KCSE BRIGHT-MIND PREDICTION

ALL SUBJECTS-2024

This Prediction examination is the outcome of a thorough analytical and systematic approach based on the trends and frequency of testing certain concepts on various subjects.

Take Note that Mwalimu Consultancy Ltd has provided a critical understanding of areas anticipated to be tested in the final KCSE 2024 Examinations.

SUBJECTS COMPILED;

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

BRIGHT-MIND SERIES

For Marking Schemes

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

THE GATEWAY TO SUCCESS

For Marking Schemes - Contact 0746 222 000 / 0742 999 000

KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

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 your name and index number in the spaces provided above.*
2. *This paper consists of **SIX** questions.*
3. *Answer any **FIVE** questions.*
4. *This paper consists of 2 printed pages.*
5. *Candidates should answer all the questions in English.*

FOR EXAMINER'S USE ONLY.

MARKS	1	2	3	4	5	6
TOTAL						

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*Answer any **FIVE** questions.*

1. **(a)** Explain why Christian Religious Education is taught in Kenya schools today. **(7 marks)**

(b) Give reasons why the Bible is referred to as the "Word of God" **(6 marks)**

(c) What lessons do Christians learn about work from the Genesis stories of creation. **(7 marks)**

2. **(a)** Explain the meaning of the symbolic objects used by the Hebrews on the night of Passover. **(8 marks)**

(b) Identify the attributes of God the Israelites learn from the ten plagues. **(7 marks)**

(c) What are the similarities between the Jewish Passover and the Christian Easter. **(5 marks)**

3. **(a)** Explain why idolatry was widespread in Israel at the time of prophet Elijah. **(7 marks)**

(b) **Outline** the activities of King Jeroboam which made the Israelites in the Northern kingdom to turn away from God. **(7 marks)**

(c) In what ways in church worship abused today. **(6 marks)**

4. **(a)** ***Discuss*** how the prophetic message were written. **(5 marks)**

(b) Describe Amo's teaching on the day of the lord. **(8 marks)**

(c) State ways in which the church is carrying out its prophetic role. **(7 marks)**

5. **(a)** ***Describe*** the call of Jeremiah. **(7 marks)**

(b) ***Describe*** the fall of Jerusalem and the exile of the Israelites. **(8 marks)**

(c) Identify ways in which Christians can help to reduce human suffering. **(7 marks)**

6. **(a)** Explain the meaning of life and its wholeness in traditional African Communities. **(6 marks)**

(b) Outline ways in which traditional African Communities show appreciation to God as the source of life. **(7 marks)**

(c) How can Christians show respect for life today. **(7 marks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

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 your name and index number in the spaces provided above.*
2. *This paper consists of **SIX** questions.*
3. *Answer any **FIVE** questions.*
4. *This paper consists of 2 printed pages.*
5. *Candidates should answer all the questions in English.*

Marks	1	2	3	4	5	6
Total						

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Answer any five questions

1a. Outline the message of Isaiah's prophecy about the Messiah, which Jesus read In the synagogue of Nazareth (Luke4:16-19**)** **(6mks)**

b. Describe Zechariah's vision in the temple (Luke 1:8-23) **(8mks)**

c. What lessons do Christians learn about family relationships from the incident when Jesus accompanied His parents for the Passover festival **(6mks)**

2a. With reference to the sermon on the plain, state five teachings of Jesus on how human beings should relate to each other **(5mks)**

b. Describe the healing of the woman with a persistent flow of blood (Luke 8:43-48) **(8mks)**

c. How can a Christian eradicate cases of discrimination in the society **(7mks)**

3a . Narrate the parable of the rich fool (Luke 12:16-21) **(7mks)**

b. What are the teachings of Jesus on material possessions as drawn from the parable of the rich fool **(7mks)**

c. How do Christians use their resources to glorify God **(6mks)**

4a. Relate the message of Peter on the day of Pentecost (Acts 2:14-40) **(8mks)**

b. What is the criteria for discerning the gifts of the Holy Spirit **(5mks)**

c. Explain ways in which Christians use the fruit of the Holy Spirit to spread the gospel **(7mks)**

5a. Explain seven similarities between traditional African and Christian teachings on marriage **(7mks)**

b. Give guidelines that can help boys and girls to lead responsible sexual lives **(7mks)**

c. In what ways has the family planning brought conflicts in modern families **(6mks)**

6a. Explain the relationship between work and leisure in Christian context **(7mks)**

b. Give six reasons why a Christian should not resort to strike action as a way of presenting grievances **(6mks)**

c. State seven ways in which church can promote self -employment in modern society **(7mks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

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)*This paper consists of three sections: A, B and C*

b) *Answer all questions in section A, Three questions in section B, and Two questions in Section C.*

c) *Answers to all questions must be written in the answer booklet provided.*

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

FOR EXAMINER'S USE ONLY

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

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SECTION A

Answer all the Questions in This Section

1. What is economic history **(1mk)**

2. Identify 2 main commodities of trade obtained in the interior part of Kenya in the 19th century **(2mks)**

3. Identify two technological factors which facilitated the coming of early visitors to the Kenyan costs before 1500 AD **(2mks)**

4. State two terms of Anglo-Germany agreement of 1886 **(2mks)**

5. Name two societies which offered mixed reaction to the British occupation of western Kenya **(2mks)**

6. State one function of the governor during the colonial period **(1mk)**

7. State the main reason why Africa's established independent churches in Kenya during the colonial period **(1mk)**

8. State two proposal made by Lennox Boyd **(1mk)**

9. Give two ways in which African migration to the urban centers was controlled by the colonial government **(2mks)**

10. Identify one reform made in the sywnnerton plan of 1954 **(1mk)**

11. Identify one peaceful way of resolving conflict in Kenya **(1mk)**

12. Which body supervises the electoral process in Kenya **(1mk)**

13. Explain what is meant by devolution of power in Kenya **(1mk)**

14. Give two functions of the prison department in Kenya **(2mks)**

15. State two ways in which the rule of law is applied in Kenya **(2mks)**

16. Name the type of constitution used in Kenya **(1mk)**

17. What is the meaning of the term referendum **(1mk)**

SECTION B 45 MARKS

Answer Any Three Questions in This Section

18. a. State three reasons why Omani Arabs appointed local Arabs families to control the East Africa coast on their behalf **(3 MARKS)**

b. Explain six results of the development of plantation agriculture at the coast **(12 MARKS)**

19. a. Outline five economic consequences of the long distance trade in Kenya during the pre-colonial period **(5mks)**

b. Explain five results of the collaboration between Nabongo Mumia of Wanga and the British **(10mks)**

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20. State three factors that led to the issuing of the Devonshire while paper in 1923 **(3mks)**

b. Explain six problems experienced by the colonial government in administering Kenya **(12mks)**

21.a. What factors led to the development of multi-party democracy Kenya in the early 1990s **(3mks)**

b. Explain how the existence of many political parties has promoted democracy in Kenya **(12mks)**

SECTION C 30 MARKS

Answer Any Two Questions from This Section

22.a. Give three ways in which Education promotes unity in Kenya **(3mks)**

b. Explain six advantages of national integration **(12mks)**

23. Identify three groups of the defense forces in Kenya **(3mks)**

b. Describe the function of the defense forces in Kenya **(12mks)**

24. Give three circumstances under which a governor may be removed from office **(3mks)**

b. Explain six objectives of the devolution of government in Kenya **(12mks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

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)*This paper consists of three sections: A, B and C*

b) *Answer all questions in section A, Three questions in section B, and Two questions in Section C.*

c) *Answers to all questions must be written in the answer booklet provided.*

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

FOR EXAMINER'S USE ONLY

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

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SECTION A

Answer all the Questions in This Section

1. State t**wo** forms of oral traditions as a source of information for history and Government **(2mks)**

2. Name t**wo** sub –species of Homo-Sapiens **(2mks)**

3. State **one** theory that explain the origin of Agriculture **(1mk)**

4. Give **two** advantages of the enclosure system during the agrarian revolution in Britain **(2mks)**

5. State one method of trade **(1mk)**

6. Give two disadvantages of railway transport **(2mks)**

7. Name the person who invented the first telephone in 1875 **(1mk**

8. Identify two factors that facilitated the spread of iron working in Africa **(2mks)**

9. What was the main reason for the de cline of Kilwa as an urban centre **(1mk)**

10. State two duties of the Lukiiko in Buganda Kingdom **(2mks)**

11. Identify two strategic reasons for scramble and partition of Africa **(2mks)**

12. Give two disadvantages of the Samori Toure's second empire at Dabakala **(2mks)**

13. What was the main reason that made French to adopt the policy of assimilation in Senegal **(1mk)**

14. Name one political party that led South Africa into independence in 1994 **(1mk**)

15. State one factor that brought word II to an end **(1mk)**

16. Name one Africa country that is a member of the common wealth which is not a former British colony **(1mk)**

17. What was the main cause of personality difference between president Nyerere and the Idi Amin of Uganda in East African Community **(1mk)**

SECTION B 45 MARKS

Answer Any Three Questions In This Section

18. A. Identify three characteristics of farming in Britain before Agranian revolution in Britain **(3mks)**

b. Explain six effects of Agrarian Revolution inU.S.A **(12mks)**

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19. A. State five limitations of television as a means of communication **(5mks)**

B. Explain five factors that hinders industrial revolution in Brazil **(10mks)**

20. A Explain five causes of Chimurenga war of 1896-1897 **(5mks)**

b. Explain five results of collaboration between Lewanika of Lozi and the British in the 19th Centuary **(10mks)**

21. A. Outline five factors that led to the rise of Buganda kingdom in Pre-colonial era **(5mks)**

B. Describe Buganda's political organization in the pre colonial era **(10mks)**

SECTION C 30 MARKS

Answer Any Two Questions In This Section

22. State five problems faced the nationalist of Mozambique under portugues colonial **(5mks)**

b. Explain five factors for the growth of nationalism in Mozambique **(10mks)**

23. A. Identify five causes of World war II **(5mks)**

b. Explain five results of the Versaillers peace settlement **(10mks)**

24. State five objectives of the Economic community of West Africa States (ECOWAS) **(5mks)**

b. Explain five achievements of ECOWAS has made since its formation **(10mks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

GEOGRAPHY

312/1

PAPER 1

TIME: 2¾ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

i) *This paper consist of Section A and B*

ii) *Answer All questions in section A .In section B answer question 6 and any other two questions from this section*

iii) *All answers must be written on the answer booklet provided*

iv) *Candidates should check to the question paper to ensure that all the pages are printed as indicated and that no questions are missing.*

FOR EXAMINER'S USE ONLY

Question	1	2	3	4	5	6	7	8	9	10
Marks										

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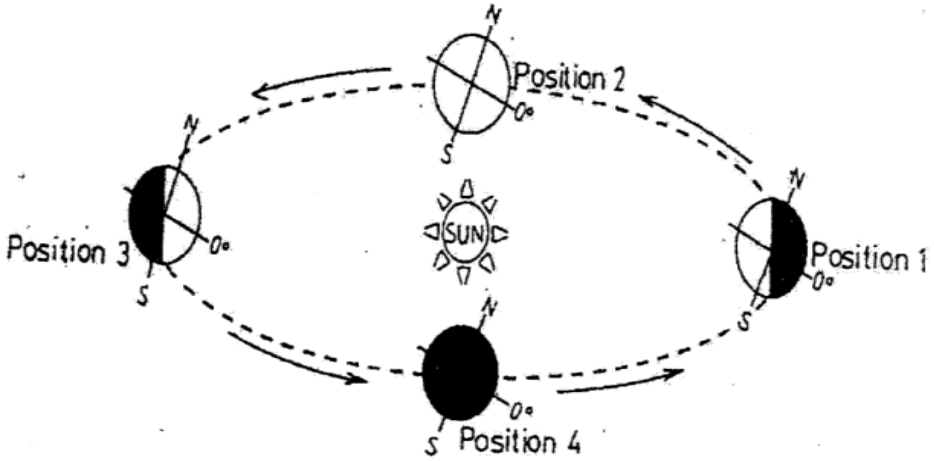
SECTION A

Answer ALL the questions in this section

1. Study the diagram below and then answer the following questions



(a). How long (in days) does it take the earth to move from position 2 to position 1 during a leap year? **(2mks)**

(b). State **three** effects of the movement of the earth represented above **(3mks)**

2. (a). Define the term microclimates **(2mks)**

(b). Identify t**hree** characteristics of convectioinal rainfall **(3mks)**

3. Describe **two** process through which wind erode desert landscape **(6mks)**

4. (a). What is natural vegetation? **(2mks)**

(b). State **three** characteristics of Mediterranean type of vegetation **(3mks)**

5. (a). What is contact metamorphism? **(2mks)**

(b). Identify the resultant metamorphic rocks when the following rocks are metamorphosed.

(i). Granite **(1mk)**

(ii) Limestone **(1mk)**

SECTION B

Answer question 6 and any other two questions from this section

6) Study the map of Mumias 1:50,000 provided and answer the questions that follow.

a) i) Name *two* scales that have been used in the map **(2 marks)**

ii) Give the magnetic variation of the map at the time it was drawn **(2 marks)**

iii) Identify *three* physical features in grid square 6044 **(3 marks)**

b) i) Name *two* districts in Western Province in the area covered by the map **(2 marks)**

ii) Give the approximate longitudinal location of Mumias town **(2 marks)**

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c) i) Draw a rectangle measuring 8cm by 4 cm to represent the area bounded by eastings 63 and 65 and northings 34 and 35 **(1 mark)**

ii) In the rectangle, mark and label the following:

- River Lusimu **(1 mark)**
- Bridge **(1 mark)**
- All weather road loose surface **(1 mark)**
- Woodland **(1 mark)**

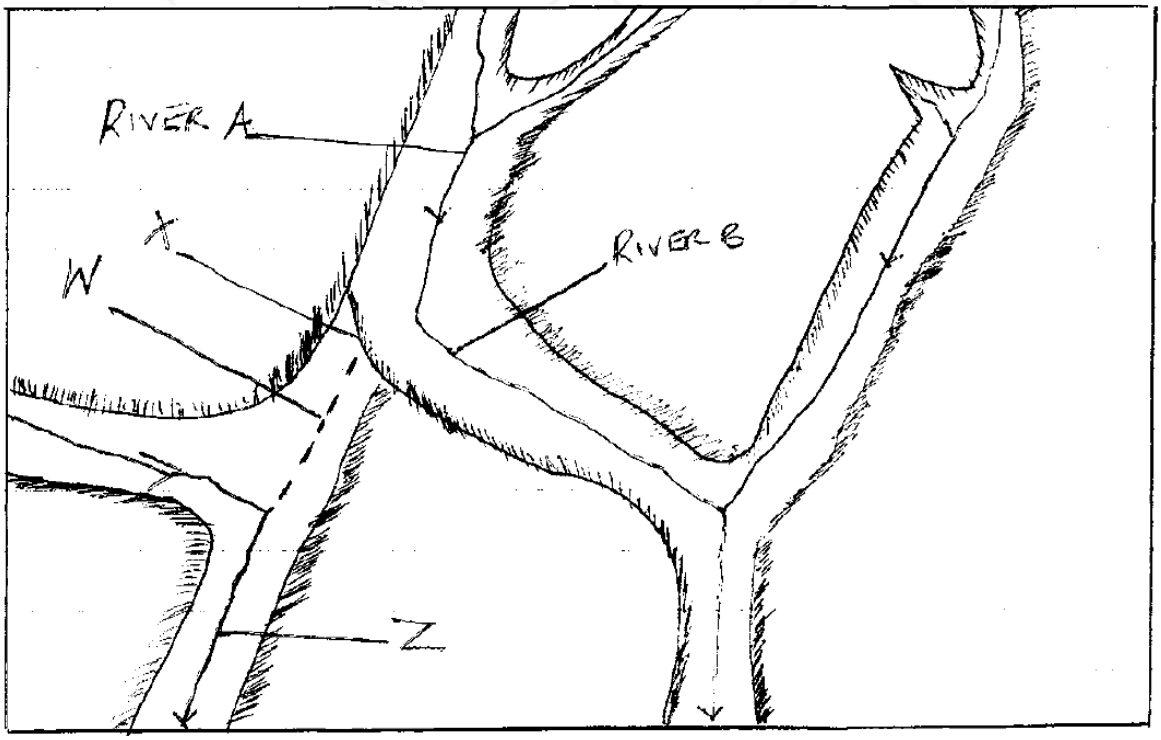
d) d) i) Citing evidence from the map, state *two* social services in the area covered by the map **(4 marks)**

ii) Describe the drainage of the area covered by the map **(5 marks)**

7. (a) (i) What is a watershed **(2 marks)**

(ii) Explain *three* ways by which a river transports its load **(6 marks)**

(b) Study the diagram given below and answer questions that follow.



i) Name the features marked X, W and Z **(3 marks)**

ii) Explain the process of river capture **(5 marks)**

c) Give three characteristics of a river in its youthful stage **(3 marks)**

d) Explain *three* economic importance of a river to human activities **(6 marks)**

7) (a). (i). Differentiate between orogenesis and orogeny **(2mks)**

(ii). Name **two** Fold Mountains of the alpine orogeny **(2mks)**

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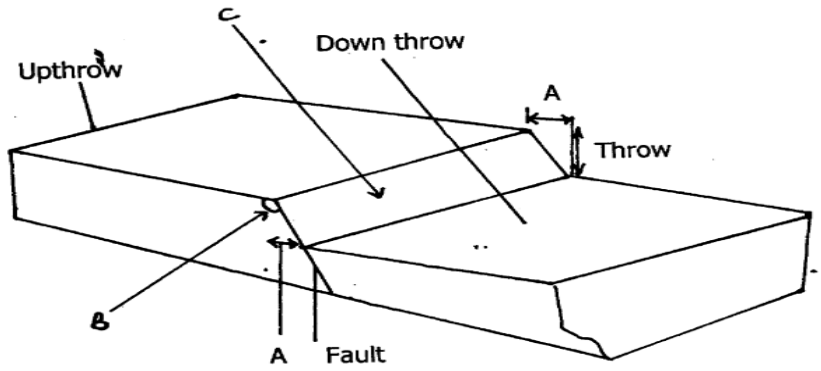
(b). The following diagram represents a faulted landscape. Use it to answer the following questions.



