**

(b) Explain **five** factors that promote National Unity in Kenya. **(10mks)**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

HISTORY AND GOVERNMENT

311/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

(a) *Write your* ***name, index number*** *and the* ***name*** *of your school in the spaces provided above.*

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

(c) *This paper consists of THREE sections A, B and C*

(d) *Answer all questions in section A, choose three questions in section B and two questions in section C*

(e) *Answers to all questions must be written in the answer booklet provided*

FOR EXAMINER USE ONLY

SECTION A	SECTION B				SECTION C			GRAND TOTAL
1-17	18	19	20	21	22	23	24	

SECTION A (25MKS)

Answer all questions in this section

1. Give **two** ways archaeologists identify historical sites. **(2mks)**

2. Give **two** economic activities of early man during stone age period**.** **(2mks)**

3.Give **two** inventions that promoted Agrarian Revolution in Britain. **(2mks)**

4. What is the **main** factor that stimulated the growth of Trans-Atlantic trade? **(1mk)**

5. Give **two** reasons why camel is referred to as the ship of the desert. **(2mks)**

6. Give **one** disadvantage of using coal as a source of industrial energy. **(1mk)**

7. State **one** advantage of horn blowing in the pre-colonial period. **(1mk)**

8. State **one** problem faced by Athens. **(1mk)**

9. Identify one symbol of unity among the shona kingdom**.** **(1mk)**

10. Name **two** colonies of British in West Africa. **(2mks)**

11. Give **one** reason the Africans were against the Akidas by German colonial administrators**.** **(1mk)**

12. Identify two chartered companies which were used to administer European colonial possessions in Africa. **(2mk)**

13. Name **one** political party that fought for independence in Ghana**.** **(1mk)**

14. Identify **one** weapon that was used during cold war**.** **(1mk)**

15. Give the **main** reason why the league of nations was formed in 1919. **(1mk)**

16. State **two** ways the treaty of versailles affected Germany. **(2mks)**

17. Give **two** advantages of being a member of common wealth organization. **(2mks)**

SECTION B (45 MARKS)

Answer three questions from this section.

18. a) State **three negative** effects of land enclosure system in Britain during Agrarian Revolution. **(3mks)**

b) Explain **Six** disadvantages of open cast system of agriculture. **(12mks)**

19. a) Identify **three** modern means of print media. **(3mks)**

b) Explain **six** positive effects of telecommunications. **(12mks)**

20. a) State **three** reasons that has contributed to the growth of Johannesburg city. **(3mks)**

b) Describe **six** social problems experienced by the people of Johannesburg since the end of apartheid**.** **(12mks)**

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21. a) Give **three** reasons it took so long for Mozambique to attain its independence from Portugal. **(3mks)**

b) Explain **six** factors that have favoured the success of FRELIMO nationalists during their struggle. **(12mks)**

SECTION C (30 MARKS)

Answer two questions from this section.

22. a) What factors enabled Samori Toure to resist the French colonisation in West Africa**. (5mks)**

b)Explain **five** results of defeat of Mandika by the French. **(10mks)**

23. a)What were the causes of the first world war.(1914-1918**)** **(5mks)**

b) Explain the results of the Second World War**.** **(10mks)**

24. a)State **three** challenges faced by Pan-African movement. **(3mks)**

b) Explain **six** achievements of the organisation of African unity (OAU) since it's formation. **(12mks)**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

GEOGRAPHY

312/1

PAPER 1

TIME: 2¾ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO THE CANDIDATES

a) *Write your name and admission number in the spaces provided*

b) *Answer All questions in section A*

c) *In section B answer question 6 and any other two questions*

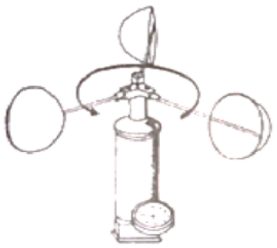
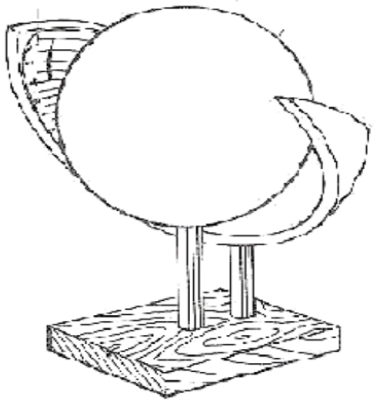
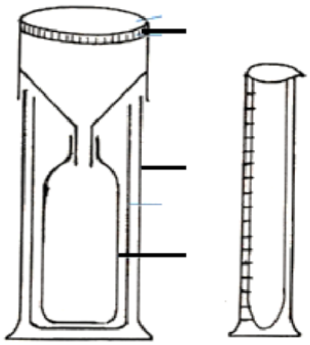
d) *Students should check the question paper and ensure that all pages are printed and that no question s are missing.*

For Examiner's Use Only

Section	Questions	Candidate's Score	Maximum Score
A	1-5		25
B	6		25
			25
			25
	Total Score		100

SECTION A

1. The diagram below shows some weather instruments.

K	L	M
		

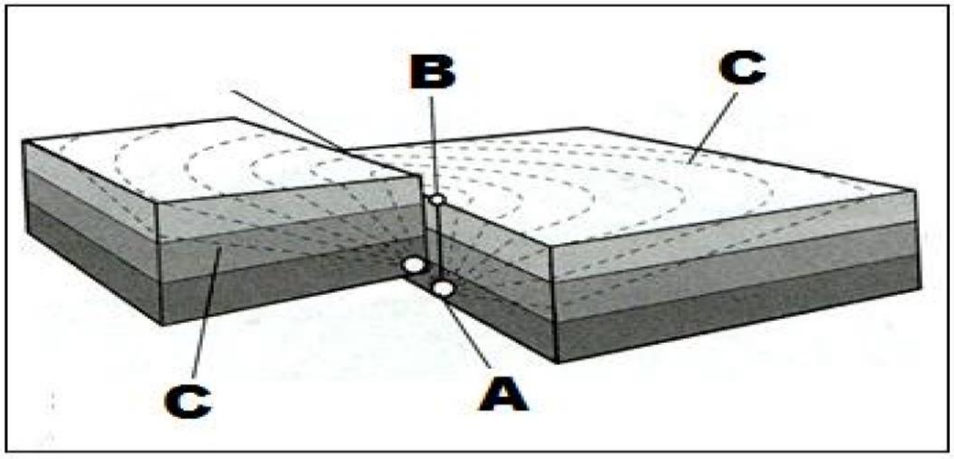
(a) Identify the instruments marked K, L and M**.** **(3 marks)**

(b) Give two modern methods of weather forecasting. **(2 marks)**

2. (a) Give the two main movements of the earth. **(2 marks)**

(b) State three reasons why the interior of the earth is very hot. **(3 marks)**

3. The diagram below show the occurrence of an earthquake



(a) Name the parts marked A, B and C. (**3marks)**

(b) List two scales used to measure the magnitude of an earthquake. **(2 marks)**

4. State five characteristics of coniferous forests. **(5 marks)**

5. (a) What is soil catena? **(2 marks)**

(b) State three factors that influence soil colour. **(3 marks)**

SECTION B

Answer question 6 and any other two questions from this section

6. (a) Study the map of Tambach **1:50 000 (sheet 90/3)** provided and answer the Following questions.

(i) Name ***three*** human features found in grid square 8260. **(3 marks)**

(ii) Measure the length of all-weather road loose surface C 51from the junction near the mining camp to the southern edge of the map. Give your answer in Kilometers. **(2 marks)**

(iii) Convert the map scale into a statement scale? **(2 marks)**

(iv) Give **two** ways through which relief has been represented in the area covered by the map. **(2 marks)**

(c) Draw a square 15cm by 10cm to represent the area enclosed by easting 78 and 95 and northing 60 and 70. **(1 mark)**

On it mark and label the following features.

(i) River Kerio. **(1 mark)**

(ii) Lake Kamnorok. **(1 mark)**

(iii) Seasonal swamp. **(1 mark)**

(iv Tambach Municipality **(1 mark)**

(d) (i) Describe the drainage of the area covered by the map. **(6 marks)**

(ii) Citing evidence from the map, state ***five*** functions of Tambach town. **(5 marks)**

7. (a)(i) What is a mineral**?** **(2 marks)**

(ii) Give three ways used to classify rocks. **(3 marks)**

(b) (i) Describe how igneous rocks are formed. **(5 marks)**

(ii)List three examples of mechanically formed sedimentary rocks. **(3 marks)**

(c)Explain three types of rock metamorphism. **(6 marks)**

(d) Suppose you were to carry out a field study on rocks in the area surrounding your school

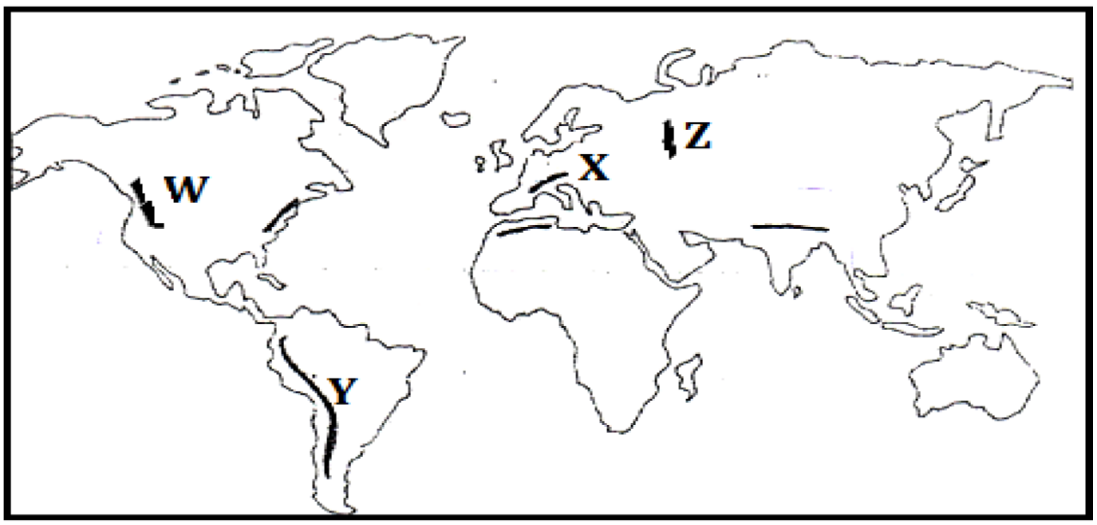
(i) State three characteristics that you would look for while identifying different rock types **(3 marks)**

(ii) State three follow up activities for the field study **(3 marks)**

8. (a) (i)Differentiate between faulting and folding. **(2 marks)**

(ii) Name five features formed as a result of faulting. **(5 marks)**

(b) The world map below shows the location of some fold mountains. Use it to answer the questions that follow:



(i) Identify the fold mountains marked W, X, Y and Z **(4 marks)**

(ii) Citing relevant examples, explain how Fold Mountains were formed according to the plate tectonics theory**.** **(6 marks)**

(c) Explain the effects of Fold Mountains on the following

(i) Transport. **(2 marks)**

(ii) Agriculture. **(2 marks)**

(iii) Tourism. **(2 marks)**

(iv) Mining. **(2 marks)**

9. (a) Give three examples of West coast deserts. **(3 marks)**

(b)(i) Apart from rock pedestals, name four other features formed due to wind erosion in arid regions. **(4 marks)**

(ii) With the aid of well labelled diagrams, describe how a rock pedestal is formed. **(7 marks)**

(c) Explain four factors that influence the rate of wind transpor**t.** **(8 marks)**

(d) State three negative influence of desert features**.** **(3 marks)**

10. (a) (i) What is a lake**?** **(2marks)**

(ii) Give three processes that lead to formation of Lakes. **(3marks)**

(b) Describe how Lake Victoria was formed **(6marks)**

(c) Explain three factors why some Lakes in the Rift Valley in Kenya are saline. **(6marks)**

(d) Explain four ways in which lakes influence the climate of the surrounding areas. **(8marks)**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

GEOGRAPHY

312/2

PAPER 2

TIME: 2¾ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

Instructions To Candidates

1. *Write your name and Index number in the spaces provided above.*
2. *Sign and write the date of examination in the spaces provided above.*
3. *This paper consists of two sections; **A** and **B***
4. *Answer **all** the questions in Section **A**.*
5. *In section **B** answer **question 6** and any other **two** questions.*
6. *All answers **must** be written in the answer booklet provided.*
7. ***Candidates should answer the questions in English***

For Examiner's Use Only

Section	Questions	Maximum Score	Candidate's Score
A	1-5	25	
B	6	25	
		25	
		25	
Total Score		100	

SECTION A (25 marks)

*Answer **all** the questions in this section*

1. (a)State **three** conditions that favour the growing of oil palm in Nigeria **(3marks)**

(b) Apart from making oil, state **two** other uses of oil palm. **(2marks)**

2. (a) Name **three** areas which make up the Zuider Zee reclamation project in the Netherlands. **(3marks)**

b) State **three** natural problems experienced by farmers at Mwea-Tebere irrigation schemes. **(3marks)**

3. (a) State **three** measures that have been taken to conserve fisheries in Kenya **(3marks)**

(b) Give t**hree** reasons why Japan is a great fishing nation. **(3marks)**

4. (a) Give **two** advantages of using Hydro-electric power over other forms of energy **(2marks)**

(b) State **two** benefits that have resulted from rural electrification in Kenya **(2marks)**

5. Explain **two** ways in which people are affected by floods. **(4marks)**

SECTION B (75 marks)

*Answer **question 6** and any other **two** questions from this section*

6. The table below shows total number of livestock in selected Counties in Kenya in 2019. Use it to answer (a)

County	**Number of livestock**
Turkana	479,902
Wajir	661,152
Garissa	457,102
Kajiado	348,304
Narok	744,010
Marsabit	645,713
Laikipia	387,969

(a)(i) Using a scale of 1cm to represent 100,000 livestock, draw a simple bar graph to represent the data in the table above. **(9marks)**

(ii) Apart from simple bar graph, name **three** statistical methods that can be used to represent the data in the table **(3marks)**

(b) Name:

(i) **Three** exotic breeds of commercial beef cattle reared in Kenya. **(3marks)**

(ii) **Two** traditional breeds of cattle kept by nomadic pastoralism in Kenya **(2marks)**

(c) Explain **three** physical factors that favour beef farming in Argentina. **(6marks)**

(d) State **two** problems experienced by beef farmers in Argentina. **(2marks)**

7. (a) (i) Define the term mining **(2marks)**

(ii) Identify the areas where the following minerals are mined in Kenya.

i) Carbon (iv)oxide **(1 mark)**

ii)Titanium **(1 mark)**

iii) Limestone **(1 mark)**

(b) State **three** factors that influence the exploitation of minerals **(3marks)**

(c) Describe the processing of gold in south Africa **(7marks)**

(d) (i) Explain **three** ways in which gold contributes to the economy of South Africa. **(6marks)**

(ii) State **four** problems which South Africa experiences in the exploitation of gold. **(4marks)**

8.(a) (i) What is Agro-forestry? **(2marks)**

(ii) Give **four** reasons why Agro-forestry is encouraged in Kenya (**4marks)**

(b) Explain how the following factors influence the distribution of forests in Kenya.

(i)Relief **(4 marks)**

(ii) Soil **(4marks)**

(c) State **five** challenges experienced in exploitation of tropical hardwood forests. **(5mark)**

(d) You plan to carry out a field study in a forest

i)Give **three** secondary sources of information you would use to prepare for the field study. **(3marks)**

ii) What would be disadvantages of using secondary methods of collecting data in this kind of study. **(3marks)**

9. (a) i) Define the term industrialization **(2marks)**

ii) Name a town in Kenya where each of the following industries is located.

- Motor vehicle assembly **(1mark)**
- Oil refining **(1 mark)**
- Export processing zone **(1 mark)**
- Fish processing **(1 mark)**

(b) Explain **four** causes of the decline in the textile industry in Kenya. **(8 marks)**

(c) Explain **four** factors which influenced the location of iron and steel industries in the Ruhr Region of Germany in the 19th Century **(8 marks)**

(d) Show how industrialization can lead to environmental pollution in Kenya. **(3 marks)**

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10. Use the map of East Africa below to answer question (a)



(a) (i) Name the railway terminus **P,Q** and **R** **(3marks)**

(ii)In each case give the main commodity transported by the railway lines marked **S** and **T**.

(2marks)

(iii) Give **four** challenges facing railway transport in East Africa. **(4marks)**

(b) Outline **three** advantages of using containers while handling goods at the port of Mombasa

(3marks)

(c) One of the problems facing road transport is the high frequency of accidents. Explain **four** measures the Kenya Government has taken to reduce motor vehicle accidents in the Country.

(8marks)

(d) Give **five** reasons why there is limited use of letter writing as a means of communication in Kenya. **(5marks)**

For Marking Schemes Contact 0746 222 000 / 0742 999 000

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

ENGLISH

101/1

PAPER 1 *(Functional Skills)*

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

Instructions to the candidates

a) *Write your name and index number in the spaces provided above.*

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

c) *Answer all the questions in this paper*

d) *Candidates must answer the questions in English.*

For Examiner's Use only

Question	Maximum Score	Candidate's score
1	20	
2	10	
3	30	
Total score		

1. <u>FUNCTIONAL WRITING (20 Marks)</u>

You recently read an article on the lack of a reading culture among the youth in Kenya. The writer claimed that there are not enough interesting African novels young Kenyans can enjoy. You feel that more young people should try the novel "Fathers of Nations."

Write a book review of the novel. In your review, briefly describe the storyline, the major themes and give a good reason why young people should read the book.

2. CLOZE TEST (10MKS)

Read the passage below and fill in each blank space with the most appropriate word. (10 Marks)

As a teenager, Rebecca ---------- (1) about reproductive health from her biology class. Outside of school, the changes in a ----------(2) body were not readily discussed. Rebecca ended ----------…(3) feeling confused and isolated in her journey as she grappled with a mixture of ----------(4) that were hard to explain – from severe cramps, bloating, constipation and unusual cravings to heavy bleeding, headaches and fatigue that left her bedridden for days. Unfortunately, because many of her peers ----------(5) mild cramps, her 'discomforts' were often dismissed as 'typical menstrual issues.'

Now a 35-year-old mother, she looks back at her experience.

"I thought I was just unlucky," Rebecca ----------(6). "My friends would talk about ----------(7) period cramps, but what I felt was on a whole different level. I'd miss school because the pain was so bad."

The turning ----------(8) came in her late twenties when she was finally ----------(9) with endometriosis. "Endometriosis is a condition where tissue similar to the lining inside the uterus grows outside. When these cells undergo bleeding during menstruation, it leads to pain," explains Dr Ezekiel Mecha a senior ----------(10) at the department of Biochemistry, university of Nairobi.

(Adapted from "Why Chronic Menstrual Pain is Often Misunderstood" *The Standard*, Monday, June 17,2024)

3. ORAL SKILLS (30MARKS)

A. Read the oral narrative below and answer the questions that follow.

Hyena and Fox said to one another, "Let us go and eat food together". They walked to Hyena's place and here they ate some old bones. Then they went to Fox's home and here they were given some honey. Hyena had never tasted such sweet food before. He ate and ate and greedily licked his fingers.

"Do you relieve yourself after eating this sweet food?" he asked.

"No, we do not," replied Fox.

"What do you do to ensure such sweetness remains inside you?" he asked.

"A person is sewed tightly as quickly as possible," Fox explained.

The Hyena was sewed and he went back home. After two days, Hyena was dying to relieve himself. So, he went back to Fox.

"Fox unsew me now so that I can go to the bush to relieve myself".

"Oh no, why should we relieve you of sweetness," said Fox running away.

Hyena was now desperate, he kept fighting and making funny noises.

"Why are you behaving like that?" Crow asked.

"I have plenty of meal bothering me. Would you pull this thread so that you can eat some?" said Hyena.

The greedy Crow quickly undid the thread and 'pooaa' came out the unwanted stuff from inside Hyena. It gushed out at a terrific speed and covered the Crow completely. The Crow could not move until it rained. The rain washed off Hyena's excrement but Crow had a white patch on his neck. He still has it to this day.

I. How would you would prepare yourself to effectively tell the story? **(3 Marks)**

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II. Mention **two** ways in which you would know that your audience in the story is fully participating in the performance. **(2 Marks)**

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III. 'Let us go and eat food together…'

Which words would you stress in the sentence above and why? **(2 Marks)**

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B. Underline the silent letters in the following words. **(4 Marks)**

I. Comb

II. Coup

III. Guilt

IV. Sword

C. Classify and then identify the dominant sound feature in each of the short forms given.**(4 Marks)**

I. A good wife and health are man's best wealth.

II. Ken can can a can of curled kales.

D. The underlining indicates which word is stressed in the sentences below. Briefly explain what each sentence means. **(3 Marks)**

I. My chair broke.

II. My chair broke.

III. My chair broke.

E. Mention any **three** ways you would use your voice effectively when asked to give a speech during assembly**. (3 Marks)**

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F. You have been elected the Chairperson of your English study group. Explain **three** things you would to do during an upcoming discussion to ensure it is productive. **(6 Marks)**

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G.<u>Read the dialogue below and answer the question that follow.</u>

Kamau: (Looking distraught) Oh what do I do now?

Jane: Hi Kamau. How are you?

Kamau: Oh, Jane, my mother…

Jane: What a coincidence! My mother is in town!

Kamau: That is great, Jane. As I was telling you, my mother has just been admitted to hospital.

Jane: Is everyone's mother unwell? Mine called and said she wants money to buy medicine; a lot of money. These people back at home think money grows on trees!

Kamau: Jane, she is your mother. Surely you should help her if you can.

Jane: I have only twelve thousand shillings and it is all for buying an outfit and shoes. I have to look good at that dinner next week.

Kamau: Well, I have to look for some money and send it to my mother. See you later, Jane.

Jane: Wait, don't you want to know where I am going for that dinner next week?

I.Identify **three** shortcomings in Jane's responses. **(3 Marks)**

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THIS IS THE LAST PRINTED PAGE.

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

ENGLISH

101/2

PAPER 2

TIME: 2½ HOURS

(Comprehension, Literary Appreciation and Grammar)

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

1. Write your details in the spaces provided above.
2. Answer all the questions in this paper.
3. Answer the questions in English.

EXAMINER'S USE ONLY

QUESTION	MARKS	CANDIDATE'S SCORE
1	20	
2	25	
3	20	
4	15	
TOTAL	**80**	

1. COMPREHENSION

Read the following passage and answer the questions that follow.

Technology is basically the way we execute the discoveries of science and **blend** it with our own needs. Technology is a general term used to refer to the different tools, machines and equipment we use in everyday life. These tools and equipment have been invented by man to make the tasks faster, easier and more comfortable.

Since the invention of the wheel and the use of microchips in computers and mobiles, technology has come a long way. Man has reached the moon and explored the outer space just because of the advancement in the aeronautics field. Even in primitive occupations such as agriculture, there have been so many technological advancements with modern tools such as traction engine and stream tractor technology which has helped us make progress.

Although there have been countless examples where technology has changed our lives, there are some which are considered as revolution for mankind. The technology used in the field of robotics is one such fine example. Nowadays robots are being used by people and industries all over the world for various purposes. They are also used in places which are otherwise considered harmful for humans thereby protecting us. One such area is the cleaning and managing of radioactive waste

Artificial intelligence (AI) is another field which is a classic example of the technological advancement man has achieved. Who could have imagined that a machine would be capable of thinking like us? That is what Artificial Intelligence has been successful in doing. It is an intelligent machine capable of behaving like us. It can do activities such as problem-solving, planning, learning and even reasoning. Today Artificial Intelligence is used in all major areas such as warfare, security, healthcare and communication. On top of this, it is far more efficient than us and has a lower rate of error.

Technology has its own importance in our lives. Without technological advancement, our lives would not be simpler and faster. The modernization that the world is witnessing today has all been possible because of technological developments in different fields. Moreover, it has helped in reducing the risks people had to undertake in many sectors such as mining. With new tools available, the tasks are less risky and are more efficient as well.

Although technological advancements are important for us, it is also true that we seem to be over-dependent on them nowadays. The use of mobiles was meant to be able to keep us in touch in different times. But now we see kids too much involved in the different applications on mobiles and killing the valuable time. In addition, many crimes have been reported through the misuse of digital technology. Also, it has been seen that many people lack the basic education required to ensure the proper use of the technology available today. In fact, most of them use it for the sake of fashion and hence end up misusing it. People have been so dependent on technology that they no longer want to do any kind of manual activity. Even for small works that can be done manually, people prefer to do it through technology. This has resulted in making humans mentally as well as physically dormant.

Technology is surely a **boon** for mankind. It is all the more important for the economic growth of a country. Modern technologies have in fact succeeded in reducing the human effort and the risk in

doing a lot many other things. But still, it is for us to see how best we make use of technology available to us.

While on one hand we can make use of technological advancements of nuclear energy to generate electricity and help many villages lighten us, on the other hand the same nuclear energy can be used to create bombs which cause **mammoth** destruction. Similarly, robots and other technological advancements have served as a good servant to us but the moment it becomes the master it can wipe all humanity from earth.

Questions

a. What is technology according to the passage**?** **2mks**

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b. State two prominent ways in which technology has changed lives according to the passage**. 2mks**

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c. How has technology been Important to human beings according to the passage? **3mks**

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d. How has advancements in the field of aeronautics changed this field? **2mks**

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e. Make notes on the drawbacks of technology **4mks**

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f. Technology is surely a boon for mankind. *Begin: Surely*…….. **1mk**

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g. Discuss the writer's mixed thought on technology. **3mks**

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h. Explain the meaning of the following words as used in the passage. **3mks**

i Blend

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…….

ii Mammoth

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……..

iii Boon

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……

2.*Read the following extract from the play "The Samaritan" by John Lara and then answer the questions after.*

Seymour: *(Springing to his feet with clenched fists*) That cannot be possible. Nobody can write that kind of thing about me in this world!

Harvester: *(Looking at Ted and Seymour*) Copies of indisputable documentary evidence to that effect were all over today's newspapers and are being shared in all media platforms.

Seymour: *(Resuming his seat and swearing with trembling voice)* Those are fake documents! These are all barefaced falsehoods! And I can assure you one thing: Those behind the allegations now have their appointment with fate! Certainly!

Ted: (*Sitting properly and looking up for the first time*) **Supply of air?** I am beginning to think this is serious. Could we end up in Baneta Express Prison?

Harvester: *(Turning pages of his note book)* But that is only one of the allegations, there are many more, including drug trafficking, grabbing of public land, **inflation** of the cost of municipal projects, use of proxies to secure municipal tenders, undertaking shoddy public works, murder and gang warfare. The information is very detailed on the people and companies involved.

Mossi: There is a lot of personal information on municipal leaders on that evil thing too; including lifestyles of individual municipal officials, where they live, the kind of houses they live in, their businesses, the vehicles they own, other properties in their possession, when the properties were acquired, and a lot of other personal details I don't want to mention here. (Looking at Bembe) There was a lot of talk yesterday on the Madingo Golf Club, with everyone Wondering where you got the money to put it up.

Bembe: (*Sitting up with an expression of horror on his face*) The Madingo Golf Club? No! I have always been very **discreet** about my private affairs! How did they get the Information it is mine?

Mossi: You see, there is hardly anything on earth you can do without somebody knowing About it. You should also remember that those we regard as our friends are Sometimes wolves in sheep's clothing. And they may have a lot of information About us, which could be damaging!

Bembe: This might be our worst nightmare!

Mossi: What worries me most is the recent formation of a lobby group, an amorphous virtual group, comprising mostly of lawyers, calling itself *The Samaritan*. It is calling upon the people to volunteer as witnesses and help in the prosecution of those involved in corruption and abuse of office in the Municipality. They are also planning to **petition** the Local Government Minister, the Prime Minister, and the Chief Justice to take action. The situation is not pretty at all.

Ted: (*Looking at Justice Jaden)* Can such online allegations form a strong basis for prosecution and conviction?

Jaden: (*Adjusting his eyeglasses*) Yes, they can; provided there are valid documents supporting the allegations.

Bembe: (*Throwing his hands in the air)* I think we have no choice other than ban that thing within Maracas Municipality! The Municipal Council needs to pass a by-law to that effect urgently. I will enforce it immediately!

Jaden: (*Adjusting his eyeglasses and then his tie*) I think we need to be careful and strategic. On what basis do you ban it? And how can you police the use of mobile phones to ensure the ban is effective?

Seymour: We can think creatively about that. For example, we can claim that municipal

authorities are concerned that suspect Apps, particularly spy Apps, are finding their way into our municipality. This may lead to theft of confidential information such as bank account details. We can also cite issues of cyberbullying and the sharing of pornographic materials in schools

QUESTIONS

a) What is Seymour referring to at the beginning of the excerpt**?** **(2mks)**

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b) Identify and illustrate two aspects of style in this excerpt**.** **(4mks)**

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c) Discuss two themes evident in this **excerpt.** **(4mks)**

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d)Discuss one character trait of Seymour and one character trait of Mossi as presented in this **excerpt.** **(4mks)**

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e) From your knowledge of the rest of the play, what two things does Mossi suggest could be done to control the use of the Samaritan App? **(2mks)**

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f) From your knowledge of the rest of the play, briefly explain the origin of the Samaritan App. **(4mks)**

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g) Explain the meaning of the following words and phrases as used in the excerp**t** **(5mks)**

i) Supply of air

……

ii) Inflation

……

iii) Discreet

……

iv) Amorphous

……

v) Petition

……

3.Read the following Song and then answer the questions that follow.

THE RETURN

Oh! People of Andatsi,
Listen to the drums,
Listen to the **ululations,**
Bestowed upon the son of our land.

Celebrate him, we must,
from a young lad, hero is born,
A role model to you sluggards,
Can't you hear the praises over the wheat farms,
Bestowed upon the son of our land.

Tooth and nail fought he,
People of Andatsi,
Apt wine you must prepare,
A drop- for the ancestors, gods and him,
On our land- sun has shone,
Elders, come, hear- the sweet songs
Bestowed upon the son of our land.

No more fear– the seer once proclaimed,
No more sorrow, upon the clansmen faces,
People of Andatsi- you hold him high,
For the son of Andatsi is back and praises are,
Bestowed upon the son of our land.

Questions.

a. Classify the above song. **2mks**

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……

b. Who is the singer? **1mk**

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……

c. Briefly explain what the song is about. **3mks**

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d. Identify and illustrate one economic activity of the community. **2mks**

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e. How is the community organized? **2mks**

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f. With illustrations, show what makes the song above an oral song. **3mks**

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g. Identify and illustrate any one-character trait of the son of the land. **2mks**

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……

h. Describe the prevailing mood in the song. **3mks**

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i. Explain the meaning of the following lines as used in the song.

On our land the sun has shone. **1mk**

……

……

Tooth and nail he fought. **1mk**

……

……

4. GRAMMAR

1.Rewrite the following sentences as instructed. 3mks

a. He was obviously angry with you. ***Begin: His……..***

……

b. He did not apply for the job. He did not get it. ***Begin: Had……***

……

c. ‘’Are you taking part in the walk? My father asked. ‘Rewrite ***in indirect speech***

……

2.Use the correct form of the word in brackets to complete each of the following sentences. 3mks

a. Owen did not know that the tree had ……. his house. (Strike)

b. The three…… were arrested. (Passer-by)

c. She has spent a lot of time ……. her compound. (Beautiful)

3.Underline the main Clause in the following sentences. 2mks

a. I saw the woman who gave birth to twins.

b. If you work hard, you will pass your examinations.

4.Underline the gerund in the following sentence. **1mk**

Diana is studying but swimming is her hobby.

5.Replace the phrasal verb underlined with one word similar in meaning. **2mks**

a. The project has really <u>eaten into</u> my savings.

……

b. He had his dog <u>put down</u> because it was in a lot of pain from its tumors.

……

6.Fill in the blank space with the correct alternative from the given choices. **2mks.**

a. Neither Tom nor his friend ……. there. (was / were)

b. Vivian is one of the people who …… always in a hurry. (are/is)

7.Explain the difference in meaning between the following sentences. **2mks**

a. Has the donkey eaten Mary?

b. Has the donkey eaten, Mary?

……

……

……

……

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

ENGLISH

101/3

PAPER 3

TIME: 2½ HOURS

(Creative Composition and Essays Based On Set Books)

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

a) *Answer three questions only*

b) *Question one and two are compulsory*

c) *In question three choose only one of the optional texts you have prepared on*

d) *Where a candidate presents work on more than one optional text, only the first one to appear will be marked*

e) *Each of your essays must not exceed 450 words*

FOR EXAMINERS USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1.	20	
2.	20	
3.	20	

For Marking Schemes Contact 0746 222 000 / 0742 999 000

1. Imaginative composition. (Compulsory) (20 marks)

Either

Write a composition ending with the following words: …..*The events of that day will remain etched in my mind forever*.

OR

Discuss how young people can use their talent for personal development.

2.Compulsory text 'The Samaritan' by John Lara (20 Marks)

Change can be initiated through the effort of ordinary citizens. Closely referring to Nicole in The Samaritan by John Lara, write an essay to support this statement.

3.Optional texts

a) **The Novel**: Kazuo Ishuguro, **an Artist of the Floating World. (20marks)**

Noriko's marriage negotiations have been used as a means to reveal Ono's past. Justify the statement using illustrations from the novel Artist of the floating world.

or

(**b) A Silent Song and Other Stories (20marks**

War causes a lot of harm and should be avoided at any cost.Validate this statement basing your illustration in Chimamanda Adichies"Ghost"

or

c**)** Misuse of power is a common phenomenon in most African countries. Validate this statement basing your arguments on the play **"Parliament of Owls" (20 Marks)**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

102/1

KISWAHILI

KARATASI YA 1-INSHA

MUDA: SAA 1¾

JINA……

SHULE…… SAHIHI……

NAMBARI YA USAJILI…… MKONDO……

Cheti cha Kuhitimu Kisomo cha Sekondari (KCSE)

Maagizo

(a) Andika insha mbili. Insha ya kwanza ni ya lazima

(b) Kisha chagua insha nyingine moja kati ya hizo tatu zilizobaki

(c) Kila insha isipungue maneno **400**

(d) Kisha insha ina alama **20**

(e) Kila insha lazima iandikwe kwa lugha ya Kiswahili

(f) Andika nambari ya maswali uliyoyajibu kwenye jedwali ulilocherewa hapo chini

Kwa matumizi ya mtahini pekee

Swali	Upeo	Alama
1	20	
	20	
Jumla	40	

Lazima

1.Wewe ni katibu wa chama cha walinda Mazingira wasio na mipaka shuleni mwenu. Andika kumbukumbu za mkutano uliofanyika kujadili athari za mafuriko yaliyokumba eneo lenu.

2 .Kumekuwa na visa vingi vya ajali za barabarani nchini. Ukiwa mhariri wa gazeti la Darubini. Andika tahariri kuhusu chanzo cha ajali hizi huku ukionyesha mikakati inayofaa kuzuia ajali nchini.

3. Tunga kisa kitakachodhihirisha maana ya methali ifuatayo:

Pele hupewa msi kucha.

4. Tunga kisa kitakachomalizika kwa maneno yafuatayo:

Sikuupa moyo wangu nafasi ya kujutia niliyoyatenda. Nilikuwa nimeamua kuyajenga maisha yangu upya.