(i). Name the parts marked A,B and C **(3mks)**

(ii). Using well labeled diagrams ,Describe how a rift valley is formed through anticlinal arching **(7mks)**

(c). State **three** effects of faulting on drainage **(3mks)**

(d). Explain the effects of Fold Mountains to human activities **(8mks)**

8. (a) (i). Differentiate between weathering and mass wasting **(2mks)**

(ii). Identify **three** agents of weathering **(3mks)**

(b). Describe how the following processes of weathering occur

(i). Pressure release or unloading **(4mks)**

(ii). Carbonation **(3mks)**

(c). Explain the significance of weathering to human activities **(8mks)**

(d). Form four students from Danish Obara Secondary School conducted a field study on weathering around their school

(i). State **three** preparation they made before the field study **(3mks)**

(ii). Write down **two** hypotheses they formulated to guide the study **(2mks)**

9. (a). Distinguish between catchment area and a drainage basin **(2mks)**

(b) . (i). Describe **two** processes through which a river transport its load **(6mks)**

(ii). State **four** factors which influence the ability of a river to transport its load **(4mks)**

(c). Using a well labeled diagram, explain how an ox-bow lake is formed **(7mks)**

(d). (i). What is the difference between drainage pattern and drainage system? **(2mks)**

(ii). State **five** importance of rivers to human activities **(5mks)**

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10. (a). (i). Differentiate between an aquifer and an aquifuge **(2mks)**

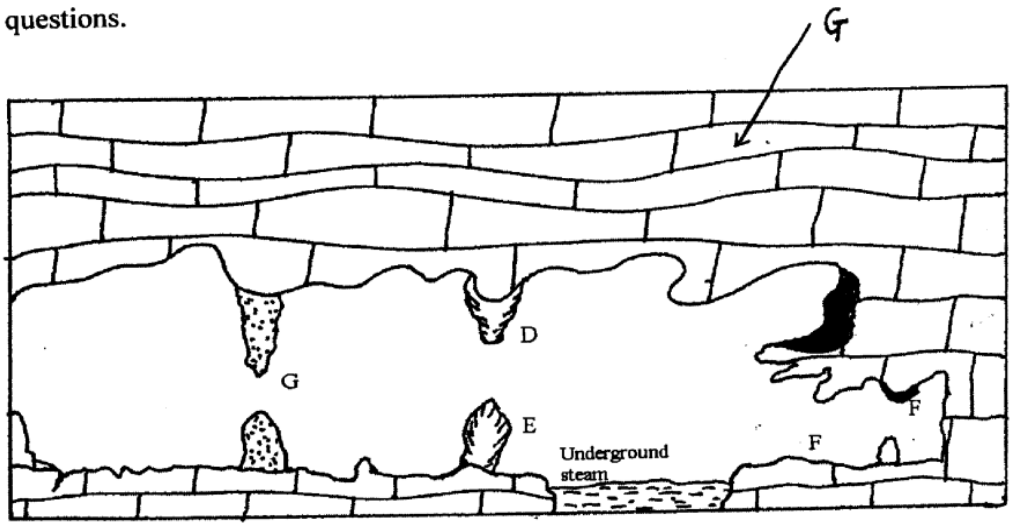
(ii). Name **three** sources of underground water **(3mks)**

(b). State four conditions necessary for the formation of artesian wells **(4mks)**

(c). (i). Name **four** surface features formed in areas dominated by limestone **(3mks)**

(ii). The diagram below represents underground features formed in a karsts landscape .Use it to answer the following questions

lowing questions.



(i). Name the features marked D,E and G **(3mks)**

(ii). Describe how a limestone pillar is formed **(3mks)**

(d). Explain three effects of karst scenery to human activities **(6mks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

GEOGRAPHY

312/2

PAPER 2

TIME: 2¾ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INTRODUCTION TO CANDIDATES

i) *This paper consist of Section B and B*

ii) *Answer All questions in section A .In section B answer question 6 and any other two questions from this section*

iii) *All answers must be written on the answer booklet provided*

FOR EXAMINER'S USE ONLY

Question	1	2	3	4	5	6	7	8	9	10
Marks										

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SECTION A (25 MARKKS)

Answer all the questions in this section

1. (a). What is water pollution ? **(2mks)**

(b) state three sources of pollution along the East African Coastal waters **(3mks)**

2. (a) Differentiate between ***biomass*** and ***biogas*** forms of energy **(2mks)**

(b). Give three reasons why the two sources in 2 (a) above should be developed **(3mks)**

3. (a). Name two counties in Rift Valley where Dairy farming is practiced in Kenya **(2mks)**

(b) State four problems facing dairy farmers in Kenya **(4mks)**

4. (a) State three physical factors that favor the growth of cocoa in Ghana **(3mks)**

(b) Name two countries which imports cocoa from Ghana as a raw material **(2mks)**

5. (a) Define international trade **(1mk)**

(b) Give three reasons why Kenya's trade is mainly in raw form rather than finished products **(3mks)**

SECTION B (75 MARKS)

Answer questions 6 compulsory and any other two questions from this section

6. The table below shows horticultural crops exported by Kenya in the year 2010 to European Union. Study it and answer the questions that follow

CROP	QUANTITY IN TONNES
Flowers	42,500
Oranges	28,700
Tomatoes	21,600
Carrots	15,400

(a) Draw a divided rectangle 15 cm long by 6 cm wide to represent horticultural crop production in Kenya in year 2010 using the data above (show your workings/calculations) **(8mks)**

(b). Calculate the range of the above data **(1mk)**

(c). Apart from divided rectangles, Name two other appropriate ways of representing the above data **(2mks)**

(**d).** Name two deciduous fruits exported by Kenya to European Union market **(2mks)**

(e) Explain two physical conditions favoring the development of horticultural industry in Naivasha **(4mks)**

(f). Explain how the Kenya Government is addressing problems facing horticultural farmers **(8mks)**

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7. (a). i). What is agro forestry? **(1mk)**

ii). Explain four reasons why agro forestry is being encouraged In Kenya(8mks)

(b). Give three examples of softwood trees found in Kenya **(2mks)**

(c). Explain four characteristics of softwood forests in Canada **(8mks)**

(d). State problems affecting forestry in Canada **(5mks)**

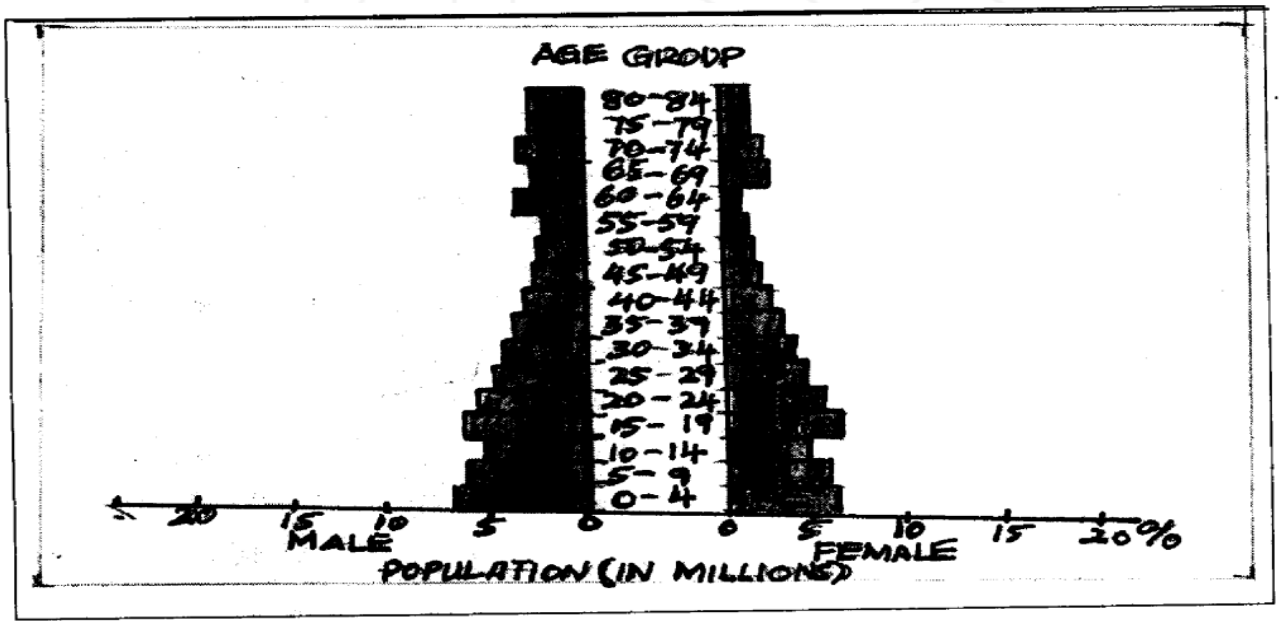
8. (a) i) Define Age-structure **(2mks)**

ii). What was the population growth rate in Kenya in 1999,if the crude birth rate was 52 per 1,000 of the population and the crude death rate was 14 per 1,000 of population? **(2mks)**

iii). State three reasons why it is necessary to carry out population census **(3mks)**

(b). Account for the high population density in the Kenyan highlands **(2mks)**

(c) The pyramid below represents the population structure of Country X.Use it to answer questions that follow.



i. Describe the characteristics of the population represented by the pyramid **(5mks)**

ii. Other than migration,explain three factors influencing population growth and structure **(6mks)**

iii. State two positive effects of population growth and strauctur e **(2mks)**

iv. Give three problems that could arise from overpopulation **(3mks)**

9. (a). Explain how the following factors influence mining **(3mks)**

i). Capital

ii)Value of mineral **(3mks)**

(b). Name four methods of underground mining **(4mks)**

(c) Explain five factors which influence occurance of minerals. **(10mks)**

(d). Explain how gold is processed to its finest form **(5mks)**

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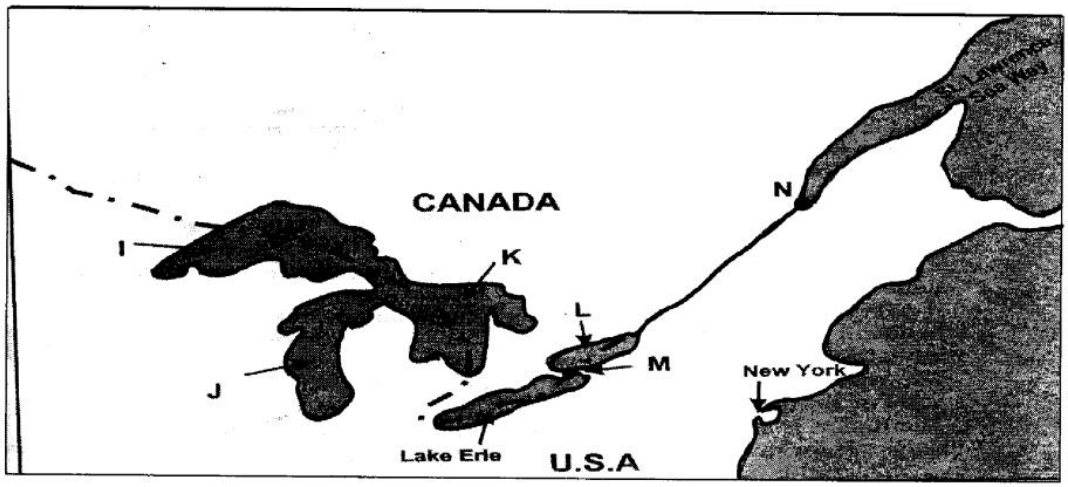
10. Study the map of the Great Lakes and the St.Lawrence Seaway below and answer the question that follow



(a). Name

i). The port marked N **(1mk)**

ii) The waterfall marked M **(1mk)**

iii). The lake marked I,J,K and L **(4mks)**

(b). Explain five ways in which the great lakes and St.Lawrence Seaway has contributed to the economy of U.S.A and Canada **(10mks)**

(c). i).State three recent developments that have taken place in Kenya to improve communication **(3mks)**

ii). Explain three problems facing telephone as a means of communication in Kenya **(6mks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

BIOLOGY

231/1

PAPER 1 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS

1. *Write your name, class and admission number in the space provided above.*
2. *Write the date of the examination and sign in the space provided above.*
3. *Answer **all** the questions in the spaces provided.*
4. *You **WILL** be **penalized** for wrong spelling especially technical terms.*
5. *Write your answers in **English Language.***

FOR EXAMINER'S USE ONLY

Question	Maximum Score	Candidate's Score
1-30	80	

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*Answer **all** the questions*

1. (a) List **two** professional occupations that require the study of biology. **(2mks)**

……

……

(b) Other than observation,name **one** other scientific skill developed by studying biology**(1mk)**

……

2.(a) Give an example of a sex linked trait in human beings that is linked to the; **(2mks)**

Y chromosome.

……

X chromosome

……

(b) Write the types of gene mutation represented by the following analogues.

(i) Intended message **BRING THERMOS ON OUTING**

Actual message **BRING MOTHERS ON OUTING**

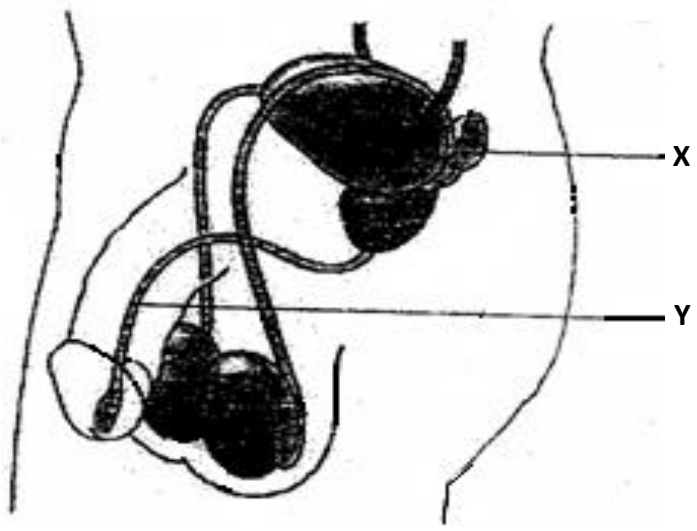
Type …… **(1mk)**

(ii) Intended message **PLEASE SAY WHERE YOU ARE**

Actual message **PLEASE STAY WHERE YOU ARE**

Type …… **(1mk)**

3. The diagram shown below represents a male reproductive system.



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(a) Name the structure labelled **X**. **(1mk)**

……

(b)Name one substances that pass through structure labelled Y. **(1mk)**

……

4.(a) State the circulatory system found in members of the class Insecta. **(1mk)**

……

(b) Name the blood vessels that transport blood from: **(2mks)**

(i) Small intestine to the liver.

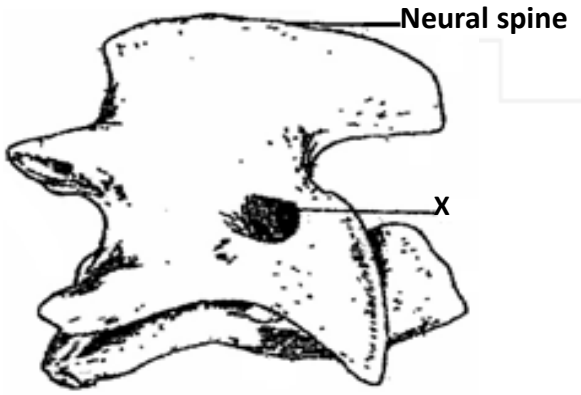
……

(ii) Lungs to the heart.

5.Name **one** enzyme that is secreted in its precursor form. **(1mk)**

……

6. The diagram below represents a type of bone in the mammalian skeleton.



(a)Identify the bone illustrated in the diagram. **(1mk)**

……

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

……

……

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7. (a) The diameter of the field of view of a light microscopic is 6.5mm. Plant cells lying across the diameter are 12.

(i) Determine the size of one cell in micrometers. **(1mk)**

(ii) Explain how drooping of leaves on a hot sunny day is advantageous to a plant. **(1mk)**

……

……

(b). A strip of peeled potato whose cell sap concentration was 30 % was placed in a petridish containing 10 % sugar solution.

Account for the observation made after minutes. **(1mk)**

……

……

8. (i) Distinguish between a community and a population **(1mk)**

……

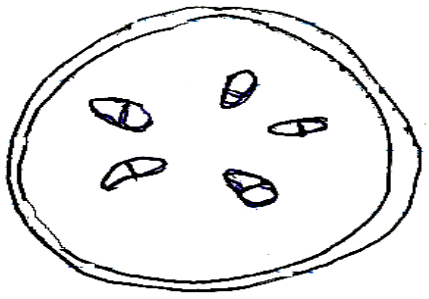
……

(ii) State **one** measure that can be taken to control infection of man by protozoan parasites.**(1)**

……

……

9. The diagram below shows a section through plant organ.



(i) Name the class of the plant from which the section was obtained. **(1mk)**

……

(ii) Give **one** reason for your answer in (a) above **(1 mk)**

……

……

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(b) What is the role of vascular bundles in plant nutrition? **(2mks)**

……

10. (a) State **one** substance that is taken up by active transport by roots and transported to the rest of the plant parts. **(1mk)**

……

(b) Identify **one** product of photosynthesis that is transported to the rest of the parts of the plant. **(1mk)**

……

11. (a) Explain why specimens are collected and preserved in specimen bottles. **(1mk)**

……

……

(b) What is binomial nomenclature as used in the naming of living organisms? **(1mk)**

……

……

(c) Give a reason why scientific names are given in Latin**.** **(1mk)**

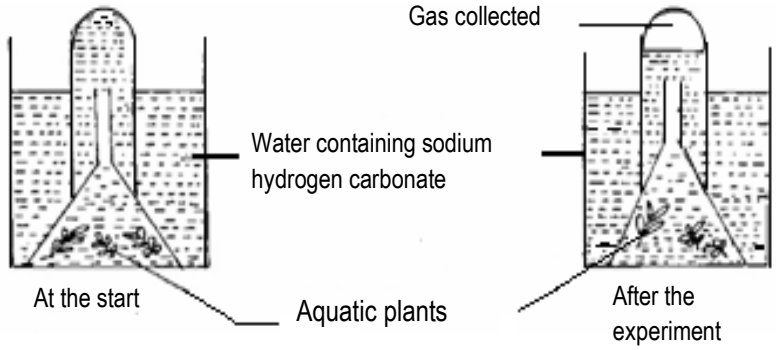
……

12.(a)Name **two** raw materials for the dark stage process of photosynthesis. **(2mks)**

……

……

(b)The set up shows an experiment to investigate photosynthesis.



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(i) What gas was collected in the test tube? **(1mk)**

……

(ii) What was the role of sodium hydrogen carbonate in the experiment? **(1mk)**

……

……

13. (a) What is meant by the term gaseous exchange? **(1mk)**

……

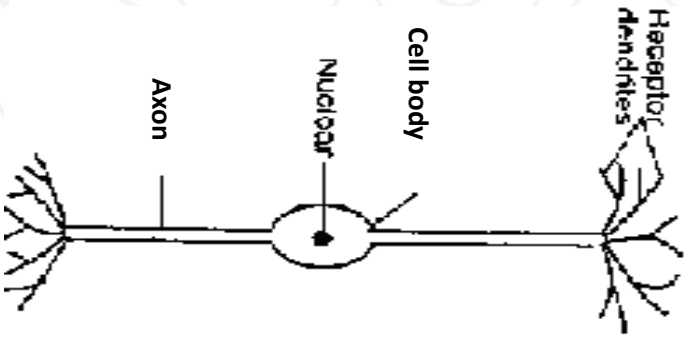
……

(b) Explain why respiratory surfaces are moist. **(1mk)**

……

……

14. The diagram below shows a specialized human cell.



(a) Name the cell **(1mk)**

……

……

(b) On the diagram, use an arrow to indicate the direction of impulse transmission **(1mk)**

15.(a) What is the meaning of the terms **(2mks)**

(i) Homeostasis

……

……

(ii) Osmoregulation

……

……

Name the hormones involved in regulation of glucose level in the blood **(2mks)**

……

……

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16. State **two** structural differences between ribonucleic acid (RNA) and deoxyribonucleic acid (DNA). **(2mks)**

RNA	**DNA**
(i)	
(ii)	

17. State **three** differences in composition between umbilical artery and umbilical vein**(3 mks)**

Umbilical vein	**Umbilical artery**

18. The following is an equation representing a type of respiration

$$C_6H_{12}O_6 \longrightarrow 2C_3H_6O_3 + \text{Energy}$$

(a) Identify the type of respiration. **(1mk)**

……

(b) Suggest **one** industrial application of the process named in (a) above. **(1mk)**

……

……

(c) Give the **one** end product of anaerobic respiration in plants. **(1mk)**

……

19. Name any **one** physiological process in plants that may be affected by dust as a pollutant. **(1mk)**

……

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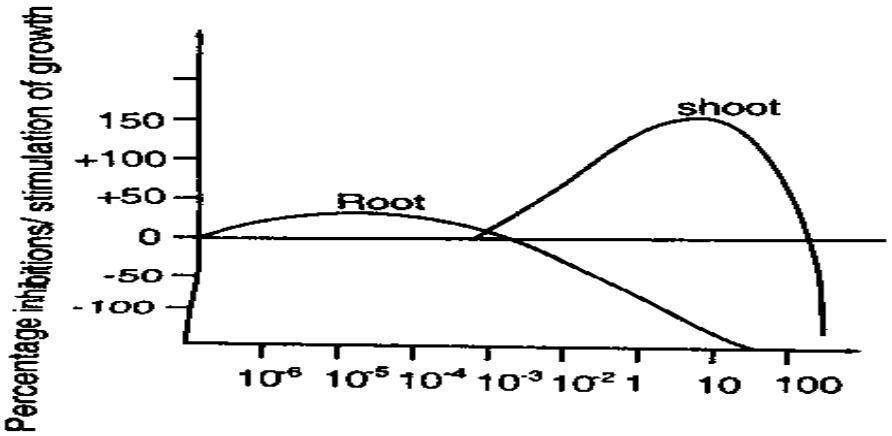
20. Below is a graphical representation of the effects of different concentration of auxins on shoot and root growth. Study it carefully and then answer the questions that follow.



Auxin concentration (ppm)

(a) Identify **any two** conclusions that can be drawn from the graph. **(2mks)**

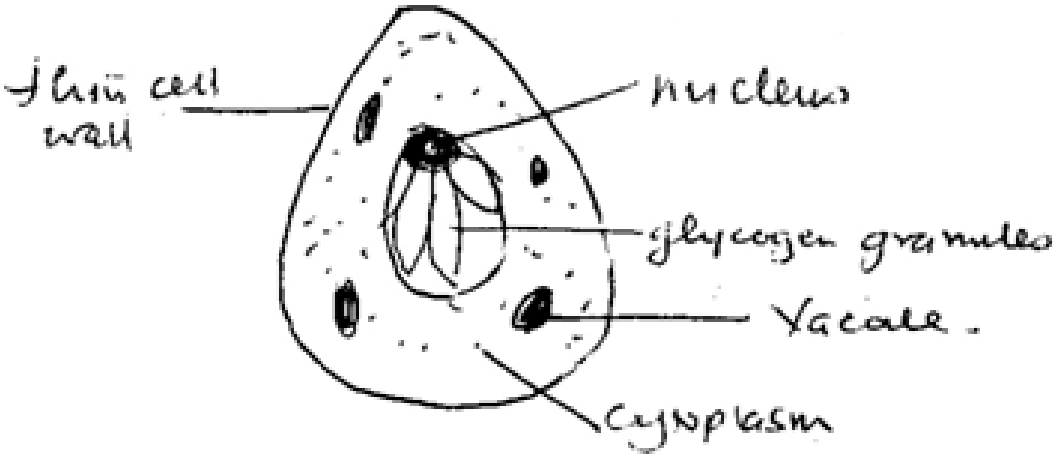
……

……

(b) Name the growth hormone responsible for ripening of fruits. **(1mk)**

……

21. The figure below shows one of the many moulds known



(a) State the mode of nutrition exhibited by the organism **(1mk)**

……

(b) Name the kingdom to which it belongs **(1mk)**

……

(c) State one feature common to members of the kingdom named in (b) above **(1mk)**

……

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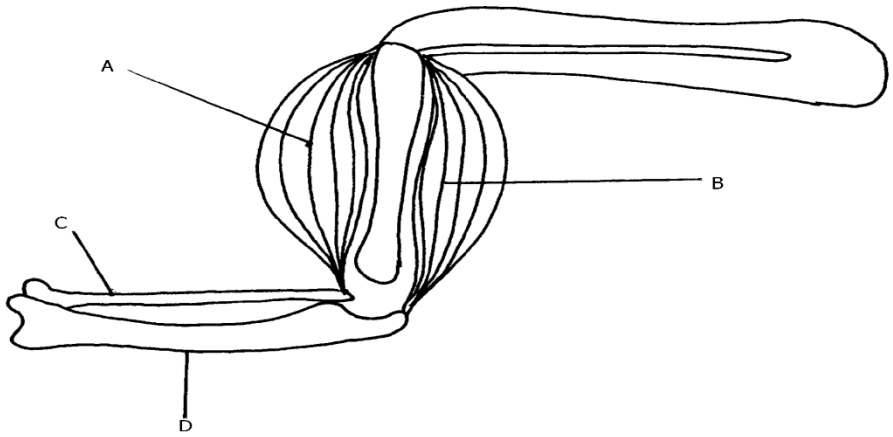
22. Study the diagram below and then answer the questions that follow:-



(a) Name the bones labeled **C** and **D**. **(2mks)**

C……

D……

(b)What happens to structure **A** and **B** as the lower arm is straightened **(1mk)**

……

……

23.(a) What is meant by non-disjunction? **(1mk)**

……

……

(b)Give **one** example of a genetic disorder arising from non-disjunction. **(1mk)**

……

24.(a) What is seed dormancy? **(1mk)**

……

……

(b)Name a growth inhibitor in seeds **(1mk)**

……

(c) Differentiate between hypogeal and epigeal germination in seeds **(1mk)**

……

……

25. (a) Name **one** photochemical cell in the retina of the human eye that detects low light intensity. **(1mk)**

……

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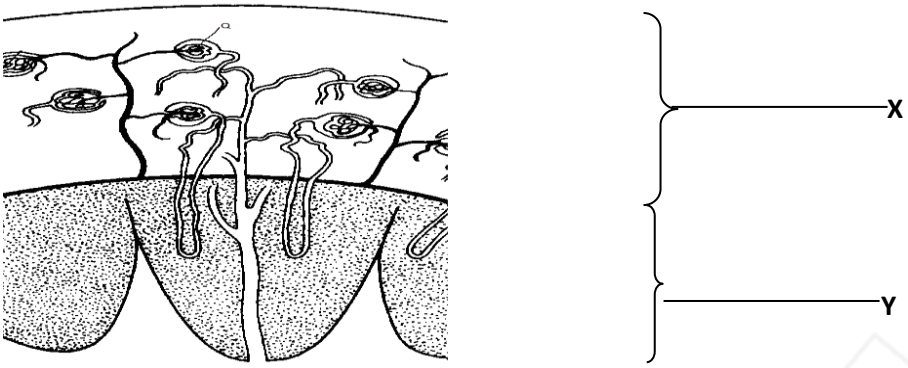
(b) Name **one** chemical substance involved in nerve impulse transmission in mammals

(1mk)

……

26. The illustration below shows a transverse section through a mammalian kidney.



(a) Name the structures labelled **X** and **Y**.

X…… **(1mk)**

Y…… **(1mk)**

(b) State the process in **Q** that leads to the formation of glomerular filtrate. **(1mk)**

……

27.(a) What is meant by the term Genetically Modified Organism(**GMO**)? **(1mk)**

……

……

(b) Name **one** area in Medicine where knowledge of Genetic Engineering has been successfully applied**.** **(1mk)**

……

28. (a) State the view of the theory of organic evolution. **(1mk)**

……

……

(b) State the weakness in Lamarck's theory of evolution. **(1mk)**

……

……

(c) What is adaptive radiation? **(1mk)**

……

……

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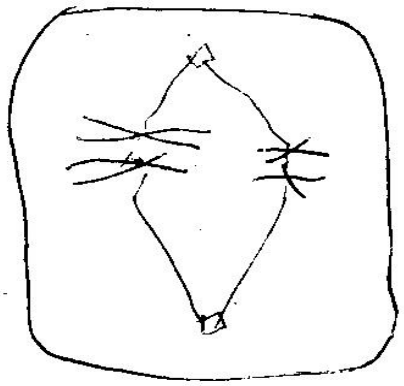
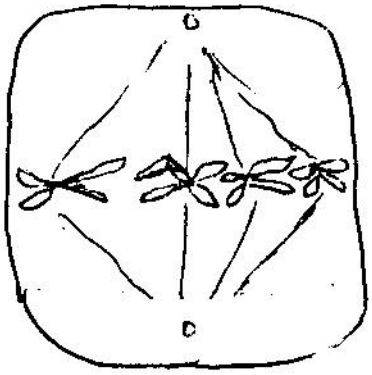
29. Study the diagrams below and then answer the questions that follow.



A



B

(a) Name the stages **A** and **B** **(2mks)**

A……

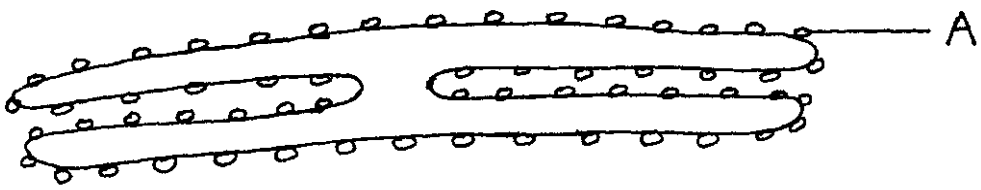
B……

(b)Give a reason for your answer for **B**. **(1mk)**

……

……

30. The diagram below shows one of the cell organelles.



(a) Identify the organelle **(1mk)**

……

(b) Give the function of the part of the organelle marked **A**. **(1mk)**

……

……

(c) State **one** structural feature of the cell membrane that gives it strength. **(1mk)**

……

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

BIOLOGY

231/2

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 index number in the spaces provided above.*
(b) *Sign and write the date of the examination in the spaces provided above.*
(c) *This paper consists of **two** sections; **A** and **B**.*
(d) *Answer all the questions in section **A** in the spaces provided.*
(e) *In section B answer question **6 (compulsory)** and either question 7 or 8 in the spaces provided after question 8.*

FOR EXAMINER'S USE ONLY

Section	Question	Maximum Score	Candidate's Score
A	**1**	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	**6**	20	
	7	20	
	8	20	
Total score		**80**	

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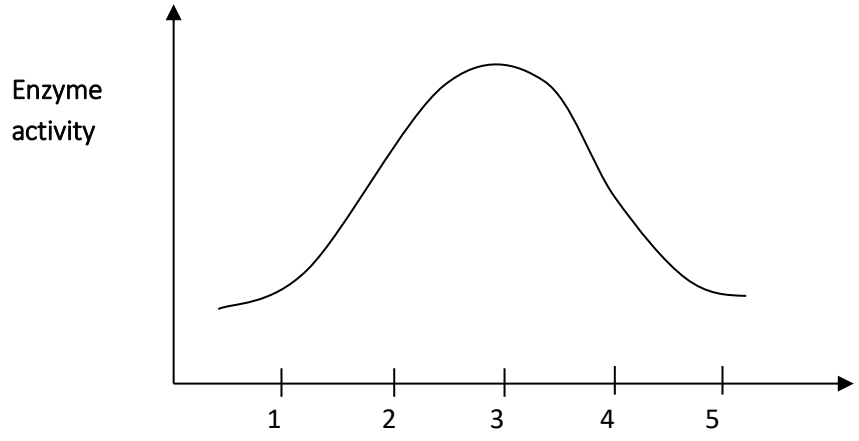
SECTION A

1. (a) The figure below shows the effect of pH on an enzyme catalysed reaction.



(i) State the pH at which the enzyme is most active. **(1 mark)**

……

(ii) Name ***one*** enzyme likely to be the one in the figure above and suggest the part of the alimentary canal where it is found. **(2 marks)**

Name -

……

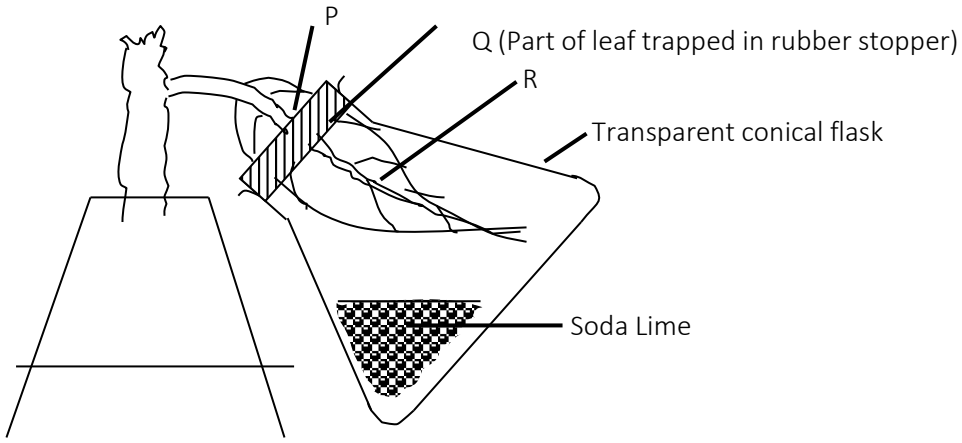
Location in the alimentary canal

……

(iii) Name the digestive juice that contains the enzyme. **(1 mark)**

……

(b) A lass set up the experiment below to investigate some factors necessary for photosynthesis. Study the set up and answer the question that follow.



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Before the apparatus were set up in the light, the potted plant was kept in a total darkness for 48 hours.

(i) What was the purpose of keeping in darkness? **(1 mark)**

……

……

(ii) State the colours obtained at the end of the experiment after the leaf was tested for starch. **(3 marks)**

P -

……

Q -

……

R -

……

2. (a) In an investigation, Snapdragon plants with broad leaves (B) were crossed with plants with narrow leaves (N). The F_1 progeny had intermediate leag breadth.

(i) Give a reason for intermediate leaf breadth in F_1 generation. **(1 mark)**

……

……

(ii) If the plants in the F_1 generation were selfed state the genotypic and phenotypic ratio of the F_2 generation. Use a punnet square to do your working. **(5 marks)**

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(b) State the function of Deoxyribonucleic acid (DNA) molecule. **(2 marks)**

……

……

3. (a) Define the following terms related to evolution and give examples of each. **(4 marks)**

(i) Homologous structures

……

……

Examples

……

(ii) Analogous structures

……

……

Examples

……

……

(b) Explain:

(i)Why an underdose insecticide spraying of mosquitoes may cause a serious problem on this mode of killing mosquitoes using the same spray in future. **(2 marks)**

……

……

……

(ii)Why soot on barks of trees due to industrial revolution caused emergence of black melanic moths in a region that originally had white speckled types. **(2 marks)**

……

……

……

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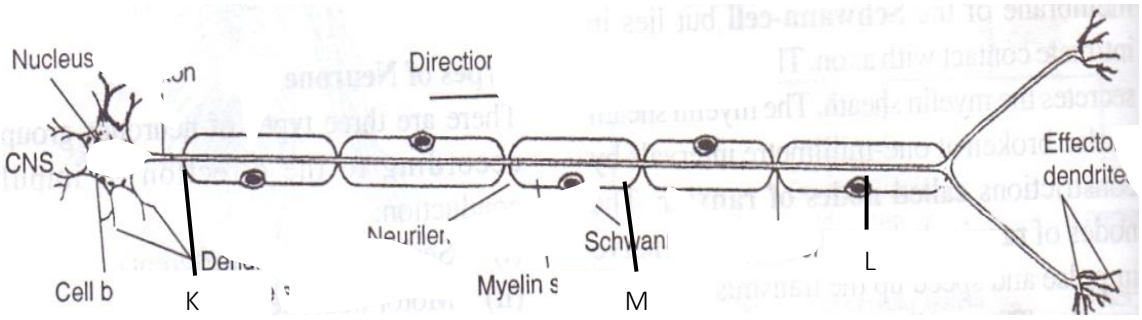
4. The diagram below shows a neurone.