For Marking Schemes Contact 0746 222 000 / 0742 999 000

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

102/2

KISWAHILI

KARATASI YA 2-LUGHA

MUDA: SAA 2½

JINA……

SHULE…… SAHIHI……

NAMBARI YA USAJILI…… MKONDO……

Cheti cha Kuhitimu Kisomo cha Sekondari (KCSE)

Maagizo

(a) *Andika jina lako na namba yako ya usajili katika nafasi ulizoachiwa hapo juu.*

(b) *Tia sahihi yako kisha uandike darasa lako katika nafasi ulizoachiwa hapo juu.*

(c) *Jibu maswali* ***yote.***

(d) *Majibu yote yaandikwe kwenye nafasi ulizoachiwa katika kijitabu hiki cha maswali.*

(e) *Majibu yote ni* ***lazima*** *yaandikwe kwa lugha ya Kiswahili.*

(f) *Usitoe ukurasa wowote kutoka kwenye kijitabu hiki.*

KWA MATUMIZI YA MTAHINI PEKEE: -

Swali	Upeo	Alama
1	15	
2	15	
3	40	
4	10	
JUMLA	80	

1. UFAHAMU (Alama 15)

<u>Soma kifungu kifuatacho kisha ujibu maswali yanayofuata.</u>

Ustawi wa dola lolote lile hutegemea mseto wa nguvu, maarifa chipukizi, uchapuchapu wa barubaru, pamoja na maarifa, upevu, uvumilivu na tajriba ya wazee. Tunaweza kuumithilisha ufanisi wa nchi na jumba la ghorofa lililojengwa juu ya tegemezo: msingi huu ukiwa imara, ghorofa nyingi zaweza kuinuliwa. Nayo imara ya tegemezo hutegemea vyuma imara visivyotetereka na vifaa vinginevyo. Zaidi ya haya yote, mafundi wahusika kama vile wasanifu mjengo, wahandisi, mafundi bomba na wengineo sharti wawe na ujuzi tosha ili kufanikisha kazi inayohusika. Katika taswira hii, twaweza kuelewa ni kwa nini baadhi ya nchi zimestawi huku nyingine zikiitwa ulimwengu wa tatu. Shida za nchi hizo ni kutozistawisha taaluma ambazo ndizo msingi wa maendeleo, hivyo huwa na walakini katika utekelezaji. Matokeo yake ni kulimatia.

Nchi nyingi humu barani mwetu zimekosa kustawi kutokana na kasoro nyingi tulizo nazo katika uimarishaji wa taaluma zetu. Sababu kuu ni kuwa, wengi wetu hukimbilia kutekeleza kazi mbalimbali hata bila ujuzi wowote kwa kazi hizo. Tabia kama hii inatokana na ukweli kuwa sisi hatujali kama tuna vipawa vya kufanya kazi fulani. Wengine huvunjwa moyo na waliowazingira kuwa vipawa vyao havifai. Hivyo, si ajabu kuona kijana aliye na kipawa fulani akikosa kukivuvia kwa sababu labda hata hatambui kuwa anacho.

Wengi wa wakembe wetu hukosa kuvitambua vipawa vyao, hivyo kukosa kuendeleza utaalamu unaohusiana navyo kwa kukosekana kwa **mtalaa** wa kuvichochea katika mfumo wa elimu. Mfumo wa elimu nchini Kenya kwa sasa unasisitiza wanafunzi kupita mtihani ili kuingia vyuoni. Hata hivyo, ni muhimu kuvikuza vipawa walivyo navyo vijana ili wavitumie katika siku za halafu. Vitambuliwe mapema shuleni bali si vyuoni. Kunao wanagenzi wengine ambao, licha ya kuvitambua vipawa vyao hawavifukutii kamwe, huvipuuza na kujisukuma katika taaluma ambazo hazikuwafaa kamwe. Kunao wanagenzi wengine ambao hutamani na kuingilia taaluma fulani, si kwa kuzipenda, bali kwa kuwa wandani wao wazishiriki. Hawajui kuwa kibaya chako si kizuri cha mwenzio. **Huliona tanga la nguo wakalisahau la miyaa.** Kuna wengine ambao huziandama taaluma fulani kwa kushurutishwa na wazazi au wadhamini wao. Nao vijana hukosa ukakamavu wa kujiamulia na kukubali shingo upande maamuzi hayo. Hata hivyo, kuna wale ambao hujitosa katika taaluma hizo bila kushurutishwa ili wapate hadhi. Matokeo ni kuwa kijana huzifanya kazi hizo kwa chati wala si kwa dhati. Wengine hujipenyeza kwa taaluma fulani eti kwa kuwa wamekosa nyingine. Si ajabu basi kutokana na ukosefu wa ajira kumwona mtaalamu wa mifugo akiwa mwalimu, mwalimu akiwa dereva na tabibu akiwa mkulima hali zaraa haimudu.

Ili kupata suluhu katika jambo hili, sharti kila mmoja wetu ashiriki katika kuitambua, kuikuza, kuikomaza na kutumia taaluma ya kila kijana. Twaweza kuuiga mfano wa Wazungu wafanyavyo kwao. Wao hujitahidi kuvitambua vipawa vya watoto wangali wachanga hali ambayo huwasaidia kuzikuza taaluma zao baadaye. Naye kijana akishajua atakachofanya, afaa kufanya utafiti ili kufikia kina cha taaluma yake.

Maswali

(a) Eleza sababu za watu kujishughulisha na taaluma zisizo zao. **(alama2)**

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(b) Eleza kikwazo cha ustawi wa nchi zinazoendelea. **(alama 1)**

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……

(c) Taja mambo manne yanayostawisha taifa**.** **(alama 4)**

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(d) Taja mambo **matano** yanayokwamiza uendelezaji wa vipawa miongoni mwa vijana. **(alama 5)**

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(e) Kuna tofauti gani kati ya Waafrika na Wazungu katika ukuzaji wa taaluma**?** **(alama 2)**

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(f) Eleza maana ya ‘Huliona tanga la nguo wakalisahau la miyaa’. **(alama 1)**

……

……

(g) Eleza maana ya vifungu vifuatavyo vilivyotumika katika ufahamu. **(alama 2)**

(i) kulimatia

……

……

(ii) mtalaa

……

……

A. <u>UFUPISHO</u> (Alama 15)

<u>Soma kifungu kifuatacho kasha ujibu maswali</u>

Ardhi ni mali ya taifa. Hivyo inampasa kila raia kuinafidhi. Hii ina maana kwamba hatuna budi kuwarithisha wana na wajukuu, vitukuu na vilembwe, vining’ina na wapwa zetu ardhi yenye rutuba. Ardhi ndiyo chanzo cha riziki zote. Fauka ya hayo, ardhi ni dafina kubwa.

Tangu asili ardhi hii imefunikwa na joho la miti na majani. Rutuba ilienea kila mahali. Lakini wakati ulifika ambapo wanadamu hawakuvumilia kukaa bila kuitumia johari hii. Walishika maparange na mashoka. Wakafyeka majani na miti yote. Wakalima wakapanda na kuvuna.

Kisha walihama hapo. Waliendelea kufanya hivyo mwaka hadi mwaka. Hali ya kufyeka sehemu mbalimbali za nchi, kuchoma mioto ovyo, kuwa na mifugo mingi na kutojua kuhifadhi ardhi vizuri kulileta mavuno hafifu kila mwaka.

Mvua iliponyesha matone ya mvua yaligonga ardhi. Maji yakajiri kwa nguvu na kutawanya chembe za udongo. Wakati wa kiangazi udongo ulipokauka, upepo mkali ulichukua tabaka la juu. Hivyo ikawa mazao hayawezi kustawi. Hatimaye nchi ikawa kama mkuranga. Mambo haya yakasababisha mmomonyoko wa juu juu halafu mwanzo wa michirizi na mwisho makorongo na maporomoko ya ardhi.

Walakini basi ya kale hayapo. Sasa wakuu wa serikali yetu ya Insafu wamekuhimizeni, ikiwa mu wakulima, mpande zaidi. Wamewashauri namna ya kuongeza mavuno katika mashamba yenu kwa maarifa bora ya zaraa, kama vile kuunafidhi udongo, kutumia mbolea, njia za kunyunyizia dawa makondeni ili kuua wadudud wanaoharibu mimea, na kutumia maarifa malihi katika kupanda mbegu. Kwa wale ambao si wakulima, serikali yetu ya Insafu imeweka shule za mafundisho maalum na kumhimiza kila mmoja wao aongeze maarifa yake na afanye kazi kwa tabasuri na bidii ili aongeze mapato yake na mapato ya serikali pia. Katika sehemu nyingine maelezo ya wakuu wa serikali yamefuatwa barabara, na kumetokea maongezeko malihi ya mazao.

Walakini pia katika sehemu hizo maongezeko yake hayakutosha sana. Katika sehemu nyingine kwa bahati mbaya watu wamepotezwa na watu wakaidi ambao kwa kutaka ushaufu, wamewaambia watu kuwa njia rahisi na nyepesi ya kujipatia serikali ya kujitawala yenyewe, na wamewashawishi na kuwatisha baadhi ya watu waasi amri za serikali zihusuzo zaraa. Wahaini hao wametibua mambo. Ni watu wa kuaili na ni afkani.

Maswali

a. Fupisha ujumbe wa aya tatu za kwanza kwa maneno 80. (alama 9, 1 ya mtiririko)

Matayarisho.

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Nakala Safi

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b. Eleza masuala ambayo mwandishi anaibua katika aya mbili za mwisho kwa maneno 60.

(alama 6, 1 ya mtiririko)

Matayarisho.

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Nakala Safi

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B. <u>MATUMIZI YA LUGHA</u>

(a) Taja sauti mbili ambazo huitwa viyeyusho **(alama 1)**

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(b) Andika neno lililo na muundo wa silabi ufuatao **(alama 1)**

IKKI

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(c) Ainisha viambishi katika neno lifuatalo **(al. 2)**

Yafutikayo

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(d) Tambua aina mbili za sentensi ukizingatia uamilifu na utoe mfano mmoja kwa kila moja **(ala. 2)**

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(e) Ainisha vielezi vya namna katika sentensi hii **(ala. 2)**

Mzee huyu mkongwe alicheka kijinga huku akila haraka haraka

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(f) Ainisha vishazi katika sentensi ifuatayo **(ala. 2)**

Kijana aliyezungumza na nyanyake ameingia katika darasa lililochafuliwa na wanafunzi

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(g) Changanua sentensi ifuatayo kwa kielelezo cha <u>mistari</u> **(ala. 3)**

Mwanafunzi mwerevu sana aliyekuwa mgonjwa jana amepelekwa nyumbani

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(h) Bainisha shamirisho na chagizo katika sentensi ifuatayo **(ala. 3)**

Somo aliukata mti kwa kisu jana asubuhi

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(i) Andika kwa usemi wa taarifa **(ala. 3)**

Karani: Njoo nikutume kwa babu yangu.

Karanja: Sitaki kupita njia ya kwa babu

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(j) Eleza matumizi ya ‘ni’ katika sentensi hii **(ala. 2)**

Ingieni darasani mara moja ili niwape zoezi ambalo ni rahisi

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(k) Eleza maana ya sentensi zifuatayo **(ala. 2)**

(i) Ningalisoma kwa bidii ningalipita mtihani

(ii) Ningesoma kwa bidii ningepita mtihani

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(l) Andika katika udogo wingi **(ala. 2)**

Mti wa msonobari unatengeneza meza nzuri sana

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(m) Tambua miundo yoyote mitatu ya ngeli ya LI-YA **(ala. 3)**

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(n) Eleza maana tatu za sentensi ifuatayo **(ala. 3)**

Alisema angeenda kwao

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(o) Andika upya sentensi ifuatayo katika hali sambavu **(ala. 1)**

Mwanafunzi anasoma darasani

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(p) Tumia neno ‘hadi’ kuonyesha mahali na wakati katika sentensi **(ala. 2)**

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(q) Yakinisha katika hali ya mazoea. **(ala. 2)**

Asiyeugua hahitaji daktari

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(r) Tunga sentensi ukitumia neno ‘komaa’ kama **(ala. 2)**

(i) Kivumishi

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(ii) Nomino

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(s) Taja matumizi yoyote mawili ya <u>kistari kirefu</u> **(ala. 2)**

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4). <u>ISIMUJAMII. (Alama 10)</u>

a) Eleza sababu za kufanya makosa katika mazungumzo **(alama 4)**

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b) Eleza mambo manne yaliyochochea kusanifisha lugha ya Kiswahili nchini Kenya.**(alama 4)**

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c) Taja lahaja zozote nne za lugha ya Kiswahili **(alama 2)**

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KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

102/3

KISWAHILI

KARATASI YA 3-FASIHI

MUDA: SAA 2½

JINA……

SHULE…… SAHIHI……

NAMBARI YA USAJILI…… MKONDO……

Cheti cha Kuhitimu Kisomo cha Sekondari (KCSE)

MAAGIZO

a) *Jibu maswali manne pekee.*
b) *Swali la kwanza ni la lazima.*
c) *Maswali hayo mengine matatu yachaguliwe kutoka sehemu nne zilizobaki yaani; tamthilia, riwaya, hadithi fupi na fasihi simulizi.*
d) *Usijibu maswali mawili kutoka sehemu moja.*
e) *Majibu yote lazima yaandikwe kwa lugha ya Kiswahili.*
f) *Majibu yote sharti yaandikwe kwa kijitabu cha majibu ulichopewa.*
g) *Andika nambari ya maswali uliyoyajibu.*

KWA MATUMIZI YA MTAHINI PEKEE

SWALI	UPEO	ALAMA
	20	
	20	
	20	
	20	
JUMLA	80	

For Marking Schemes Contact 0746 222 000 / 0742 999 000

SEHEMU YA A: USHAIRI

MBELE YA SAFARI

1. Ilipoanza safari , ilianza kwa dhiki
Tulishikana kwa ari, kwenda safari ya haki
Tukawa ni majabari, nyoyo zisitaharuki
Tukajizatiti

2. Njaa ikawa dhabiti ,na kiu kutamalaki
Nasi tulitia dhati tusijali kuhiliki
Ingawa mbele mauti ,dhila na mingi mikiki
Tukajizatiti

3. Huu mwisho wa safari, tukaambiwa ni haki
Shangwe kwetu na fahari,utumwa hatuutaki
Kuwa mbele ya safari , juhudi iliyobaki
Tukajizatiti

4. Ile ilikuwa ndoto , mwisho wake mafataki
Nguvu zimechomwa moto,sahala ‘mekuwa dhiki
Wagombanio kipato,utashi haukatiki
Nakutabakari

5. Msafara ukasita , kwenye mlima wa haki
Kijasho kinatuita , mlima haupandiki
Basi sote ‘kijipeta, kukikwea kima hiki
Twataka hazina

6. Tukiwa migongo wazi ,tukainama kwa shaki
Tukawa’chia ukwezi , kialeni wadiriki
Wakapanda bila kazi ,Kuteremsha miliki
Wakaitapia

7. Wakafikia makazi,ya pumbao na ashiki
Huko wakajibirizi, kwenye raha lakilaki
Wakaisahau ngazi, ya umma ulomiliki
Mbele ya safari

8. Na hazina yetu sote, kuishusha hawataki
Wamo wanatema , kwa umati halaiki
Imezima nia yote ,kiza hakitakasiki
Mbele ya safari

MASWALI

a) Eleza safari inayolejelewa katika shairi hili. **(al 2)**

b) Onyesha kinaya cha safari inayozungumziwa**.** **(al 6)**

c) Taja na ueleze bahari mbili za shairi ukizingatia **:** **(al 4)**

i. Mizani

ii. Vina

d) Andika ubeti wa saba kwa lugha ya nathari. **(al 4)**

e) Eleza umuhimu wa aina mbili za uhuru wa kishairi zilizotumiwa katika ubeti wa sita **(al 4)**

f) Eleza umbo/ muundo wa shairi hili. **(ala 2)**

SEHEMU YA B: TAMTHILIA

Timothy Arege;BEMBEA YA MAISHA

Jibu swali la 2 au la 3

2. (a.) Soma dondoo lifuatalo kasha ujibu maswali.

Sara : Mimi ninashukuru kwa hawa alionipa mungu. Nikitaka zaidi nitakuwa mchache wa shukrani.(kimya) Dina nimesemwa sanana kutukanwa kwa sababu ya hawa wasichana wangu. Wewe unajua yote yaliyosemwa, hadharani na faraghani. Si makanisani, si magengeni. Leo nikiviona vitoto hivi vilivyochekwa na kusimangwa jana, vikijiendeshea mambo yao, ninaridhika moyoni. Hata nikiitwa nitaondoka nikiwa nimeridhika. (Anatokwa na machozi)

Kila binadamu hukabiliana na mabadiliko katika maisha yake. Jadili kauli hii ukirejelea tamthilia ya Bembea ya Maisha.

i.) Changanua maudhui katika dondoo hili **(ala 3)**

ii.) Bainisha toni katika dondoo hili **(ala 2)**

iii.) Tambua mbinu tatu za lugha ambazo zimetumiwa katika dondoo hili. **(ala 3)**

(b.) Jadili jinsi suala la utu linavyoshughulikiwa katika tamthilia ya Bembea Ya Maisha **(ala 12).**

AU

3. Kila binadamu hukabiliana na mabadiliko katika maisha yake. Jadili kauli hii ukirejelea tamthilia ya Bembea ya Maisha. **(ala 20)**

SEHEMU YA C: RIWAYA

C. MOMANYI: **NGUU ZA JADI**

Jibu swali la 4 au la 5

4. "Lazima amejiunga na kundi la marafiki wenye pesa wanaojaribu kumpotosha."

(a) Eleza muktadha wa dondoo. **(alama 4)**

(b) Anayesema maneno haya ni jasiri. Thibitisha kwa hoja tano. **(alama 5)**

(c) Tathmini kwa hoja kumi na moja nafasi ya wenye pesa katika kuendeleza tamaa na ubinafsi katika nchi ya Matuo. **(alama 11)**

AU

5. "Mangwasha siku zote hizi ulikuwa unachezeshwa kayamba tu. Ati walisema Osama alikuwa hatari kwa usalama duniani; kuna Osama kuliko huyu?" alijiskia kusema. Alishusha pumzi kwa nguvu akajiuliza kimoyomoyo kwa nini Mungu aliruhusu moto kumtia kwenye shimo la maangamizi na wanawe. Hata hivyo, aliamini kuwa wakati mwingine Mungu huruhusu mabaya

kutokea ili kuwafunza waja. Waaidha, alijua kuwa mashaka yanapomkumba mja, huwa ni funzo pia. Humtayarisha kuyahimili machungu zaidi ulimwenguni ama kumuasa dhidi ya kuabudu maovu. Maovu yanapotendwa na wachache, hata wale wasio na hatia pia hujikuta wamo humo uovuni. Ni mtego wa waliomo na wasiokuwemo.

(a) Changanua mtindo katika dondoo hili. **(alama 5)**

(b) Eleza umuhimu wa mandhari ya kanisani aliko Mangwasha katika kukuza Riwaya ya Nguu za Jadi **(alama 5)**

(c) Nchi ya matuo imeshinikizwa na Nguu Za Jadi zinazorudisha nyuma usawa katika jamii. Tathmini kauli hii kwa hoja kumi. **(alama 10)**

SEHEMU YA D :HADITHI FUPI

MAPAMBAZUKO YA MACHWEO NA HADITHI NYINGINE

Jibu swali la 6 au 7

WINNIE NYARURI OGENCHE: ''SABINA''

6. ''Maneno ya ripota huyo yalimwiingia Ombati maskioni yakasalia huko.Hayakufika akilini.Mwalimu mkuu alipenya kwenye umati uliokuwa umeanza kuwa mkubwa na kumtaka Ombati awaelekeze alikokuwa Sabina .Kabla ya Ombati kuwajibu,Sabina alifika nyumbani amevaa rinda kuukuu huku harufu ya samadi inamvuka.Watu waliokuwa wakimngoja walimzoa juujuu na kuanza kuimba tena. Ombati aliwafurusha wageni waliokuja kumwoa Sabina pamoja na mifugo wao.Baada ya kufanya hivyo,alijiunga na Sabina kuhojiwa na kupigwa picha.Alijitanua jinsi alivyotunukiwa kumlea mwana mwepesi masomoni.''

a) Eleza umuhimu wa mhusika Sabina katika **kukuza hadithi husika**. **(alama 6)**

b) Kwa kutoa mifano mwafaka kutoka kifunguni,onyesha **aina nne za taswira** zilizojitokeza. **(alama 4)**

c) Fafanua **changamoto** zinazokabili jinsia ya kike kwa mujibu wa hadithi hii. **(alama 10)**

YUSSUF SHOKA HAMAD: ''*Mzimu wa Kipwerere*''

7.“…Kabla mwanamke yule hajakiwasha kile kibatari,nilijitokeza mle mvunguni na maguo yangu meupe kama ya maiti nikaangua mwangwi mkali mfano wa parapanda ya siku ya kiama.”

(a)Yaweke maneno haya katika muktadha wake. **(Alama 4)**

(b)Fafanua umuhimu wa mandhari katika dondoo hili. **(Alama 4)**

(c)Fafanua mbinu za kimtindo katika dondoo hili. **(Alama 2)**

(d)Onyesha jinsi itikadi ilivyomwezesha *mlinda mzimu na wahenga waliotukuka* kuwafanya wanakijiji kuogopa na kuamini mzimu wa Kipwerere kiasi cha kutofanya mzaha na maeneo yale ambayo mzimu uliotea.. **(alama 10)**

SEHEMU YA E: FASIHI SIMULIZI

Swali la nane

8. a) Ulumbi ni nini? **(alama 2)**

ii) Ulumbi hutekeleza **majukumu** gani katika jamii?. (**alama 6)**

iii) Eleza **vipengele sita** vya kuzingatia katika uchanganuzi wa hadithi. **(alama 6)**

b) Eleza namna ambavyo hadhira huhusishwa katika uwasilishaji wa fasihi simulizi. **(alama 6)**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

AGRICULTURE

443/1

PAPER 1

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS

*The paper consists of **three** sections A , B and C*

Answer all questions in section A and B in the spaces provided

*Answer **any two** questions from section C on foolscaps provided*

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATES' SCORE
A	1 - 17	30	
B	18 – 21	20	
C		20	
		20	
	TOTAL SCORE	**90**	

SECTION A (30 MARKS)

Answer all the questions in this section in the spaces provided.

1. What is the importance of taking farm inventory? **(1 mark)**

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2. State four factors that determine the choice of a crop enterprise. **(2 marks)**

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3. Calculate the amount of P_2O_5 in 1000 kg of a compound fertilizer 20:10:10 **(2 marks)**

4. Give four farming practices leading to soil loss. **(2 marks)**

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5.a) What is organic farming? **(½ mark)**

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b) Give any **two** conditions that lead to small scale farming. (**1 mark)**

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6.List three factors that contribute to competitive ability of weeds. **(1 ½ marks)**

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7. State **three** ways in which pruning helps to control diseases in tomatoes. **(1 mark)**

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8.a) Give **three** ways through which minerals can be lost in the soil. **(1 mark)**

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b) State any **three** deficiency symptoms of phosphorous in crop production. **(1 ½ mark)**

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9. Give **four** reasons for using certified seeds for planting. **(2 marks)**

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10.a) State **three** effects of plant diseases on crop production. **(1 ½ mark)**

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b) Name **two** diseases of maize. **(1 mark)**

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11. List **four** functions of Coffee Board of Kenya. **(2 marks)**

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12.a) Define the term land reform. **(½ mark)**

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b) State **three** advantages of land consolidation **(1 ½ mark)**

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13.a) Distinguish between a dam and a weir. **(1 mark)**

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b) Give any **four** cultural methods used in soil and water conservation. **(2 marks)**

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14. Differentiate between hybrids and composites as used in maize breeding. **(1 mark)**

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15. What is rogueing as used in crop production. **(½ mark)**

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16. State three reasons why a farmer should diversify his farm enterprises. **(1 ½ mark)**

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17. State **four** advantages of organic mulches. **(2 marks)**

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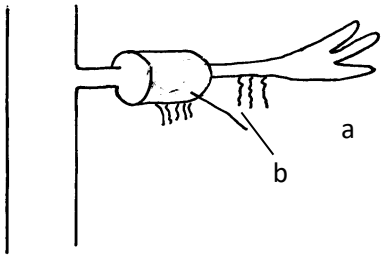
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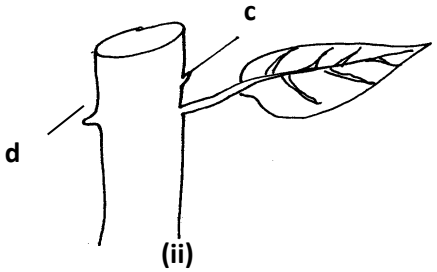
SECTION B (20 MARKS)

Answer all the questions in this section in the spaces provided.

18. Study the illustration below and answer the questions underneath.



(i)



(ii)

a) Identify the above illustrations **(1 mark)**

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b) Name the parts labelled a,b,c and d **(2 marks)**

a) …… **c) ……..**

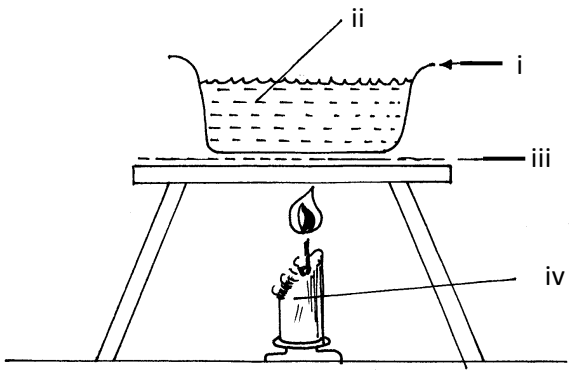
b)…… **d)……..**

c) Name two other methods of vegetative propagation in each case give an example of a crop propagated using the method. **(2 marks)**

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19. The diagram below shows a set up of apparatus for finding the percentage of humus contents in a soil by ignition.



a) Label the apparatus **(2 marks)**

i) ……..

ii) …….

iii)……..

iv) …….

b) Outline the steps followed in carrying out the illustrated experiment. **(3 marks)**

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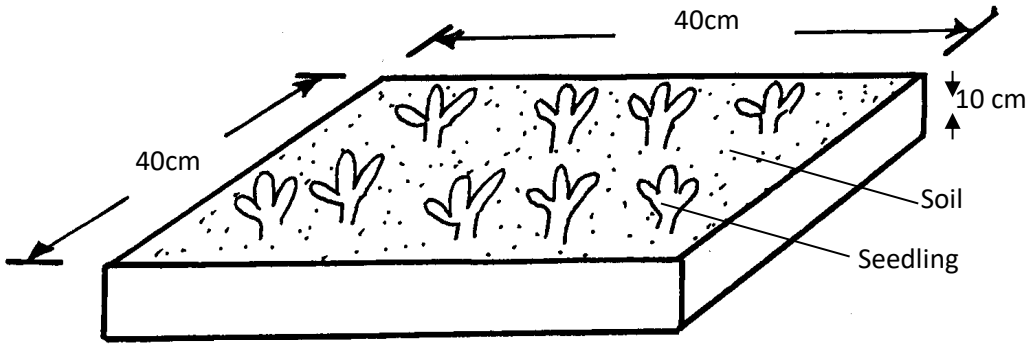
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20. Observe the following diagrams and answer the questions that follow.



a) i. Name the type of structure above used to prepare seedlings. **(1 mark)**

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ii. State **three** advantages of this method of preparing seedlings. **(1 $^{1}/_{3}$ marks)**

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b)i. After sowing seeds give two practices carried out before seedling germinate. **(1 mark)**

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ii. Give **three** management practices that should be carried out to increase the survival of seedling in the seedbed before transplanting. **(1 ½ marks)**

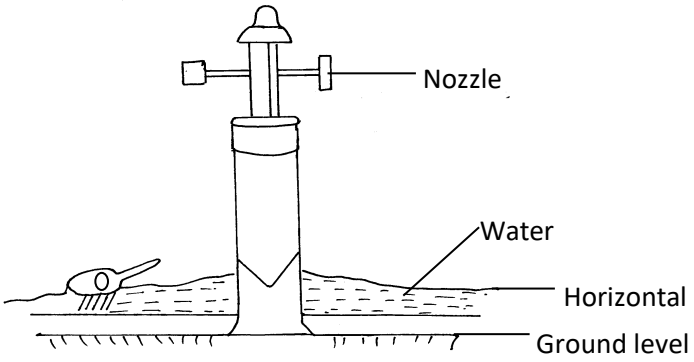
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21. Study the diagram below and answer the questions that follow.



a) Name the method of irrigation illustrated above. **(½ mark)**

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b) State **two** advantages of this method of irrigation. **(1 mark)**

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c) State **three** problems encountered by farmers using this method of irrigation **(1 ½ marks)**

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d) Give **four** factors which determine the choice of the method named in (a) above. **(2 marks)**

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SECTION C (40 MARKS)

Answer any two questions in this section in the spaces provided after question 24.

22.a) Describe field production of tomatoes under the following sub-headings.

i) Ecological requirements **(5 marks)**

ii) Land preparations **(4 marks)**

iii) Transplanting **(7 marks)**

iv) Disease control **(4 marks)**

23.a) Outline the factors a farmer would consider before selecting a farm enterprise to undertake. **(10 mrks)**

b) The farm manager of Kilimo farm made the following purchases in December 2004.

-Seeds and fertilizers 2,500/=
-disc plough 80,000/=
-Fuel 5,000/=
-Poultry feeds 4,500/= and
-Cattle drugs 2,000

During the year the farm sold maize to Njoro girls for 20,000; milk processor for Shs. 40,000. Kilimo farm also expected Shs. 8,000 from a prominent neighbouring farmer for ploughing the land. The opening valuation was Shs. 50,000 and closing valuation Shs. 80,000.

Using the information provided above, prepare Profit and Loss account for Kilimo farm.**(10 mrks)**

24.a) Discuss factors that should be put into consideration while choosing suitable implements for primary cultivation. **(10 marks)**

b) Describe how you would establish grass pasture seeds on land that is already ploughed using a Mouldboard plough, up to when the pasture is ready for grazing. **(10 marks)**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

AGRICULTURE

443/2

PAPER 2

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES:

- *Write your **name** and **index number** in the spaces provided.*
- ***Sign** and **write the date** of examination in the spaces provided*
- *This paper consists of three section **A,B** and **C***
- *Answer all questions in section **B** and **C***
- *Answer any two questions in section **C***
- *All the questions should answered in the spaces provided*

FOR EXAMINERS USE ONLY

SECTION	QUESTIONS	MAX SCORE	CANDIDATES SCORE
A	1-13	30	
B	14-17	20	
C	18-20	20	
		20	
TOTAL SCORE		90	

1. (a) Name the causative organisms of pneumonia in calves **(1mks)**

……

(b) State **two** symptoms of pneumonia in calves **(2mks)**

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(c) Give **two** ways of controlling pneumonia in calves **(2mks)**

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2. (a) Which tool will be required for the following farm operations?

(i) Cutting wool sheep **(1mk)**

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(ii) Castrating piglets **(1mk)**

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(b) Give **four** reasons why feeding of colostrums is important in rearing of piglets. **(2mks)**

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3. Give **three** conditions under which a famer may prefer to use an Ox-cart instead of a tractor drawn trailer? **(3mks)**

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4. Give four factors that should be considered when siting a beehive in a farm **(2mks)**

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5. State **four** management practices that would ensure maximum harvest of fishing from fishpond **(2mks)**

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6. Give **two** predisposing factors to foot-rot diseases in sheep **(2mks)**

……

……

7. What is the intermediate host for liver fluke? **(1mk)**

……

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8. Give **two** causes of soft shells in eggs **(1mk)**

……

……

9. List **four** factors associated to the animal that determines the amount of feed animals consumed **(2mks)**

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10.Give **four** reasons why young rams should be docked. **(2mks)**

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11.List **four** cattle diseases caused by virus **(2mks)**

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12. State any **two** disadvantages that may arise from in breeding in livestock production **(2mks)**

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13. Give **two** signs that would show that a doe is just about to give birth **(2mks)**

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SECTION B (20MARKS)

Answer ALL the questions in this section in the spaces provided

21. The diagram **below** represents conditions of a tractor tyre.



E **F** **G**

(a) Which diagram represents the correct pressure in a tractor tyre? **(1 mark)**

……

(b) Identify the mistakes with the other two tyres. **(2 marks)**

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(c) Give the correct measures taken for each tyre mentioned in **(b) above**. **(2 marks)**

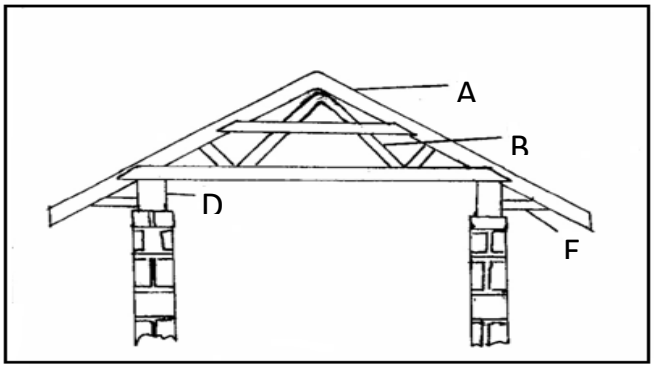
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22. Study the diagram **below** of a farm structure.



(a) Identify the structure **above**. **(1 mark)**

……

(b) Name the parts labeled. **(4 marks)**

A .....

B .....

E .....

D .....

23. Study the tools **below** and answer the questions **below**.



W **X** **Y**

(a) Identify the tools. **(3 marks)**

W .....

X .....

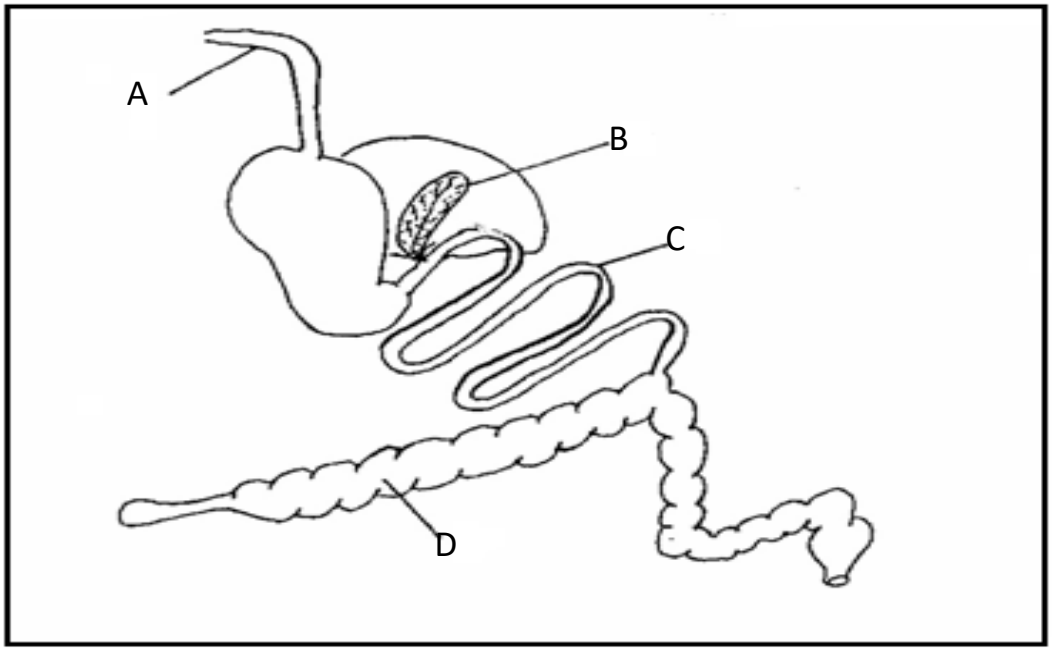
Z .....