(a) Giving a reason, identify the neurone. **(2 marks)**

Identify -

.....

Reason -

.....

(b) Name the parts labeled **K, L** and **M**. **(3 marks)**

K -

L -

M -

(c) State the function of **L**. **(1 mark)**

.....

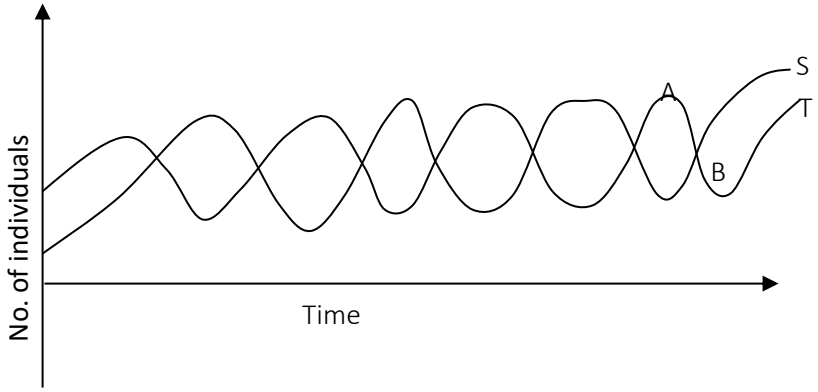
.....

(d) What happens to the muscle on arrival of the impulse. **(1 mark)**

.....

.....

5. The graph below shows the relationship between the number of herbivores and carnivores in a park.



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(a) Identify the curve representing herbivores. Give reasons for your answer. **(2 marks)**

Identify -

……

Reason -

……

……

(b) Suggest a reason for the slope of curve **S** and **T** between **A** and **B**. **(2 marks)**

……

……

(c)(i) Name the relationship between the two types of organisms as portrayed by the graph. **(1 mark)**

……

(ii) State the significance of the relationship you have stated in (i) above. **(1 mark)**

……

……

(d) Describe the long-term effect on the park's ecosystem if the species of the carnivores were to become extinct. **(2 marks)**

……

……

……

SECTION B.

*Answer question 6 **(COMPULSORY)** and either question 7 or 8 in the spaces provided.*

6. An experiment was done to determine the concentration in the blood of two hormones **X** and **Y** produced in the ovaries of a healthy woman aged 30 years within a period of 28 days. The results obtained are shown in the table below.

Time (days)	Concentration of hormone X (arbitrary units)	Concentration of hormone Y (arbitrary units)
2	5	4
4	12	4
6	18	4

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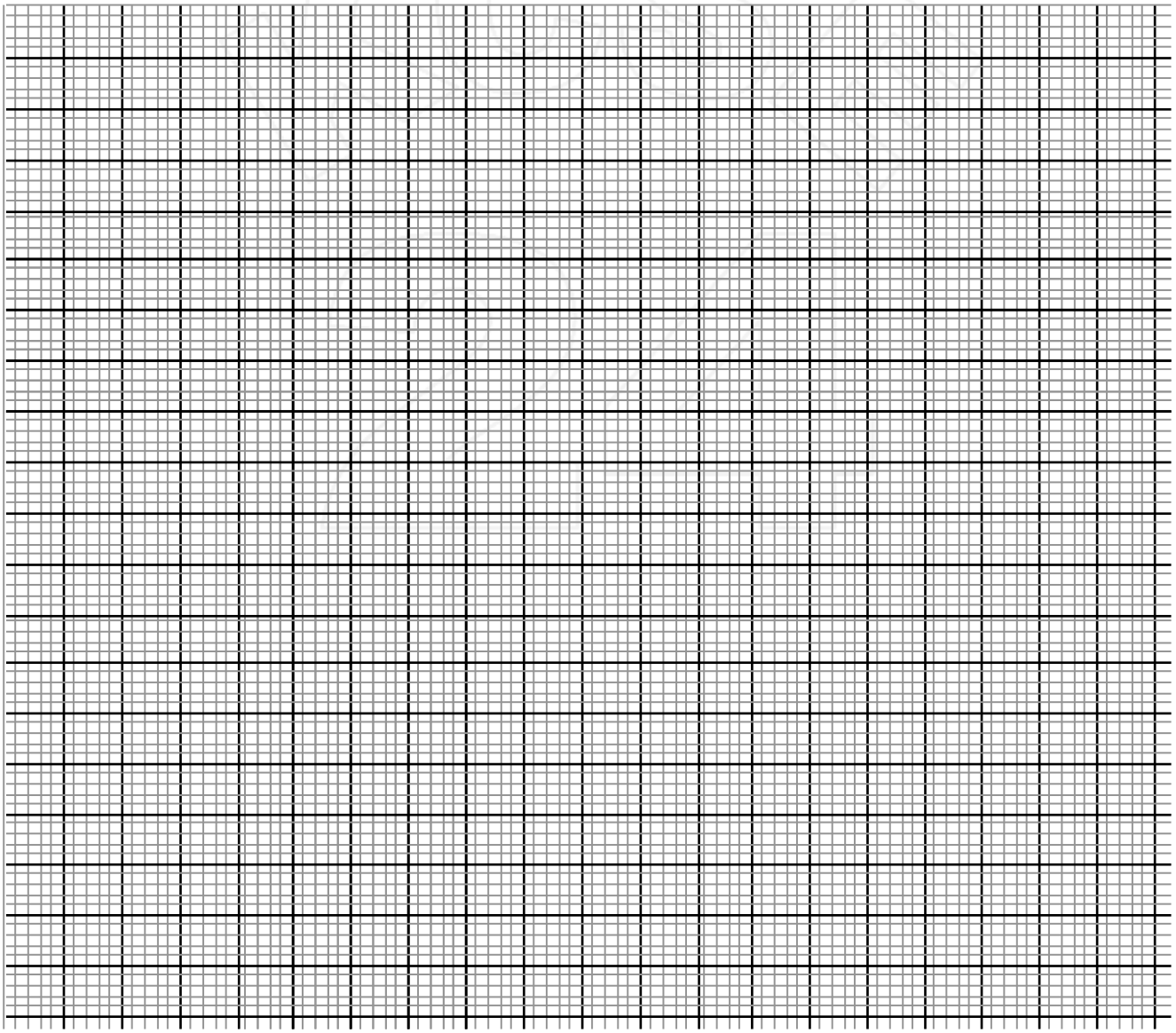
8	28	4
10	40	4
12	56	4
14	24	4
16	20	9
18	24	20
20	24	36
22	22	48
24	16	32
26	8	24
28	3	4

(a) Using same axes, plot a graph of the concentration of hormones **X** and **Y** against time. **(7 marks)**



(b) Suggest the identity of the hormones **X** and **Y.** **(2 marks)**

X -.....

Y -.....

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(c) When was the concentration of hormones **X** and **Y** equal? **(1 mark)**

X -.....

Y .....

(d) Explain the role played by the hormones **X** and **Y** during menstrual cycle. **(4 marks)**

X -

.....

.....

.....

Y -

.....

.....

.....

(e) Briefly describe ***three*** features and mechanisms that hinder self-pollination and self fertilization in plants. **(6 marks)**

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

7. Describe the adaptation of finned fish such as Tilapia to locomotion. **(20 marks)**

8. (a) State ***two*** functions of the mammalian skin. **(2 marks)**

(b) Describe the structure and function of the mammalian skin. **(18 marks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

BIOLOGY

231/3

PAPER 3 (PRACTICAL)

TIME: 1¾ HOURS

SCHOOL…… SIGN……

Kenya Certificate of Secondary Education.

CONFIDENTIAL

Each candidate should be supplied with the following;

- 2 test tubes in a test tube rack
- 10 ml of white wheat flour suspension in a 50ml beaker labeled **M**.
- 10 ml of groundnut solution in a 50 ml beaker labeled **N**.
- 10% Sodium hydroxide solution in a beaker labeled **U**
- Benedict's solution labeled **V**
- 1% copper sulphate solution in a beaker labeled X
- Droppers
- 2 filter papers
- A means of heating
- A test tube holder.

NB:

a) TO PREPARE GROUND NUT SOLUTION

Peel off the raw testa; then grind the cotyledons and embryo using mortar and pestle into a powder; then dissolve the powder in water in a beaker.

For every 20 candidates dissolve 10gms of ground nut powder in 100 ml of water.

b) TO PREPARE WHEAT SOLUTION

Dissolve 10gms of wheat flour in 100 ml of water for every 20 candidates.

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

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, Index number and your other details in the spaces provided above.*
2. *Spent the first 15 minutes of the time allocated to read through the question paper.*
3. *Answer all the questions in the spaces provided only.*
4. *Wrong spelling especially of biological terms will be penalized.*

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	14	
2	13	
3	13	
TOTAL	**40**	

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1. a) You are provided with substances labeled **M, N, V, U** and **X** and a filter paper. **M** and **N** are food substances, while **V** is Benedict's solution, **U** is 10% Sodium Hydroxide solution and **X** is 1% Copper Sulphate solution. Using the reagents provided, carry out tests determine the food substance(s) in **M** and **N** **(10 marks)**

Substance	FoodSubstance Being Tested For	Procedure	Observation	Conclusion
M				
N				

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a). State the functions of the food substances found in both **M** and **N**. **(4marks)**

……

……

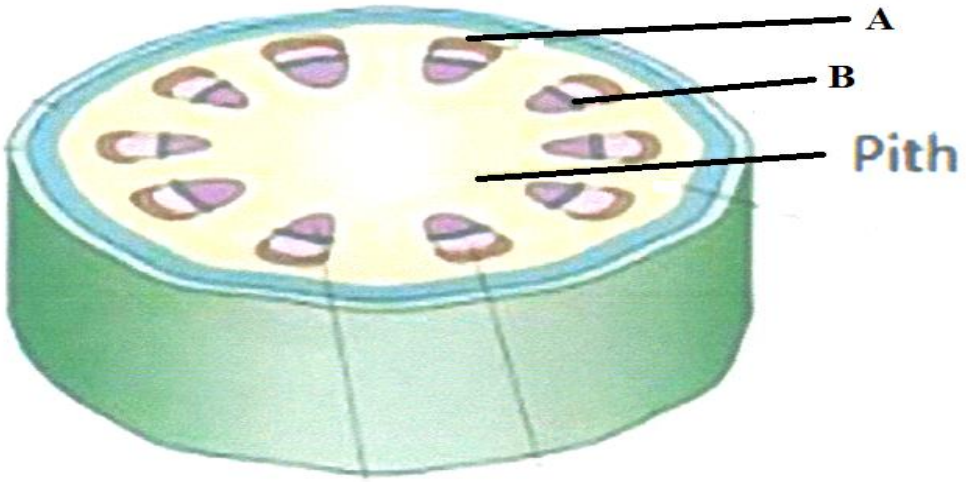
……

……

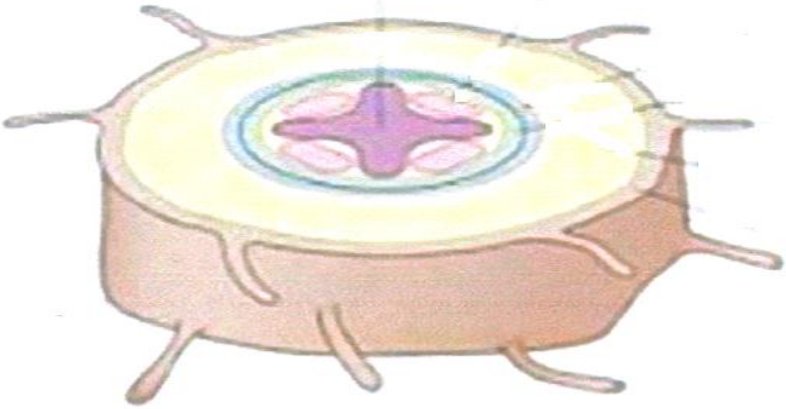
……

2. Below are sections of a dicotyledonous plant organs labeled **X** and **Y**.

X



Y



(a) Give **three** observable differences between the sections. **(3 marks)**

……

……

……

……

……

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(b) On the diagram, label any **three** parts of section Y. **(3 marks)**

(c) Identify and state the functions of the parts labeled **A** and **B**. **(4 marks)**

A …….

Function……

……

B ……

Function……

……

(d) How would section **X** compare with that of a monocotyledonous plant? **(3 marks)**

……

……

……

……

……

3. Below is a diagram showing a type of metamorphosis exhibited by a butterfly



a) (i) Give the name of the type of metamorphosis in the diagram above. **(1mark)**

……

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

……

……

……

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b) Name stages **Q** and **R** **(2mks)**

Q……

R……

(c) Differentiate the biological activities in the development stages **R** and **S**. **(4marks)**

……

……

……

……

……

……

(d) Name the **two** major hormones that are associated with metamorphosis in insects.**(2mks)**

……

……

(e) (i) Name the class to which the organisms in the diagram above belongs**.** **(1mark)**

……

(ii) Give **two** reasons for your answer in (e) (i) above**.** **(2marks)**

……

……

……

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

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*
- *Mathematics tables and electronic calculators may be used.*
- *All working must be clearly shown where necessary.*

FOR EXAMINERS USE ONLY

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

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1. **(a)** State one disadvantage of using flower extracts as acid – base indicators.**(1mk)**

……

……

(b) Name the indicator that can be used in the laboratory to tell the PH of lemon juice. **(1mk)**

……

……

(c) Differentiate between strong and weak acids. **(1mk)**

……

……

2. **(a)** What are isotopes? **(1mk)**

……

……

(b) Determine the number of neutrons in $^{18}_{8}O$ **(1mk)**

3. When magnesium is burnt in air it reacts with both oxygen and nitrogen gas giving a white ash. Write two equations for the reactions that take place. **(1mk)**

……

……

4. A solution contains 29.1g per litre of aluminium Sulphate. Calculate the number of Sulphate ions in 350cm^3 of the solution.
(Al = 27, S = 32, O = 16) Avogadro's constant = 6.0 x 10^{23}. **(2mks)**

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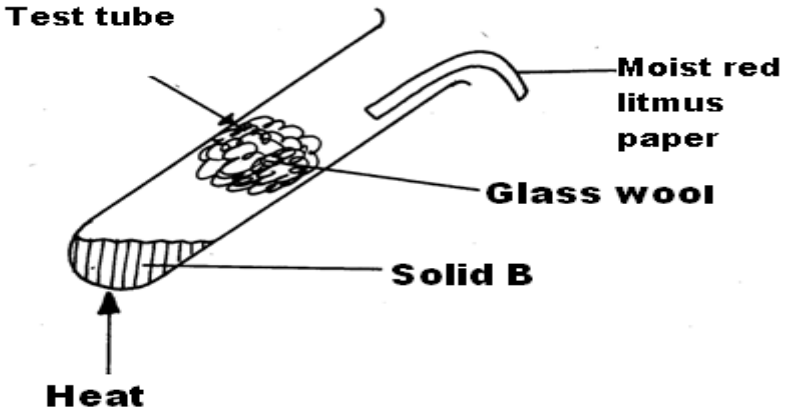
5. When a solid B was heated in a test-tube, it gave off two gases. The two gases were seperates by passing them through a plug of glass wool in a test-tube as shown below.



The first gas which evolved turned moist red litmus paper to blue. Later the other gas involved turned the litmus back to red.