(b) What are the functions of tools? **(2 marks)**

Z .....

X .....

24. Study the diagram **below** then answer the questions that follow.



(i) Name **one** farm animal which has the above digestive system. **(1 mark)**

……

(ii) Label the following parts. **(2 marks)**

A .....

B .....

(iii) Give the functions of each of the parts named **(2 marks)**

C .....

D .....

SECTION C

Answer any TWO questions in this section in the spaces provided

25. (a) Give the differences between a petrol and a diesel engine **(10mks)**

(b) Describe the daily maintenance of a tractor **(10mks)**

26. (a) What are disease predisposing factors? **(2mks)**

(b) State **five** disease predisposing factors in livestock **(5mks)**

(c)State **five** predisposing factors of mastitis in dairy cattle **(5mks)**

(d) Explain any **four** general methods of disease control in livestock **(8mks)**

27. Discuss the management of layers from day old up to point of lay in a deep litter system. **(20mks)**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

BUSINESS STUDIES

565/1

PAPER 1

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

1. *Write your name and index number in the spaces provided above*
2. *Write the date of examination and sign in the spaces provided above*
3. *Answer all the questions*
4. *All answers should be written in the spaces provided*
5. *Candidates should ensure that no questions are missing*
6. *Candidates should answer the questions in English.*

For examiners use only

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Marks																						

Question	23	24	25
Marks			

TOTAL MARKS

1. Outline **four** causes of business failure **(4 marks)**

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2. Outline **four** circumstances under which goods can be transported using containers **(4marks)**

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3. Highlight **four** characteristics of money **(4marks)**

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4. State the type of product market described below **(4 marks)**

a**. Buyers and sellers have perfect knowledge of the market**

……

b. Only one seller in the industry

……..

c. Many sellers dealing with differentiated products which are close substitutes

……..

d. Few sellers and many buyers

……..

5. Mention **four** characteristics of a good filing system **(4 marks)**

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6. Highlight **three** uses of ledger accounts **(3 marks)**

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7. State the term given to each of the following statements as used in business studies **(4marks)**

Statement. **Term**

a. **Movement of goods and services from the producer to consumer…….**

b. Creation of goods and services.…….

c. Using a good or service ……

d. Satisfaction derived from using a good or service ……

8. Highlight four circumstances under which a partnership may be dissolved. **(4 marks)**

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9. Taxation is the main source of public revenue. Highlight **four** demerits of taxation **(4 marks)**

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10 .The following information was extracted from the books of Wembe traders **(5 marks)**

Capital Ksh. 1,119,300

Long term liabilities Ksh. 1,807,000

Current Liabilities. Ksh 978,700

Determine Wembe traders rate of return on capital employed if the business made a net profit of Ksh. 438,945

11. Outline four channels of distribution of imported sugar **(4marks}**

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12. Miundo Academy's bus was involved in an accident. Highlight **five** steps the school should take while claiming for compensation **(5marks)**

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13. State **four** characteristics of capital as a factor of production. **(4marks)**

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14. Highlight **four** types of demand of a commodity. **(4 marks)**

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15. Sacco's have become very popular in Kenya today. Outline **four** reasons behind their popularity **(4 marks)**

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16. Outline **four** advantages of open office layout. **(4 marks)**

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17. The following information relates to Nyandarua stores as at 31/12/2023

Cash sh. 70,000

Creditors sh. 22,000

Bank overdraft sh. 5000

Furniture and fittings sh. 105,000

Premises sh. 50,000

Cash at bank sh. 33 000

AFC loan Sh. 120,000

Prepare a balance sheet as at 31/12/2023 **(5 marks)**

18. State the level of production that matches the following occupations

Occupation Level of production

a. Carpentry ..**…… ……**

b. Lumbering ……

c. Fishing ……

d. Banking ……

19. Outline **four** methods of government involvement in business. **(4 marks)**

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20. Outline three causes of unemployment in Kenya **(3marks)**

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21. State **four** classification of goods produced in an economy **(4 marks)**

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22. State **three** motives that would make a person retain part of his wealth in cash **(3marks)**

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23. State **four** sources of a business idea. **(4 marks)**

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……

24. State the account to be debited and credited from the following transactions **(4 marks)**

Transaction.	Debit.	Credit
a. Bought a motor van in cash sh. 700,000	…….	……..
b. Paid Maina by cheque sh. 6,000	……	……..
c. Converted his house to a business premises	…….	……..
d. Took sh. 7,000 from the bank for business use	……	……..

25. Highlight four internal diseconomies of scale to a firm as a result of expansion. **(4 marks)**

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KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

BUSINESS STUDIES

565/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

a) Write your name and index number in the spaces provided above.

b) Write the date of examination and sign in the spaces provided above.

*c) This paper consists of **6** questions.*

*d) Answer **any five** questions.*

e) All questions carry equal marks.

FOR EXAMINER'S USE ONLY

Question	Maximum score	Candidate's score
	20	
	20	
	20	
	20	
	20	
	20	
	Total score	

1. a) Explain **five** factors that may promote entrepreneurship in Kenya. **(10 Marks)**

b) There has been a decline in demand for leather jackets, explain **five** factors that may have caused this. **(10 Marks)**

2. a) Explain **five** positive effects of inflation to the economy. **(10 Marks)**

b) Explain **five** causes of balance of payments disequilibrium. **(10 Marks)**

3. a) Explain **five** benefits that a private limited company may enjoy by changing to a public limited company. **(10 Marks**)

b) Explain the functions of the following documents as used in home trade **(10 Marks)**

i). Invoice
ii). Debit note
iii). Credit note
iv). Receipt
v). Statement of account

4. a) The following trial balance relates to XYZ ltd.

XYZ limited
Trial Balance
As at 31st Dec. 2013.

Details	Dr	CR
	Kshs	Kshs
Capital		800,000
Opening stock	200,000	
Purchases	680,000	
Returns	50,000	80,000
Discount	80,000	45,000
Carriage inwards	42,000	
Debtors and creditors	200,000	105,000
Sales		1,200,000
Motor vehicles	750,000	
Furniture and fittings	250,000	
Rent	50,000	60,000
Bank overdraft		42,000
Carriage outwards	30,000	

Additional information:
Closing stock was valued at shs. 80,000

Required:

Prepare XYZ limited Trading, profit and loss account **(10 Marks)**

b) Explain any **five** sources of public finance **(10 Marks)**

5. a) Describe **five** types of advertising techniques used in product promotion. **(10 Marks)**

b) Explain **five** advantages of a bonded warehouse to the importer. **(10 Marks)**

6. a) Describe **five** government-initiated methods that help in the protection of consumers from exploitation by dishonest traders **(10 Marks)**

b) The following opening balances were extracted from the books of Masinga Traders on 1st May 2023

Details	**sh**
Furniture	56,000
Capital	80,000
Creditors	20,000
Debtors	25,000
Bank	11,000
Cash	8,000

The following transactions took place in the course of the month:

- Paid a creditor sh 4,500 in cash
- Took sh 3,000 from the bank for family use
- Bought stock sh 18,600 on credit
- Acquired a 10 year bank loan sh 165,000 which was credited to the business bank account
- Purchased land worth sh 82,000 paying by cheque
- Converted a family table worth sh 55000 to business use
- Received sh 7,300 in cash from debtor.

Required: Prepare Masinga Traders Balance sheet at the end May 2023. **(10 Marks)**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

BIOLOGY

231/1

PAPER 1 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

Instructions to Candidates

a) *Write your name and Admission number in the spaces provided above.*

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

c) *Answer **ALL** the questions in the spaces provided below each question.*

d) This paper consists of 30 questions only.

*e) Answer **all** the questions in the spaces provided.*

f) *All working **MUST** be clearly shown where necessary.*

For Examiner's Use Only

Questions	Max. Score	Candidate's Score
1 – 30	80	

1. How does growth as a characteristic of living organisms differ in plants and animals? **(2marks)**

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2. (a) State **two** roles of active transport in animals **(2 mark)**

……

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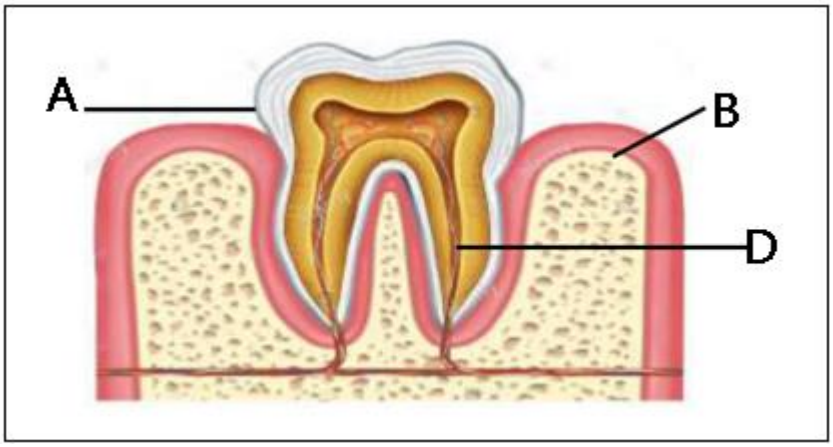
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b) Cyanide lowers the rate of active transport. Explain? **(1mark)**

……

……

3. The figure below is a diagram of a vertical section of a mammalian tooth.



Name the parts labelled **A** and **B**. **(2 marks**

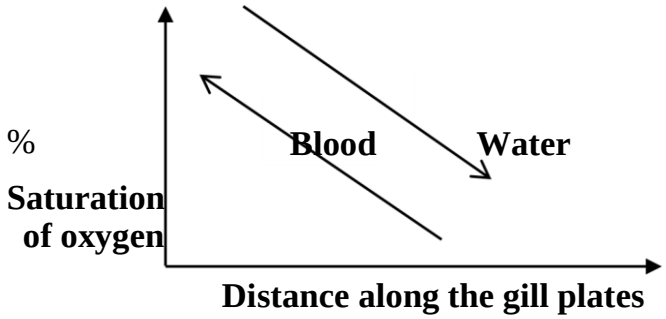
(ii) State **0NE** way in which structure **D** is adapted to its functions. **(1mark)**

……

……

……

4. The figure below shows % saturation of oxygen in blood in fish as water passes along the gill plate.



(a) (i) Name the type of blood flow shown in the gill plate. **(1mark**

……

……

(ii) Explain the advantage of the type of flow named in a (i) above. **(2marks)**

……

……

……

(b) State organs in humans which display the type of flow named in a (i) above. **(1mark)**

……

5. The equation below shows an oxidation reaction of food substances.

$$C_{51}H_{98}O_6 + 145O_2 \longrightarrow 102\ CO_2 + 98\ H_2O + \text{energy}$$

a) What do you understand by the term respiratory quotient? **(1mark)**

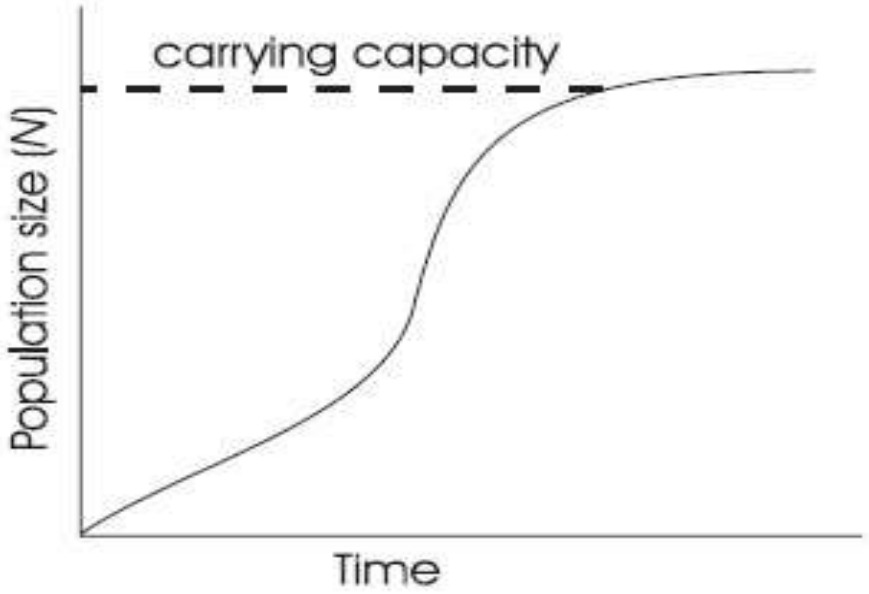
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b) Determine respiratory quotient of the oxidation of food substance. **(2marks)**

c) Identify the food substance. **(1mark)**

6. When any one of the growth parameters such as growth in size or weight, increase in number of cells are plotted in a graph against time like below, a clear curve is obtained.



State its name**.** **(1mark**

7. The embryo of a dry, fully developed seed usually passes through a period of rest after ripening period and it cannot germinate even when provided with all favorable conditions. State the significance of this. **(2marks)**

……

……

……

8. a) Cowpeas seeds were place in a vacuum flask and left for five days. What is the expected change in composition of gases in the flask on the sixth day? **(1mark)**

……

……

b) Give a reason for your answer in (a) above **(1mark)**

……

……

9. Biotechnologist works day and night to curb food insecurity using the knowledge of polyploidy in genetics. Explain the economic importance of such practice? **(2marks)**

……

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……

b) Define a backcross? **(1 mark)**

……

……

10. The structure below was obtained from an animal cell



a) What is the name of the hair like structure and state its function? **(2marks)**

……

……

……

b) From which parts of the mammalian body are these structures found? **(1mark)**

……

11. A student was found to have blood group B+.

a) What type of antibody is present in his plasma? **(1mark)**

b) Which antigens are present in this blood group? **(1mark)**

12. Plants relatively have less waste to excrete than animals. Give **ONE** reasons to explain this observation, **(1marks)**

……

……

13. State **TWO** methods by which plants get rid of their waste products. **(2marks)**

……

……

14. To estimate the population size of mosquitoes in **Banji** village that covers an area of 25km^2, visiting researchers caught 400 mosquitoes which they marked and released. After 24 hours, 200 mosquitoes were caught out of which 120 had not been marked.

a) Suggest the sampling method described above. **(1 mark**

b) What are the disadvantages of this method? **(2 marks**

15. The table below shows stomatal distribution on leaves A and B and their surface area. Use the information to answer the questions.

	Leaf surface	**A**	**B**
Number of stomata	Upper leaf	20	5
	Lower leaf	0	15
Surface area		25 cm^2	18cm^2

Identify with reasons the habitats of the plant from which the leaves were obtained.

Leaf A Habitat: **(1 mark**

Reason; (**1 mark**)

Leaf B Habitat: (**1 mark**

Reason: (**1 mark**)

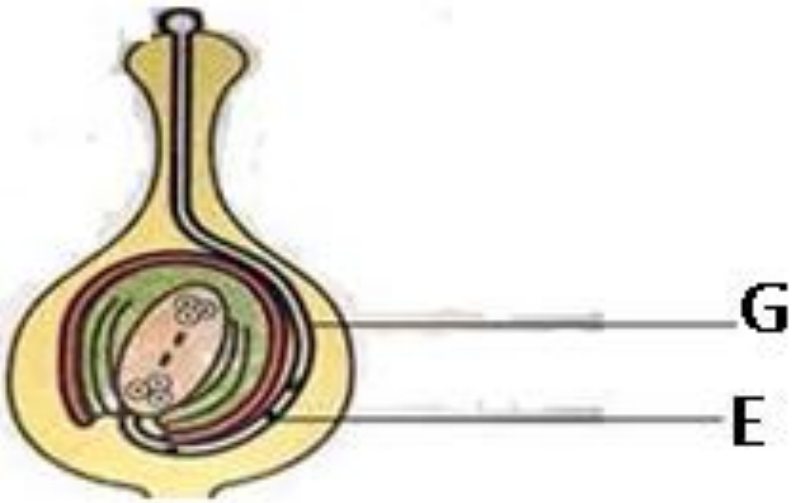
16. Name the causative agent of the following diseases. **(2 marks)**

(i) Trichomoniasis.

(ii) Gonorrhea.

17. The diagram below shows a pollen tube as it develops down the style.

Use it to answer the questions that follow;



(i)Name the part labelled **G**. **(1 mark)**

(ii)State ***two*** functions of part labelled **E**. **(2 marks)**

……

……

18. (a). Define parthenocarpy. **(1 mark)**

……

……

(b)Name the plant hormone that induces fruit ripening. **(1 mark)**

……

19. A group of Form Three students collected a certain specimen for study as shown below. Study it carefully and use it to answer the questions that follow.



(i)Name the type of metamorphosis that the above specimen undergoes. **(1 mark)**

……

(ii)Give any **two** advantages of the above metamorphosis. **(2 marks)**

……

……

20. (i).Give **two** structural features in a leaf that adapts it to absorb Carbon (IV) Oxide. **(2 marks)**

……

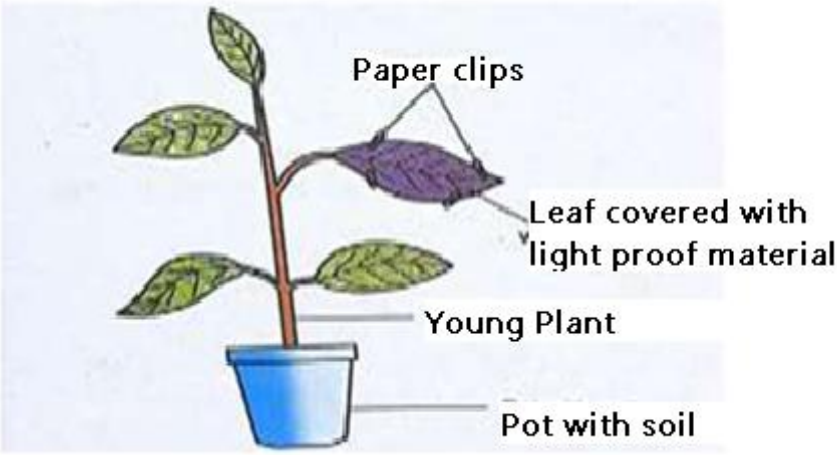
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(ii)Name the cell organelle in which Carbon (IV) oxide combines with water to form a complex organic compound takes place. **(1 mark)**

……

21. In an experiment to investigate a factor affecting photosynthesis; leaf of a potted plant, which had been kept in the dark overnight was covered with an aluminum foil as shown in the diagram below. The set up was kept in the sunlight for three hours after which food test was carried out.



a) Which factor was being investigated in the experiment? **(1 mark)**

(b) Which food test was carried out? **(1 mark)**

c) State the results of the food test. **1 mark)**

22. Explain how the following plant adaptations minimizes rate of transpiration. **(2marks)**

a) Sunken stomata.

……

……

b) Thick cuticle.

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23. Explain how drooping of leaves on a hot sunny day is advantageous to a plant. **(2marks)**

……

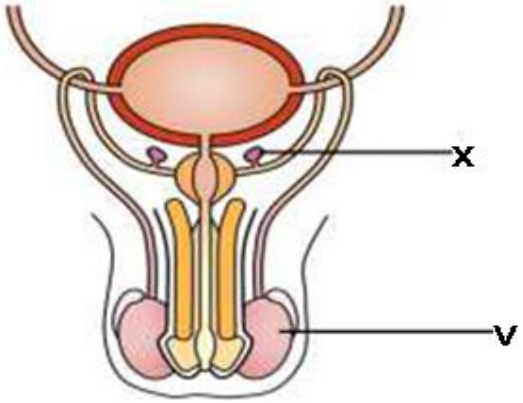
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24. Name **two** tissues in plants which are thickened with lignin. **(2marks)**

……

25. The diagram below shows the front view of a male reproductive system.



a) Give the functions of the structures labelled **X** and **V.** **(2marks)**

……

……

b) What is the role of Follicle Stimulating Hormone in male reproduction? **(1mark)**

……

26. How do the following factors hinder self-pollination in flowering plants? **(3marks)**

a) Self-sterility.

……

……

b) Heterostyly.

……

……

c) Protogyny.

……

……

27. The table below shows the concentration in parts per million of sodium and iodide ions in sea water and cell sap of a plant.

	Sodium ions concentration	**Iodide ions concentration**
Sea water	326	39
Cell sap	162	574

a) i) Which of the two ions intake will be affected if the plant was sprayed with a chemical that inhibits respiration. **(1mark)**

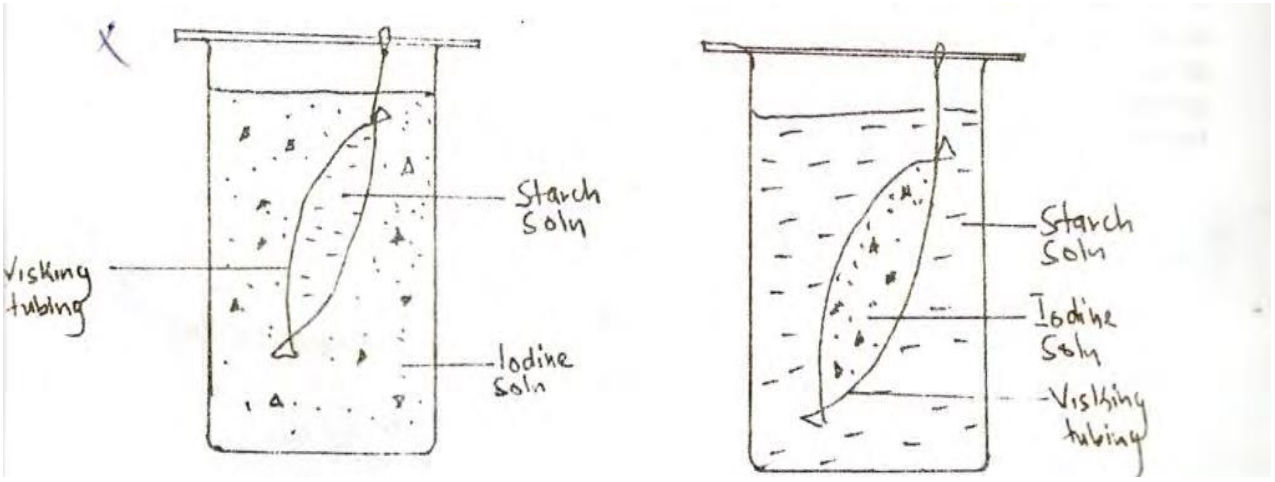
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ii) Explain your answer in 27(a) (i) above. **(1mark)**

……

……

b) An experiment was set up as shown in the diagram below.



At the end of the experiment, it was observed that the starch turned blue black while the color of iodine solution in the beaker did not change. Account for this observation. **(2 marks)**

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28. State the role of the following organelles: **(3 marks)**

a)Ribosomes.

b) Chloroplast.

c) Nucleus

29. A process that occurs in plants is represented by the equation below.

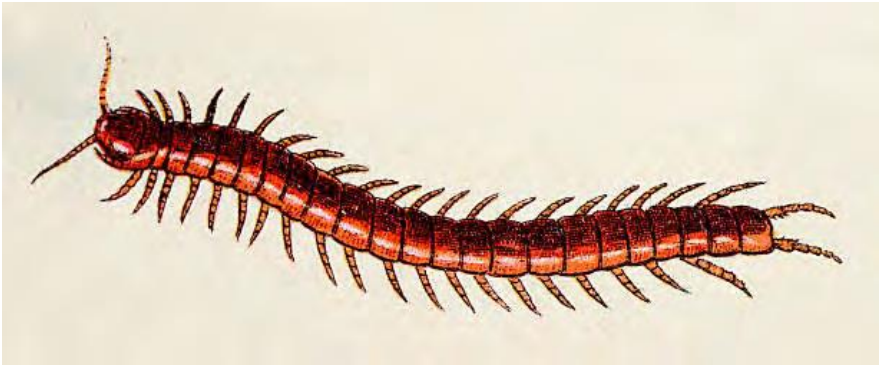
$C_6H_{12}O_6 \xrightarrow{} 2C_2H_5OH + 2CO_2 + Energy$

(Glucose (Ethanol (Carbon dioxide)

a) Name the process. **(1 marks)**

b) State **two** economic importance of the process named in (a) above. **(2 marks)**

30. Below is a diagram of an organism.



a) Identify the Class to which the organism belongs. **(1 mark)**

……

b) State **two** features shown on the diagram that are characteristics of this Class. **(2 mk**

……

……

……

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

BIOLOGY

231/2

PAPER 2 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES:

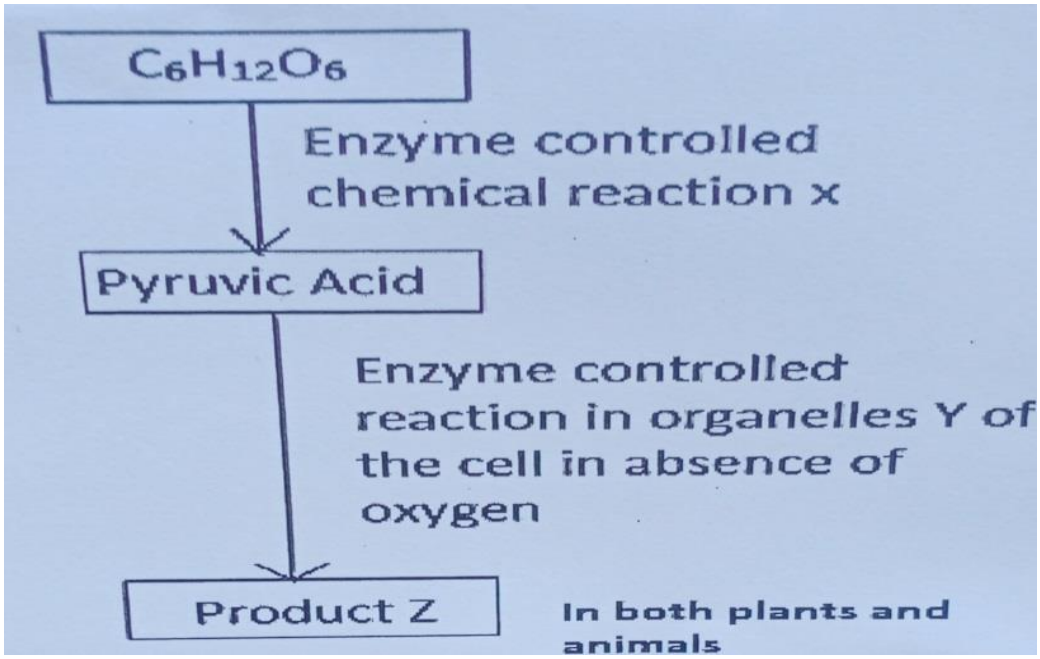
- *Write your name and index number in the spaces provided above.*
- *This paper consists of two sections; A and B.*
- *Answer ALL the questions in section A in the spaces provided.*
- *In section B, answer questions 6 (compulsory) and either questions 7 or 8 in the spaces provided after question 8.*

For Examiner's use only

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE SCORE
A	1	8	
	2	8	
	3	8	
	4	8	
B	5	8	
	6	20	
	7	20	
	8	20	
	TOTAL SCORE	80	

SECTION A(40 MARKS)

1. Study the flow chart below of a process that takes place in both plants and animals;



a) Name the above process. **(1mk)**

……

b) (i) In the above process name the chemical reaction represented **by X.** **(1mk)**

……

(ii)Name the part of the cell where the enzyme controlled reactions in b(i) above takes place. **(1mk)**

……

c) Name the product Z in:

i) Plants **(1mk)**

ii) Animals **(1mk)**

d) What would be the fate of pyruvic Acid if oxygen supply is availed in the mitochondria of an animal cell**.** **(2mks)**

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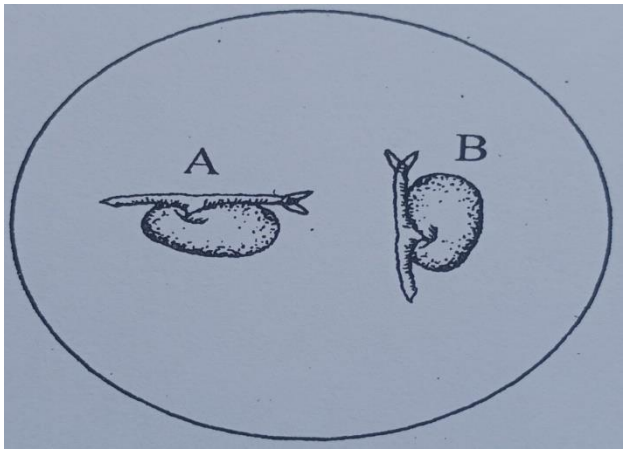
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e) What is meant by the term oxygen debt. **(1mk)**

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2. A student set up an experiment as shown in the diagram below to investigate a certain phenomenon. The petri dish contained moist cotton wool. The set up was placed in darkness and left for 24 hours.



a) What is the aim of the experiment**.** **(1mk)**

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b) State the expected results after 24 hours. **(2mks)**

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c) Account for the results you have stated in (b) above**.** **(5mks)**

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3. (a) Give an example of vestigial structure in humans. **(1mk)**

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(b) State three evidences of organic evolution**.** **(3mks)**

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(c) The peppered moth (Biston betularia) exists in many parts of England. It normally rests on barks of trees. It exists in two major forms; a normal or wild type which is speckled white and mutant variety which is darker (melanic form). Before industrialization almost all the peppered moth in England were of white variety. After 1840s the population of the melanic form increased rapidly especially around the industrial cities. The white form dominated in the rural (non-polluted) areas.

i) Discuss why the lighter (non melanic) form was dominant in rural (non-pollued) areas. **(1mk)**

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ii) What factors could have led to the differences in population size of the two variety in the two areas**.** **(2mks)**

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(d) Distinguish between homologous and analogous structures**.** **(2mks)**

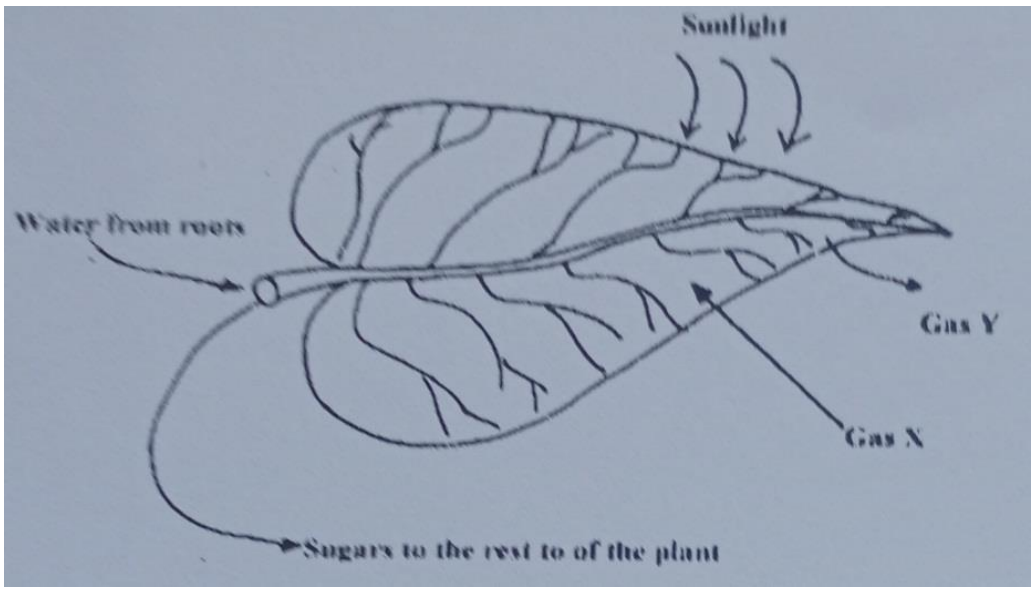
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4. The following diagram of a leaf shows what happens in a plant leaf during photosynthesis;



a) Name the gases labeled **X and Y** **(2mks)**

X

Y

b) Give two ways in which leaves are adapted to absorb light. **(2mks)**

……

……

……

c) Name the tissue that transports water into the leaf and sugars out of the leaf**.** **(2mks)**

……

……

d) Explain why it's an advantage for the plant to store carbohydrates as starch rather than as sugars.

(2mks)

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……

5. (a) What are sex linked genes**.** **(1mk)**

……

……

(b) A normal woman and a haemophiliac man have a family. Using a punnet square and letter H for normal blood clotting, determine the possible phenotypes of their offsprings**.** **(5mks)**

(c) Other than haemophilia give two examples of sex-linked traits. **(2mks)**

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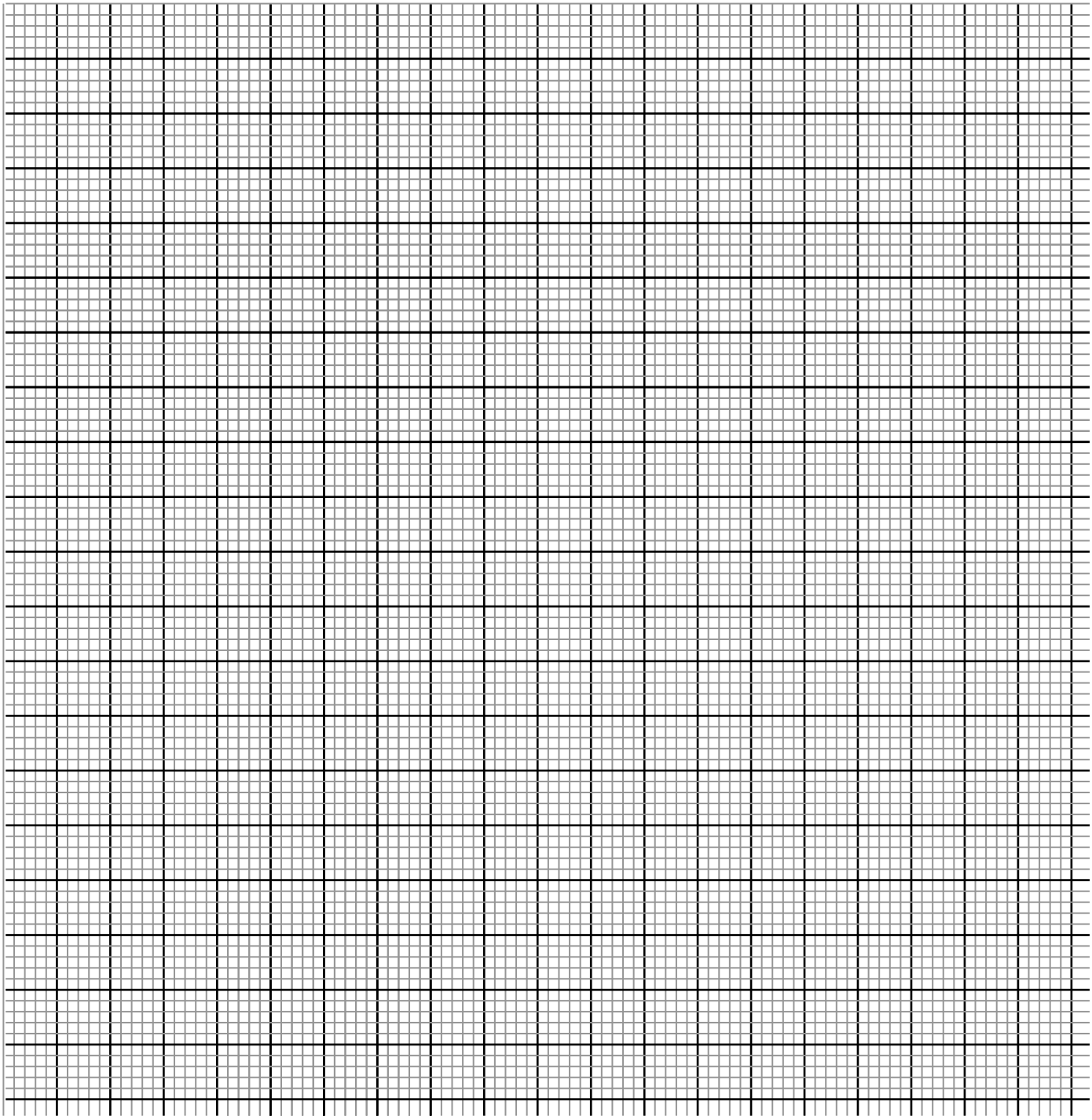
SECTION B:

Answer question 6 (compulsory and either question 7 or 8 in the spaces provided

6. Two person X and Y drunk volumes of concentrated solution of glucose. The amount of glucose in their blood was determined at intervals. The results are shown in the table below;

Time (minutes)	**Glucose level in blood (Mg/100cm^3)**	
	X	**Y**
0	87	84
15	112	123
30	139	170
45	116	188
60	100	208
90	95	202
120	92	144
150	88	123

a) On the grid provided, plot, graphs of glucose level in blood against time on the same axes. **(7mks)**



b) What was the concentration of glucose in the blood of X and Y at the 20th minute**.** **(2mks)**

……

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……

c) Suggest why the glucose level in the person X stopped rising after 30 minutes while it continued rising in person Y. **(3mks)**

……

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……

d) Account for the decrease in glucose level in person X after 30 minutes and person Y after 60 minutes**.** **(3mks)**

……

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……

e) Name the compound that stores energy released during oxidation of glucose. **(1mk)**

……

f) Explain what happens to excess amino acids**.** **(4mks)**

……

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……

7. (a) Describe how gaseous exchange takes place in terrestrial plant. **(10mks)**

(b) Describe the mechanism of gaseous exchange in a mammal. **(10mks)**

8. Explain how abiotic factors affect plant**.** **(20mks)**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

BIOLOGY

231/3

PAPER 3 (PRACTICAL)

TIME: 1¾ HOURS

SCHOOL…… SIGN……

Kenya Certificate of Secondary Education.

BIOLOGY CONFIDENTIAL

Each candidate will require the following:

3 bean seedlings as follows:

One grown under normal conditions labelled **A**

One grown in the dark labelled **B**

One grown in the dark with unilateral source of light labelled **C**

NB:

The curvature of the seedling **C** towards source of light should be obvious.

Germination time 10 – 14 days.

✓ Iodine solution

✓ White tile

✓ Dropper

✓ 2 test-tube

✓ Mortar & pestle

✓ 2 labels

Coloured photographs

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

BIOLOGY

231/3

PAPER 3 (PRACTICAL)

TIME: 1¾ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

1. *Write your name, class and admission number in the spaces provided above.*
2. *Sign and write the date of the examination in the spaces provided.*
3. *Answer all questions in the spaces provided.*
4. *You are required to spend the first 15 minutes of the 1 ¾ hours allowed for this paper reading the whole paper carefully before commencing your work.*
5. *Additional pages must not be inserted.*

FOR EXAMINERS USE ONLY

Section	Maximum Marks	Candidate Score
1	13	
2	16	
3	11	
TOTAL SCORE	**40**	

For Marking Schemes Contact 0746 222 000 / 0742 999 000

1. You are provided with three sets of seedlings labelled A, B and C.

Examine them and answer the questions that follow:

(a) State the conditions under which seedling A and B were grown. **(2marks)**

A ……

B……

(b) (i) Name the type of germination exhibited by the seedlings. **(1mark)**

……

(ii) Give a reason for your answer in b (i) above. **(1mark)**

……

……

……

(c) List two observable differences between seedlings A and B. **(2marks)**

A	**B**

(d) Name the term used to describe the phenomenon exhibited by specimen **B** **(1mark)**

……

(e) (i) Name the response exhibited by the seedlings labelled **C**. **(1mark)**

……

(ii) Explain how the response named in (e) (i) above occurred. **(2mrks)**

……

……

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……

(f) Separately, pluck, cut and crush the leaves from seedling **A** and **B.**

Place the crushed extract into separate test-tubes labelled $\mathbf{A_1}$ and $\mathbf{B_2}$.

Add 2ml of water to form solutions A_1 and B_1 respectively.

(i) Using the reagent provided, carry out food test on $\mathbf{A_1}$ and $\mathbf{B_1}$. **(4 marks)**

Test for	**Procedure**	**Observation**	**Conclusion**

(ii) Account for the results obtained (f) (i) above. **(2marks)**

……

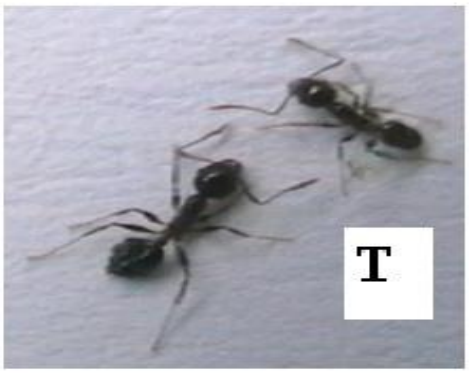
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2. Below are photographs of animals labeled R and T. Study them carefully and answer the questions that follow.





a)

i) Name the phylum to which the animal in photograph **R** belongs**.** **(1 mark)**

……

ii). List **three** characteristics found in members belonging to the phylum of specimen **R** only.

(3 marks)

……

……

……

iii). Which class does the animal in photograph **R** belong. **(1mark)**

……

……

b).Using observable features only, state three differences between animals in photograph **R** and **T**

(3marks)

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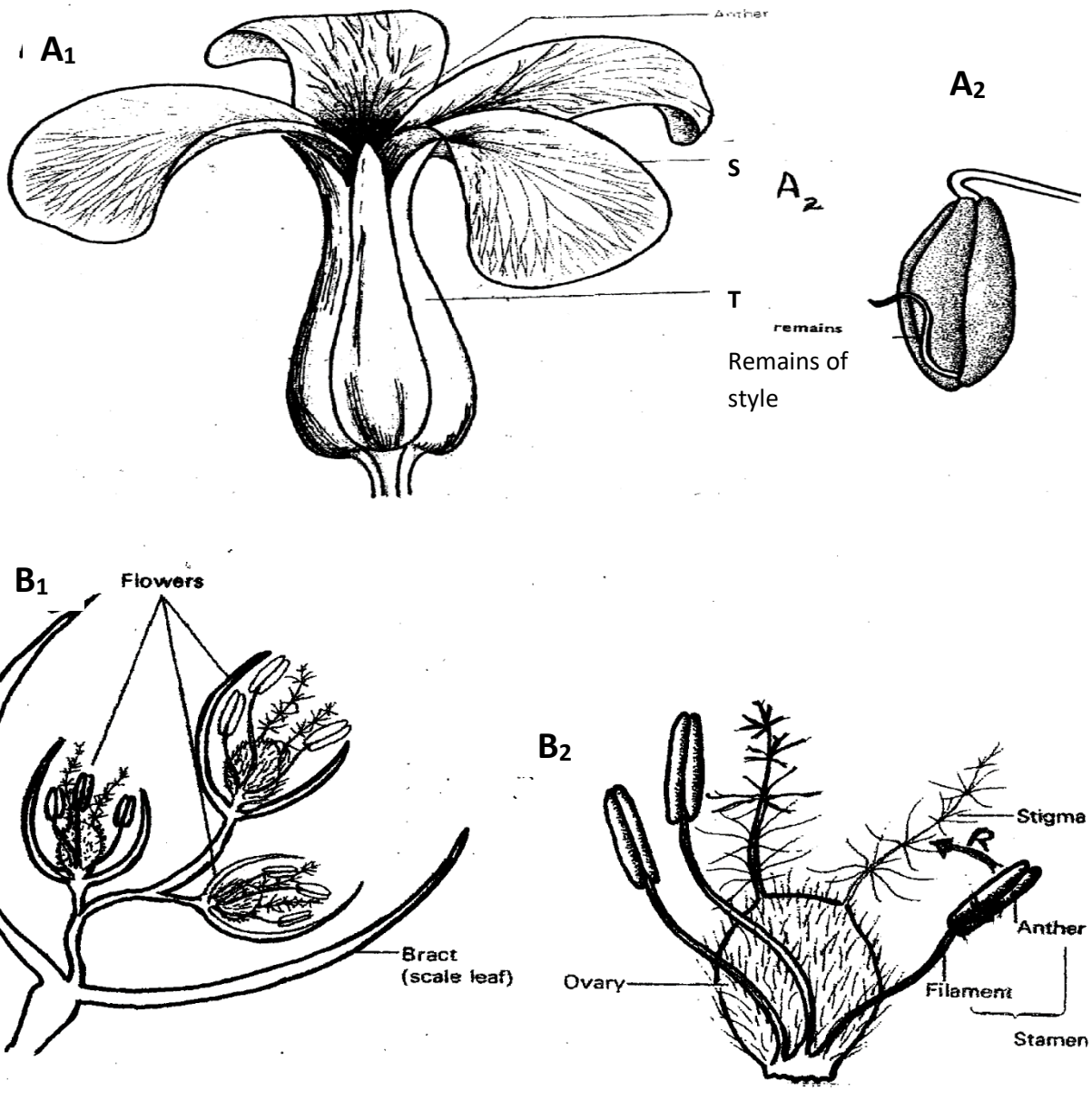
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c).On the photograph **T** name the parts labeled **2** and **3.** **(2 marks)**

……

……

3. Study the photographs below and use them to answer the questions that follow;



a) Using the number of flowers arising from the shoot of each plant, state the flowers labelled $\mathbf{A_1}$ and $\mathbf{B_1}$ **(2 marks)**

……

……

……

b) Name the class of the plant from which each of the flowers was obtained. Give a reason for your answer in each case **(2 marks)**

Flower	**Class**	**Reason**
A1		
B1		

c) Name the parts labelled **S** and **T** **(2 marks)**

S……

T ……

d) What type of ovary is shown in flower $\mathbf{B_1}$? Give a reason for your answer. **(2 marks)**

……

……

……

e) i) Name the agent responsible for the process represented by the arrow labelled **R** in $\mathbf{B_2}$ **(1 mark)**

……

ii) Give a reason for your answer in **e (i)** above **(1 mark)**

……

……

iii) List **two** other features (not shown in the photograph) expected of such flowers as $\mathbf{B_1}$ **(2 marks)**

……

……

……

f) (i) Name an agent that brings about a similar process as the one shown by the arrow in $\mathbf{B_2}$ for $\mathbf{A_1}$ **(1 mark)**

……

……

ii) Give a reason for your answer in **f(i)** above **(1 mark)**

……

……

g) What is the likely agent of dispersal of the specimen labelled $\mathbf{B_2}$? **(1 mark)**

……

……

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KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

CHEMISTRY

233/1

PAPER 1 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- *Write your name and index number in the spaces provided above.*
- *Sign and write the date of examination in the spaces provided above.*
- *Answer all the questions in the spaces provided.*
- *KNEC Mathematical tables and electronic calculators may be used.*
- *All working must be clearly shown where necessary.*

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1-26	80	

1(a) State the condition under which a Bunsen burner produces a non-luminous flame. **(1mk)**

……

(b)Write an equation for the reaction that takes place in a luminous flame assuming the laboratory gas is butane. **(1mk)**

……

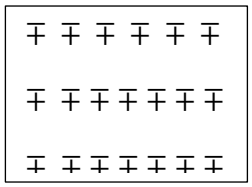
(c) One of the regions in the non-luminous flame is the unburnt gas region. Describe how the presence of this region can be shown using a piece of paper. **(1mk)**

……

……

……

2. The diagram below is a section of a model of the structure of element T.



KEY

+ Nuclear Charge

− An Electron

a) State the type of bonding that exist in T. **(1mk)**

……

b) In which group of the periodic table does element T belong? Give a reason. **(2mks)**

……

……

……

3. A radioactive isotope of lead undergoes radioactive decay in two stages as shown below:

$^{216}_{85}Pb$ (i) $\longrightarrow$ $^{212}_{83}X$ (ii) $\longrightarrow$ $^{212}_{84}Y$

(a) Identify the particle emitted at each stage. **(2mks)**

……

……

(b) State one use of radioactive isotopes. **(1mk)**

……

……

4(i) State the observations made when Hydrogen Sulphide gas is bubbled through aqueous Lead (II) Nitrate solution. **(1mk)**

……

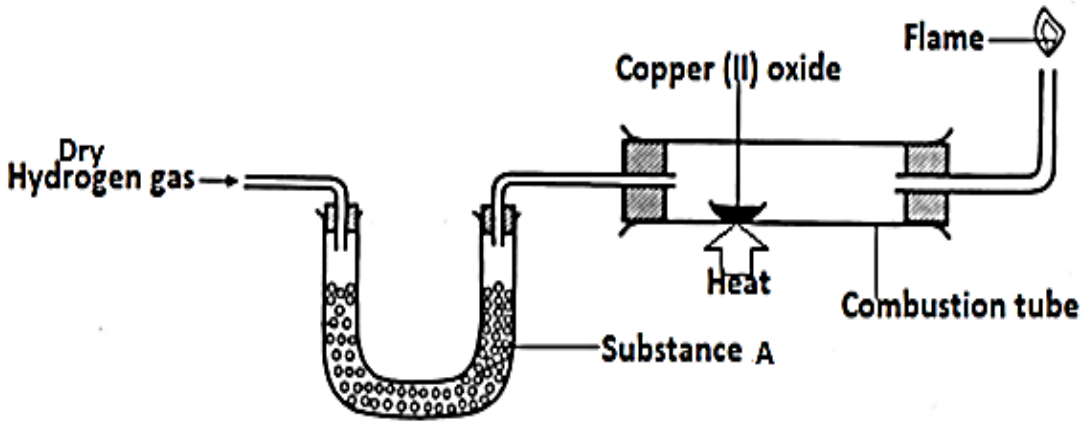
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(ii) Write an ionic equation for the reaction above. **(1mk)**

……

……

5. The set up below was used to investigate the reaction between dry hydrogen gas and Copper (II) Oxide.



(a) Name substance A. **(1mk)**

……

(b) State the observation made in the combustion tube. **(1mk)**

……

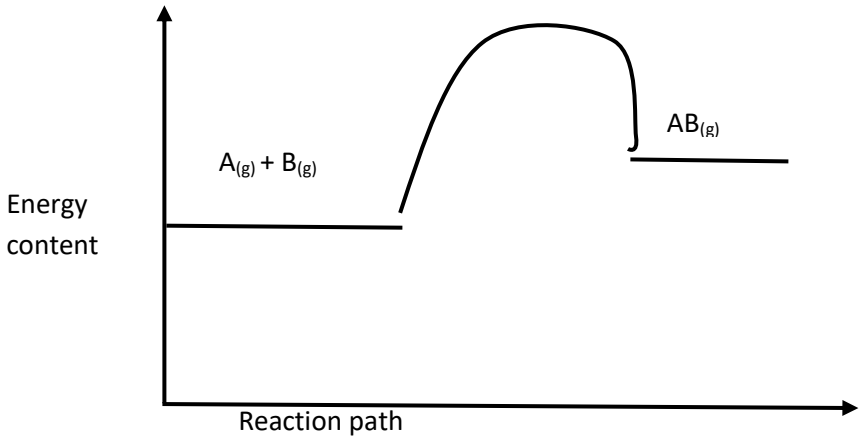
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(c) Explain the observation in (b) above. **(1mk)**

……

……

6(a) Consider the following equation. $A_{(g)} + B_{(g)} \longrightarrow AB_{(g)}$



On the same axis, sketch the graph when a catalyst is added. **(1mk)**

H H

| |

(b) Hydrazine H – N – N – H is used as a fuel in rockets. Using the bond energies in the table below. Calculate the enthalpy change for combustion of hydrazine. **(3mks)**

$N_2H_4(l) + O_2(g) \longrightarrow N_2(g) + 2H_2O(g)$

Bond	Bond energy kJ/mol
N – H	388
N – N	163
O = O	496
N ≡ N	944
O – H	463

……

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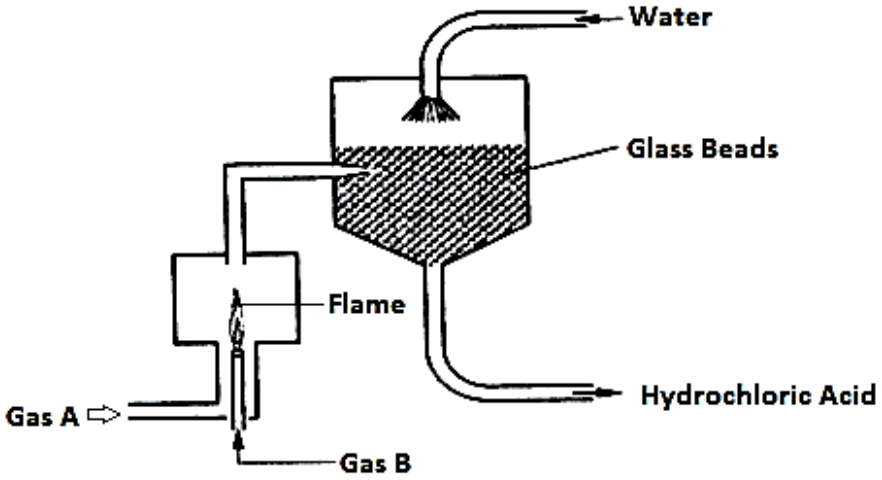
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7. The diagram below represents large scale manufacture of hydrochloric acid. Study it and answer the questions that follow:



(a) Identify

(i) Gas A **(1mk)**

……

(ii) Gas B **(1mk)**

……

(b) Write the chemical equation for the reaction between gas A and gas B. **(1mk)**

……

……

(c) State the role of glass beads in the process. **(1mk)**

……

……

8. Use the following information on substances S, T, V and Hydrogen to answer the question that follow.

(i) T displaces V from a solution containing V ions.

(ii) Hydrogen reacts with the heated oxide of S but has no effect on heated oxide of F.

a) Arrange substances S, T, V and Hydrogen in order of increasing reactivity. **(2mks)**

……

……

……

b) If T and V are divalent metals, write an ionic equation for the reaction in (i) above. **(1mk)**

……

……

9. Describe how the PH of anti-acid (Actal tablet) can be determined in the laboratory**.** **(3mks)**

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10(a)A student electroplated a spoon with copper metal. Write an equation for the reaction at the cathode. **(1mk)**

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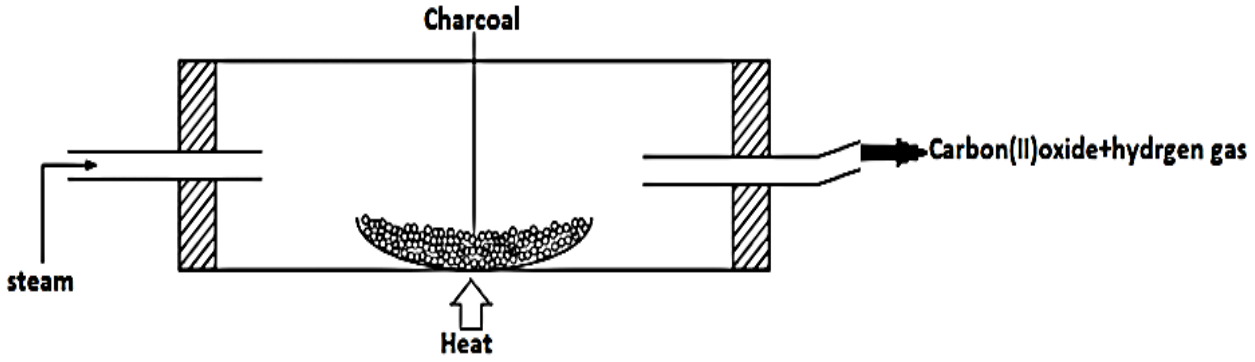
(b) Calculate the time in minutes required to deposit 1.184 grams of Copper if a current of 2A was used. (1 Faraday = 96500 coulombs, Cu = 63.5) **(2mks)**

……

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……

11. When steam was passed over heated charcoal as shown in the diagram below, hydrogen gas and Carbon (II) oxide were formed.



a) Write a balanced equation for the reaction which takes place in the combustion tube. **(1mk)**

……

……

b) Name two uses of Carbon (II) oxide gas, which are also the uses of hydrogen gas. **(2mks)**

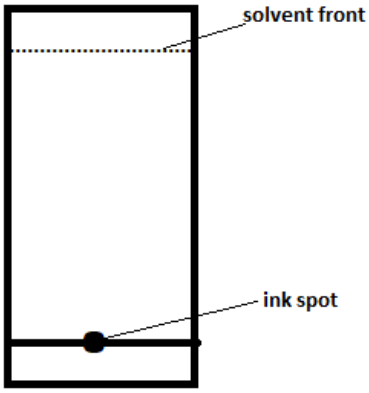
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A12. A given sample of ink is a mixture of red dye, blue dye and orange dye. The blue dye is least absorbed than the rest and the red dye is the most sticky.

a) Complete the paper chromatogram below showing their separation. **(1½mks)**



(b) The above dyes are soluble in water. Describe how a pure sample of blue dye can be obtained. **(1mk)**

……

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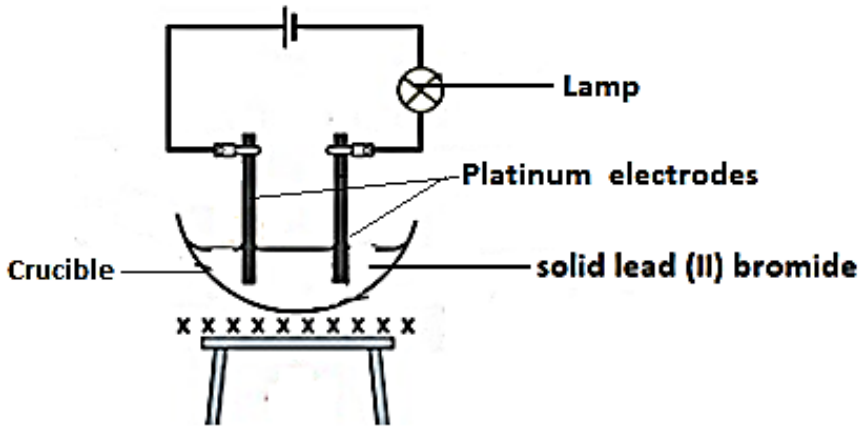
c) Name the solvent used in paper chromatography. **(½ mk)**

……

……

……

13.In an experiment to investigate the conductivity of substances, a student used the set up shown below.



The student noted that the bulb did not light.

a) What had been omitted in the set up. **(1mk)**

……

……

b) Explain why the bulb lights when the omission is corrected? **(2mks)**

……

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14.The results of an experiment to determine the solubility of potassium chlorate in water at 30^{o}C were as follows.

Mass of dish = 15.86g

Mass of dish + saturated solution at 30^{o}C = 26.8g

Mass of dish + solid potassiumchlorate after evaporation to dryness = 16.68g

Calculate the mass of saturated solution containing 60g of water at 30^{o}C. **(3mks)**

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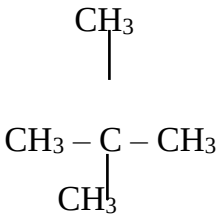
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15(a) Give the systematic names of the following compounds. **(2mks)**

(i)

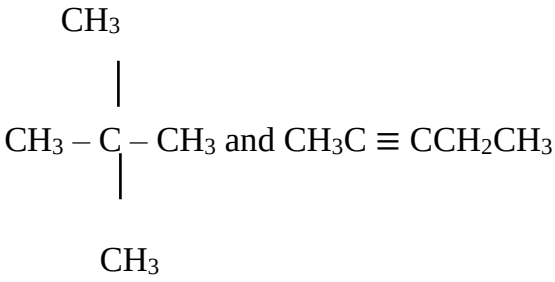


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(ii) $CH_3C \equiv CCH_2CH_3$

……

(b) Describe a chemical test that can be carried out inorder to distinguish between.

 and $CH_3C \equiv CCH_2CH_3$ **(2mks)**

……

16(a) Draw a labelled diagram showing the atomic structure of $^{23}_{11}Na$ **(2mks)**

(b) The atomic number of phosphorous is 15. Draw a dot (·) and cross (x) diagram for the compound formed when phosphorous react with chlorine. **(1mk)**

17(i) State Gay-Lussaic's Law. **(1mk)**

……

……

ii) 15cm^3 of a gaseous hydrocarbon reacted completely with 45cm^3 of Oxygen gas. 30cm^3 of carbon (IV) oxide were formed. Determine the formula of the hydrocarbon given that all volume of gases were measured under same conditions of temperature and pressure. **(2mks)**

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18. Consider the following reactions

$$N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$$

The enthalpy is -92.4kJ per mole of nitrogen.

a) Give the enthalpy change per mole of ammonia. **(1mk)**

……

……

b) State and explain how each of the following affects the yield of ammonia: .

(i) Increase in temperature. **(1mk)**

……

……

(ii) Finely divided iron. **(1mk)**

……

……

19.Excess iron was allowed to rust in cm^3 of moist air remaining was measured at 1 atmospheric pressure each day. The results were as follows.

Day	0	1	3	4	5	6	7	8
Volume (cm^3)	2000	1900	1720	1660	1620	1600	1600	1600

(i) Write an equation for the formation of rust. **(1mk)**

……

(ii) On which day was the reaction complete. Explain. **(1mk)**

……

……

(iii) What is the percentage volume of oxygen in air. Show your working. **(1mk)**

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……

20. Element P^{3+} and Q^{2-} belong to period three of the periodic table.

(i) Write the electronic arrangement of their atoms. **(2mks)**

……

……

……

ii) Write the formula of the compound formed by P and Q. **(1mk)**

……

……

21(i) Give the IUPAC name of the following:

$CH_3CH_2COOCH_2CH_3$ **(1mk)**

……

ii) Give the chemical name to which the compound you have named in (i) above belongs**.(1mk)**

……

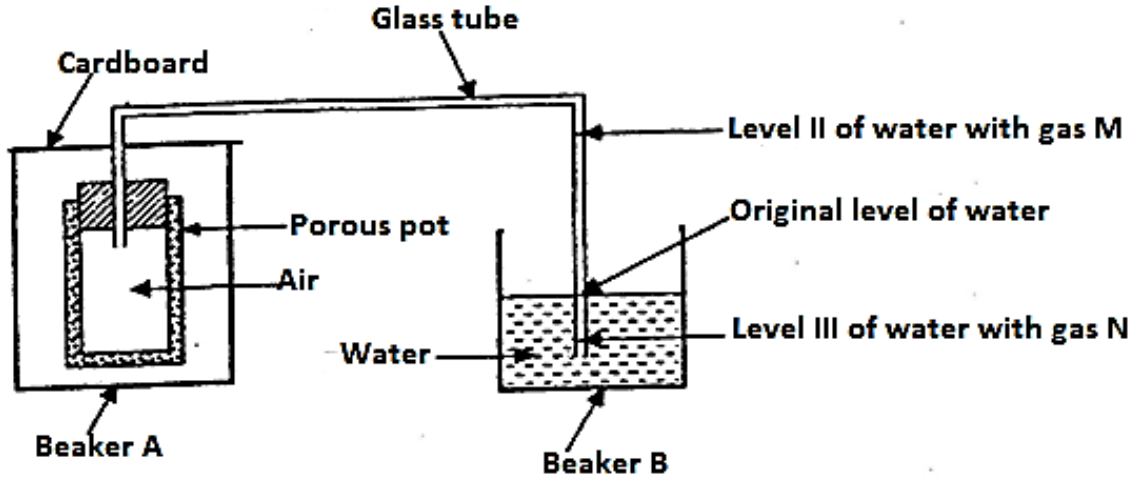
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iii) Name the two substances used in the formation of the compound in (i) above. **(1mk)**

……

……

22. The set up below was used to investigate some properties of two gases M and N.



When beaker A was filled with gas M, the level of water in the glass tube rose to point II. When the experiment was repeated using gas N, the level of water dropped to point III. Explain these observations. **(2mks)**

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23. Nitric (V) acid may be prepared in the laboratory by the action of concentrated sulphuric (VI) acid on a suitable nitrate and distilling off the nitric V acid.

(a) Why is the apparatus used in the preparation of nitric (V) acid made of glass. **(1mk)**

……

……

(b)Pure nitric (V) acid is colourless but the products in the laboratory preparation is usually yellow. Explain. **(2mks)**

……

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……

24. Starting with copper metal, describe how a pure sample of Copper (II) carbonate can be prepared. **(3mks)**

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25. Aluminum is both malleable and ductile.

(a)Differentiate between malleable and ductile. **(2mks)**

……

……

……

(b) State one use of aluminium based on:

(i) Malleability **(1mk)**

……

……

(ii)Ductility **(1mk)**

……

……

26. Sulphur (IV) oxide and nitrogen (IV) oxide reacts as shown in the equation below.

$SO_2(g) + NO_2(g) \longrightarrow SO_3(g) + NO(g)$

(i) Using the oxidation numbers of either sulphur or nitrogen, show that this is redox reaction.**(2mks**

……

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(ii) Identify the reducing agent. **(1mk)**

……

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

CHEMISTRY

233/2

PAPER 2 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

Instructions to candidates

(a) *Write your name and admission number in the spaces provided above.*

(b) *Answer **all** the questions in the spaces provided in the question paper.*

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

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

(e) *Candidates should answer the questions in English.*

For Examiner's Use Only

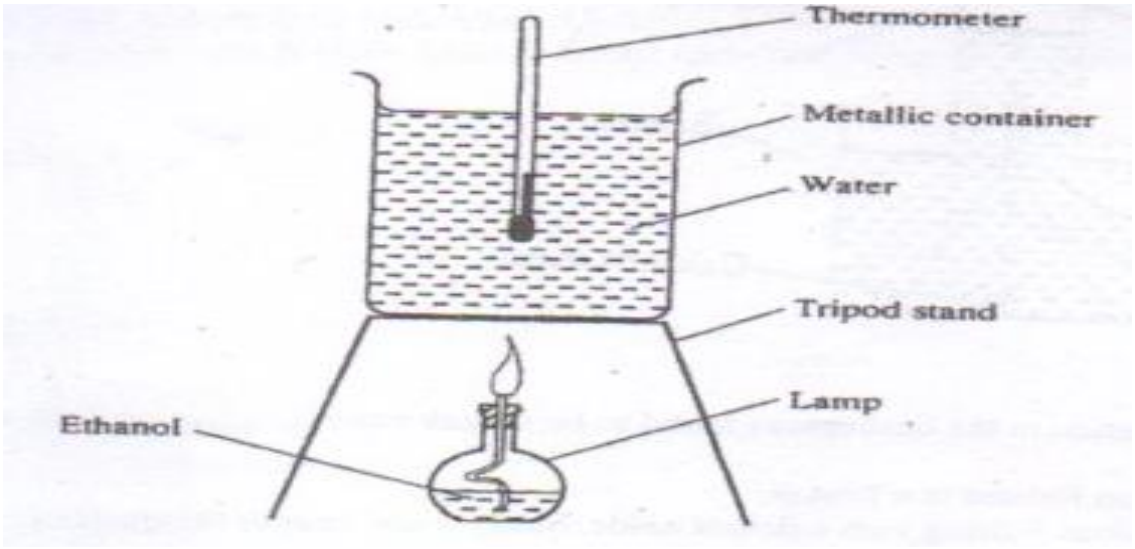
QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	11	
2	13	
3	13	
4	12	
5	11	
6	08	
7	12	
Total score	80	

1. State two factors that should be considered when choosing fuel for cooking. **(2 marks)**

……

……

(b) The diagram below represents a set –up that was used to determine the molar heat of combustion of ethanol



During the experiment, the data given below was recorded

Volume of water	$450cm^3$
Initial temperature of water	25^0 C
Final temperature of water	46.5^0 C
Mass of ethanol + Lamp before burning	125.5g
Mass of ethanol + Lamp after burning	124.0g

Calculate the:

i. Heat evolved during the experiment (density of water=$1g/cm^3$,Specific heat capacity of water =$4.2Jg^{-}K^{-}$ **(2marks)**

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ii. Molar heat of combustion of ethanol (C=12.0, O=16.0, H=1.0) **(3 marks)**

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(c) Write the thermal chemical equation for the complete combustion of ethanol**.** **(1mark)**

……

……

(d) The value of the molar heat of combustion of ethanol obtained (b) (ii) above is lower than the theoretical value. State two sources of error in the experiment**.** **(2 marks)**

……

……

……

e) Define the term molar heat of combustion **(1 mark)**

……

……

2. The grid below shows a section of the periodic table. The letters do not represent the actual symbols of the elements.

K	**L**				**M**		**N**	**P**
	Q		**R**	**S**		**T**	**V**	
W								

a) Name the family to which element P belongs. **(1mark)**

……

……

b) Which two elements will form carbonates that do not decompose on heating. **(2 mark)**

……

……

c) With a reason, identify an element in period three with the largest atomic radius. **(2marks)**

……

……

……

d) Write the formula of the compound formed between L and **M** **(1 mark)**

……

e) State two uses of element **R** and for each use, state property of element **R** that makes it possible for the use

(i) **Use** **(1/2mark)**

……

Property **(1/2 mark)**

……

(ii) Use **(1/2 mark)**

……

Property **(1/2 mark)**

……

f) Using dots **(.)** and cross **(x),** show bonding in the compound formed between **R** and oxygen .