(a) Identify solid B **(1mk)**

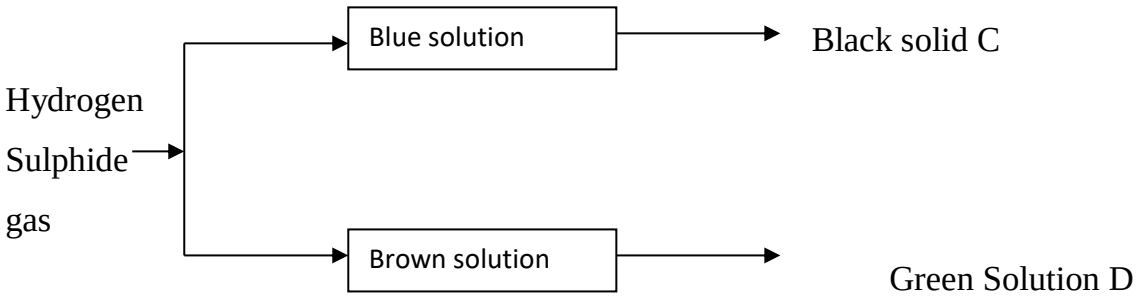
……

(b) Write the equation for the reaction that take place in the test tube **(1mk)**

……

……

6. Hydrogen Sulphide gas was bubbled into two solutions of metallic nitrates as shown in the flow diagram below



(a) Identify the black solid C **(1mk)**

……

(b) Write an ionic equation for the formation of the green solution **(1mk)**

……

……

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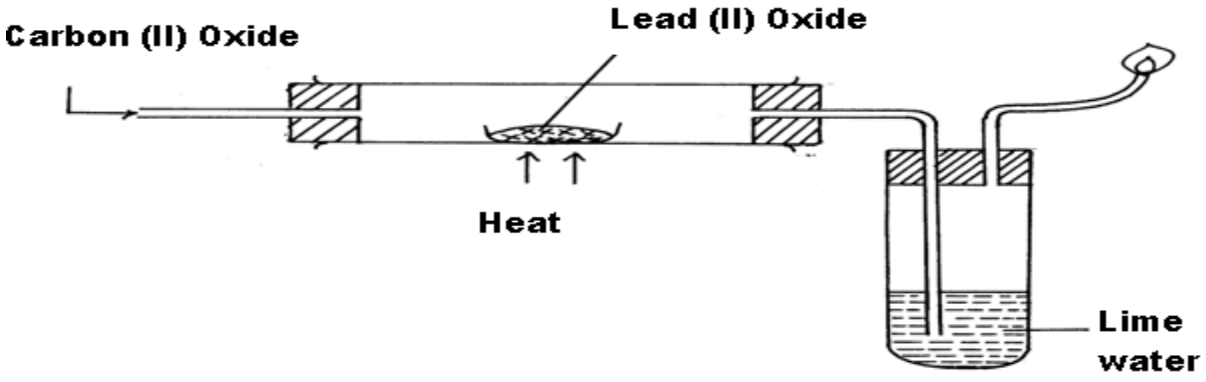
(c) State the property of Hydrogen Sulphide shown by the formation of solution D**(1mk)**

……

……

7. The apparatus shown below was used to investigate the effect of Carbon (II) Oxide on Lead (II) Oxide.



(a) State the observation made in the combustion tube during the experiment.**(2mks)**

……

……

(b) Write the equation for the reaction that take place in test-tube E. **(1mk)**

……

……

8. **(a)** Lime water is also used to soften hard water. Why is this method not preferred to soften hard water. **(1mk)**

……

……

(b) Name a compound that causes temporary hardness of water. **(1mk)**

……

(c) State one disadvantage of using hard water for domestic purpose. **(1mk)**

……

9. **(a)** Name the compound below

$CH_3CH_2CH = CH_2$

……

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(b) Draw and name other isomers of the compound in (a) above. **(2mks)**

10. A white solid dissolve in water to form a colourless solution. The colourless solution forms a white precipitate with Ammonia solution but dissolve in excess alkali. The colourless solution forms a white precipitate with Lead (II) Nitrate solution. The white Precipitate dissolve on warming to form a colourless solution.

(a) Write the chemical formulae for the ion formed when the colourless solution react with excess ammonia solution. **(1mk)**

……

……

(b) Write the name of the ion present in the white solid. **(1mk)**

……

(c) What is an alkali **(1mk)**

……

……

11. The solubility of Potassium Manganate (VII) at 20^0C is 13g per 100g of water and at 90^0C is 60g per 100g of water.

(a) Determine the mass of Pottassium (VII) Manganate present in 80g of saturated solution at 90^0C. **(1mk)**

……

……

(b) Calculate the mass of Pottassium (VII) Manganate that would crystallize out if the solution in (a) were cooled to 20^0C. **(2mks)**

……

……

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12. **(a)** Explain why concentrated Sulphuric (VI) acid is a poor electrolyte and has no effect on blue litmus paper whereas 2M Sulphuric (VI) acid conducts electricity and changes blue litmus paper red. **(1mk)**

……

……

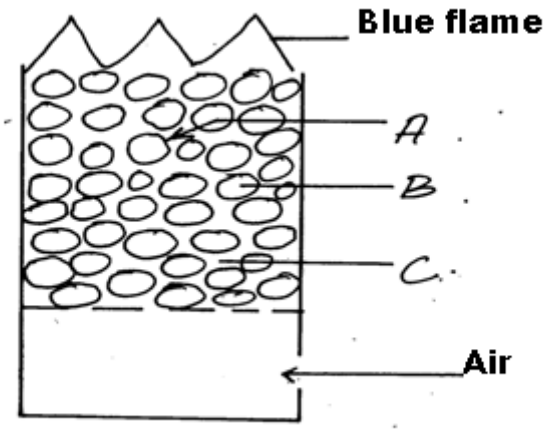
(b) What is a binary electrolyte. **(1mk)**

……

……

13. An element F has a relative atomic mass of 88. When a current of 0.5 amperes was persed through the fused chloride of F for 20 minutes and 20 seconds, 0.278g of F were deposited at the cathode. Determine the charge on ion of F (1Faraday = 96500C). **(2mks)**

14. Below is a cross- section of a charcoal burner



(a) Charcoal is a form of impure carbon. Name allotropes of carbon. **(1mk)**

……

……

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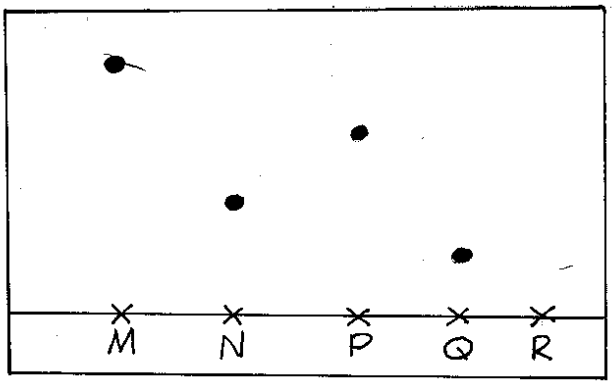
(b) Write an equation for the reaction taking place at the part marked B. **(1mk)**

……

……

15. The diagram below represents paper chromatogram of four types of sugar.



(a) Identify the most stable sugar. **(1mk)**

……

(b) On the diagram, show the chromatogram of R. **(2mks)**

16. The empirical formula of a hydrocarbon is C_2H_3. The hydrocarbon has a relative molecular Mass of 54. (H = 1, C = 12)

(a) Determine the molecular formula of the hydrocarbon. **(1mk)**

(b) Draw the structure formulae of the hydrocarbon in (a) **(1mk)**

(c)To which homologous series does the hydrocarbon in (b) above belong? **(1mk)**

17. State three factors that increase the rate of reaction for the following rection.**(3mks)**

$CaCO_{3(s)} + 2HCl_{(aq)} \longrightarrow CaCl_{2(aq)} + CO_{2(g)} + H_2O_{(aq)}$

……

……

……

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18. In terms of structure and bonding explain the following

(a) Melting point of Magnessium is higher than that of Sodium. **(3mks)**

……

……

……

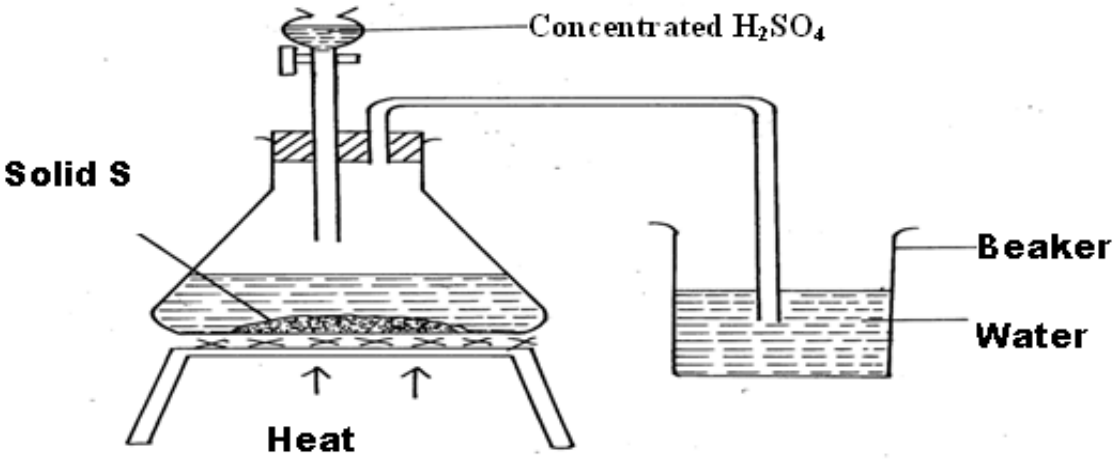
……

(b) Melting point of Chlorine is lower than that of Iodine. **(1mk)**

……

……

19. The set-up below was used to prepare a solution of hydrogen chloride gas



(a) Identify solid S **(1mk)**

……

(b) Identify one mistake in the set up. **(1mk)**

……

……

(c) Write an equation for the reaction taking place in the flask. **(1mk)**

……

……

20. **(a)** State gay Lussac's law **(1mk)**

……

……

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(b) $10cm^3$ of a gaseous hydrocarbon, CxHy required 30cm3 of oxygen for complete combustion. If steam and $20cm^3$ of Carbon (IV) oxide were produced, what is the value of x in CxHy. **(2mks)**

21. Starting with lead metal, describe how a dry sample of Lead(II) chloride can be prepared in the laboratory. **(3mks)**

……

……

……

……

22. An ion T^{2-} has an electronic arrangement of 2.8

(a) What is the atomic number of the element. **(1mk)**

……

……

(b) To which group and period does the element belong to;

Group_____ **(1mk)**

Period_____ **(1mk)**

23. Using dot (.) and cross (x) diagram show the type of bond present in hydrogen ion, H_3O^+ (H = 1, O = 8) **(2mks)**

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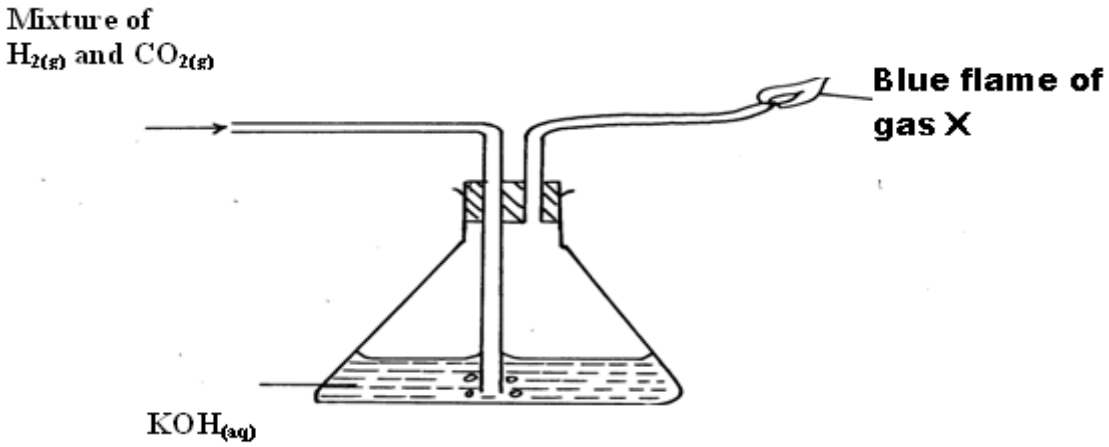
24. A mixture of Hydrogen gas and Carbon (IV) oxide are passed through Potassium hydroxide solution as shown below.



(a) State the observation made in the conical flask. **(1mk)**

……

……

(b) Write the equation for the reaction that takes place in:-

(i) the conical flask **(1mk)**

……

……

(ii) the burning of gas x **(1mk)**

……

……

25. $20cm^3$ of a solution containing 4g per litre of Sdium hydroxide was neutralized by 8cm3 of dilute Sulphuric (VI) acid. Calculate the concentration of the acid im moles per litre.(Na = 23, O = 16, H=1) **(3mks)**

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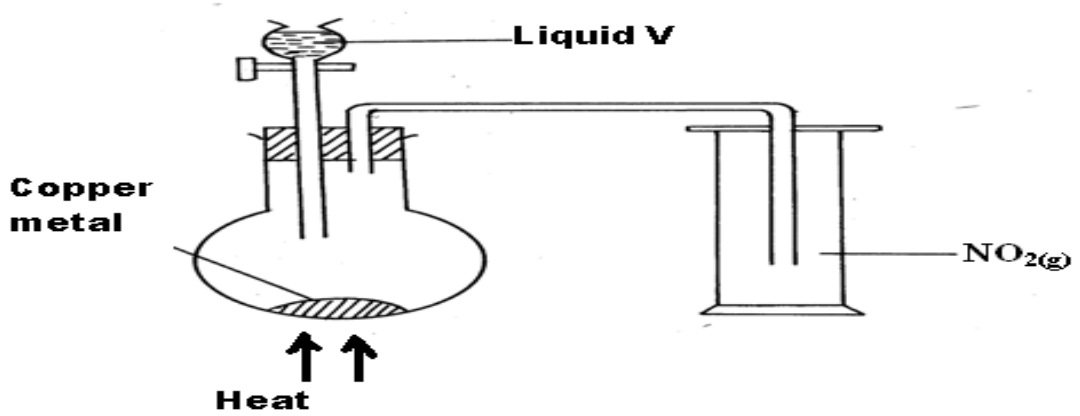
26. Given that the hydration energies of $Ca^{2+}_{(g)}$ and $Cl^{-}_{(g)}$ are -1562KJ/Mole and -364KJ/Mole respectively. The heat of solution (ΔHsoln) for one Molw of $CaCl_2$ is -82.9 KJ/Mole. Determine the lattice energy for $CaCl_2$. **(2mks)**

27. The diagram below is used to prepare nitrogen (IV) oxide gas.



(a) Identify substance V **(1mk)**

……

(b) State and explain one precaution taken when carrying out the experiment. **(2mks)**

……

……

……

……

……

28. Electrode potentials for the half cells are shown below. Use the information to answer the questions that follow.

$Sn^{2+}_{(aq)} + 2e^{-} \longrightarrow Sn_{(s)}$; $E^{\theta} = -0.14V$

$Cu^{2+}_{(aq)} + 2e^{-} \longrightarrow Cu_{(s)}$; $E^{\theta} = -0.34V$

(a) Write the cell representation for the cell made up of two half cells. **(1mk)**

……

……

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(b) Write the cell equation for the cell reaction. **(1mk)**

……

……

(c) Calculate the E^{θ} value for the cell. **(1mk)**

29. State the function of each of the following in the solvay process of production of Sodium Carbonate.

(a) Coke **(1mk)**

……

……

(b) Cold water on the carbonation. **(1mk)**

……

……

(c) Ammonia a generator. **(1mk)**

……

……

30. **(a)** A student in form three was given two gases C_2H_6 and C_2H_4. He added acidified Potassium Manganate (VII) to each solution. State the observations the student made. **(2mks)**

……

……

(b) State one use of C_2H_4. **(1mk)**

……

……

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

CHEMISTRY

233/2

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.*
- *Sign and write the date of examination in the spaces provided above.*
- *Answer **all** the questions in the spaces provided*
- *Mathematics tables and electronic calculators may be used.*
- *All working must be clearly shown where necessary.*

FOR EXAMINERS USE ONLY

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

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1. **(a)** The table **below** shows the ions of elements **W, X,** Y, Z and their electron arrangement.

The letters do not represent the actual symbols of the element.

Ion	Electron configuration
W^-	2,8,8
X^{2+}	**2,8,8**
Y^{3+}	**2,8**
Z^{2-}	2,8

(i) Which two elements belong to the same period? Give a reason. **(2mks)**

……

……

(ii) In which group of the periodic table does Y belong? **(1mk)**

……

……

(iii) Write the formula of the compound formed between W and X **(1mk)**

……

……

(iv) What type of bond is formed between W and X. Explain. **(2mks)**

……

……

……

(b) (i) What is a coordinate bond. **(1mk)**

……

……

(ii) Draw a dot (**.**) cross (X) diagram to show bonding in the Ammonium ion. NH_4^+ ion (N = 7, H = 1) **(2mks)**

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c) Aluminum chloride and sodium chloride are both chlorides of period 3 elements. Use this information to explain the following observations.

I A solution of $A1CI_3$ in water turns blue litmus paper red while that of sodium chloride does hot. **(1 ½ mks)**

……

……

……

II The melting point of sodium chloride (801°C) is higher than that of A1C13 (180°C). **(1 ½ mks)**

……

……

……

2. **(a)** Give the names of the following compounds.

(i) $CH_3CH_2CH_2CH_3$ **(1 mk)**

……

(ii) $CH_3CHCHCH_2CH_3$ **(1 mk)**

……

(b) Study the information in the table below ad answer the questions that follow.

No. of carbon atoms per molecule	**Relative molecular mass of hydrogen**
2	28
3	42
4	56

(i) Write the general formula of the hydrocarbons in the table. **(1 mk)**

……

(ii) Predict the relative molecular mass of the hydrocarbon with *5* carbon atoms**. (1mk)**

……

……

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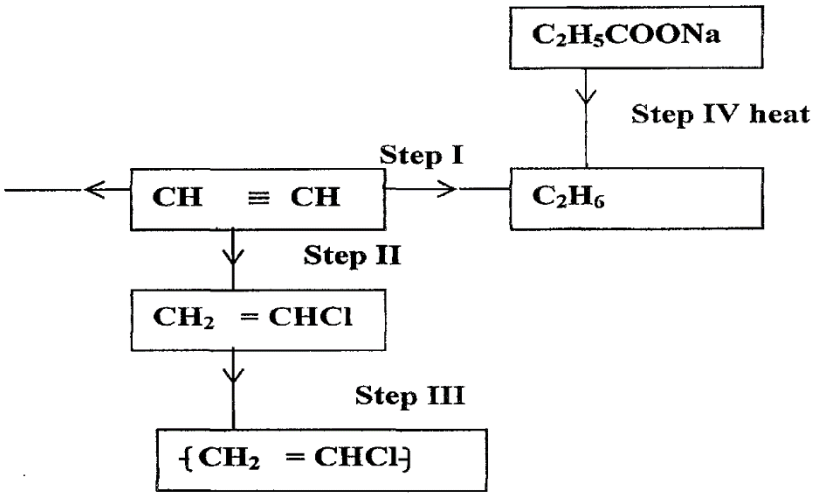
(iii) Determine the molecular formula of the hydrocarbon in (ii) and draw its structural formula. **(2 mks)**

……

……

(c) Study the scheme given below and answer questions that follow.



(i) Name the reagent used in

Step I **(1 mk)**

……

Step II **(1 mk)**

……

Step III **(1 mk)**

……

(ii) Write an equation for complete combustion of CH ≡ CH **(1 mk)**

……

……

(iii) Explain **one** disadvantage of the continued use of items in step III. **(1 mk)**

……

……

……

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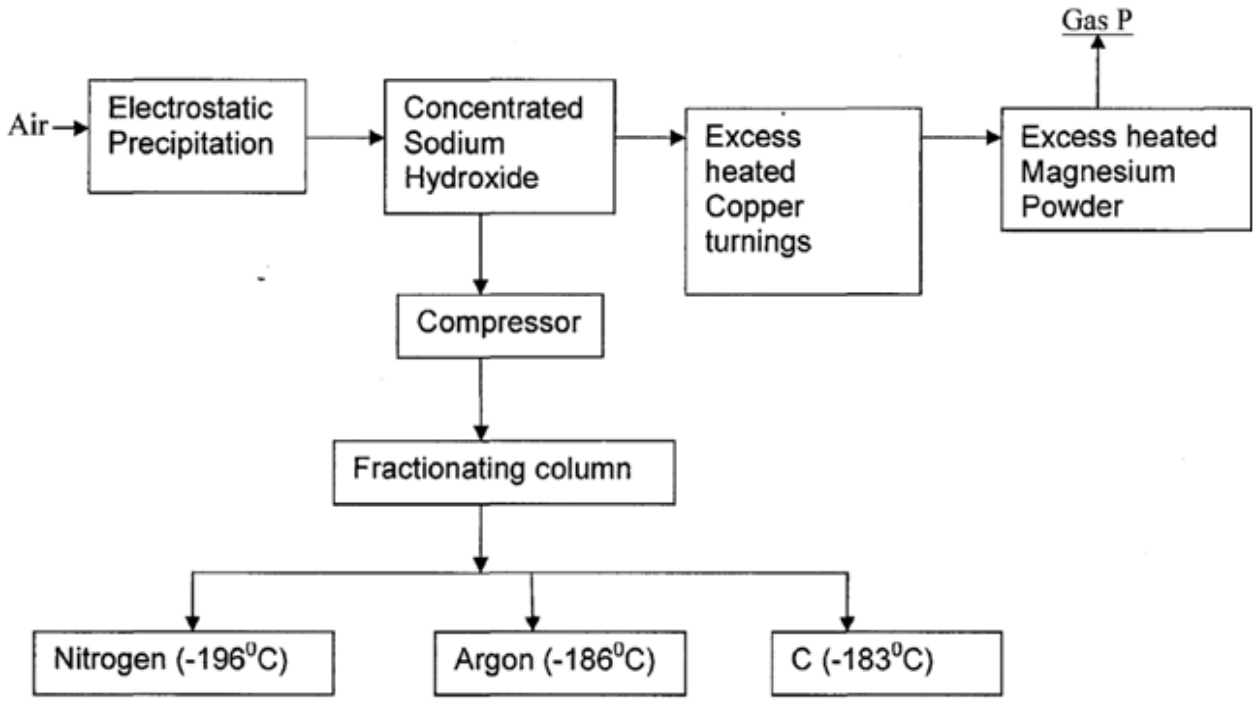
3.Air was passed through several reagents as shown in the flow chart below.



(a) Name the major components of air. **(2mks)**

……

……

(b) Write an equation for the reaction which takes place in the chamber with:

(i) Concentrated sodium hydroxide. **(lmk)**

(ii) Excess heated copper turnings. **(lmk)**

(iii) Excess heated magnesium powder. **(1mk)**

(c) Name **one** gas which escapes from the chamber containing magnesium powder. Give a reason for your answer. **(2mks)**

……

……

……

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(d) Name the substance that was eliminated by electrostatic precipitation. **(lmk)**

……

(e) Name a reagent that can be used in place of concentrated sodium hydroxide. **(1 mk)**

……

(f) Name substance C. **(lmk)**

……

(g) State **three** uses of gas C. **(3mks)**

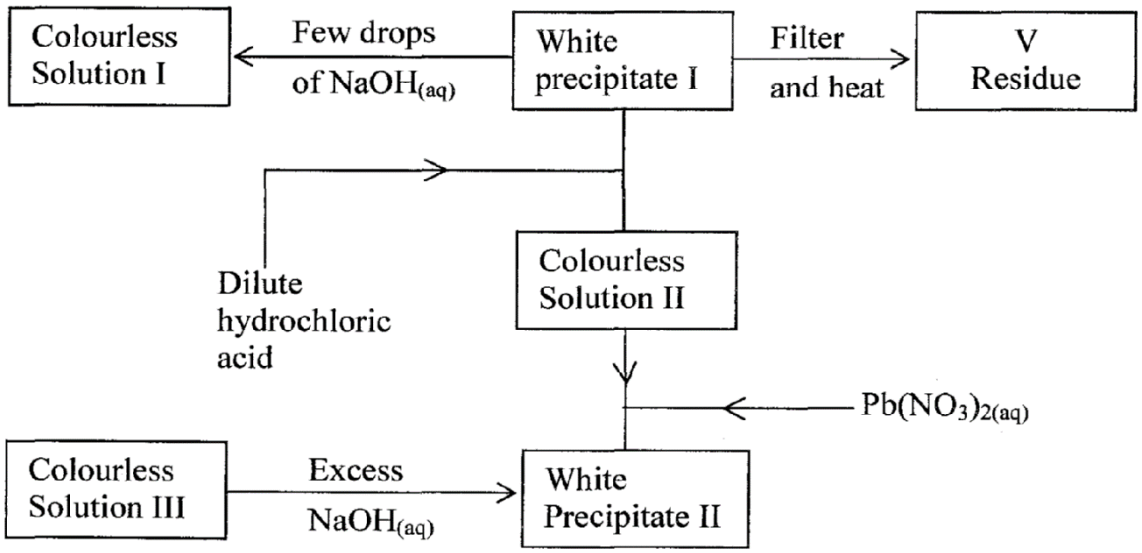
……

……

……

……

4. (a) Study the flow chart **below** and answer the questions that follow.



Residue V was yellow when hot and white when cold.

(i) Identify

I White precipitate **I.** **(1mk)**

……

II Solution **II.** **(1mk)**

……

III Residue V. **(1mk)**

……

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(ii) Write an ionic equation for the reaction of solution **II** with $Pb(NO_3)_{2(aq)}$. **(1 mk)**

……

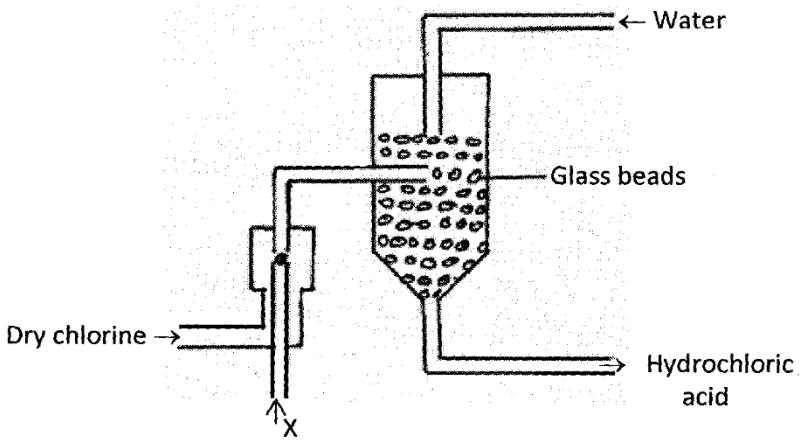
……

(iii) Write observations that would be made when ammonia solution is added drop wise till in excess to the colourless solution II **(lmk)**

……

……

(b) The diagram **below** represents a set-up for large scale manufacture of hydrochloric acid. Study it and answer the questions that follow:



(i) Name substance **X.** **(1 mk)**

……

(ii) What is the purpose of glass beads? **(1 mk)**

……

……

(iii) Give **one** source of substance X used in the above process. **(lmk)**

……

(iv) Give two use of hydrochloric acid. **(2mks)**

……

……

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(c) The table below shows the ammeter readings obtained when two different electrolytes of the same concentration were tested.

Electrolyte	**Ammeter reading (Amps)**
Hydrochloric acid	4.0
Ethanoic acid	1.2

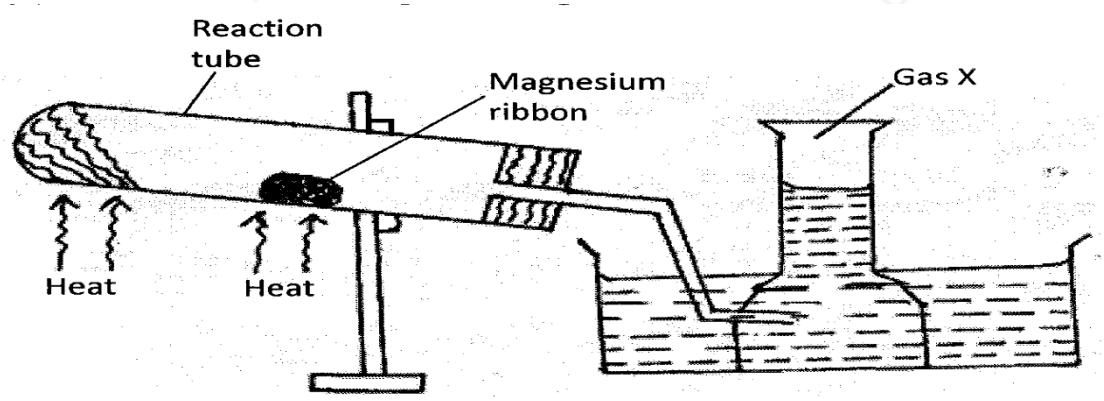
Why does Ethanoic acid give a lower ammeter reading? Explain your answer **(2mks)**

……

……

……

5. The set-up **below** was used to prepare and collect gas **X.** During the experiment cleaned magnesium ribbon was strongly heated before heating the wet glass wool.



(a) Name gas **X** …… **(1mk)**

(b) Why is magnesium ribbon cleaned before it is used? **(1mk)**

……

……

(c) State one observation that would be noted in the reaction tube. **(1mk)**

……

(d) Write the equation for the reaction in the reaction tube. **(1mk)**

……

……

(e) State one industrial use of the solid product formed in the reaction tube**(1mk)**

……

……

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(f) What precaution should be taken at the end of experiment? Explain. **(2mks)**

……

……

……

(g) At the end of the experiment 96.0cm^3 of gas X were collected at 10^{0}C and 1 atmosphere pressure. Mg = 24, M.G.V = 22.4, T = O^{0}c AT STP, p = 1 atmospere at stp).

(i)Determine the volume gas X would occupy at s.t.p? **(2mks)**

……

……

……

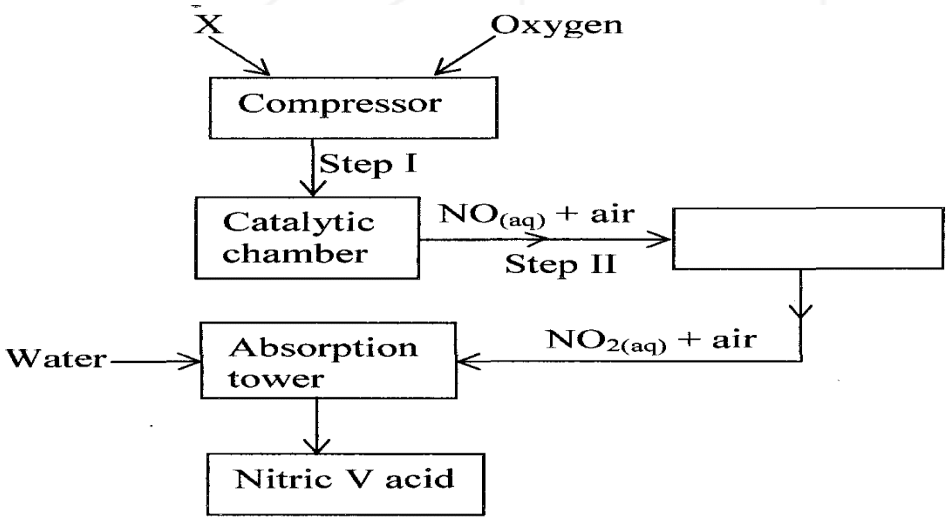
(ii) Calculate the mass of magnesium ribbon used Mg = 24. **(2 mks)**

……

……

……

6. The flow chart **below** shows the large-scale manufacture of nitric (V) acid. Study it and answer the questions **below.**



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

……

(b) Identify one source of **X** in this process. **(1mk)**

……

……

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(c) Write a balanced equation for the reaction which take place.

(i) At Step II. **(1mk)**

……

(ii) In the absorption tower. **(1mk)**

……

(d) Name the catalyst used in this process. **(1mk)**

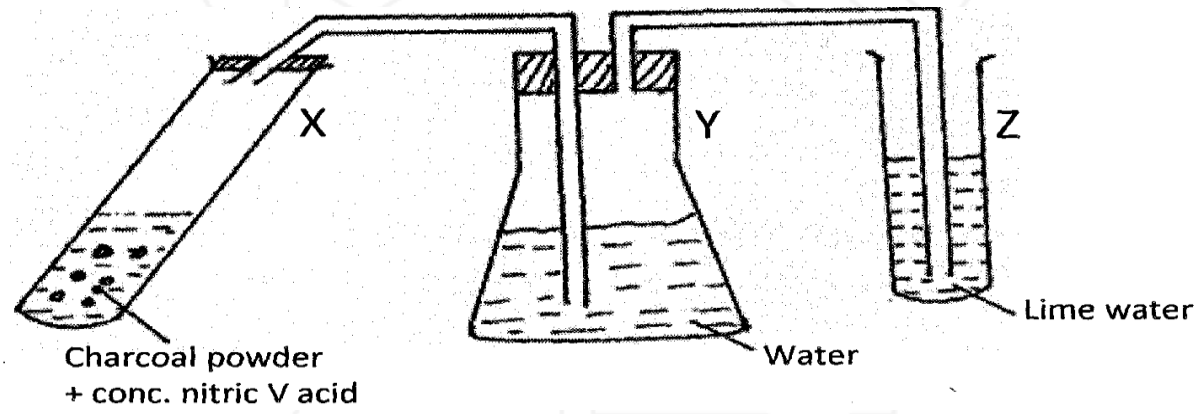
……

(e) Why is it not advisable to store nitric (V) acid in a transparent bottle? **(1 mk)**

……

……

(f) The apparatus **below** was arranged to investigate the properties of nitric (V) acid. Study the set-up and answer the questions that follow:



(i) Explain what would be observed when blue and red litmus paper is dropped into flask Y after the experiment. **(2 marks)**

……

……

……

(ii) Write an equation for the reaction in test tube **X** above. **(1 mark)**

……

(iii) What gaseous products would be expected if concentrated sulphuric (VI) acid was used in place of conc. nitric (V) acid? **(1 mark)**

……

……

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7. **(a)** Explain the following observation, giving an equation where necessary. When a sample of tap water is boiled for some time, a white precipitate is formed. **(lmk)**

……

……

(b) A sample of hard water is *found* to contain 0.25g of calcium chloride and 0.24g of magnesium sulphate per litre.

(i) Describe how this sample of water is softened by using anhydrous sodium carbonate **(2mks)**

……

……

……

(ii) Calculate the mass of anhydrous sodium carbonate required to soften a litre of the water sample (Ca= 40, Mg = 24, Na = 23, 0 = 16, Cl = 35.5, S = 32 and C = 12) **(3mks)**

……

……

……

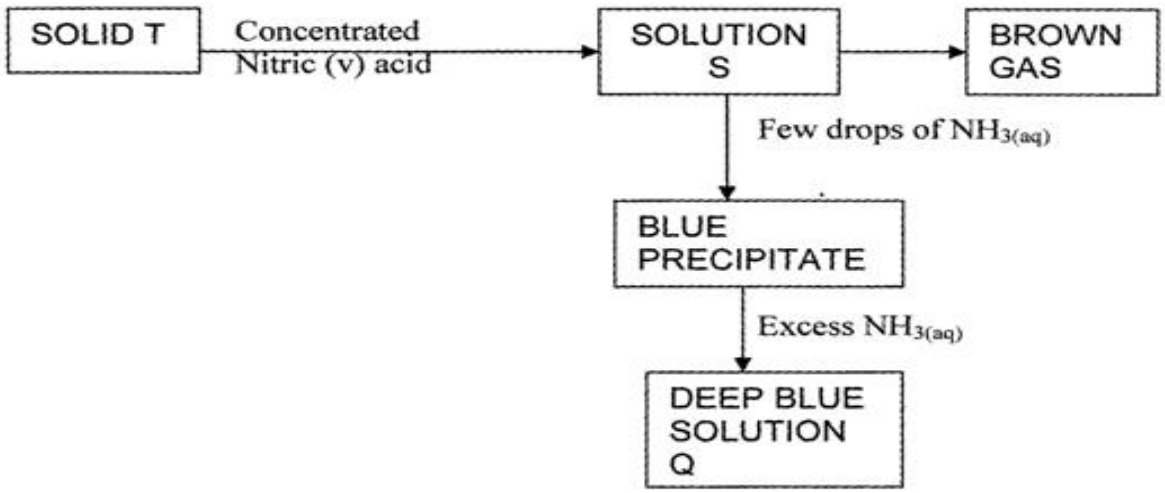
……

(iii) Give two reasons why it is necessary / important to soften tap water supplied for domestic . **(2mks)**

……

……

(c) Study the flow chart below and answer the questions that follow.



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(i) Identify solid T **(lmk)**

……

(ii) Write an equation for the reaction between solid T and concentrated nitric (v) acid. **(lmk)**

……

……

(iii) Write an equation for the reaction that produces solution Q. **(lmk)**

……

……

KCSE 24

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

CHEMISTRY

233/3

PAPER 3 (PRACTICAL)

TIME: 2¼ HOURS

SCHOOL…… SIGN……

Kenya Certificate of Secondary Education.

CONFIDENTIAL

INSTRUCTIONS TO SCHOOLS

The information in this paper is to enable the Head of the school and the teacher in charge of chemistry to make adequate preparations for this year's chemistry practical examination.