(2 marks)

g) In terms of structure and bonding, explain why the boiling point of the oxide of L is higher than that of N**.** **(1 marks)**

……

……

h) Calculate the volume of the gas produced when 1.95g of element W reacts with water (W= 39, Molar gas volume at S.T.P= 24,000cm^3) **(2 marks)**

……

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……

3. Use the information below on standard electrode potentials to answer the questions that follow

Electronic reaction	**E^{Θ} volts**
$C^{2+}_{(aq)} + 2e^- \rightarrow C_{(s)}$	+0.34
$D^{2+}_{(aq)} + 2e^- \rightarrow D_{(s)}$	+0.44
$E^{+}_{(aq)} + e^- \rightarrow E_{(s)}$	-2.92
$F^{2+}_{(aq)} + 2e^- \rightarrow F_{(s)}$	-2.71
$G^{2+}_{(aq)} + 2e^- \rightarrow G_{(s)}$	-0.14
$\frac{1}{2}H_{2(g)} + e^- \rightarrow H^-_{(aq)}$	+2.87
$\frac{1}{2}K_{2(g)} + e^- \rightarrow K^-_{(aq)}$	+1.09
$L^{+}_{(aq)} + e^- \rightarrow \frac{1}{2}L_{2(aq)}$	0.00

a) i) Identify the strongest reducing agent**.** **(1 mark)**

……

ii) Calculate the e.m.f of the cell obtained by connecting half cells **C** and **D** **(1 mark)**

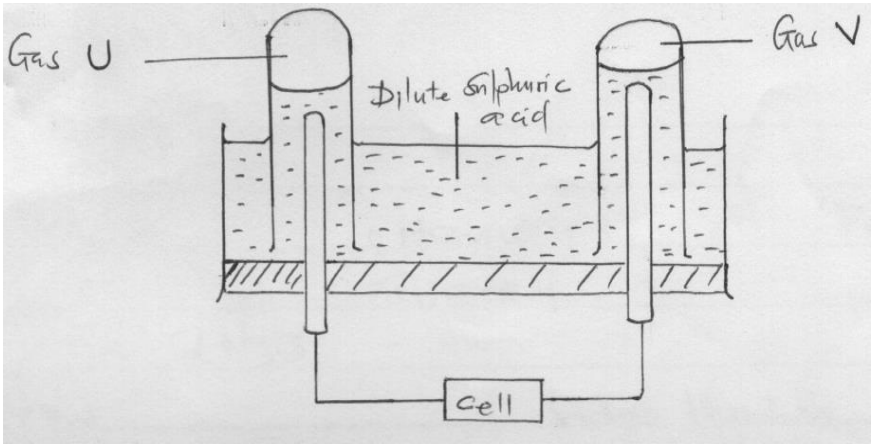
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b) Draw a well labeled diagram of a cell formed by connecting half cells **C** and **D**. **3 marks)**

c) he figure below shows the electrolysis of dilute sulphuric (VI) acid



i) On the diagram label the cathode and anode **(2 mark)**

ii) Name the gases **U** and V **(2 mark)**

Gas **U** ……...……..

Gas **V** ……

iii) Write the equation taking place at the anode **(1 mark)**

……

……

d) Define the term **electrolysis** **(1 mrks)**

……

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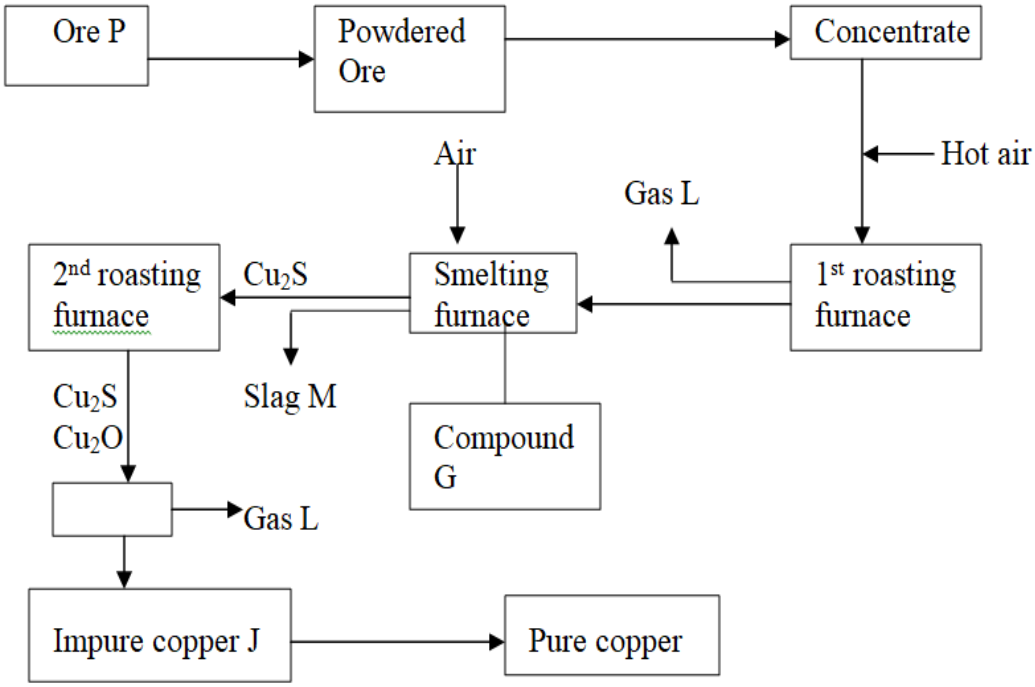
e)State **two** applications of electrolysis **(2 mrks)**

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4. The flow chart below outlines some processes involved in the extraction of copper from copper pyrites. Study it and answer the questions that follow.



(a) Name the following: **(3 marks)**

(i) Ore P ……..…..

(ii) Gas L……

(iii) Slag M ……...….

(b) (i) Explain how the ore is concentrated. **(1 mark)**

……

……

(ii) Why is it necessary to grind the ore into powder? **(1 mark)**

……

……

(c) Give the purpose of adding silicon (IV) oxide compound G into the smelting furnace. **(1 mark)**

……

……

(d) Pure copper is obtained from impure copper by electrolysis. Name the material used as anode and cathode. **(1 mark)**

Anode ……

Cathode …….

(e) What effects does this process of copper extraction have to the environment? **(1 mark)**

……

……

(f) State two uses of copper metal. **(2 marks)**

……

……

(g) A current of 100 Amperes was passed for 20 days. What mass of copper in kg was deposited at the cathode? (Cu = 64, If = 96500 C) **(2 marks)**

……

……

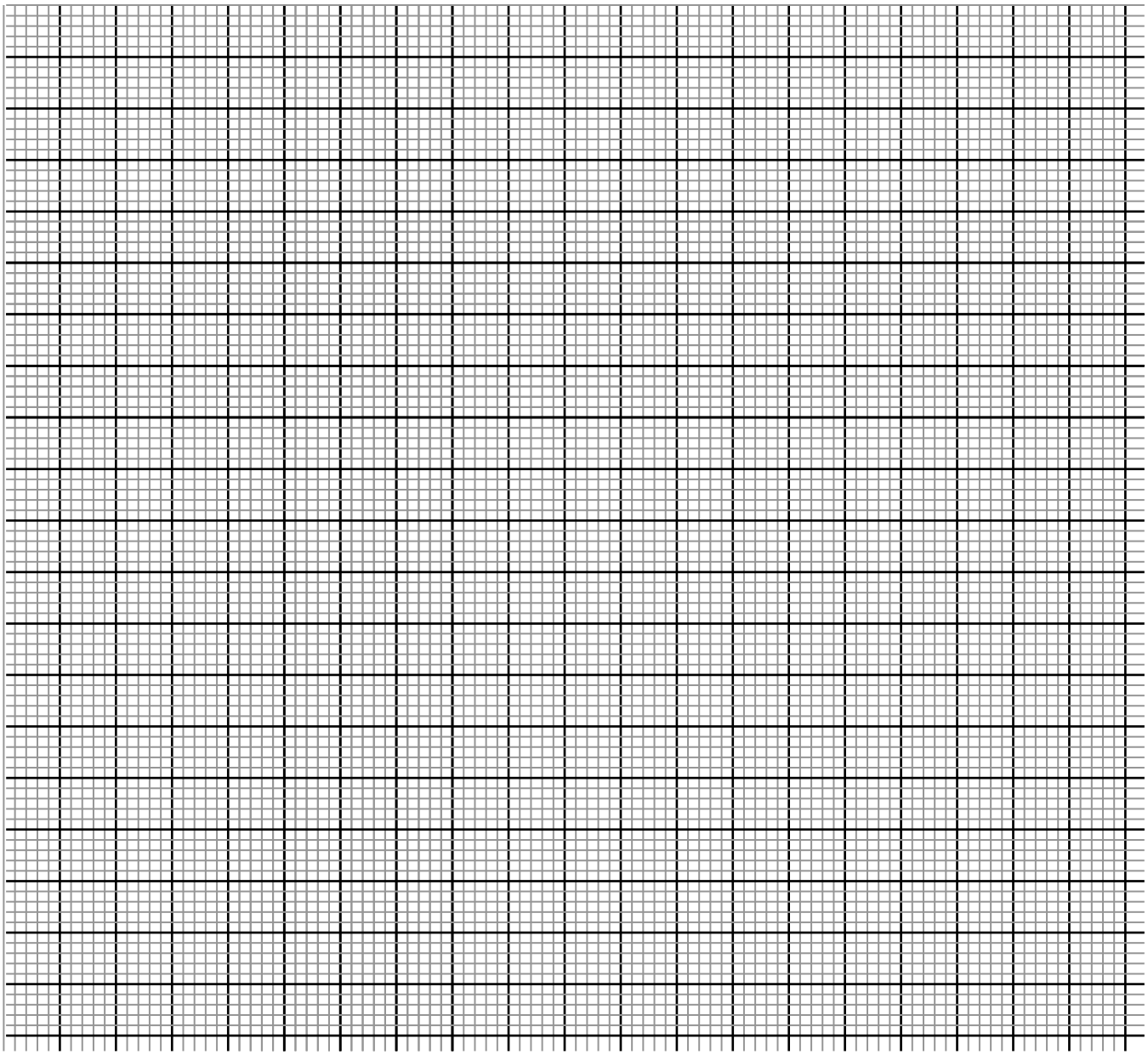
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5. The table below shows the solubility of potassium nitrate at different temperatures.

Temperature ^{0} c	10	20	30	40	50	60	70	80	90	100
Solubility g/100g of water	80	88	96	104	114	124	136	148	162	180

a) Plot a graph of solubilities of potassium nitrate against temperature. (3mk)



b) From your graph determine;

i) the solubility of the potassium nitrate at 65^0c**.** **(1mk)**

……

……

……

ii) the mass of potassium nitrate that would **dissolve in 50g of water at 82^0c**. **(2mk)**

……

……

……

……

c) Determine the molar concentration of potassium nitrate at 37^0 c. (N=14, O= 16, K= 39. Assume the density of solution to be $1g/cm^3$ **)** **(3mk)**

……

……

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……

d) 130g of potassium nitrate salt was added to 100g of water and heated to 90^0c. It was then cooled to 15^0 c.

i) At what temperature were the crystals first formed? **(1mk)**

……

……

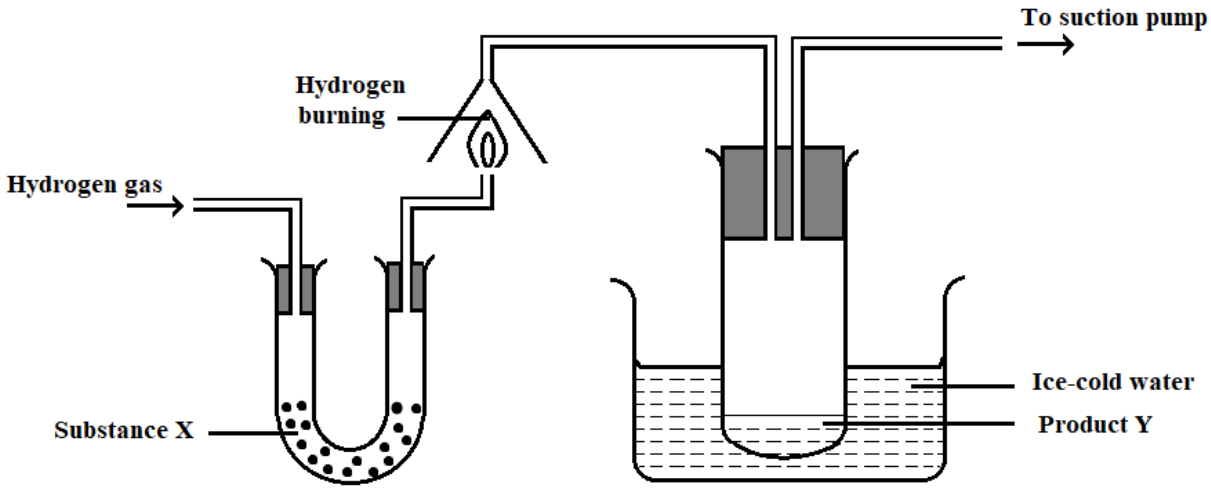
ii) Calculate the mass of crystals formed**.** **(1mk)**

……

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6. The figure below shows the apparatus used to burn hydrogen in air. Use it to answer the questions that follow.



i) State the role of substance **X** **(1 mark)**

……

ii) Give the name of the substance that could be used as **X** **(1 mark)**

……

iii) State the role of the suction pump **(1 mark)**

……

……

iv) Name the product **Y** formed **(1 mark)**

……

v) Give a simple physical test to prove the identity of **Y** **(2 mark)**

……

……

……

……

vi) State the difference between **"dry"** and **"anhydrous".** **(2 mrks)**

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……

7 a)Name the following compounds **(3 mrks)**

i) $CH_3CH_2CH_2OH$

……

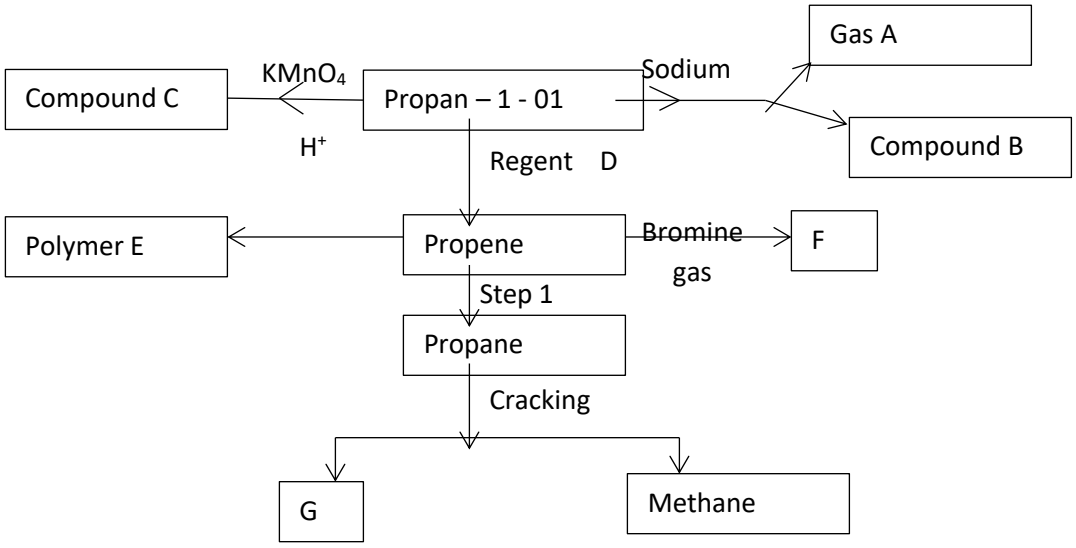
ii). CH_3 CH_2 CH_2 COOH

……

iii). $CH_3CH_2CH_2COOCH_2CH_3$

……

b). Study the scheme below and answer the questions that follow



i.Identify product

A......**(1 mark)**

F......**(1 mark)**

ii. Name the compound C **(1 mark)**

.....

iii. State the conditions for step 1 **(2 mark)**

.....

iv. Name the process leading to formation of compound C **(1 mark)**

.....

v.Write an equation for the reaction leading to the formation of methane**.** **(1 mark)**

.....

vi. Identify reagent D. **(1 mark)**

.....

vii. Draw the structure of F. **(1 mark)**

.....

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

CHEMISTRY

233/3

PAPER 3 (PRACTICAL)

TIME: 2¼ HOURS

SCHOOL…… SIGN……

Kenya Certificate of Secondary Education.

Chemistry confidential

Instruction to schools

Apart from the common laboratory and chemicals, each candidate requires the following;

A

- Solution D -100cm^3
- Solution K -100cm^3
- Solution N -100cm^3
- Solution R -100cm^3
- One burette 0-50ml
- One pipette 25ml and pipette filler
- Six dry test tube and test tube holder
- One thermometer
- One metallic spatula
- One boiling tube
- One 10ml measuring cylinder
- 250ml plastic beaker
- Distilled water
- 2-conical flask
- About 2g of solid $NaHCO_3$

B: ACCESS TO

- Source of heat
- Distilled water.
- Litmus paper
- 2M NaoH
- 2M $Ba(No_3)_2$
- 2M $NH_{3(aq)}$

- 2M NaCl
- Phenolphthalein
- Acidified potassium dichromate
- Bromine water

C) FURTHER INFORMATION

Solid J - Maleic acid (0.5g)

Solid D hydrated Zncl2 (0.5g)

Solution D -Sulphuric (VI) acid 1M

Solution R (NaoH) 1M

Solution N prepared by dissolving $100cm^3$ concentration of HCL in $400cm^3$ concentration of HCl in $400cm^3$ distilled water then top up to make one liter ($100cm^3$)

Solution K (NaOH) dissolves 40g in $400cm^3$ made upto litre ($100cm^3$)

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

CHEMISTRY

233/3

PAPER 3 (PRACTICAL)

TIME: 2¼ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES:

(i) Write your **name** and **index number** in the spaces provided **above**.

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

(iii) Answer **ALL** the questions in the spaces provided in the question paper.

(iv) You are not allowed to start working with apparatus for the first 15 minutes of $2\frac{1}{4}$ Hours allowed for this paper. This time is to enable you read the question and make sure you have all the chemicals and apparatus required.

(iv) Mathematical tables and silent electronic calculators **may be** used.

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

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

FOR EXAMINER'S USE ONLY:

Question	Maximum Score	Candidate's Score
1	20	
2	13	
3	7	
Total Score	40	

QUESTION 1

(a) You are provided with the following

(i) Sulphuric(VI) acid labeled a solution D

(ii) Solution R prepared by dissolving 40g of NaOH in 400cm^3 of distilled water and made up to 1 litre.

You are required to determine the molarity of Sulphuric (VI) acid.

PROCEDURE

(i) Fill the burette with Sulphuric (VI) acid.

(ii) Using pipette and pipette filter place 25cm^3 of solution R into conical flask.

(iii) Add 2-3 drops of phenolphthalein indicator.

(iv) Titrate solution R against solution D.

(v) Repeat the titrations to obtain two concordant titrates

(vi) Record your results in the table below.

	I	II	III
Final burette reading (cm^3)			
Initial burette reading (cm^3)			
Volume of solution D used(cm^3)			

(4mks)

i) Calculate the average volume of acid solution D used . **(1mk)**

ii) Calculate the number of moles NaOH solution (Solution R) used. **1mk)**

iii) Calculate the number of moles of acid used. **(1mk)**

iv) Determine the molarity of Sulphuric (vi) acid. **(1mk)**

b) You are provided with the following;

(i) 0.85M HCL labeled solution N.

(ii) Sodium hydroxide labeled solution K.

You are required to determine the molar heat of neutralization **of** solution N

Procedure

i. Measure 50cm^3 of solution N and transfer it into a 250cm plastic beaker provided.

ii. Record the initial temperature of solution N to the nearest 0.5^0c.

iii. Rinse the burette thoroughly with distilled water and fill it up to the 0.0cm^3 mark with sodium hydroxide solution (Solution K)

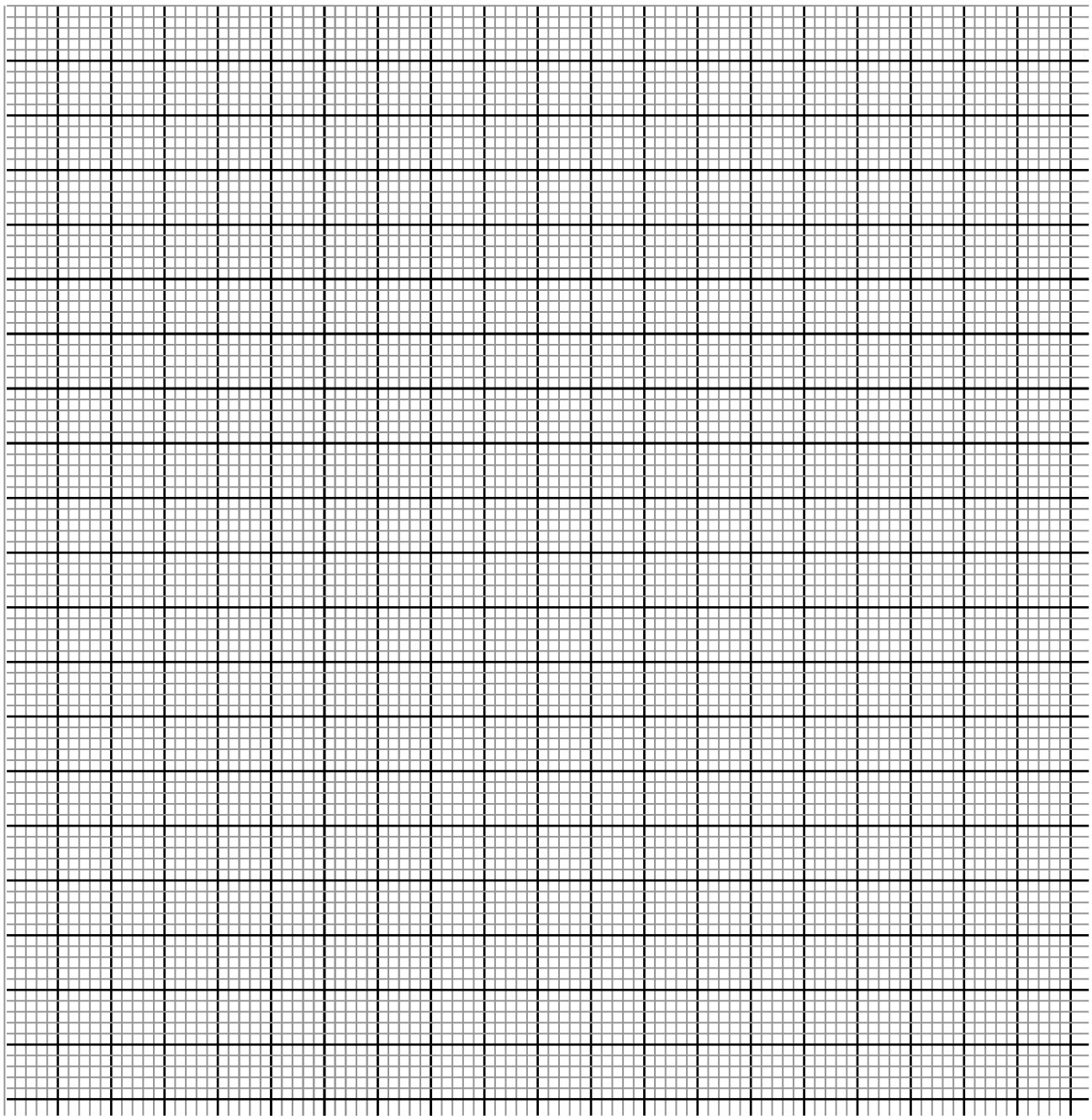
iv. From the burette add 10cm^3 of solution K to solution N in the beaker. Stir gently with the thermometer and record the new temperature in the table below.

v. Continue adding 10cm^3 portions of Solution K recording new temperature after each addition until 80cm^3 of K has been added

Volume of Solution K added (cm^3)	0	10	20	30	40	50	60	70	80
Temperature ^{0}C									

(3mks)

a) Plot a graph of temperature (y-axis) against total volume of sodium hydroxide (Solution K) (x-axis) **(3mks)**



i) From the graph determine the maximum temperature reached**.** **(1mk)**

ii) What is the temperature change? **(1mk)**

b) From the graph determine the volume of sodium hydroxide required for complete neutralization of hydrochloric acid. **(1mk)**

c) Write an Ionic equation for the neutralization reaction. **(1mk)**

d) Calculate the heat evolved when volume of sodium hydroxide in (c) was neutralized. Density of solution $1g/cm^3$,C=4.2j/g/k. **(1mk)**

e) Calculate the molar heat of neutralization. **(1mk)**

QUESTION 2

You are provided with solid D. Carry out the following tests and record your observation and inferences in the spaces provided.

a) Describe the appearance of Solid D. **(1mk)**

b) Place about half of solid D in dry test. Heat it strongly and test for any gas produced using a blue and red litmus paper.

Observation	Inferences
1mk	1mk

c) Place the rest of Solid D in boiling tube and add about $10cm^3$ of distilled water. Shake well and add about $2cm^3$ portions for each of the test below.

Observation	**Inferences**
1mk	**1mk**

i) To one portion, add aqueous NaOH drop wise until in excess

Observation	**Inferences**
1mk	**$^1/_2$mk**

ii) To the second portion, add aqueous ammonia drop wise until in excess

Observation	**Inferences**
1mk	**$^1/_2$mk**

iii) To a third portion add about 5 drops of sodium chloride solution.

Observation	**Inferences**
1mk	**$^1/_2$mk**

iv) To a fourth portion, add dilute Barium nitrate solution.

Observation	**Inferences**
1mk	**$^1/_2$mk**

v) To a fifth, add lead (ii) nitrate solution, warm mixture

Observation	Inferences
1mk	**1mk**

QUESTION 3

i) You are provided with solid J. carry out the tests below and record your observation and inferences to the spaces provided.

Place a half of Solid J in a clean metallic spatula and ignite it on Bunsen burner flame.

Observation	Inferences
1mk	**1mk**

Put the remaining portion of solid J in a boiling tube and add about $8cm^3$ of distilled water. Shake to dissolve.

ii) To about $2cm^3$ of solution J in a test tube add 2 to 3 drops of bromine water.

Observation	Inferences
1mk	**1mk**

iii) To about $2cm^3$ of solution J in a test tube, add about $1cm^3$ of acidified potassium dichromate (vi). Warm gently and allow to stand for a minute.

Observation	Inferences
1mk	**$^1/_2$mk**

iv) To about $2cm^3$ of solution in a test tube, add a small amount of solid Sodium hydrogen carbonate.

Observation	Inferences
1mk	**$^1/_2$mk**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

PHYSICS

232/1

PAPER 1 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS

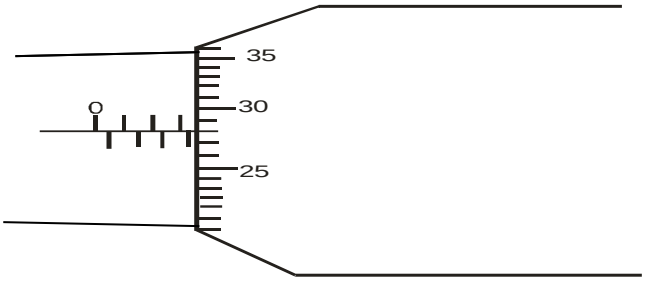
1. The paper consists of two sections, Section **A** and **B**.
2. Answer **ALL** the questions in section A and B in the spaces provided.
3. **ALL** working **MUST** be clearly shown.
4. Mathematical tables and electronic calculators **may be** used.
5. Take g = 10m/s^2 and density of water = 1000kg/m^3, L_V = 2.6 x 10^6Jkg^{-1}, L_f= 3.3 x 10^5J^{-1}kg

FOR EXAMINER'S USE:

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1-13	25	
14	11	
15	10	
16	11	
17	10	
18	13	
TOTAL	**80**	

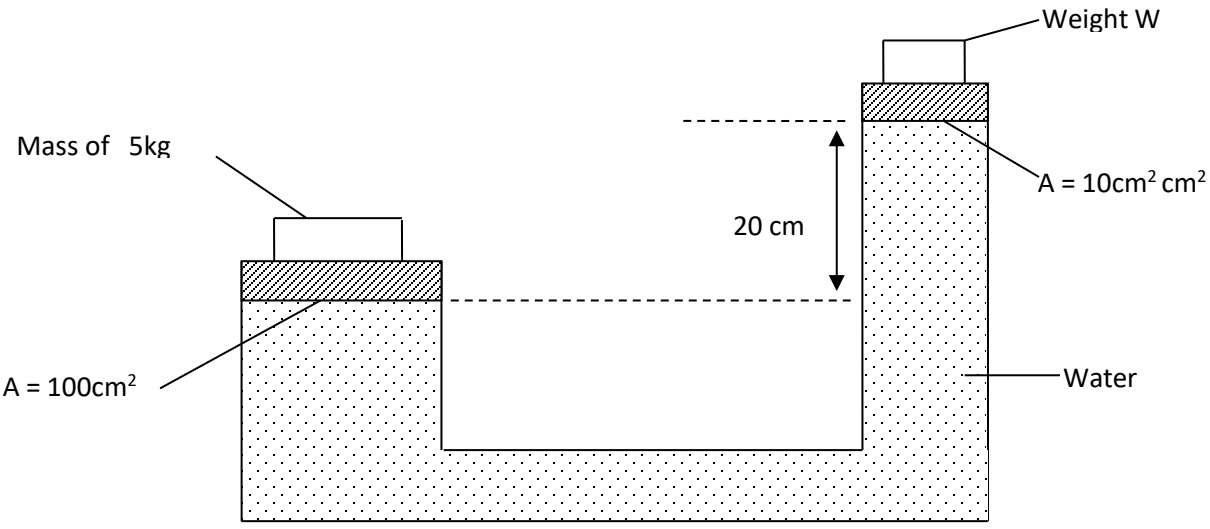
SECTION A (25 MARKS)

1. The micrometer screw gauge in figure below gives the reading of the diameter of a piece of a wire. Given that the length of the wire whose diameter was read by using figure below is 4cm, determine the volume of the wire**.** **(3 marks)**

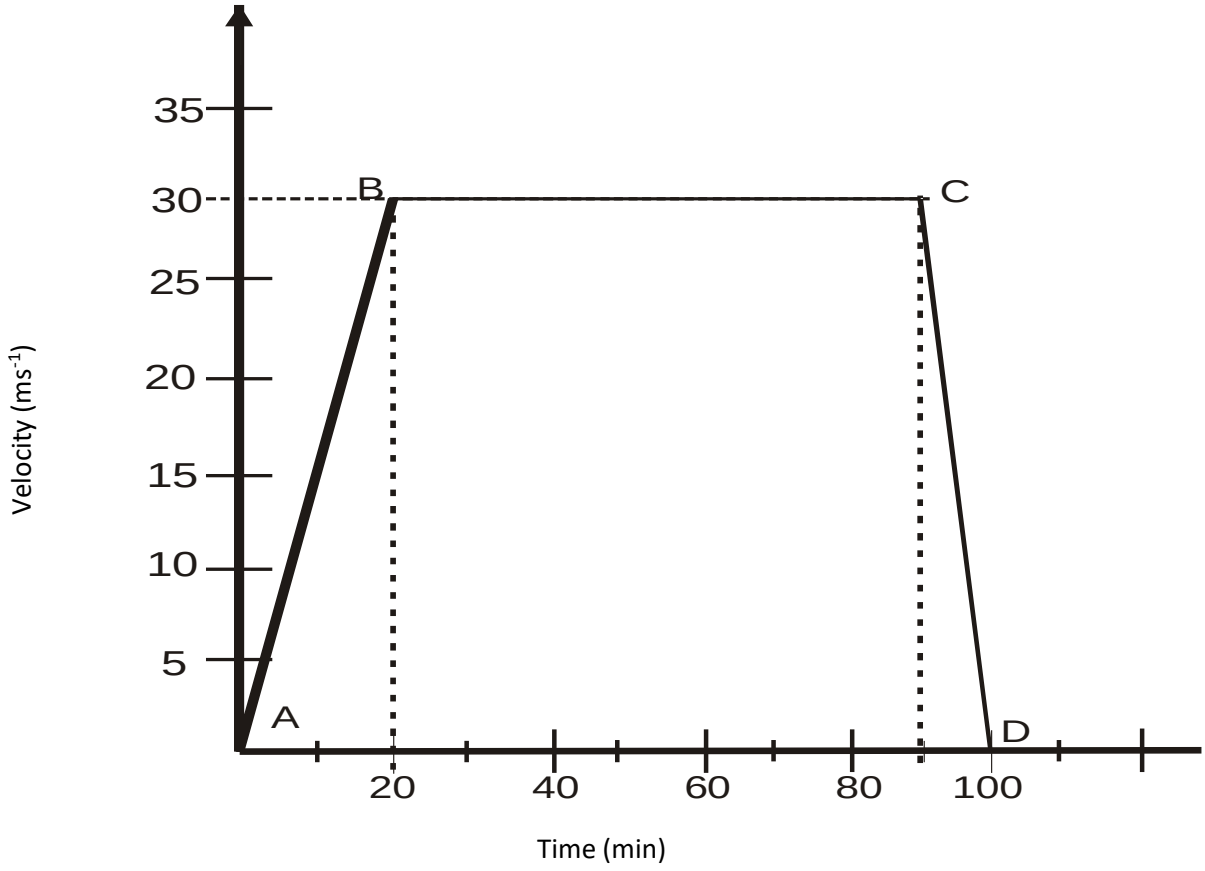


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2. The figure below shows two masses placed on light pistons. The pistons are held stationary by water of density $1000kgm^{-3}$. Determine the weight W**.** **(2marks)**



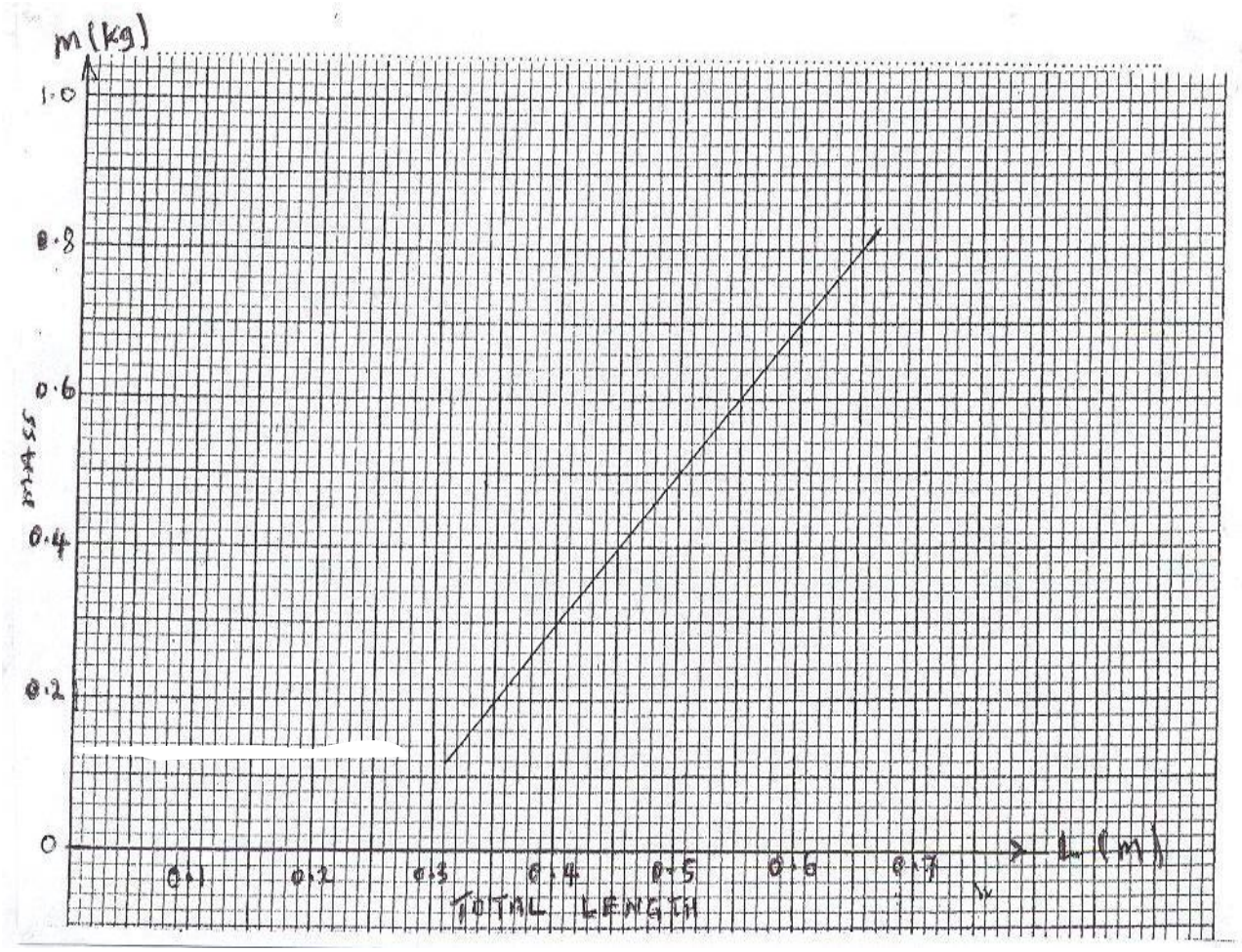
3. The following figure shows the velocity-time graph for the journey of a car in 100 minutes.



i) Determine the acceleration of the car between A and B and between C and D. **(2 marks)**

ii) Determine the distance covered by the car during the journey. **(1 marks)**

4. The result of an experiment to investigate how the total length of a spring varies with load on the end of the spring is as shown in the graph below. *(Assume Hooke's Law is obeyed)*



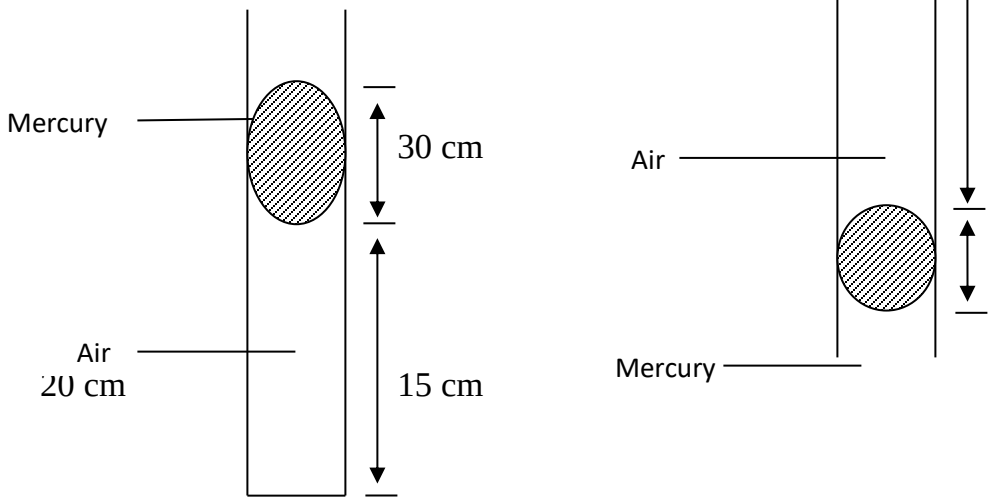
Calculate the energy increase stored by the spring when the load is increased from 4N to 8N.