Great care MUST be taken to ensure that the information here in does not reach the candidates either directly or indirectly. The teacher in charge of chemistry should **NOT** perform any of the experiments in the same room as the candidates nor make results of the experiments available to the candidates or give any other information related to the experiments to the candidates. Teachers to perform experiments to complete tables I and II to provide readings for their centre to be enclosed with the candidates' scripts to central marking centre.

In addition to the fittings and apparatus found in a chemistry laboratory, each candidate will require the following:

A.

1. *One burette 0 – 50 ml*
2. *One pipette 25.0 ml and a pipette filler*
3. *Two clean and dry conical flasks (250ml)*
4. *Six clean and dry test-tubes*
5. *pH chart (Full range)*
6. *One boiling tube*
7. *About 500cm^3 of distilled water supplied in a wash bottle*

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8. *One 250ml volumetric flask supplied with a stopper.*
9. *One 10ml measuring cylinder*
10. *One 50ml measuring cylinder*
11. *About 60cm^3 of solution A*
12. *About 100cm^3 of solution B*
13. *About 100cm^3 of solution C*
14. *100ml glass beaker*
15. *White piece of plain paper marked with **a cross** on it with a blue print*
16. *Thermometer*
17. *Stop watch/stop clock*
18. *One sticker / label*
19. *About 0.5 of solid sodium carbonate*
20. *About 2g of solid R*
21. *About 0.5g of solid V*

B Access to:

1. *Universal indicator solution (full range)*
2. *Phenolphthalein indicator*
3. *Bunsen burner, tripod stand and wire gauze*
4. *2.0M sodium hydroxide solution supplied with a dropper*
5. *Acidified potassium manganate (VII) supplied with a dropper*
6. *0.5M aqueous lead (II) nitrate solution supplied with a dropper*
7. *2.0M ammonia solution supplied with a dropper.*
8. *2.0M barium chloride solution*
9. *2.0M lead nitrate solution*
10. *Bromine water*
11. *Potassium iodide solution*

NOTE:

1. Solid R is a mixture of lead (II) carbonate and sodium sulphite in the ratio of 1:1
2. Solid V is oxalic acid
3. Solution A is prepared by dissolving 172cm^3 of Conc. Hydrochloric Acid (Density 1.18g/cm^3) in
   400cm^3 of distilled water and diluting with distilled water to make one litre solution.
4. Solution B is prepared by dissolving 15.8g of sodium thiosulphate ($Na_2S_2O_3$) in 600cm^3 of distilled water and diluting with distilled water to make one litre solution.
5. Solution C is prepared by dissolving 4g of sodium hydroxide pellets in 600cm^3 of distilled and diluting with distilled water to one litre.
6. Acidified potassium manganate (VII) is prepared by dissolving 3.0g of potassium manganate (VII) in 400cm^3 of 2.0M H_2SO_4 and diluting with distilled water to one litre.

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

CHEMISTRY

233/3

PAPER 3 (PRACTICAL)

TIME: 2¼ 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 in the question paper.
(b) Sign and write the date of examination in the spaces provided above.
(c) Answer ALL questions in the spaces provided on the question paper
(d) You are NOT allowed to start working with the apparatus for the first 15 minutes of the 2 ¼ hours allowed for this paper. This time is to enable you to read the question paper and make sure you have all the apparatus and chemicals that you may need.
(e) All working MUST be clearly shown where necessary
(f) Mathematical tables and silent non-programmed electronic calculators may be used.

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QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1	22	
2	11	
3	07	
Total Score	40	

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1. You are provided with:

i) Solution A which is 2.0M hydrochloric Acid (HCl)

ii) Solution B, which is 0.1 M sodium thiosulphate ($Na_2S_2O_3$)

iii) Solution C which is alkali of 0.1 M concentration

You are required to:

i) Find the effect of change of temperature on the rate of reaction between sodium thiosulphate, solution B, and hydrochloric Acid, solution A.

ii) Prepare a dilute solution of hydrochloric acid, solution A

iii) Write an ionic equation for the reaction between hydrochloric acid, solution A, and the alkali solution C.

Procedure I

Using a measuring cylinder measure 10 cm^3 of solution B into a clean 100cm^3 glass beaker. Place it together with its contents on a white piece of paper marked with a **cross (X**) on it with bold blue print. Measure the temperature of the solution and record it as shown in the table below.

Using a clean measuring cylinder, measure 5cm^3 of solution A. add it to the contents of the beaker containing solution B and immediately start the stop watch. Record the time it will take for the cross (X) to become invisible when viewed above the reaction mixture in the beaker.

Wash the glass beaker used and repeat the experiment at the temperature indicated in the table below by warming sodium thiosulphate solution B to the stated temperature before adding hydrochloric Acid, solution A.

Table I

Experiment number	1	2	3	4	5	6	7	8
Volume of hydrochloric Acid, solution A (1 cm^3)	5	5	5	5	5	5	5	5
Volume of sodium thiosulphate solution B(cm^3)	10	10	10	10	10	10	10	10
Temperatuiure (^{0}C) of sodium thiosulphate, solution B	Room temp.	30	35	40	45	50	55	60
Time in seconds								
Reciprocal of time $\left(\frac{1}{t}\right)$ per seconds,S^{-1}								

(6 marks)

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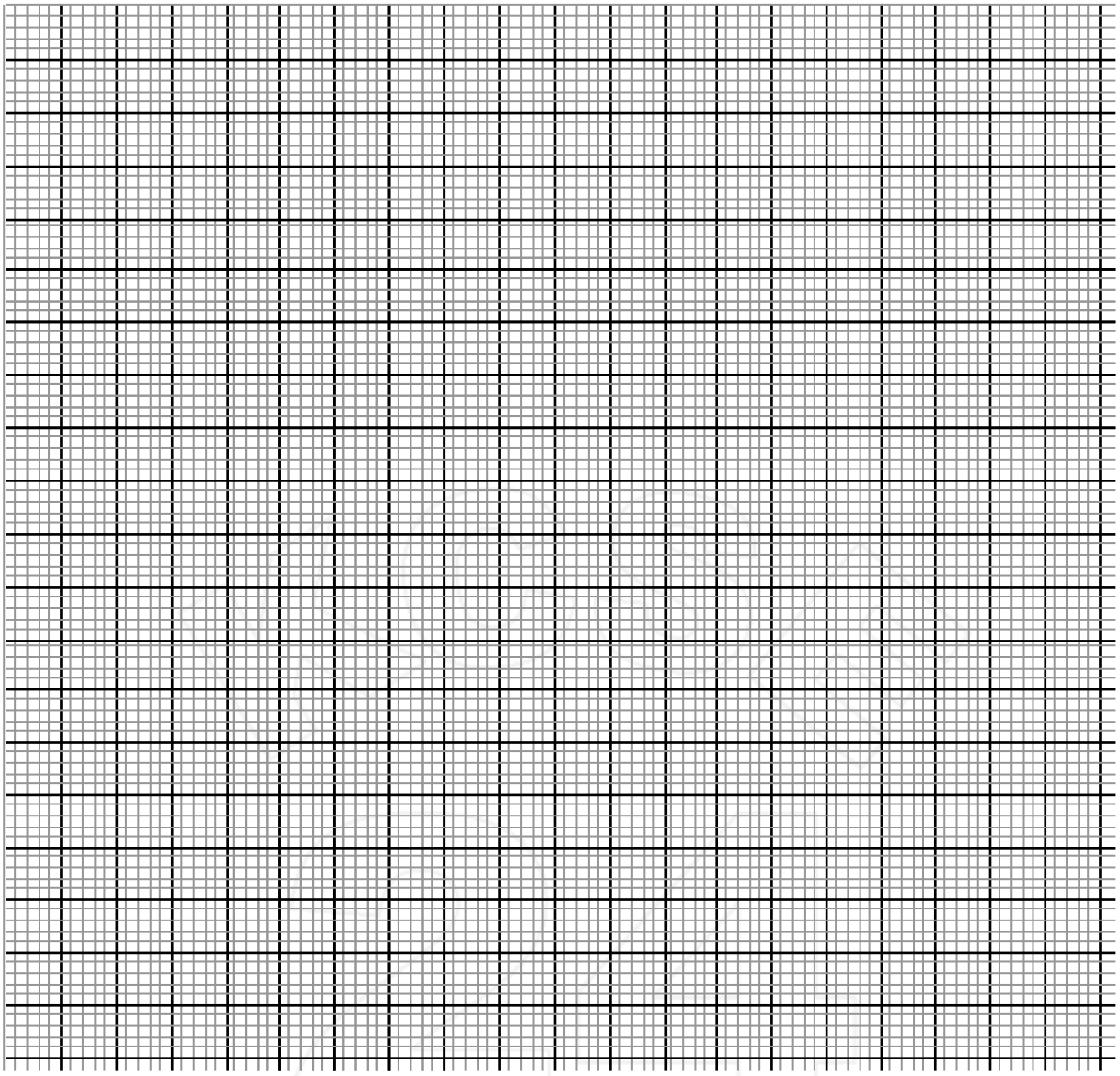
a) On the grid provided, plot a graph of reciprocal of time $\left(\frac{1}{t}\right)$ against temperature **(3 marks)**



b) Comment on the effect of change in temperature on the reaction between sodium thiosulphate, solution B and hydrochloric acid, solution A. **(1mark)**

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……

c) Use your graph to determine:

i) The time taken by the reaction when the temperature is 58^0C. **(1mark)**

ii) The temperature at which the rate of the reaction is 0.045 sec^{-1}**.** **(1mark)**

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Procedure II

Using a clean measuring cylinder, place **12.5 cm^3** of solution A in a 250ml volumetric flask. Add 200 cm^3 of distilled water and shake. Add distilled water upto the mark. **Label this solution D**. Fill a burette with solution D. Using a pipette and pipette filler, place 25.0 cm^3 of solution C into a 250 ml conical flask. Add two drops of phenolphthalein indicator and titrate with solution D until the pink colour disappears.

Record your results in table II. Repeat the titration two more times and complete the table.

Table II **(5 marks)**

	I	II	III
Final Burette Reading(cm^3)			
Initial Burette Reading(cm^3)			
Volume of solution D (cm^3)			

d) Calculate:

i) The average volume of solution D used. **(1 mark)**

ii) Moles of hydrochloric Acid, solution D used. **(1 mark)**

iii) Moles of Alkali solution C used**.** **(1mark)**

iv) Determine the reacting mole ratio between the hydrochloric acid, solution D, and the alkali, solution C. **(1 mark)**

v) Write ionic equation for the reaction between hydrochloric acid, solution A and alkali, solution C. **(1mark)**

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2. Place all **solid R** provided into a clean boiling tube then add about **10cm^3** of distilled water. Shake the contents thoroughly then filter. Retain both the filtrate and residue. Divide the filtrate into four equal portions.

(a) To the first portion, add sodium hydroxide solution dropwise until in excess.

Observation	**Inference**
(½ mark)	(½ mark)

(b) To the second portion, add about 2cm^3 of Barium Chloride Solution.

Observation	**Inference**
(1 mark)	(1 mark)

(c) To the third portion, add 3 drops of lead (ii) nitrate solution provided followed by about 2cm^3 of 2M nitric (V) acid and shake the mixture.

Observation	**Inference**
(1 mark)	(1mark)

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(d) To the fourth portion, add 3 drops of acidified potassium manganate (Vii).

Observation	**Inference**
(1 mark)	(1 mark)

(e) Transfer all the residue into a clean boiling tube, then add about $2cm^3$ of 2M nitric acid and add about $3cm^3$ of distilled water when all the solid has dissolved. Divide the resulting product into three equal portions.

(i) To the 1st portion add sodium hydroxide solution drop wise until in excess.

Observation	**Inference**
(½ mark)	(½ mark)

(ii) To the second portion, add ammonia solution drop wise until in excess.

Observation	**Inference**
(½ mark)	(½ mark)

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(iii) To the third portion, add a few drops of potassium iodide solution.

Observation	Inference
(½ mark)	(½ mark)

3. You are provided with solid V. You are required to carry out the tests indicated below.

Place a spatulaful of solid V in a boiling tube. Add about 6 cm^3 of distilled water and shake well. Divide the mixture into four equal portions in test tubes.

a) To the first portion, add two drops of potassium manganate (VII) solution.

Observations	Inferences
(1 mark)	(1 mark)

b) To the second portion, add three drops of bromine water.

Observations	Inferences
(l mark)	(l mark)

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(c) To the third portion, add all the sodium carbonate.

Observations	**Inferences**
(l mark)	(l mark)

(d) Test the pH of the solution using universal indicator solution provided.

Observations	**Inferences**
(½ mark)	(½ mark)

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

PHYSICS

232/1

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*
- *This paper consists of two sections, A and B.*
- *Answer ALL the questions in the spaces provided.*
- *All working must be clearly shown in the spaces provided in this booklet*
- *Mathematical tables and Electronic calculators may be used.*

Take g = 10m/s²

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Section	Question	Maximum Score	Candidate's Score
A	1-14	25	
B	15	11	
	16	11	
	17	12	
	18	10	
	19	11	
TOTAL SCORE		80	

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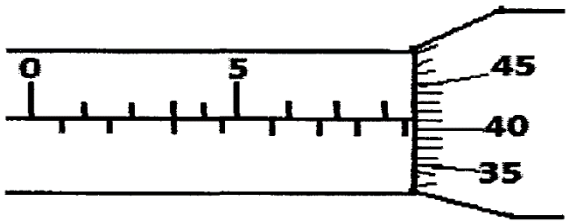
SECTION A: (25MARKS)

Answer all questions in this section.

1. What is the actual reading of the micrometer screw gauge shown below if it has an error of+ 0.5mm? **(2marks)**



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2. In a ball and ring experiment, the ball goes through the rings at room temperature. When it is heated it does not go through the ring, but when left on the ring for some time, it goes through. Explain this observation. **(2marks)**

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3. In the study of free fall, it is assumed that the force F acting on a given body of mass, m, is gravitational, given by F = mg. State two other forces that act on the same body. **(2marks)**

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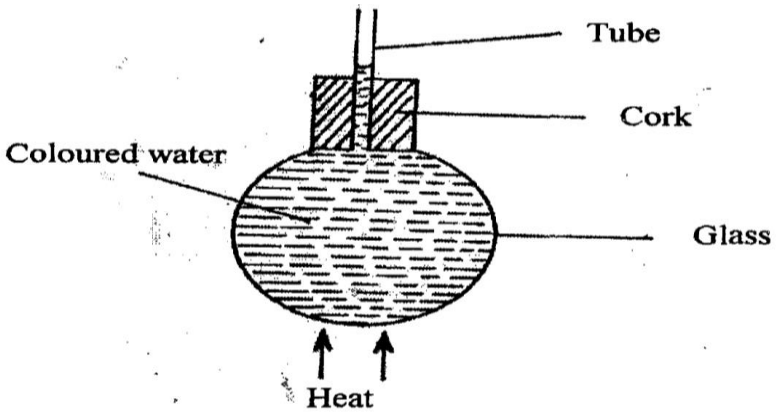
4. In the set up shown below, it is observed that the level of the water initially drops before starting to rise. Explain this observation. **(2marks)**



5. Distinguish between speed and velocity. **(1mark)**

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6. State how the pressure in a moving fluid varies with speed of the fluid. **(1mark)**

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7. A piece of metal weighs 3N in air and 2N when totally immersed in water. Calculate the volume of the metal. (Density of water = 1000Kg/m^3) **(3marks)**

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8. Why is banking of roads necessary? **(1mark)**

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9. Give a reason why air is not commonly used as the fluid in a hydraulic lift. **(1mark)**

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10. Tall buildings are built with lighter materials at the upper part. Explain **(2marks)**

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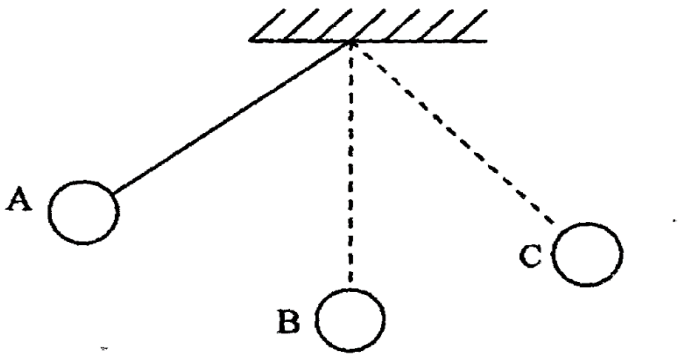
11. The figure below shows a swinging pendulum.



State the energy conservation taking place as the pendulum moves from A to B and B to C

A toB……

B to C……

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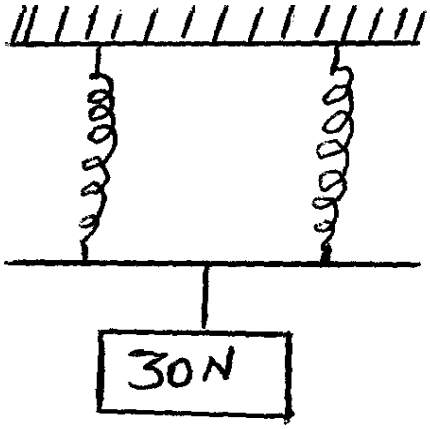
12. The identical springs each of spring constant 3N/cm are used to support a load of 30N as shown.



Determine the extension on of each spring. **(3marks)**

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13. In a vacuum flask, the walls enclosing the vacuum are silvered on the inside. State the reason for this. **(1mark)**

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14. Sketch velocity — time graph of a body moving down a viscous fluid. **(2marks)**

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SECTION B: (55 MARKS)

Answer ALL the questions in the spaces provided.