(2marks)

5. State the two constant forces that act on a body falling through a fluid**.** **(1mark)**

6. A fixed mass of gas is enclosed in a vessel. Explain in terms of molecular theory how the pressure measured at the wall of the vessel is produced by the gas molecules. **(2 marks)**

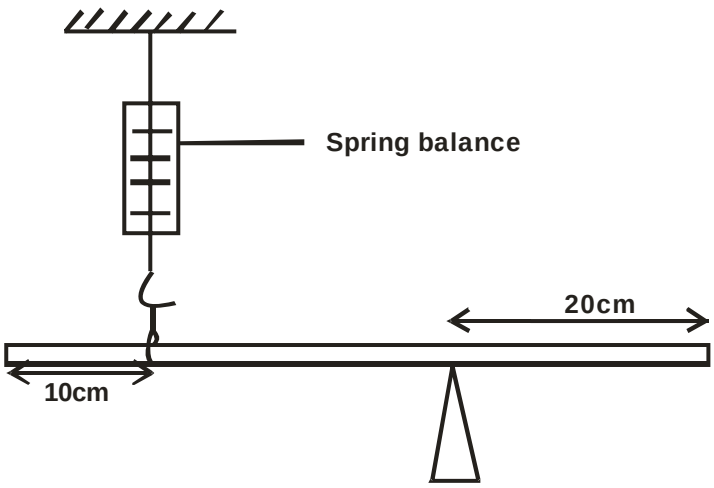
7. A uniform narrow-bored tube closed at one end contains dry air which is sealed by a thread of mercury15.0cm long. The tube is held in the following two positions as shown in the diagram below



(i) Calculate the atmospheric **pressure** **(2 marks)**

8. Explain the cause of random motion of smoke particles as observed in Brownian motion experiment using a smoke cell. **(1mark)**

9. The figure below shows a uniform bar of length 1.0 m pivoted near one end. The bar is kept in equilibrium by a spring balance as shown:



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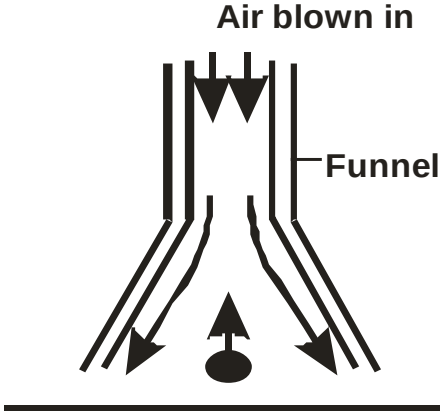
Given that the reading of the spring balance is 0.6 N, determine the reaction force at the pivot.
(3marks)

10. State the reason why it is colder during the night when the sky is clear than when it is cloudy.
(1mark)

11. In terms of intermolecular distances explain anomalous expansion of water. **(1mark)**

12. A resultant force F acts on a body of mass M causing an acceleration of A_1 on the body. When the same force acts on a body of mass 2M, it causes an acceleration of A_2. Express A_2 in terms of **A_1 (2marks)**

13. Figure shows a pith ball being lifted into a funnel end of a blower.



Explain this observation **(2marks)**

SECTION B (55 MARKS)

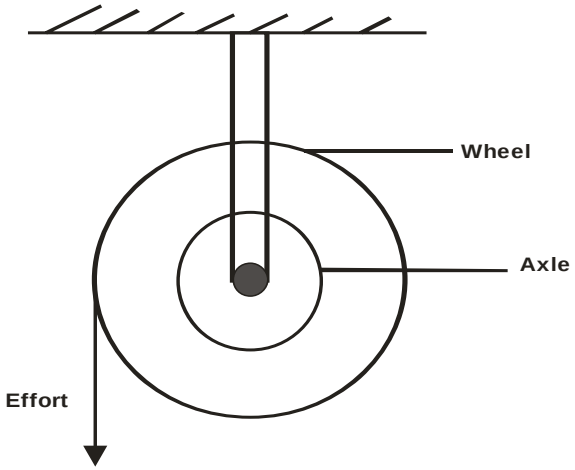
14. An object is fired vertically upward from the ground level with a velocity of $50ms^{-1}$ and reaches a maximum height, h. It falls back to the ground and bounces to a height of 4m.

a) Sketch a velocity time graph to represent the motion of the object from the time it is fired till it bounces to the height of 4m. **(1mark)**



b.) Calculate the maximum height reached h. **(2marks)**

c) The figure below represents a wheel and axle used as a machine, whose efficiency is 80% to raise 400N of building materials. The wheel and axle has diameters of 75cm and 15cm respectively.



i) Mark on the diagram the correct position and direction of the load to be lifted. **(1Mark)**

ii) Name the principle on which this machine works. **(1Mark)**

iii) Calculate the effort needed to raise the load. **(3Marks)**

iv) The machine is operated manually and raises the load to a height of 5m in 20 seconds. Calculate the power developed by the operator. **(3Marks)**

15. a) State what is meant by the term specific latent heat of vaporization. **(1 mark)**

b) In an experiment to determine the specific latent heat of vaporization of water, steam at 100^0C was passed into water contained in a well lagged copper calorimeter. The following measurements were made.

Mass of calorimeter =50g
Initial mass of water =70g
Final mass of calorimeter + water + condensed steam = 123g
Initial temperature of water + calorimeter = 5^0 C
Final temperature of mixture = 30^0C
(specific heat capacity of water=4200JKg^{-1}K^{-1} and specific heat capacity of copper=390 JKg^{-1}K^{-1}.}

Determine:

i) Heat gained by calorimeter alone **(2 marks)**

ii) Heat gained by water only. (**2 marks)**

iii) Given that L is the specific latent heat of evaporation of steam

I. Write an expression for the heat given out by steam. **(1 mark)**

II. Determine the value of L **(2 marks)**

c) Steam at 100^{o}c was passed for some time into ice at 0^{o}c. At the end, temperature of the water obtained was 52^{o}_{C} and its mass 2g. Calculate;

ii) Mass of the ice used. **(2marks)**

16 a) Define a radian **(1mk)**

b) Three masses are placed in a rotating table at distances 6cm, 9cm and 12cm respectively from thecanter of rotation. When the frequency of rotation is varied it is noted that each mass slides off at a different frequency of rotation of the table. Table 1 shows the frequency at which each mass slides off.

Radius, r (cm)	12	9	6
Sliding off frequency rev/s	0.68	0.78	1.0

i) State two factors that determine the frequency at which each mass slides off. **(2 marks)**

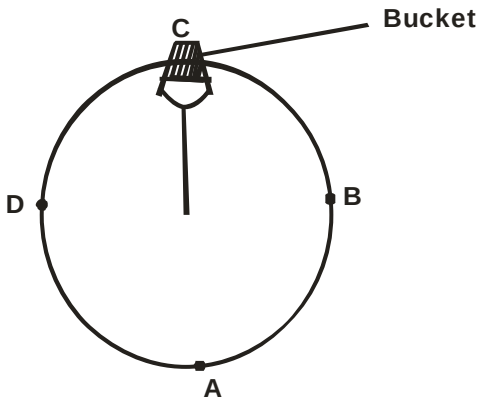
ii) Oil is now poured on the table before placing the masses. Explain the effect of this on the frequency at which the mass slides off. (**2 marks)**

c) A marked point on a rim of a wheel has a linear velocity of 11.2m/s. If the rim has a radius of 0.8m Calculate;

i)The angular velocity of the point **(2 marks)**

ii)The centripetal **acceleration** **(2 marks)**

d) The figure below shows a bucket filled with water moving round in a vertical circular path of radius 1m



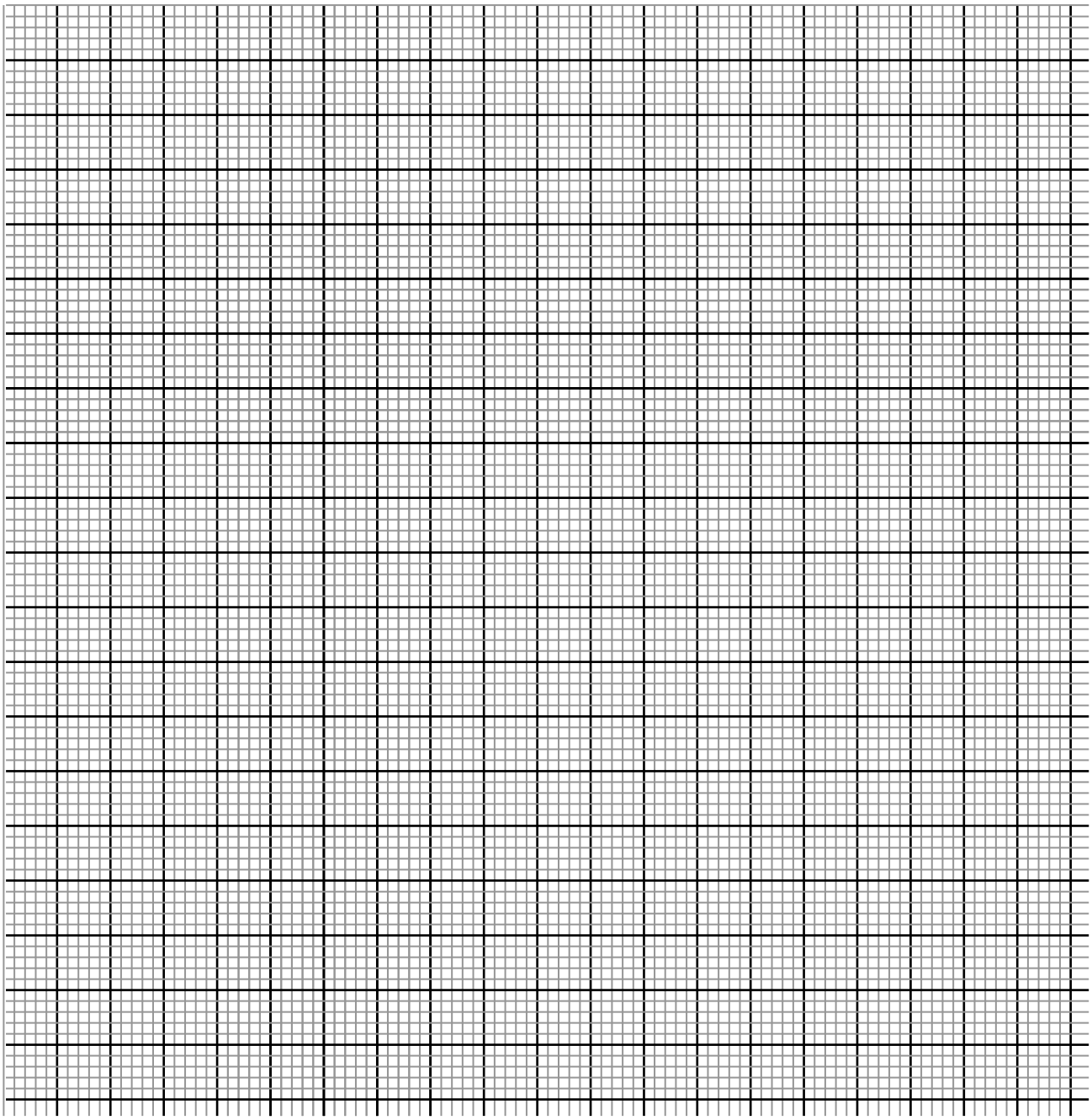
If the mass of water is 5kg and the speed of the bucket is 20m/s Show by calculation that this net force is greater at point A than at point C. **(2 marks)**

17. The table below shows the volume V of a certain mass of a gas at different temperatures, T, obtained in an experiment to verify Charles law.

V (cm^3)	7.0	7.6	8.2	8.6	8.8
T (^oC)	15	40	65	80	90

(a) Draw a set-up of apparatus that could be used to verify the law. **(2marks)**

(b) i) Plot a graph of volume (y-axis) against temperature. **(3marks)**



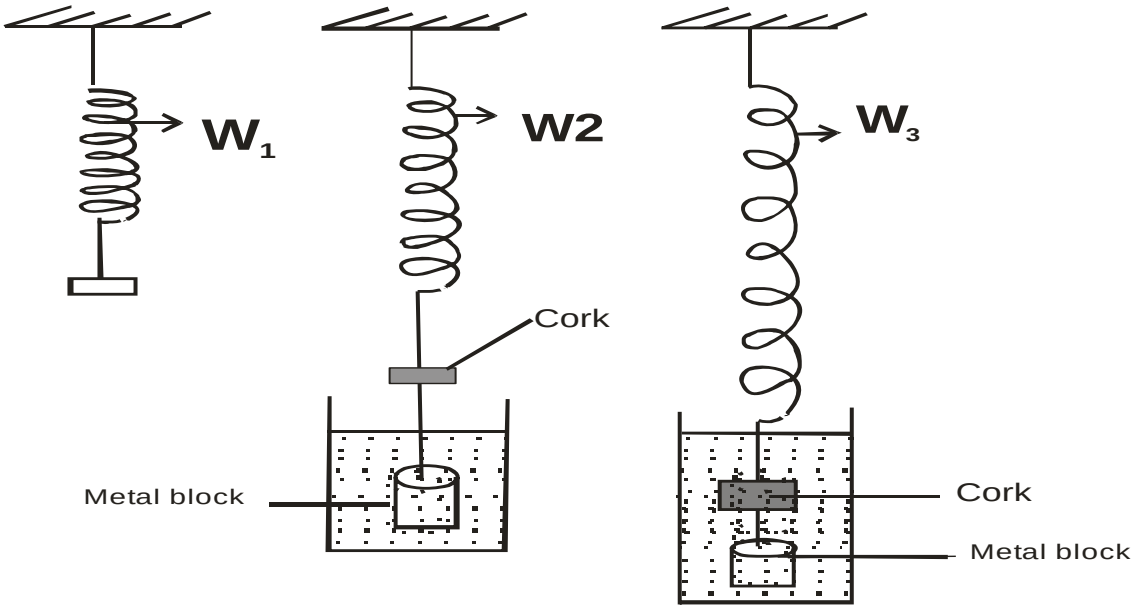
ii) From the graph determine the volume of the gas at 0^{o}c**.** **(1Mark)**

iii) Use the graph to determine the rate of expansion of the gas. **(2Marks)**

iv) Given that V=KT+C, write down the values of K and C**.** **(2Marks)**

18) (a) State Archimedes' principle. **(1Mark)**

b) A student was provided with water in a beaker, a spring balance, a metal block, a cork and a string. Using the arrangements shown in figure below she recorded the following results



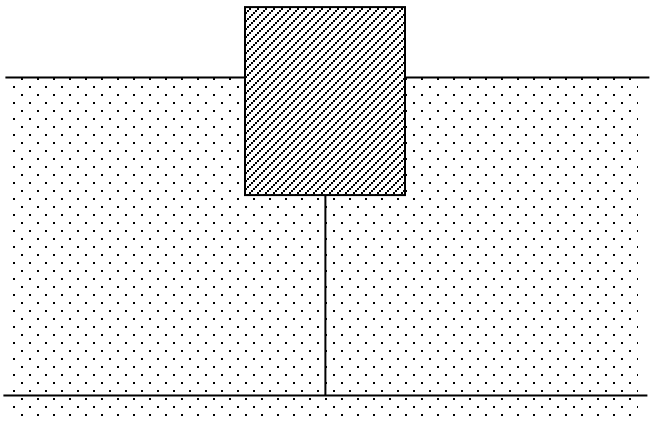
Weight of cork in air = W_1

Weight of cork in air and metal in water = W_2

Weight of both cork and metal in water = W_3

Derive an expression for the relative density of the cork**.** **(3marks)**

(c) A wooden block of mass 50g floats with 20% of its volume above the water surface and kept in place by string as shown below. The tension in the string is 0.06N.



Calculate: -

(i) The upthrust experienced by the object. **(1 Mark)**

(ii) The volume of the water displaced. **(2 Marks)**

(iii) The density of the object. **(2 Marks)**

(iv) What would happen if the string was cut and what volume of water would the block finally displace? **(2 Marks)**

d) The rubber used to make a balloon weighs 0.1kg.The balloon is inflated to a volume of $0.5m^3$with hydrogen whose density is $9.0 \times 10^{-2} Kg/m^3$.Determine the maximum load the balloon can lift. (Density of air=$1.3Kg/m^3$**)** **(3marks)**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

PHYSICS

232/2

PAPER 2 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO THE CANDIDATES:

*(a) Write your **name** and **index number** in the spaces provided above.*

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

*(c) This paper consists of **two** Sections **A** and **B**.*

*(d) Answer **all** the questions in sections **A** and **B** in the spaces provided.*

*(e) All working **must** be clearly shown in the spaces provided.*

*(f) Mathematical tables and electronic calculators **may be** used.*

FOR EXAMINER'S USE ONLY:

Section	Question	Maximum Score	Candidate's Score
A	1 11		
	12		
	13		
B	14		
	15		
	16		
	17		
Total Score		80	

SECTION A: (25 MARKS)

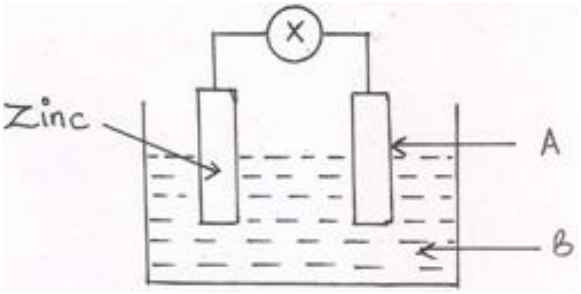
1.State the two laws of reflection of light. **(2 marks)**

2.A positively charged rod is brought near the cap of a lightly charged electroscope. The leaf divergence first reduces and as the rod comes nearer, it's divergence increases.

(a) State the charge on the electroscope. **(1 mark)**

(b) Explain the behaviour on the leaf. **(2 marks)**

3. The figure below shows a simple cell. Use it to answer question **3** and **4** below.

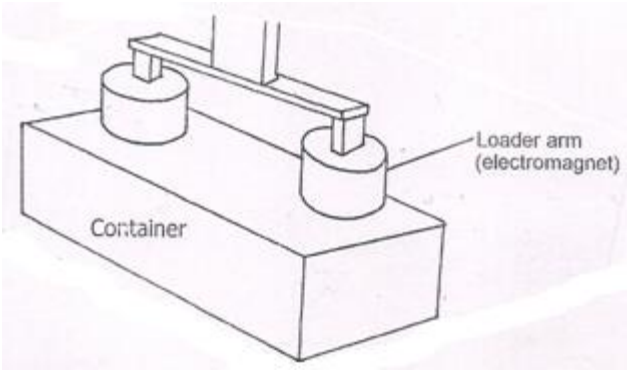


Name the parts labelled B. **(1 marks)**

Explain why the bulb goes off after sometimes. **(1 mark)**

4. Why is repulsion the sure test for the polarity of a magnet? **(1 mark)**

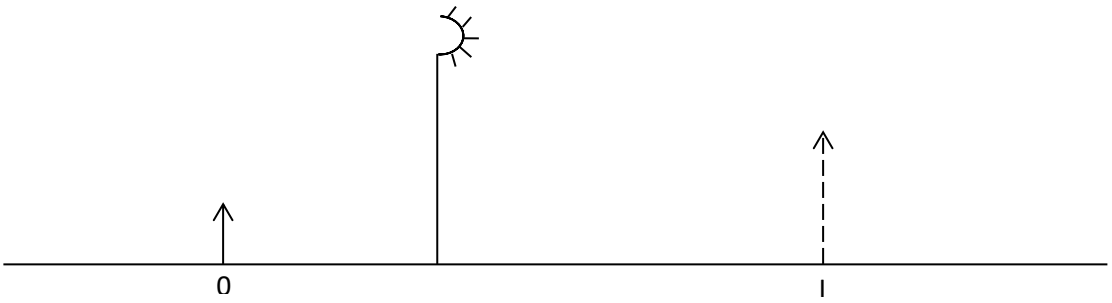
5. The figure below shows a container loader which uses electromagnet to offload containers from a ship.



(i) Why should the container be made of iron? **(1 mark)**

(ii) State **two** ways in which the loader can be made to lift a heavier container. **(2 marks)**

6.. The figure below shows an object O and its image I formed by a concave mirror. The diagram is drawn to scale.



Using a suitable ray, determine the focal length (f) and the radius of curvature (r) of the mirror. **(3 marks)**

f …… cm

r…….. cm

7 The following are electromagnetic waves and some of their characteristics.

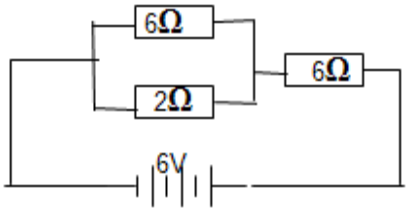
A - Have high penetrating power
-Used to sterilize medical equipment
- Used to detect flaws in metals in industry

B - Causes heating effect
-Used in cooking, heating and drying
-Used in heat seeking missiles

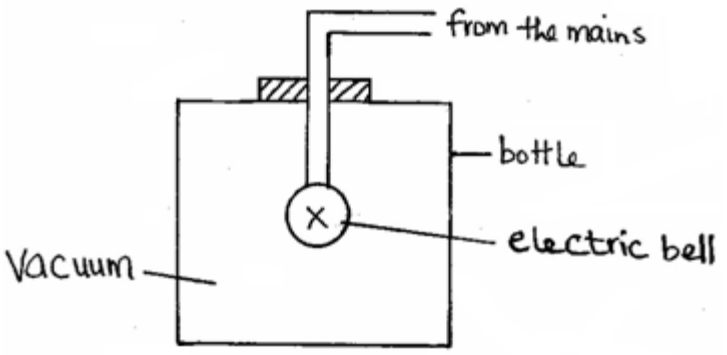
C -High penetrating power
-Used to locate bone fractures
- Used to control germs and pests

Arrange the waves in order of increasing frequency **(1mark)**

8. The figure below shows a 6V battery connected to an arrangement of resistors. Determine the current flowing through the 2Ω resistor. **(3marks)**



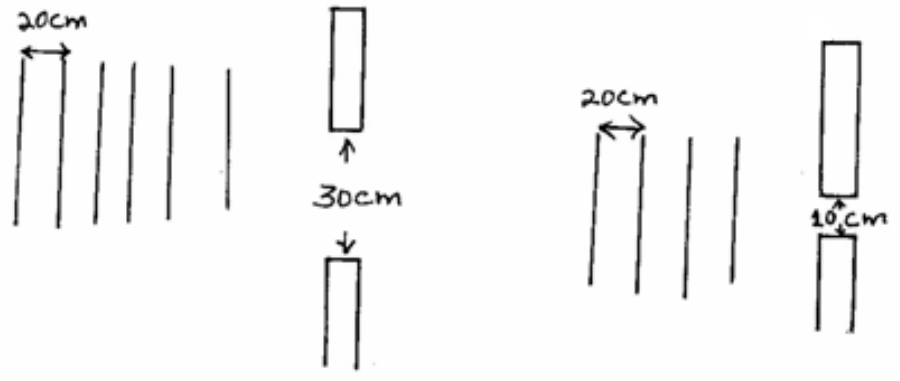
9.The figure below shows a set up to study sound waves.



State and explain what is observed on the bell when the switch is closed. **(2 marks)**

10.A water wave whose wavelength is 7.5cm in the deep end of an inclined tank has a wavelength of 3.0cm in the shallow end. If the speed of the wave in the shallow end is $0.6ms^{-1}$, calculate it's speed in the deep end. **(3 marks)**

11.The diagrams below show waves going through an opening. Draw the wave patterns of the aperture. **(2 marks)**



SECTION B: (55 MARKS) ANSWER ALL THE QUESTIONS IN THIS SECTION

12. (a) (i) State the difference between gamma and X-rays in the way they are produced**. (1mk)**

(ii) Give a reason why the target of an x ray tube is made of metals of high melting points. **1mark)**

(iii) State with a reason the effect on the x rays produced in an x ray tube, when pd across the tube is increased. **(2marks)**

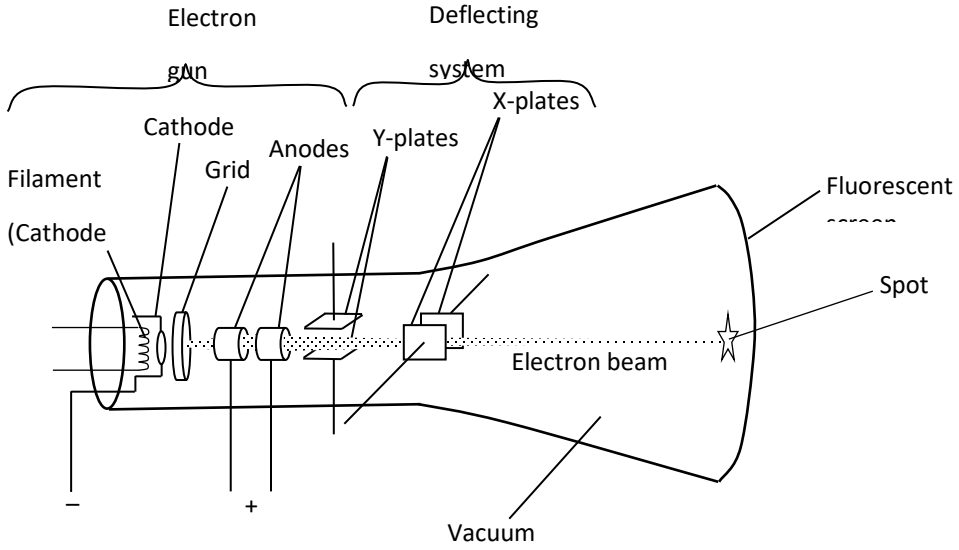
(iv) X rays are used for detecting cracks in metal beams.

I. State the type of x-rays used. **(1mark)**

II. Give a reason for your answer in (i) above. (**1mark)**

(b) in a certain X ray tube the electrons are accelerated by the p.d. of 12000V. Assuming all the energy goes to produce X-rays, determine the frequency of x rays produced. (Planck's constant = 6.62×10^{-34}Js, charge of an electron = 1.6×10^{19} **(3 marks)**

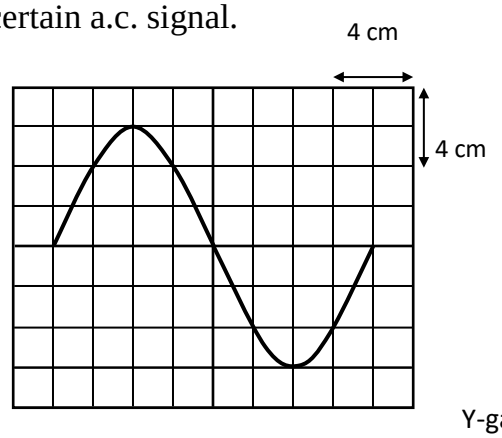
13(a) The figure below shows the main features of a cathode ray tube (CRT) of a cathode ray oscilloscope (CRO).



(i) Describe how the electrons are produced in the tube. **(2 marks)**

(ii) State and explain the function of the grid. **(2 marks)**

(b) The diagram in figure below shows the screen of a CRO displaying the waveform of a certain a.c. signal.



Y-gain = 80 V/division

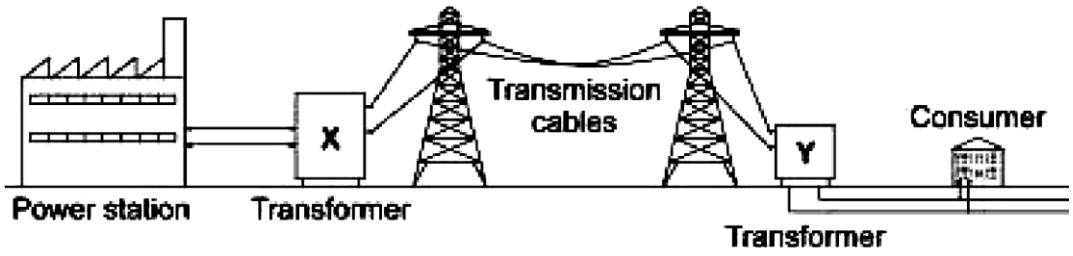
Time base control = 2.5 ms/division

Determine:

(i) The frequency of the a.c. signal. **(3 marks)**

(ii) The peak to peak voltage of the a.c. signal. **(2 marks)**

14 (a) .The diagram below shows the National Grid system.



What type of transformer is;

X…… **(1mark)**

Y……. **(1mark)**

b) A house has the following appliances

Appliance	Power rating W	Time used in hours per day
Cooker	4000	1
TV set	150	3
Electric kettle	2000	0.5
Radio	300	6

i) Determine the appropriate fuse which would be required for the cooker and the radio respectively. The 240V mains available fuses are rated 40A, 35A, 20A, 13A, 3A &1A.**(2marks)**

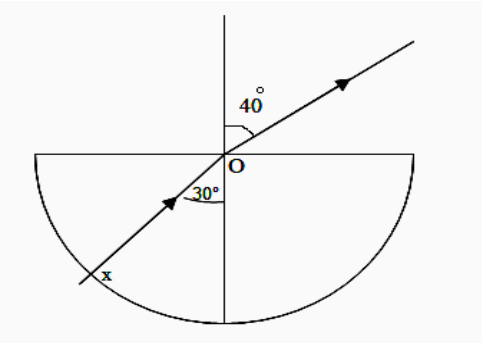
ii) Calculate the total cost of electricity paid in a month of 30 days given that all the appliances are used as shown above and 1KWh costs ksh1.85. **(3 marks)**

iii) State with reason the fuse suitable for the mains switch. **(2marks)**

(iv) State one advantage of using circuit breakers over fuses. **(1mark)**

15 (a) State what is meant by refractive index of a material. **1 mark)**

(b) The figure represents a ray of light falling normally on the curved surface of a semi-circular plastic block at X, meeting the opposite face at an angle of incidence of 30^0 and emerging into the air at an angle of 40^0.



(i) State and explain what happens to the ray as it moves from:

I) Air to glass at X. **(1marks)**

II) From glass to air at O. **(1marks**

(ii) Calculate refractive index of the plastic. **(3marks)**

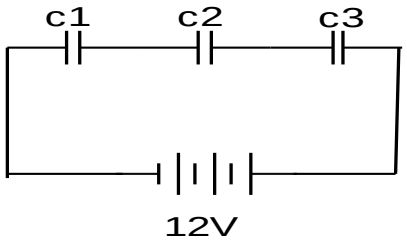
(iii) State the conditions to be satisfied for total internal reflection to occur. **(2marks)**

(iv)Calculate the critical angle for this plastic. **(2marks)**

16. (a) State what is meant by the term capacitance. **(1mark)**

(b) State **two** factors that determine capacitance of a parallel plate capacitor **(2marks)**

(c) The figure below shows a network of capacitors in series.



(i) Derive an expression for their effective capacitance C_E **(3marks)**

(ii) Given that C_1=10.5μF, C_2 =2μF and C_3= 3μF.

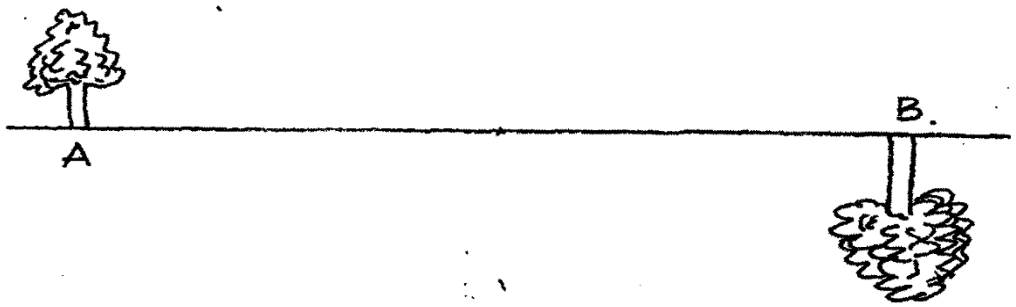
Calculate effective capacitance $C_E$in (i) above and hence

Determine the charge stored on each capacitor. **(3marks)**

(d) State two applications of capacitors. **(2marks).**

17 (a) Define the term principal focus for a convex lens **(l mark)**

(b) Figure 7 below shows an object A and its image B when an optical device is placed between A and B



i. State two characteristics of the image B **(2marks)**

ii. Name the optical device that should be placed between A to produce image B **(l mark)**

iii. Find the angle at which two mirrors are inclined when the number of images formed by the mirror is eleven. **.(2 marks)**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

PHYSICS

232/3

PAPER 3 (PRACTICAL)

TIME: 2½ HOURS

SCHOOL…… SIGN……

Kenya Certificate of Secondary Education.

CONFIDENTIAL

Each candidate will require the following.

QUESTION 1:

1. An ammeter (Range 0 – 1 A).
2. A volt meter (Range 0 – 3, or 0 – 5 Volts).
3. Two cells (Size D).
4. A switch.
5. A wire labelled L mounted on a millimeter scale.

(A nichrome resistance wire of diameter 0.30 ± 0.02)

6. A micro-meter screw gauge (to be shared).
7. Six connecting wires at least four with crocodile clips.

QUESTION 2:

PART A

1. Triangular glass prism.
2. Four optical pins.
3. Some celllotape.
4. A soft board.
5. A plain sheet of paper.

PART B

1. 100 ml beaker (Glass) Transparent
2. A meter rule.
3. A source of light (bulb or candle)
4. A screen.

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

PHYSICS

232/3

PAPER 3 (PRACTICAL)

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Instructions to candidates

a) *Write your name and index number in the spaces provided above.*

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 supposed to spent the first 15 minutes of the 2 $\frac{1}{2}$ hours allowed for this paper reading the whole paper carefully before commencing your work.*

e) *Marks are given for a clear record of the observations actually made, their suitability, accuracy and the use made of them.*

f) *Candidates are advised to record their observations as soon as they are made*

g) *Non-progmmable silent electronics calculators may be used.*

h) *Candidates should answer the questions in English.*

For Examiner`s Use Only

Question 1	a	b	d	e	f(i)	f(ii)	g
Maximum Score	1	1	5	5	3	3	2
Candidate`s Score							

Total

QUESTION 2	a	b	d	e	f(i)	f(ii)	i	j	k(i)	k(ii)	k(iii)
Maximum Score	2	2	1	2	1	3	4	1	1	1	2
Candidate`s Score											

Total

GRAND TOTAL

QUESTION ONE

1. You are provided with the following:

✓ An ammeter

✓ A voltmeter

✓ Two cells (size **D**)

✓ A cell holder

✓ A switch

✓ A wire labelled **L** mounted on a millimeter scale

✓ A micrometer screw gauge (to be shared)

✓ Six connecting wires at least four with crocodile clips

Proceed as follows:

a) Using a micrometer screw gauge, measure and record the diameter **d** of the wire **L**.

(1 mark)

d = …….mm

d = …….m

b) Place the two cells **in series** in the cell holder and use the voltmeter to measure the total electromotive force (emf) $\mathbf{E_0}$ of the battery. **(1 mark)**

E_0 = ……V

c) Starting with the switch open, connect the circuit as shown in **figure 1 below**. **P** and **Q** are points on the wire **L** such that **PQ** is 60 cm. (**PQ** should remain 60 cm throughout the experiment)

N is a point on the wire such that **PN** is 10cm (0.1 m)

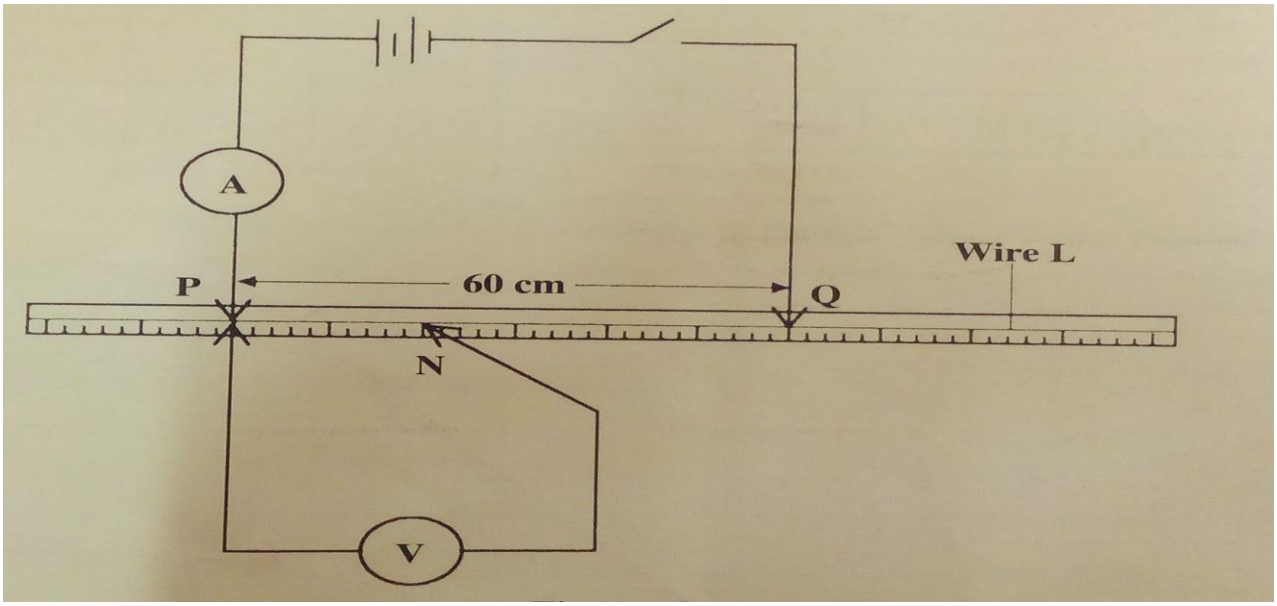


Figure 1

d) (i) Close the switch and record the current I. **(1 mark)**

I = ……A.

(ii) Measure and record in **table 1** the potential differences across **PN**.

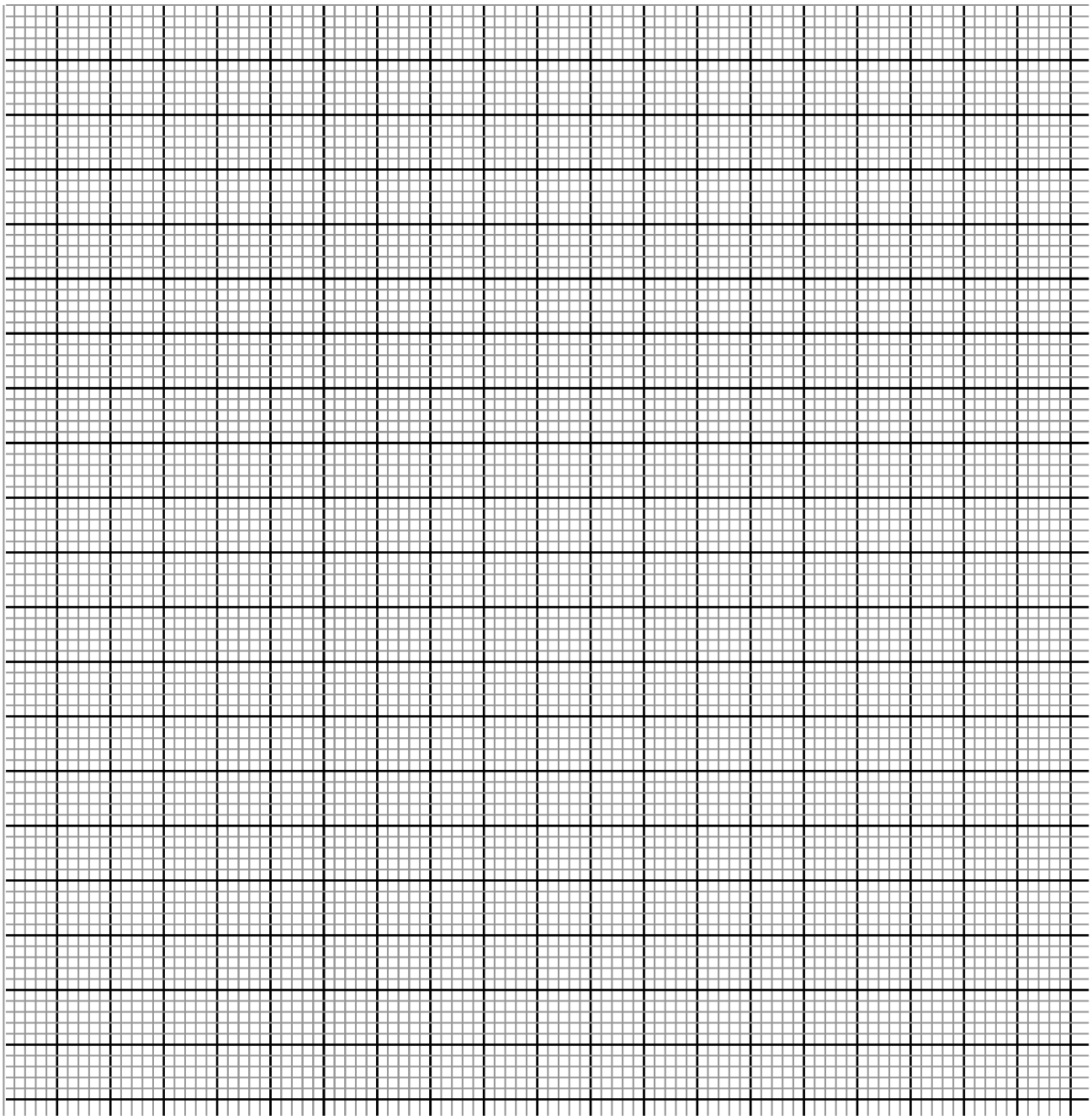
(iii) Measure and record the potential difference across **PN** for the other values of **PN** shown in **table 1** and complete the table. *(The current is expected to remain constant)*

Hint: *The switch should be crossed only when reading the voltmeter.*

Table 1 **(4 marks)**

Length PN (m)	**0.1**	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**
p.d (V)						
Resistance $(\frac{v}{1})\Omega$						

e) On the grid provided, plot a graph of resistance (y-axis) against length. **(5 mark)**



f) From the graph, determine:

(i)the slope **S** and its units**.** **(3 marks)**

(ii) the constant **K** and its units given that

$$s = \frac{4k}{\pi d^2}$$ **(3 marks)**

g) Determine constant t given that

$$t = \frac{E_0 - v_n}{I}$$

Where **V**n is the **p.d** at **PN** = 0.6 m. **(2 marks)**

QUESTION TWO

2. You are provided with the following:

✓ Triangular glass prism

✓ Four optical pins

✓ Some sellotape

✓ A soft board

✓ A plain sheet of paper

Proceed as follows:

PART A

a) Fix the plain sheet of paper on the soft board using some sellotape. Place the triangular prism on the paper and trace its outline on the sheet of paper. Remove the prism and use a ruler to extend the three sides of the outline. See **Figure2**.

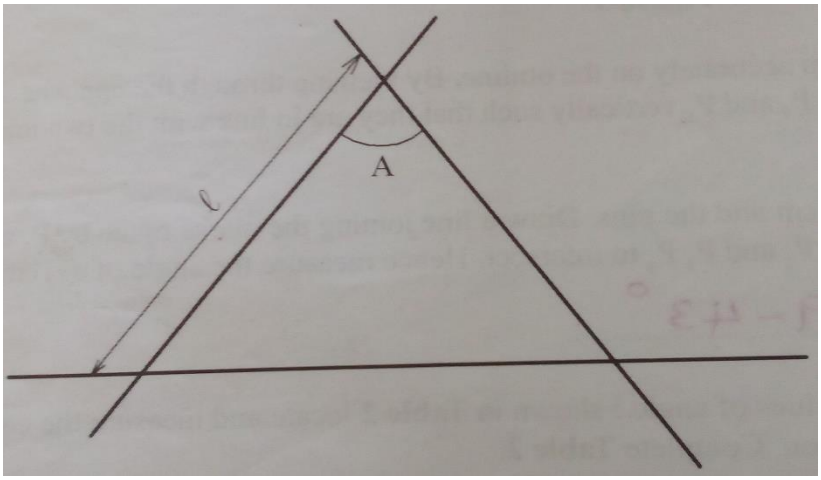


Figure 2

Measure angle **A** and the length ***l***.

A = ……. **(1 mark)**

***l* = …….cm** **(1 mark)**

NB: The plain sheet of paper must be submitted together with the question paper.

b) At a point about a thirdway along one side of the outline from angle **A**, draw a normal.

(2 marks)

c) Draw a line at angle i = 40° to the normal. Stick two pins P_1 and P_2 vertically on this line. (**see Figure 3**)

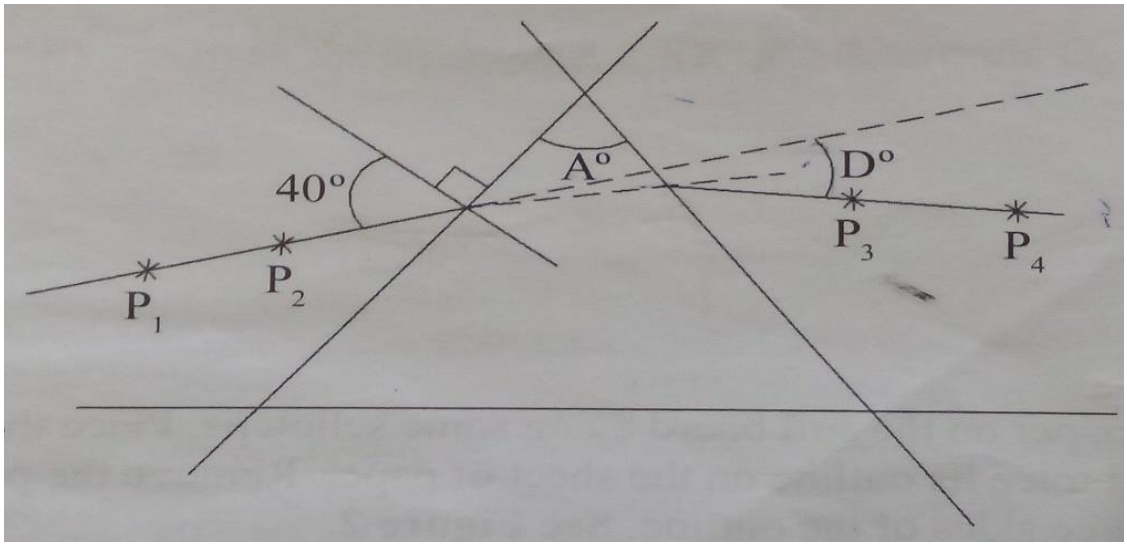


Figure 3

Place the prism accurately on the outline. By viewing through the opposite side, stick the two pins P_3 and P_4 vertically such that they are in line with the two images of pins P_1 and P_2.

d) Remove the prism and the pins. Draw a line joining the marks made by P_3 and P_4. Extend lines P_1 P_2 and P_3 P_4 to intersect. Hence measure the angle of deviation D.

D = ……. **(1 mark)**

e) For two other values of the angle i shown in **Table 2** locate and measure the corresponding angles of deviation. Complete **Table 2**.

Table 2 **(2 marks)**

i	**40°**	**50°**	**60°**
D			

f) (i) Determine the average value D_m of D**.** **(1 mark)**

(ii) Determine the constant K using the equation;

$$k = \frac{\sin\left(\frac{A+D_m}{2}\right)}{\sin\frac{A}{2}}$$ **(3 marks)**

PART B

You are provided with the following:

✓ 100 ml beaker

✓ A meter rule

✓ Source of light

✓ A screen

Proceed as follows:

g) Place the 100 ml beaker on a meter rule and pour 80 cm^3 of water into it. Arrange a lamp (source of light) and a screen on either side of the beaker. (**see figure 4**)

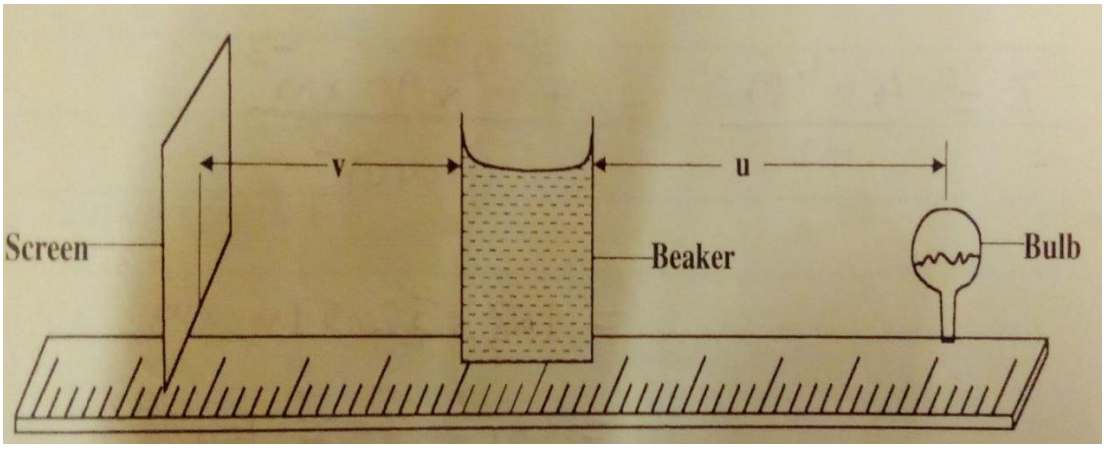


Figure 4

h) Adjust the position of the lamp on the metre rule so that its centre is a distance **u** = 12 cm from the beaker. Switch on the light. Adjust the position of the screen until a well focused vertical line *(the image of filament)* is formed on the screen. Measure and record in **table 3** the image distance **V** between the screen and the beaker.

i) Repeat part (b) for the values of **u** shown in **table 3** and complete the table.

Table 3 **(4 marks)**

Distance u (cm)	**12**	**16**	**20**
Distance V (cm)			
$\boldsymbol{y = \frac{Uv}{U+v}}$			

j) Determine **m**, the mean value of **y** using the values in **table 3.** **(1 mark)**

m = …….

k) (i) With the meter rule outside the beaker, measure the height **h** of the water meniscus above the bench. **(1 mark)**

h = ……cm

(ii) Determine the value of **P** given that (**1 mark)**

$P = \frac{5}{\sqrt{h}}$

(iii) Hence determine the value of f given that $f = \frac{P}{2m} + 1$ to one decimal place. **(2 marks)**

THIS IS THE LAST PRINTED PAGE.

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

MATHEMATICS

121/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the spaces provided at the top of this page.
*2. This paper consists of two sections: **Section l and Section II.***
*3. Answer all questions in section **l and five** questions from **Section II.***
4. Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.
5. Marks may be given for correct working even if the answer is wrong.
*6. Non- programmable silent electronic calculators and **KNEC Mathematical** tables may be used.*

FOR EXAMINER'S USE ONLY

SECTION I

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

SECTION II **GRAND TOTAL**

17	18	19	20	21	22	23	24	TOTAL

SECTION I (50 MARKS)

Answer all the questions in this section.

1. Without using a calculator, evaluate, $\dfrac{2\frac{1}{4}+\frac{3}{5}\div\frac{5}{6}\ of\ 2\frac{2}{5}}{1\frac{7}{10}}$, leaving your answer as a fraction in its simplest form. **(3mks)**

2. Find the equation of a perpendicular bisector of a line AB if the coordinates of A and B are (-4,-2) and (6,2) respectively. **(3mks)**

3. Use squares, squares roots and reciprocal tables only to evaluate the following giving your answer correct to 2 decimal places. **(4mks)**

$$\frac{1}{\sqrt{31.47}} + \frac{3}{8.54^2}$$

4. Find the integral values of x for which: **(3mks)**

$-6 \leq 3x + 3$

$14 - 3x > 2$

5. Pipe A empties a full tank in 8 hours, pipe B empties in 6 hours and pipe C empties in 3 hours. If all the three pipes are open for 30 minutes and then pipe A closed , How long will it take to empty a full tank**.** **(3mks)**

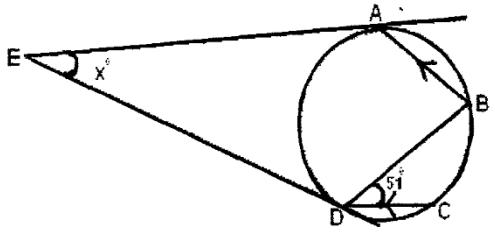
6. Without using a calculator or mathematical table, evaluate. **(3mks)**

$$\frac{8^{2/3}+4^{3/2}}{16^{-3/4}}$$

7. A man on top of a tower 300m sees two cars P and Q on a straight level road.
The angle of depression of P was 48° and that of Q was 28°. Calculate the distance between the two cars. (Give your answer to 2d.p.). **(3 marks)**

8. Two trains T_1 and T_2, traveling in opposite directions on parallel tracks are just beginning to pass one another. Train T_1 is 72metres long and is traveling at 108km/hr.T2 is 78 metres Long and traveling at 72km/hr. Find the time in seconds the two take to completely pass one another. **(4mks)**

9. In the figure bellowed and EA are tangents to the circle at D and A.DC is parallel to AB and <BDC = 51^{0}. Calculate the value of x. **(3mks)**



10. Two similar containers have base areas $25cm^2$ and $324cm^2$ respectively. Calculate the Capacity of the larger container correct to one decimal place if the capacity of the smaller one is $8cm^3$ **(3mks)**

11. Solve for χ and y in the simultaneous equation. **(4 marks)**

$3^{2\chi} \times 3^{y} = 27$

$2^{\chi - y} \times 2^{\chi} = 32$

12. Given that $1.\dot{0}\dot{5} = 1\frac{a}{b}$, Find the values of a and b. **(3mks)**

13. A Kenyan bank buys and sells foreign currencies using the rates shown below.

	Buying (Ksh)	Selling (Ksh)
1 Euro	86.25	86.97
100 Japanese Yen	66.51	67.26

A Japanese traveling from France arrives in Kenya with 5000 Euros, which he converts to Kenya shillings at the bank. While in Kenya he spent a total of Ksh.289,850 and then converted the remaining Kenya shillings to Japanese Yen at the bank. Calculate the amount of Japanese Yen that he received. **(3 mks)**

14. All prime numbers between ten and twenty are arranged in descending order to form a number.

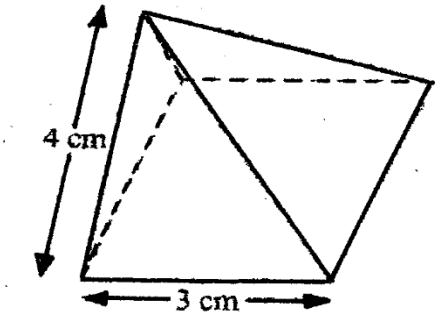
a) Write down the number **(1mk)**

b) State the total value of the third digit in the number formed in (a) above. **(1 mark)**

15. If log 2=0.30103 and log 3=0.47712 find the logarithm of 36 without using tables or calculators.

(3mks)

16. The diagram below represents a right pyramid on a square base of side 3 cm. The slant Height of the pyramid is 4 cm.



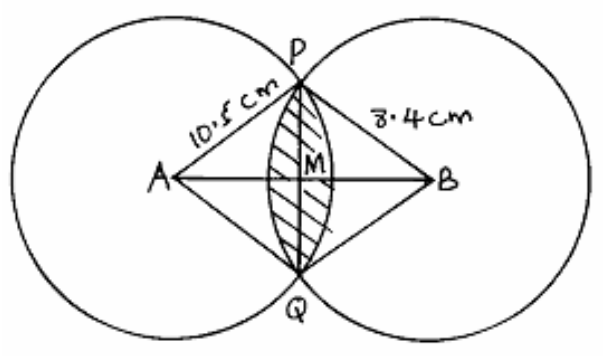
a) Draw a net of the pyramid **(2 marks)**

b) On the net drawn, measure the height of a triangular face from the top of the Pyramid **(1 mark)**

SECTION 11(50 MARKS)

Answer only FIVE questions from this section.

17. The figure below shows two circles of radii 10.5cm and 8.4cm and with centres A and B respectively. The common cord PQ is 9cm.



(a) Calculate angle PAQ. **(2 marks)**

(b) Calculate angle PBQ. **(2 marks)**

(c) Calculate the area of the shaded part. **(6 marks)**

18.B is 102km on the bearing of 112° from A. C is 94km on the bearing of 062° from B D is 073° from A and 336° from C.

(a) Using a scale of 1cm to represent 20km,draw a diagram to show the positions of A,B,C and D. **(6mks)**

b) Using your diagram, determine;

i) The bearing of B from D and A from C. **(2mks)**

ii)The distance AC and BD **(2mks)**

19. A group of people planned to contribute equally towards a water project which needed kshs. 2,000,000 to complete. However, 40 members of the group withdrew from the project. As a result, each of the remaining members were to contribute ksh 2500 more.

(a) Find the original number of members in the group. **(5mks)**

(b) Forty five percent of the value of the project was funded by Constituency DevelopmentFund (CDF). Calculate the amount that would be made by each of the remaining members of the group. **(3mks**)

(c) Members contribution were in terms of labour provided and money contributed. The ratio of the value of labour to the money contributed was 6:19, calculate the total amount of money contributed by the members **(2mks)**

20.A bus left Kisumu at 9:30 a.m towards Nairobi at an average speed of 81 km/hr. A matatu left Nairobi at 10.10 a.m at an average speed of 72km/hr. The distance between Kisumu and Nairobiis 360km.

(a) Determine

(i) The time taken before the two vehicles met. **(3mks)**

(ii) The distance between the two vehicles 40 minutes after meeting. **(2mks)**

b) A car left Kisumu towards Nairobi at 9.50 a.m at an average speed of 90 km/hr.

Determine

i) The time when the car caught up with the bus. **(3mks)**

ii)The distance of Nairobi from the place where the car caught up with the bus. **(2mks)**

21. Using a ruler and a pair of compasses only.

(i) Construct line AB = 6cm. **(1 mark)**

(ii) Construct triangle DAB where angle DAB = 75° and AB = BD. **(2 marks)**

(iii) Complete the parallelogram ABCD. **(1 mark)**

(iv) Drop a perpendicular from A to BD and hence find the area of the parallelogram. **(3 marks)**

(v) Construct a circle to touch line BC, AB produced and DC produced. Measure its radius. **(3 marks)**

22.A surveyor recorded the measurements of a field in a field book using lines AB 260m as shown below.

	B	
	130	R 40
	70	Q10
	50	P20
S50	10	
	A	

a) Sketch the map of the field. **(4mks)**

b) Find the area of the field in hectares. **(6mks)**

23. A trader sold an article at sh.4800 after allowing his customer a 12% discount on the marked price of the article. In so doing he made a profit of 45%.

a) Calculate

(i) The marked price of the article. **(3 marks)**

(ii) the price at which the trader had bought the article **(2marks)**

b) If the trader had sold the same article without giving a discount. Calculate the percentage profit he would have made. **(3 marks)**

c) To clear his stock, the trader decided to sell the remaining articles at a loss of 12.5% calculate the price at which he sold each article. **(2mks)**

24. The distances S metres from a fixed point , covered by a particle after t seconds is given by the equation, $S= t^3 – 6t^2 + 9t +5$

a) Calculate the gradient to the curve at t = 0.5 seconds. **(3mks)**

b) Determine the values of S at the maximum and minimum turning points of the curve. **(4mks)**

c) On the space provided, Stretch the curves of $S = t^3 – 6t +9t +$ **5** **(3mks)**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

MATHEMATICS

121/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS TO CANDIDATES:

(a) Write your name and index number in the spaces provided above

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

(c) This paper consists of ***TWO*** sections: ***Section I*** and ***Section II.***

(d) Answer ***ALL*** the questions in ***section I*** and only five from ***Section II***

(e) All answers and working must be written on the question paper in the spaces provided below each question.

(f) ***Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.***

(g) Marks may be given for correct working even if the answer is wrong.

(h) ***Non-programmable*** silent electronic calculators and KNEC Mathematical tables may be used except where stated otherwise.

FOR EXAMINER'S USE ONLY

Section I

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

Section II

17	18	19	20	21	22	23	24	Total

Grand Total

SECTION I:5MARKS- ***Answer all questions from this section***

1. Rationalise the denominator and simplify leaving your answer in the form $\sqrt{a} + b$.**(3 marks)**

$$\frac{\sqrt{2} + 2\sqrt{5}}{\sqrt{5} - \sqrt{2}}$$

2. a) expand $(1 - \frac{1}{2}x)^5$ **(1 mark)**

b) Use the expansion upto x^3 in (a) above to evaluate $(0.98)^5$ correct to 4 d.p **(2 marks)**

3. Agotho has a rectangular plot that was measured to the nearest meter and found to be 80m in length and 60m in width. Determine the percentage error in its perimeter. **(3 marks)**

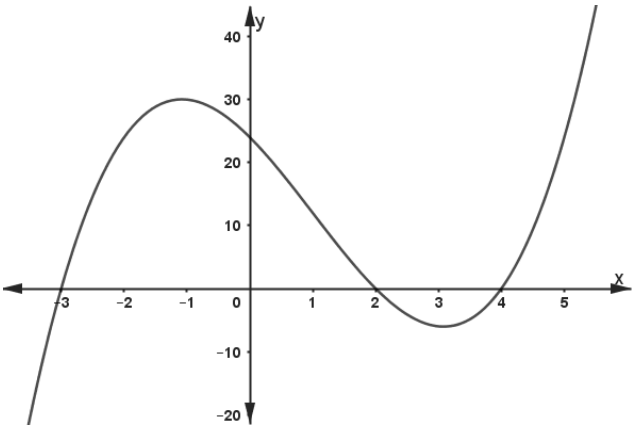
4. Simplify $\frac{9x^2-1}{3x^2+2x-1}$ **(3 marks)**

5. A circle of radius 3cm has its centre at (3, –2). Express the equation of the circle in the form $x^2 + y^2 + mx + ny + c = 0$. Where m, n and c are constants. **(3 marks)**

6. Find the value of x that satisfies the equation $\log(2x - 11) - \log 2 = \log 3 - \log x$(**4 marks)**

7. Five men working 8 hours a day take 2 days to cultivate an acre of land. How many days would four men working 10 hours a day at double rate take to cultivate 3 acres of land? **(3 marks)**

8. The figure below shows the graph of a cubic function.

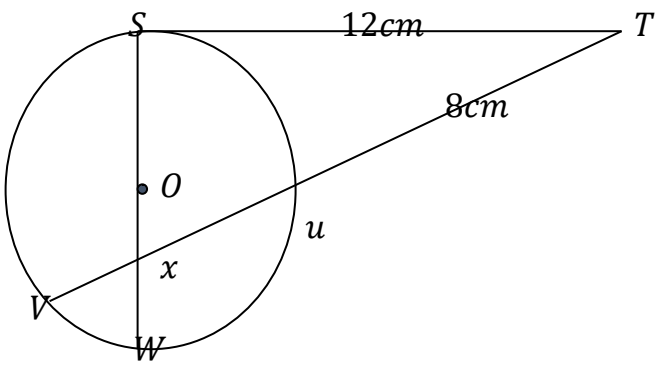


Write the equation of the function in the form $y = x^3 + ax^2 + bx + c$, where a, b and c are constants. **(3 marks)**

9. Given that $\mathbf{A} = \begin{pmatrix} 1 & k \\ 3 & 3 \end{pmatrix}$ and $\mathbf{B} = \begin{pmatrix} -3 & 5 \\ 1 & -2 \end{pmatrix}$, find k if the determinant of **AB** is 9**(3 marks)**

10. A variable P varies directly as t^3 and inversely as the square root of S. When $t = 2$ and $S = 9$ $P = 16$. Determine the equation connecting P, t and S hence find P when S = 36 and $t = 3$. **(3mks)**

11. In the figure below the tangent ST meets chord Vu. Produced at T. chord SW passes through the centre O of the circle and intersect chord Vu at x. Line ST = $12cm$ and $uT = 8cm$



a) Calculate the length of chord Vu. **(1mk)**

b) If $wx = 3cm$ and $Vx : xu = 2 : 3$. find Sx **(2mks)**

12. Make n the subject of the formula.

$$\frac{r}{P} = \frac{M}{\sqrt{n-1}}$$ **(2mks)**

13. The table below shows income tax rates in a certain year

Monthly income in Kshs	Tax rate in each kshs
$1 \leq x < 9681$	10%
$9681 \leq x < 18801$	15%
$18801 \leq x < 27921$	20%
$27921 \leq x < 37040$	25%
Over 37040	30%

In that year Mr. Mogaka gets a total deduction of ksh5,000 he gets a personal tax relief of kshs.1056 and pays kshs.3944 for NHIF, WCPS and sacco loan repayment. Calculate

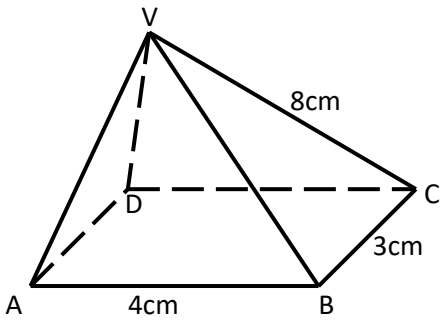
(i) P.A.Y.E. **(1 mark)**

(ii) Monthly income/salary **(3 marks)**

14. Use logarithms tables to evaluate. **(4mks)**

$$\sqrt[3]{\frac{36.72\times(0.46)^2}{185.4}}$$

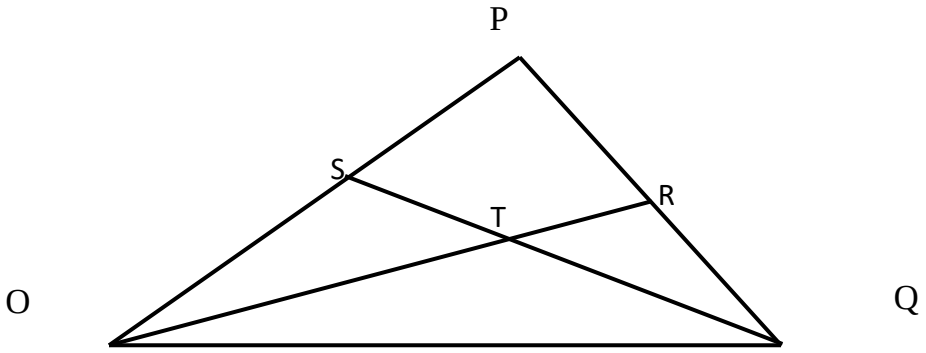
15. The figure below shows a rectangular based right pyramid. Find the angle between the planes ABCD and ABV. **(2marks)**



16. Find the shortest distance between points A(50^oS,25^ot) and B(50^oS, 140^oE in KM (Take R=6370 Km) **(3mks)**

SECTION II – 50 MARKS;Answer any FIVE questions from this section

17.



In the figure above, OPQ is a triangle in which $OS = \frac{3}{4}OP$ and $PR : RQ = 2:1$

Line OR and SQ meet at T.

h) Given that OP = p and OQ = q, express the following vectors in terms of p and q.

(i) PQ **1 Mark**

(ii) OR **2 Marks**

(iii) SQ **1 mark**

i) You are further given that ST = mSQ and OT = nOR. Determine the values of m and n. **(6 marks**

18. (a) Complete the table given below for the functions $y = -3\cos 2x$ and $y =$

$2\sin\left(\frac{3}{2}x+30\right)^0$ for $0^0 \le x \le 180^0$ **(2 marks)**

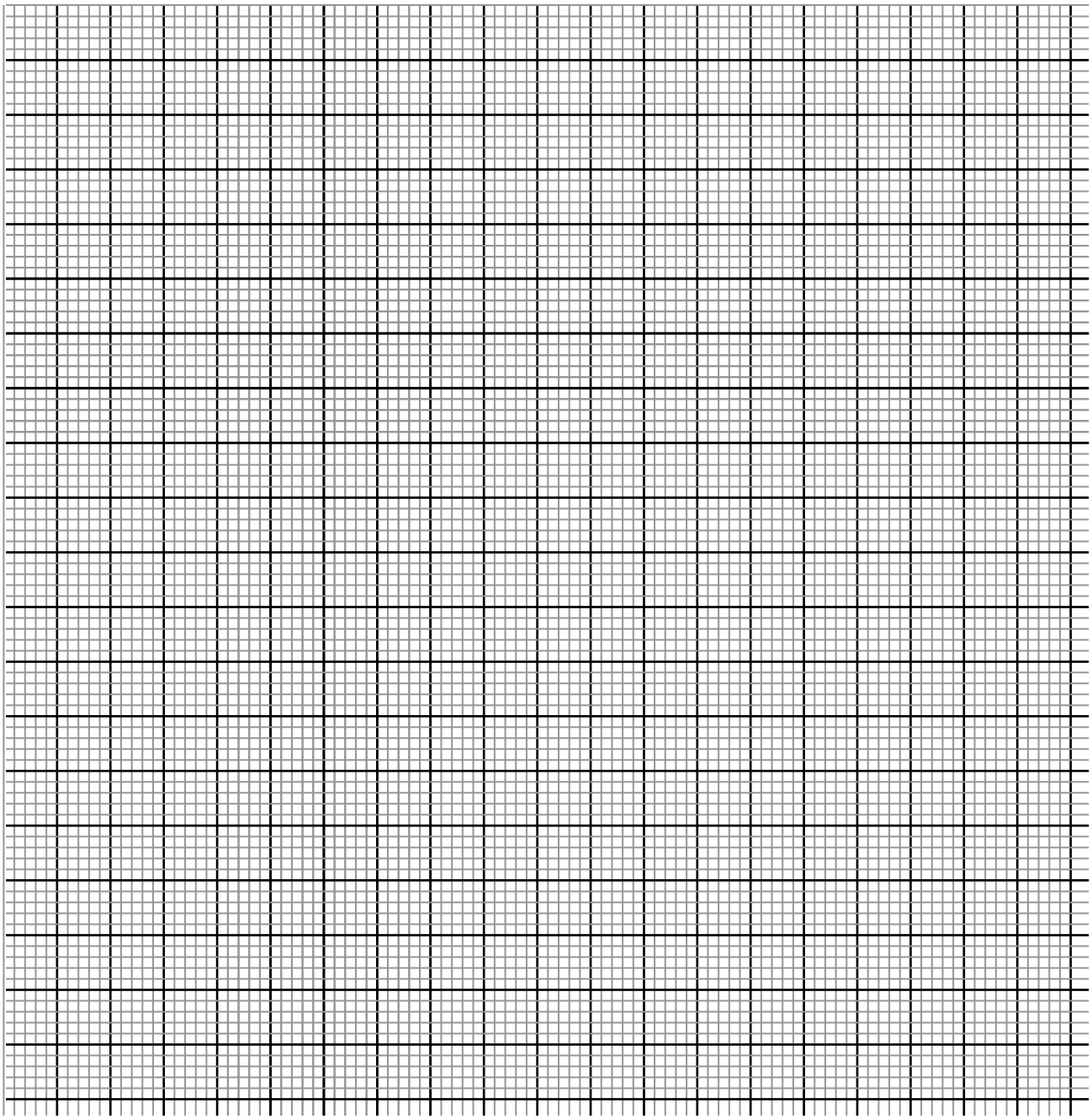
x^0	0	20	40	60	80	100	120	140	160	180
$-3\cos 2x$	-3.00			1.50	2.82	2.82		-0.52	-2.30	
$2\sin\left(\frac{3}{2}x+30\right)^0$	1.00		2.00	1.73		0.00	-1.00			-1.73

(b) Using the grid provided, draw the graphs of $y = -3\cos 2x$ and $y = 2\sin\left(\frac{3}{2}x+30\right)^0$ for $0^0 \le x \le 180^0$ on the same pair of axes. Take 1cm to represent 20^0 on the $x-$ axis and 2cm to represent 1 unit on the $y-$ axis. **(5 maks)**

(c) From the graphs in (b) above, find;

(i) the period of $y = 2\sin\left(\frac{3}{2}x+30\right)^0$ **(1 mark)**

(ii) the values of x given that $2\sin\left(\frac{3}{2}x+30\right)^0 + 3\cos 2x = 0$ **(2 marks)**



19. Awuor was paid an initial salary of Kshs. 180000 per annum with a fixed annual increment. Wasonga was paid and initial salary of Kshs. 150000 per annum with a 10% increment compounded annually.

(a) Given that Awuor's annual salary in the 11^{th} year was Kshs. 288,000, determine:

(i) Her annual increment. **(2 marks)**

(ii) The total amount of money Awuor earned during the 11 years. **(2 marks)**

(b) Determine Wasonga's monthly earning, correct to the nearest 10 shillings during the 11^{th} year **(3 marks)**

(c) Calculate the number of years it will take Awuor's total earnings to be Ksh. 1022400**.(3 marks)**

20. In a mixed school there are 420 boys and 350 girls. The probability that a girl passes her exams in the school is $\frac{4}{7}$ while that of a boy passing is $\frac{5}{8}$. The probability of a girl being made a prefect is $\frac{2}{11}$ while that of a boy is $\frac{1}{8}$.

Find the probability that a student picked at random.

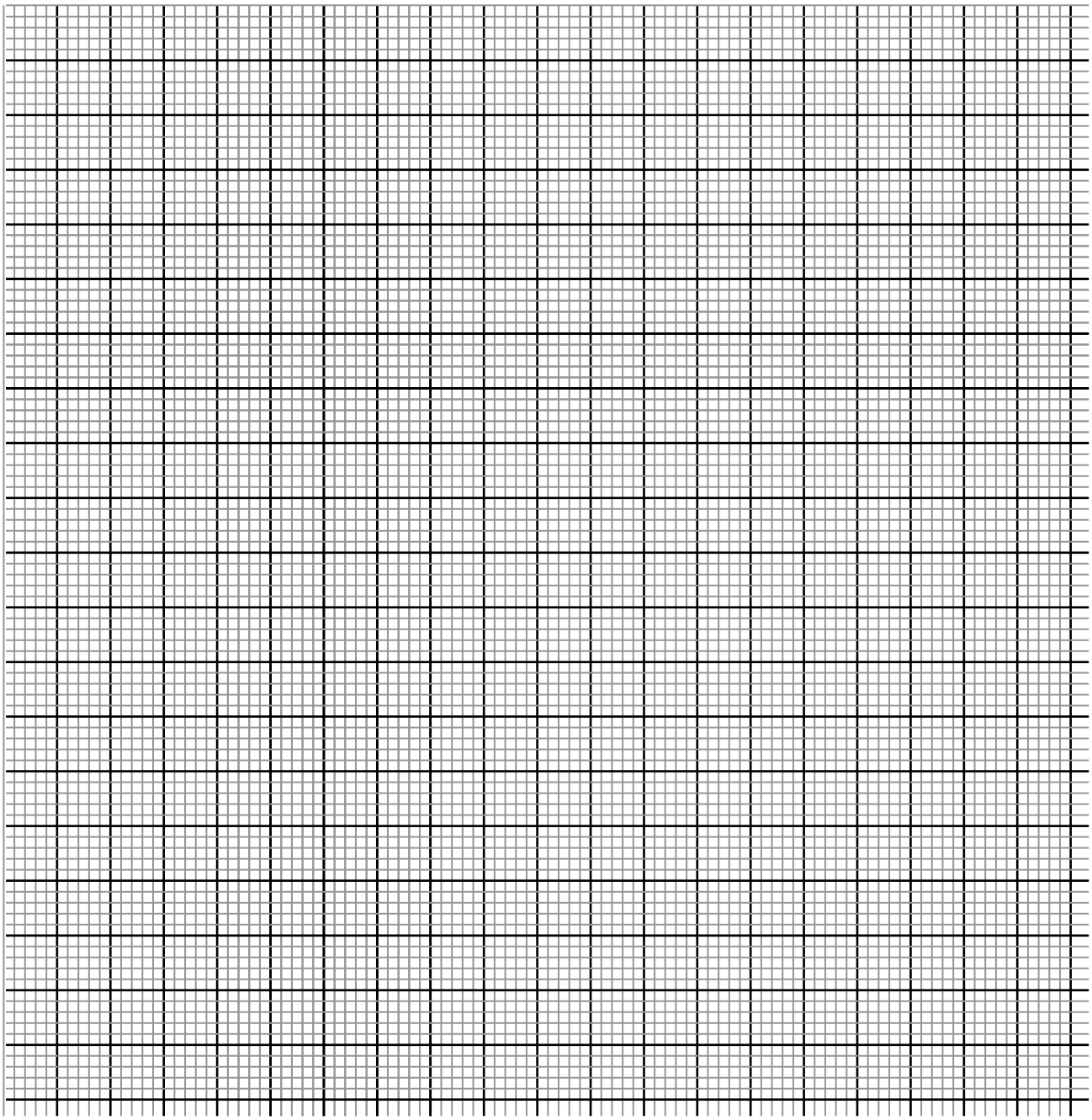
a) Is a boy and passes the exam and is not a perfect. **(3mks)**

b) Is a girl, a prefect and passes the exam. **(3mks)**

c) Is not as prefect and passes the exam. **(4mks)**

21. OABC is a parallelogram with vertices O (0, 0) A (2, 0) B (3, 2) and C (1, 2).

$O^1\ A^1\ B^1\ C^1$ is the image of OABC under transformation matrix $\begin{matrix} -2 & 0 \\ 0 & -2 \end{matrix}$



a) Find the co-ordinates of $O^1\ A^1\ B^1\ C^1$. **(2mks)**

b) On the grid provided draw OABC and $O^1\ A^1\ B^1\ C^1$ **(2mks)**

c) Find $O^{11}\ A^{11}\ B^{11}\ C^{11}$ the image of $O^1\ A^1\ B^1\ C^1$ under the transformation matrix $\begin{matrix}1 & 0\\ 0 & -2\end{matrix}$ **(2mks)**

(i) On the same grid draw $O^{11}\ A^{11}\ B^{11}\ C^{11}$. **(1mk)**

(ii) Find the single matrix that map $O^{11}\ A^{11}\ B^{11}\ C^{11}$ onto OABC. **(3mks)**

22. A particle moves in such a way that the velocity V at any given time is $v=10t - \frac{1}{2} t^2 - \frac{15}{2}$ mls.

(a) Calculate the initial velocity **(1 mark)**

(b) Calculate the velocity when the time t=3 **(2 marks)**

(c) Find the displacement during the 5^{th} second **(4 marks)**

(d) Calculate the maximum velocity attained **(3 marks)**

23. The 2^{nd} and 5^{th} terms of an arithmetic progression are 8 and 17 respectively. The 2^{nd}, 10^{th} and42^{nd} terms of the A.P. form the first three terms of a geometric progression. Find

(a) The 1^{st} term and the common difference. **(3mks)**

(b) The first three terms of the G.P and the 10^{th} term of the G.P. **(4mks)**

(c) The sum of the first 10 terms of the G.P. **(3mks)**

24. Matrix P is given by $\begin{pmatrix} 4 & 7 \\ 5 & 8 \end{pmatrix}$

(a) Find P^{-1} **(2 Marks)**

(b) Two institutions, Kamunyaka secondary School and Njabini mixed secondary School purchased beans at Sh. b per bag and maize at Sh. m per bag. Kamunyaka secondary purchased 8 bags of beans and 14 bags of maize for KSh. 47,600. Njabini mixed purchased 10 bags of beans and 16 bags of maize for KSh. 57,400.

(i) Form a matrix equation to represent the information above. **(2 Marks)**

(ii) Use matrix $P^{-1}$to find the prices of one bag of each item. **(3 Marks)**

(c) The price of beans later went up by 5% and that of maize remained constant. Kamunyaka secondary bought the same quality of beans but spent the same total of money as before on the two items. State the new ratio of beans to maize. **(3 Marks)**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

COMPUTER STUDIES

451/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

(a) *Write your Name and Index/Adm Number in the spaces provided.*

(b) *This paper consists of TWO sections: A and B*

(c) *Answer ALL the questions in section A*

(d) *Answer question 16 and any other **THREE** questions from section B*

(e) *All answers should be written in the spaces provided in the question paper.*

(f) *Do not remove any pages from this booklet.*

(g) *Candidates should answer the questions in English.*

For Examiners use only.

Section	Question	Candidates Score
A	1 – 15	
B	16	
	17	
	18	
	19	
	20	
	Total Score	

SECTION A (40 MARKS)

ANSWER ALL QUESTIONS FROM THIS SECTION

1. Give **FOUR** characteristics of first generation computers? **(2marks)**

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2. a) Why are powder fire extinguishers not allowed in the computer room? **(1 mark)**

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b) What is the difference between delete and backspace keys? **(2 marks)**

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3. Give **FOUR** factors that describe the ideal environment for a computer to work properly.

(2marks)

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4. Give **TWO** advantages of using sound output devices **(2marks)**

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5. Give **TWO** application areas of OMR **(2marks)**

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6. a) Distinguish between primary and secondary storage devices. **(2marks)**

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7. State FOUR devices that support multimedia capability on a computer **(2marks)**

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b) Differentiate between the terms: volatile memory and non-volatile memory. **(2marks)**

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8. Differentiate between misreading and transposition errors in data processing **(2marks)**

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9. What is the function of the power supply unit found in the system unit? **(2marks)**

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10. (a) Name **FOUR** approaches that may be used to replace a Computerized Information system. **(2 marks)**

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(b) Which of the approaches named in (a) above is appropriate for critical systems? Ex**plain.**

(2 marks)

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11. Terry intends to download a movie from the Internet. State the **two** factors that may determine the total time taken to complete the download. **(2 Marks)**

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12. A lecturer keeps the following student details in a database: name, age, course.

(a) Write an expression you would use to compute the year of birth of a student using this year as the current year. **(2 marks)**

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(b) What query expressions would the lecturer use to list the students whose age is above 15 years and below 25 years? **(2 marks)**

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13. a) Explain each of the following roles performed by an operating system

i.Memory management **(2 marks)**

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ii. Interrupt handling **(2 marks)**

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14. A computer teacher has put a rule that flash disk should not be used in the computer laboratory

(a) Give a reason for the rule **(1 mark)**

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(b) State two alternatives that can be used to achieve the same objective **(1 marks)**

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15. (a) What is a utility software? **(1 mark)**

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(b) Give **FOUR** examples of utility software **(2 marks)**

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SECTION B (60 MKS)

Answer question 16 and any other 3 questions.

16. a) i) What is system maintenance? **(2marks)**

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b) Differentiate between absolute and relative cell referencing. **(2marks)**

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c) The formula A4 +C$5 is typed in cell D4 and copied to cell H6. Write down the formula as it would appear in cell H6. **(2marks)**

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……

d) Generate output for the following pseudo code **(4marks)**

```
START
        X= 5
        WHILE (X<15) DO
                Y= X +2
X=X+3
PRINT X,Y
        ENDWHILE
        PRINT ("DONE',X)
STOP
```

e) Draw a flowchart for the above pseudo code **(5 marks)**

17. a) Using 10-bits binary number system, perform the following decimal operation using two's complement. (4 marks)

129_{10} - 128_{10}

b) Convert the following into binary $6CD_{16}$ **(2 marks)**

c) Perform the following binary arithmetic 11001.101+1110.011 **(2 marks)**

d) Define the following terms. **(3 marks)**

i) Record

ii) File

iii) Database

e) List any **FOUR** ways of dealing with a virus on a computer. **(4 marks)**

18. a) Explain the functions performed by **(2 marks)**

i) The control unit-

ii) Arithmetic and logic unit (ALU)

b) Define the following terms in relation to computer software . **(3 marks)**

i) Free ware.

ii) Proprietary

iii) Open source

c) i) Define the term E-commerce **(2marks)**

ii) List down **TWO** advantages of e- commerce as used in modern business environment **(2marks)**

d) Describe **THREE** ways how computing has been applied to each of the following areas:

i) Reservation systems. **(3 marks)**

ii) Law enforcement **(3 marks)**

19. (a) i) Name any **TWO** types of non-printable guides in DTP. **(1mark)**

ii) Explain the functions of each of non-printable guides in (19 (a)i) above **(4 marks)**

b) State FOUR factors to consider when designing a good file **(2 marks)**

c) Name **THREE** responsibilities that are carried out by a:

(i) Web administrator **(3 marks)**

(ii) Computer trainer **(3 marks)**

d) Identify **TWO** disadvantages of Observation method used in fact-finding. **(2 marks)**

20.(a) List **THREE** advantages of wireless communication over wired communication**.(3 marks)**

(b) Using a Diagram, describe the following signals and state where each is applied in network communication:

(i) Analog; **(2 marks)**

(ii) Digital. **(2 marks)**

(c) Name the **TWO** types of coaxial cables. (**2 marks)**

(d) (i) Define the term network protocol. **(1 mark)**

(e) List **FOUR** internet protocols **(2 marks)**

(f) Describe star topology as used in networking **(3 marks)**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

COMPUTER STUDIES

451/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

(a) *Type your name and index number at the top right-hand corner of each print out.*

(b) *Write your name and index number on the CD-R/ CD-RW provided.*

(c) *Write the name and version of the software used in each question attempted in the printouts used.*

(d) *Answer **all** the questions.*

(e) *All questions carry equal marks.*

(f) *Passwords **should not be used** when saving files.*

(g) *All files must be transferred to the CD-R/ CD-RW.*

(h) *Make printouts of your answers on the papers provided for printing.*

(i) *Arrange your printouts and tie/ staple them together.*

(j) *Hand in all the printouts and the CD/removable storage medium provided.*

(k) ***Candidates must answer the questions in English.***

For Marking Schemes Contact 0746 222 000 / 0742 999 000

1.(a) Open a word processing program and type the document below as it appears and save it as **CBC.** **(15 marks)**

PARENT'S ROLES IN COMPETENCY BASED CURRICULUM

Kenya has embraced a Competency Based Curriculum (CBC) to increase skills development and instill values in the learner. Parental empowerment and engagement in the learning process is essential to the learner's growth and development. As a parent, you are the first educator, trainer and source of authority for your child. The purpose of this brochure, therefore, is to give you more information about CBC and your role in the learning process of your child.

WHAT IS COMPETENCY BASED CURRICULUM?

This is a process that gives learners an opportunity to be actively involved in learning. It facilitates identification and development of learner's unique talents and abilities through different career pathways after grade 9. CBC assists learners acquire, nurture and apply values in day to day living

WHY THE CHANGE FROM 8-4-4 CURRICULUM TO CBC?

The Competency Based Curriculum was rolled out nationally in January 2019 in Early Years Education. The difference between 8.4.4 and CBC;

From 8-4-4	To CBC
Focuses on teaching	Focuses on practical learning
Focuses on memorization of content	Focuses on application of knowledge
Focuses on academic achievement	Focuses not only on academic achievement but also on skills development and nurturing of values
Focuses on examination and results	Focuses on what the learner is expected to achieve and provision of feedback on the learner's progress
Focuses on competition	Focuses on collaboration
Not all learners transited to the next level	Facilitates smooth transition for all learners
Less emphasis on talent and career progression	More emphasis on talent identification and career development
Less parental engagement in learning	More parental empowerment and engagement

GENERAL ROLES OF THE PARENT IN COMPETENCY BASED CURRICULUM

The following are general roles to support the learning of your child in CBC

- ∝ Provide basic necessities.
- ∝ Protect your child from physical and emotional harm.
- ∝ Instill and nurture morals and values.
- ∝ Teach and guide children to make the right choices and make them aware of consequences.
- ∝ Teach and model proper use of resources.
- ∝ Instill a sense of responsibility by ensuring children participate in age-appropriate chores.
- ∝ Help in enhancing learning achievements in your child as guided by the teacher.
- ∝ Engage with the teacher to enrich your child's learning experiences.
- ∝ Provide tender, loving care to boost your child's emotional safety and a sense of belonging.
- ∝ Take part in school activities such as academic clinics, talent

Required

b) Set page margins as follows:

i) Left margin: 6 Picas **(2 marks)**

ii) Right, Top and Bottom margins: 3 Picas **(2 marks)**

c) Apply 1.5 line spacing on the entire document **(2 marks)**

d) Insert an in margin drop cap on paragraph 1 dropped to 4 lines **(2 marks)**

e) Save the document as **CBC-1** **(2 marks)**

f) Print out the following:

i) CBC **(2 marks)**

ii) CBC-1 **(2 marks)**

2.(a) The following is an extract from Wavumbuzi Entrepreneurship Challenge showing the performance of different participants over the Six-week period.

	A	B	C	D	E	F	G	H	I	J	K	L
1	**WAVUMBUZI ENTREPRENEURSHIP CHALLENGE**											
2				**SCORED POINTS**								
3	**NAME**	**SEX**	**SCHOOL**	**WK 1**	**WK 2**	**WK 3**	**WK 4**	**WK 5**	**WK 6**	**TOTAL POINTS**	**AVERAGE POINTS**	**MEDAL**
4	Sarah	F	LSS	80	180	360	500	700	900			
5	Dennis	M	MHS	100	200	300	400	650	800			
6	Jules	F	CSS	75	120	225	350	480	600			
7	Faith	F	BHS	60	100	250	320	450	630			
8	Dylan	M	KHS	90	150	350	600	750	680			
9	Kenan	M	FMSS	70	160	210	320	500	700			
10	Sheillah	F	SSS	80	170	300	480	535	670			
11	Pauline	F	NHS	100	250	400	650	800	1000			
12	Albert	M	JSS	50	100	200	430	500	660			
13	Fionah	F	MGHS	80	150	320	450	490	600			
14												
15	**TOTAL FOR FEMALE**											
16	**TOTAL FOR MALE**											

i) Using a spreadsheet package, enter the above information and save it as **Wavumbuzi Challenge** **(11 marks)**

ii) Format the worksheet to appear as it is **(4 marks)**

iii) Rename the worksheet containing the data as ***Wavumbuzi-1*** **(1mark)**

iv) Copy the contents of *Wavumbuzi-1* to another worksheet and rename it as ***Wavumbuzi-2*** **(2 marks)**

b) Type a formula at:

i) Cell J4 to compute the total points for Sarah **(2 marks)**

ii) Apply the formula to the appropriate cells **(1 mark)**

c) Type a function at:

i) Cell K7 to compute the Average Points for Faith. **(2 marks)**

ii) Apply the function to the appropriate cells. **(1 mark)**

d) A participant earns a medal based on the Average Points scored as follows:

Average points	Medal
500 and above	Gold
300-499	Silver
Below 300	Bronze

i) Type a formula in L5 to determine David's medal **(3 marks)**

ii) Apply the formula to other appropriate cells **(2 marks)**

e) Insert a blank column after average points and label it RANK. Using appropriate function, compute the rank of the participants based on the average points in descending order **(5 marks)**

f) (i) Using appropriate functions, compute the:

(a) Total points for the female per week in cell D15 **(2 marks)**

(b) Total points for the male per week in cell D16 **(2 marks)**

ii) Apply the functions to the appropriate cells **(2 marks)**

g) Using **Wavumbuzi-1** worksheet, create a **bar chart** showing how various participants performed in the six-week challenge and Move it to a new worksheet: **(7 marks)**

i) Insert the Chart Title as: **WAVUMBUZI SIX WEEK CHALLENGE PERFORMANCE**

ii) Insert X-axis as: **PERFORMANCE SCORES**

iii) Insert Y-axis as: **PARTICIPANT NAME**

iv) Display the legend at the bottom

v) Rename the worksheet containing the chart to ***WavumbuziChart***

h) Print out each of the following: **(3 marks)**

i) Wavumbuzi -1

ii) Wavumbuzi-2 (showing the formulas)

iii) WavumbuziChart

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

HOME SCIENCE

441/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

Instructions to candidates

a) Write your name and admission no in the spaces provided.

b) Answer all the questions in section A and B and any two from section C.

c) Answers to all questions must be written in the spaces provided.

For examiners use only.

Section	Question	Maximum score	Candidates score
A	1-23	40	
B	24	20	
C	25-27	40	
TOTAL SCORE		100	

SECTION A (40 MARKS)

Answer all the questions in this section in the spaces provided.

1. Mention two disadvantages of steaming fo**od** **(2mark)**

……

……

2. State two conditions essential in making steam effective as a raising agent **(2mark)**

……

……

3. Mention two points on prevention and control of round **worms** **(2mark)**

……

……

4. Identify two ways of meeting the emotional needs of patient recuperating at **home (2mark)**

……

……

5. List two ways of achieving good grooming **(2mark)**

……

……

6. State two advantages of bungalo**ws** **(2mark)**

……

……

7. State two factors that affect a budg**et** **(2mark)**

……

……

8. State two advantages of breast milk **(2mark)**

……

……

9. State two points that guarantee safe parenthood **(2mark)**

……

……

10. Mention two points to observe when using disinfectants during **laundry** **(2mark)**

……

……

11. List two uses of candles as a source of light**ting** **(1mark)**

……

……

12. Mention two advantages of biogas fu**el** **(2mark)**

……

……

13. List down two ways of ventilating a room using doors and window**s.** **(1mark)**

……

……

14. Mention two common injuries which may accidentally occur at home**.** **(1mark)**

……

……

15. State two ways of improvising clothes storage facilit**ies** **(2mark)**

……

……

……

16. Mention two uses of facings in clothing **construction** **(2mark)**

……

……

17. Differentiate between a tear and a **wear** **(2mark)**

……

……

……

18. Mention two areas in a garment where diagonal tacking can be used **(1mark)**

……

……

19. Openings are of various types. Give two **examples** **(2mark)**

……

……

20. State two properties of silk that makes it suitable for making furnishings **(2mark)**

……

……

21. Give the correct directions of pressing the following darts**.** **(1mark)**

Front shoulder dart

……

elbow dart

……

22. State two qualities of a well-made seam **(2mark)**

……

……

23. Mention two methods of attaching collars to the neckline **(2mark)**

……

……

……

SECTION B: (20 MARKS)COMPULSORY

Answer question 41 in the spaces provided.

24. Your sister has invited you to a stay with her over the holiday and she has an eight months old baby. Describe the procedure of carrying out the following activities at her home;

a) Prepared a baby cot for her **(8marks)**

b) Thorough clean her calabash that she uses to serve porridge **(5marks)**

c) Thorough clean terrazzo floor of her bedroo**m** **(7marks)**

SECTION C (40 MARKS)

***Answer two questions from this section in the space provided*.**

25.

a) Suggest four factors that can cause food prices to rise. **(4marks)**

b) Describe with the use of two diagrams the procedure of making a machine fell seam **(6marks)**

c) Briefly describe four principles of food preservation**.** **(4marks)**

d) Give two reasons for using each of the following ingredients in flour mixtures **(6marks).**

i) Eggs

ii) Sugar

iii) salt

26.

a) Discuss five reasons for sufficient ventilation in a room **(5marks)**

b) State five ways of keeping pastry cool during preparation**.** **(5marks)**

c) Outline four functions of counterfeit section**.** **(3marks)**

d) Describe three qualities of a well-made in seam pocket **(6marks)**

27. (a) State **five** factors that affect individual nutrient requirement **(5mks)**

(b) State **five** factors to consider when packing meals**.** **(5mks)**

(c) State **six** ways of ensuring that a sleeve is well set. **(6mks)**

1. (d) Suggest four advantages of blending wool with nylon **(4mks)**

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

HOME SCIENCE

441/2

PAPER 2

TIME: 2½ HOURS

SCHOOL…… SIGN……

Kenya Certificate of Secondary Education.

CONFIDENTIAL

Instructions to the Home Science teacher

- Provide light weight plain coloured cotton fabric 56cm x 90cm.
- Sewing tools and equipment's.

KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

HOME SCIENCE

441/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

HOME SCIENCE

(CLOTHING CONSTRUCTION)

Paper 2

(PRACTICAL)

2 ½ hours

INSTRUCTIONS TO CANDIDATES

a) This paper consists of 3 printed pages.

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

c) Candidates MUST use machine stitches appropriately in the construction of the garment. Hand stitches used instead of machine stitches will not be marked.

d) Hand stitches will only be allowed for the making of loop, worked buttonhole tacking stitches.

Turn over

GIRL'S SKIRT

A pattern of a girl's skirt is provided. You are advised to study the sketches, instructions and layout carefully before you begin the test.

MATERIALS PROVIDED

1. Pattern Pieces

A — Skirt back

B — Yoke (front)

C — Lower skirt (front)

D — Front waistband

E — Back waistband

F — Frill

2.Plain lightweight cotton fabric 56 cm long by 90 cm wide.

3 Sewing thread to match the fabric.

4 One large envelope.

THE TEST

Using the materials provided, cut out and make the left half of the girl's skirt to show the following processes:

a) Cutting out. (18 marks)

b) Making of the dart at the back skirt. ($6\frac{1}{2}$ marks)

c) Joining of the yoke front to the lower skirt front using an overlaid seam. **Neaten half the seam using loop stitches.** (12 marks)

d) Attaching of the frill to the lower skirt front using a plain seam. **Leave the gathering stitches** and do not trim the seam allowance. (11 marks)

e) Making of the skirt side seam from the yoke to the hemline using an open seam. (7 marks)

f) Attaching of the front and back waistbands and holding them in place using even tacking stitches. (20 marks)

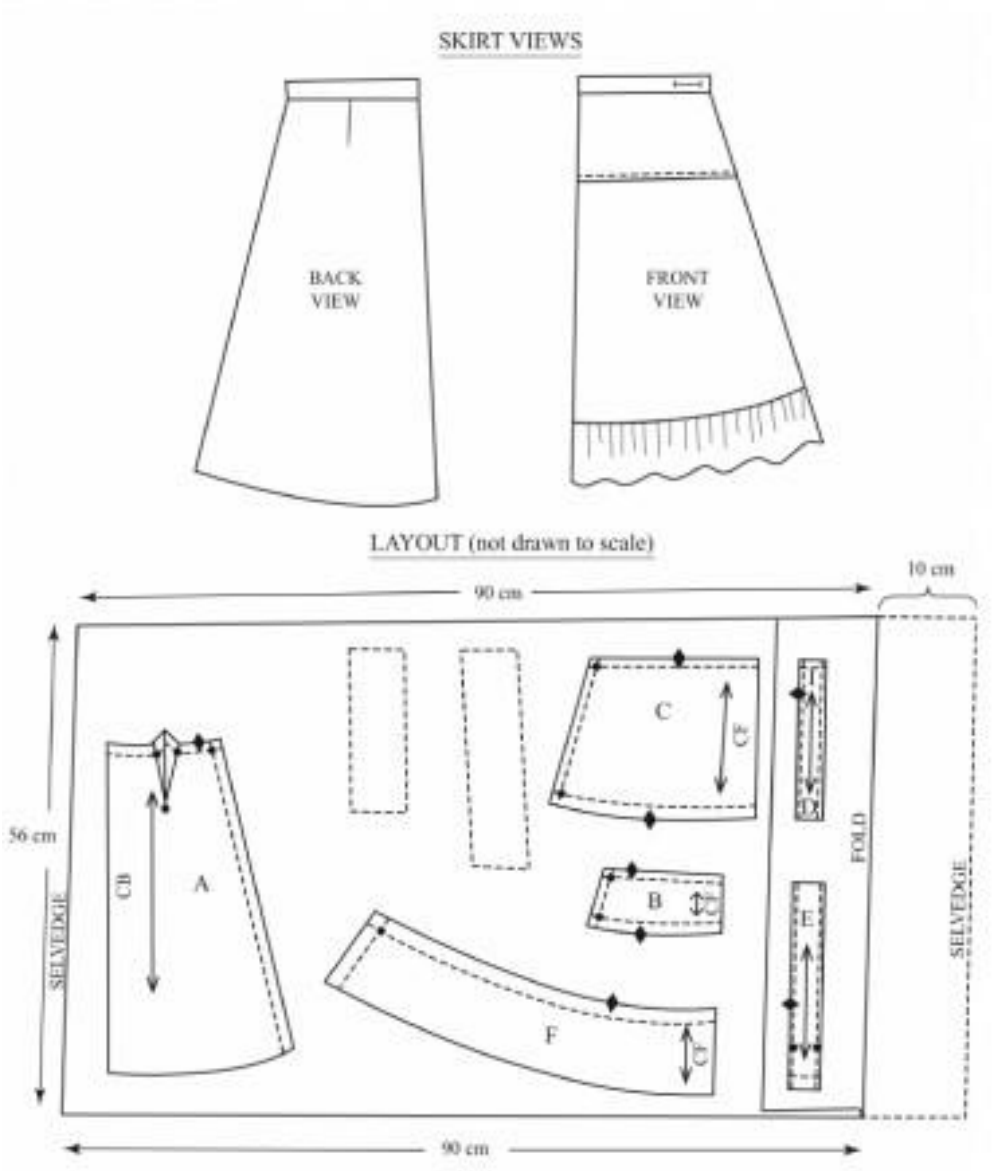
g) Making of the worked buttonhole. (12 marks)

h) OMIT The management of the skirt hem.

i) Overall presentation. ($6\frac{1}{2}$ marks)

For Marking Schemes Contact 0746 222 000 / 0742 999 000

At the end of the examination, firmly sew onto your work, on a single fabric, a label bearing your name and index number. Remove needles, pins and loose threads from your work. Fold yourwork neatly and place it in the envelope provided. Do not put scraps of fabric in the envelope. Donot seal the envelope.



KCSE 2025 SMARTGRADE MOCK

(NATIONWIDE COMPETITION)

HOME SCIENCE

441/3

PAPER 3

TIME: 1¾ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

(Foods and Nutrition)

(Practical)

Instructions to candidates

PLANNING SESSION: 30 Minutes

PRACTICAL TEST SESSION: 1¾ Hours

(a) *Reading the test carefully.*

(b) *Use the booklet provided for all your work.*

(c) *Write your name and index number on every sheet of paper used.*

(d) *Text books and recipes may be used during the planning session.*

(e) *You will be expected to keep to your order of work during practical session.*

(f) *You are allowed to take away your reference materials at the end of the planning session.*

(g) *You are not allowed to bring additional notes to the practical sessions.*

(h) *Previously written plans are not allowed into the examination room.*

For Marking Schemes Contact 0746 222 000 / 0742 999 000

TEST:

Your aunt is attending a clinic with a 5 month old baby.

Using the ingredients listed below prepare a 4 O'clock tea for you and your uncle to include;

a) Two snacks.

b) A suitable drink.

c) Dessert

Ingredients:

- Plain wheat flour.
- Water melon
- Bread.
- Cooking oil.
- Lettuce.
- Eggs.
- Pawpaw
- Tomatoes.
- Sugar.
- Margarine.
- Milk.
- Pineapple
- Tea leaves/coffee
- Salt

Planning session: 30 Min

Use separate sheets of paper and a carbon paper to make duplicate copies then proceed as follows:

1) Identify the dishes and write their recipes.

2) Write your order of work.

3) Make a list of food stuff and equipment you will require.

25 marks

For Marking Schemes Contact 0746 222 000 / 0742 999 000

TO ALL CANDIDATES;

Incase a Significant Number of these Questions Appear in KCSE Exam, Don't panic!

TAKE IT EASY

FOR MARKING SCHEMES

CONTACT

0746 222 000

0742 999 000

kcsepredictions@gmail.com

SUCCESS

TO ALL

KCSE CANDIDATES

For Marking Schemes Contact 0746 222 000 / 0742 999 000