15. a) Define the term efficiency as applied in simple machine. **(2marks)**

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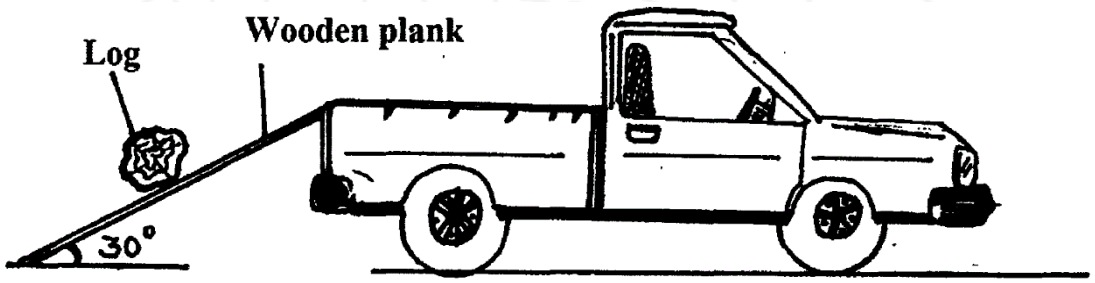
b)A man used a wooden plank to lift a log of wood from the ground to a stationary lorry on a flat ground as shown in figure below. The wooden plank was inclined at an angle of 30^0 to the ground.



i) Indicate with an arrow on the diagram, the direction of the effort and the load. **(2marks)**

ii) Calculate the velocity ratio of the set up. **(2marks)**

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iii) Calculate the mechanical advantage of the set up if its efficiency is 65%. **(2marks)**

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c) A pump is used to spray water from a pool to form fountain.

i) Determine the minimum power of the pump if it ejects 50 litres of water per minute and spray reached a height of 5metres.(Density of water = 1000Kg/m^3**)** **(3marks)**

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ii) Give a reason why water from the pump has a different temperature from that which left the pool. **(1mark)**

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16. a) Define centre of gravity **(lmark)**

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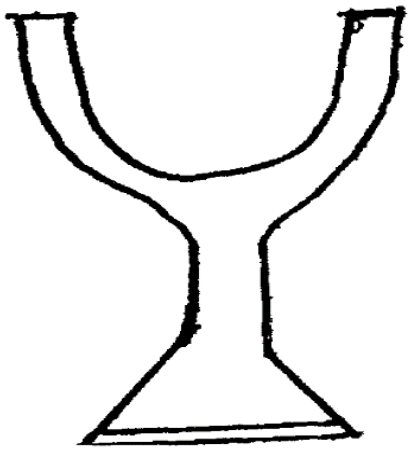
b) The figure below shows a wine glass



Explain how the stability of the glass is affected if it is filled with wine. **(2marks)**

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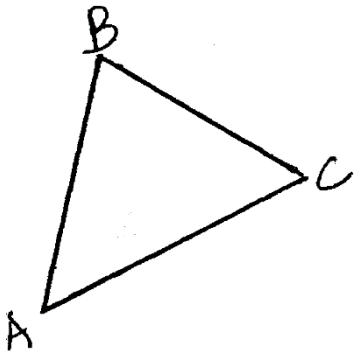
c) In the triangular ABC shown in the figure below, determine geometrically the position of centre of gravity. **(1mark)**



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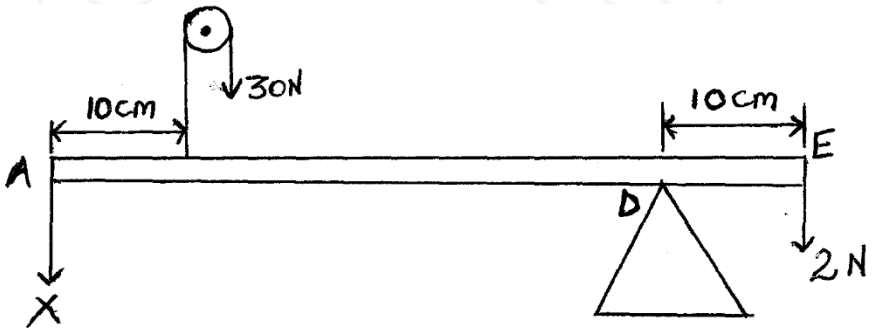
d) The figure below shows a uniform rod AE which is 40cm long. It has a mass of 2kg pivoted at D. If 2N is acting at point E, and 30N force is passed through a frictionless pulley.



Find the force (x) acting at end A. **(3marks)**

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e)i) State the principle of moments. **(1mark)**

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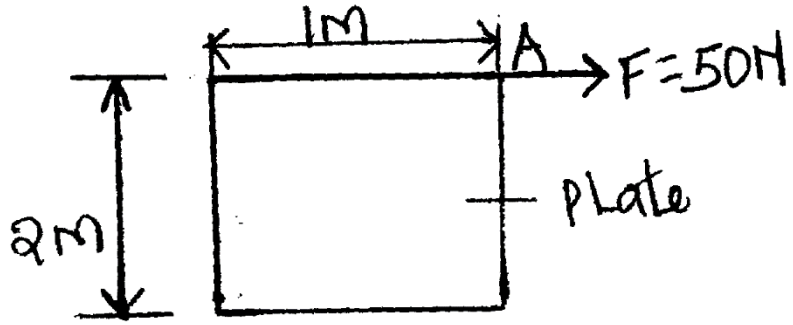
ii) The figure below shows a metal plate 2M long, 1M wide and negligible thickness A horizontal force of 50N applied at point 'A' just makes the plate tilt.



Determine the weight of the plate. **(3marks)**

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17. a) State one factor that affects melting point of water. **(1mark)**

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b) Define the term *specific heat capacity* of a substance **(1mark)**

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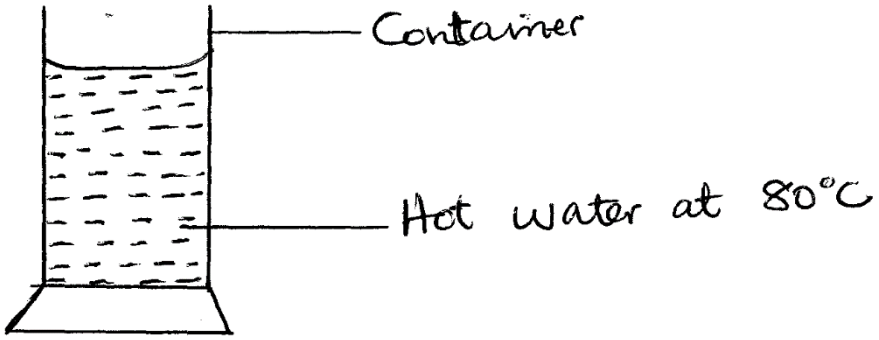
c) The figure below shows a container carrying *0.5* Kg of water at 80°C



A metal block of mass 1Kg and specific heat capacity $4000Jkg^{-1}k^{-1}$ at a temperature of 25°C is lowered into the hot water. The container losses 600J of heat during mixing and a steady final temperature of the mixture obtained is **T**. Assume no further heat is lost to the surrounding and specific heat capacity of water is $4200Jkg^{-1}k^{-1}$

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I. Derive the expression for:

i) The heat lost by the hot water. **(2mks)**

ii) The total heat lost by hot water and the container **(2mks)**

II. Determine the steady temperature **T** of the mixture **(3mks)**

d) Water drops from a water fall 120m High. The temperature of the water at the bottom is found to be 24°C. Calculate its temperature at the top
(Take specific heat capacity of water = $4200Jkg^{-1}k^{-1}$) **(3marks)**

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18. a) State the law of floatation **(1mark)**

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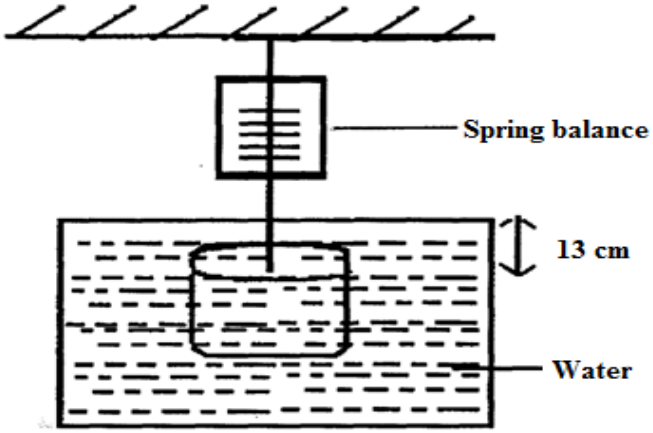
b) A solid metal block cross-section area $4cm^2$ and of density $2.5g/cm^3$ is fully immersed in water, supported by a spring balance.



i) A part from the weight, state and indicate the direction of any two forces acting on the metal block **(2marks)**

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ii) If the upward force acting on the bottom face is 1.5N, calculate the volume of the block (Density of water = $1000kg/cm^3$) **(3marks)**

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iii) Determine the apparent weight of block in water. **(3marks)**

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(c) Explain why the hydrometer is not graduated uniformly. **(1marks)**

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19.(a) Using Kinetic theory of Gases, explain how the rise in temperature of a gas causes rise in the pressure of a gas if the volume is kept constant. **(3marks)**

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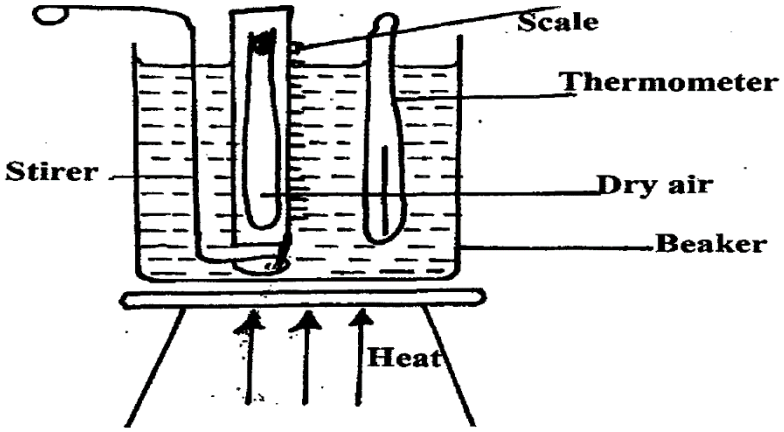
(b) The figure below is a set up that can be used to verify Charles' law of gases.



i) State two measurements that should be taken in the experiment. **(2marks)**

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ii) Explain how the measurements taken above can be used to verify Charles law. **(3marks)**

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c) A certain mass of hydrogen gas occupies a volume of $2.6m^3$ at a pressure of 1.5×10^5 pa and temperature of 12°C. Determine its volume at a temperature of 0°C, if its pressure is 1.0×10^5 pa. **(3 marks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

PHYSICS

232/2

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*
- *This paper consists of two sections, A and B.*
- *Answer ALL the questions in the spaces provided.*
- *All working must be clearly shown in the spaces provided in this booklet*
- *Mathematical tables and Electronic calculators may be used.*

FOR EXAMINERS USE ONLY

Section	Question	Maximum Score	Candidate's Score
A	1-11	25	
B	12	10	
	13	13	
	14	11	
	15	11	
	16	10	
TOTAL SCORE		80	

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SECTION A: (25MARKS)

1. State any two ways of increasing the size of an image formed by a fixed pinholecamera.

(2marks)

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2. State one advantages of an alkaline battery over a lead acid battery. **(lmark)**

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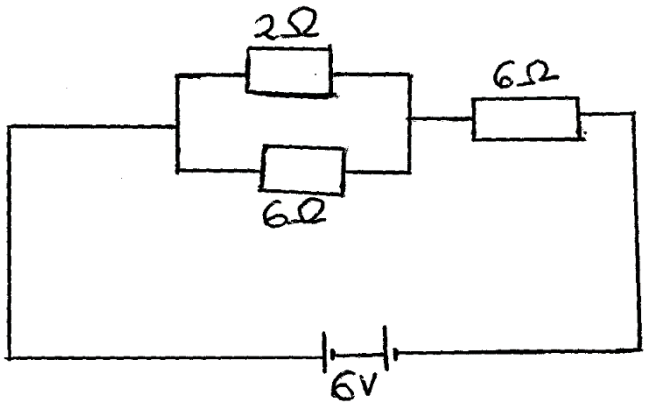
3.



The figure above shows a 6V battery connected to an arrangement of resistors.

Determine thecurrent flowing through the 2Ω resistor. **(3marks)**

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4. A negatively charged rod is brought near the cap of a lightly charged electroscope. The leaf divergence first reduces but as the rod comes nearer, it diverges more.

i) State the charge of the electroscope **(1 mark)**

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ii) Explain the behaviour of the leaf above. **(1 mark)**

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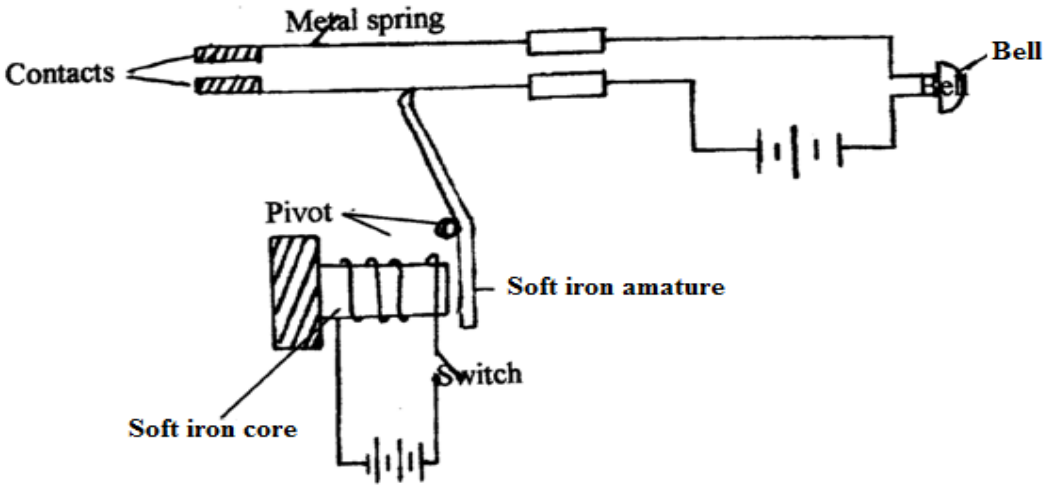
5. The figure below shows an electromagnetic relay.



Explain what happened when the switch is closed. **(3marks)**

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6. A current 12 A flows through a circuit for 2.5 minutes. How much charge passes through the circuit? **(2marks)**

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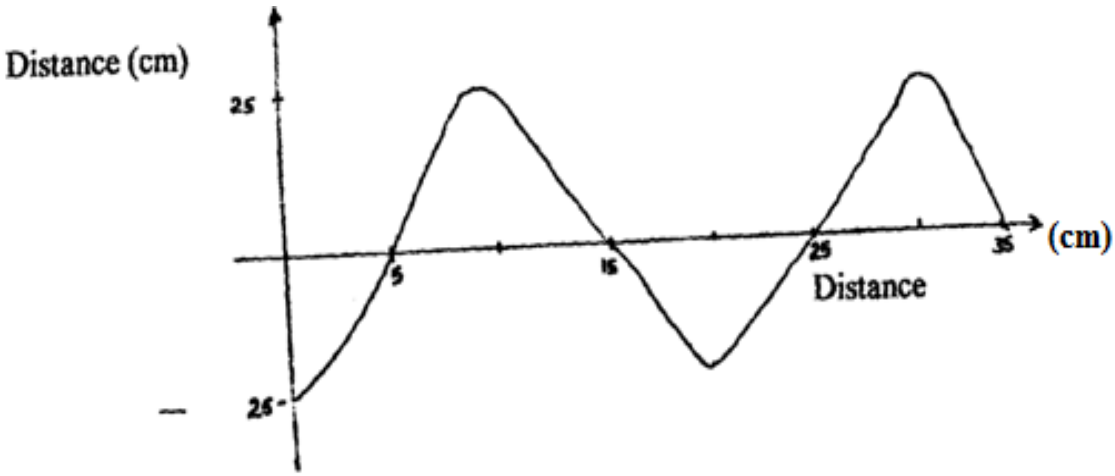
7. The diagram below shows part of a wave form. The numbers on the diagram show scales in centimeters. The speed of the wave is $16ms^{-1}$



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From the graph of the wave shown, determine;

a) The wavelength **(1mark)**

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b) The frequency

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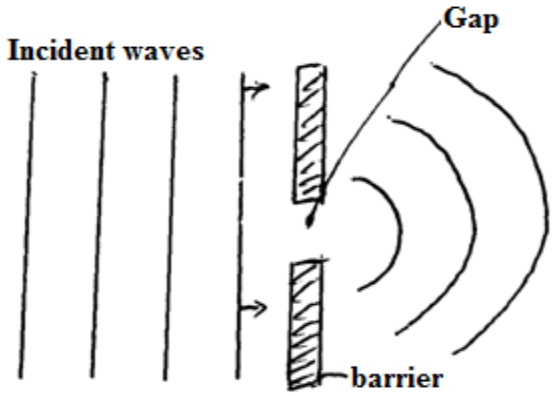
8. Figure below shows wavefront before and after passing through an opening as shown in fig.5.



State what would be observed on the pattern after passing the opening if:

i) Wave length is increased. **(1mark)**

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ii) Gap is increased. **(1mark)**

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9. State two ways by which the frequency of a note produced by a sonometer wire may be increased. **(2marks)**

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10. An electric kettle rated at 2.0kW, 240V is filled with water. If the water requires 7.0 x 10^5 Joules of heat to boil from the initial temperature, determine the resistance of the element. **(3marks)**

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11. A certain glass material has a refractive index of *2.5*. What is its critical angle? **(2mks)**

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SECTION B: (55 MARKS)

12. A student carried out an experiment to investigate how current varies with potential difference applied across a filament lamp. The following readings were obtained.

Rd(V)	0	0.20	0.40	0.60	0.80	1.20	1.60	2.40
I(A)	0.0	0.11	0.20	0.28	0.34	0.43	0.50	0.58

Draw a diagram for the circuit used to obtain the values. **(2marks)**

b) Plot a graph of V against I for the values presented in the table. **(5marks)**

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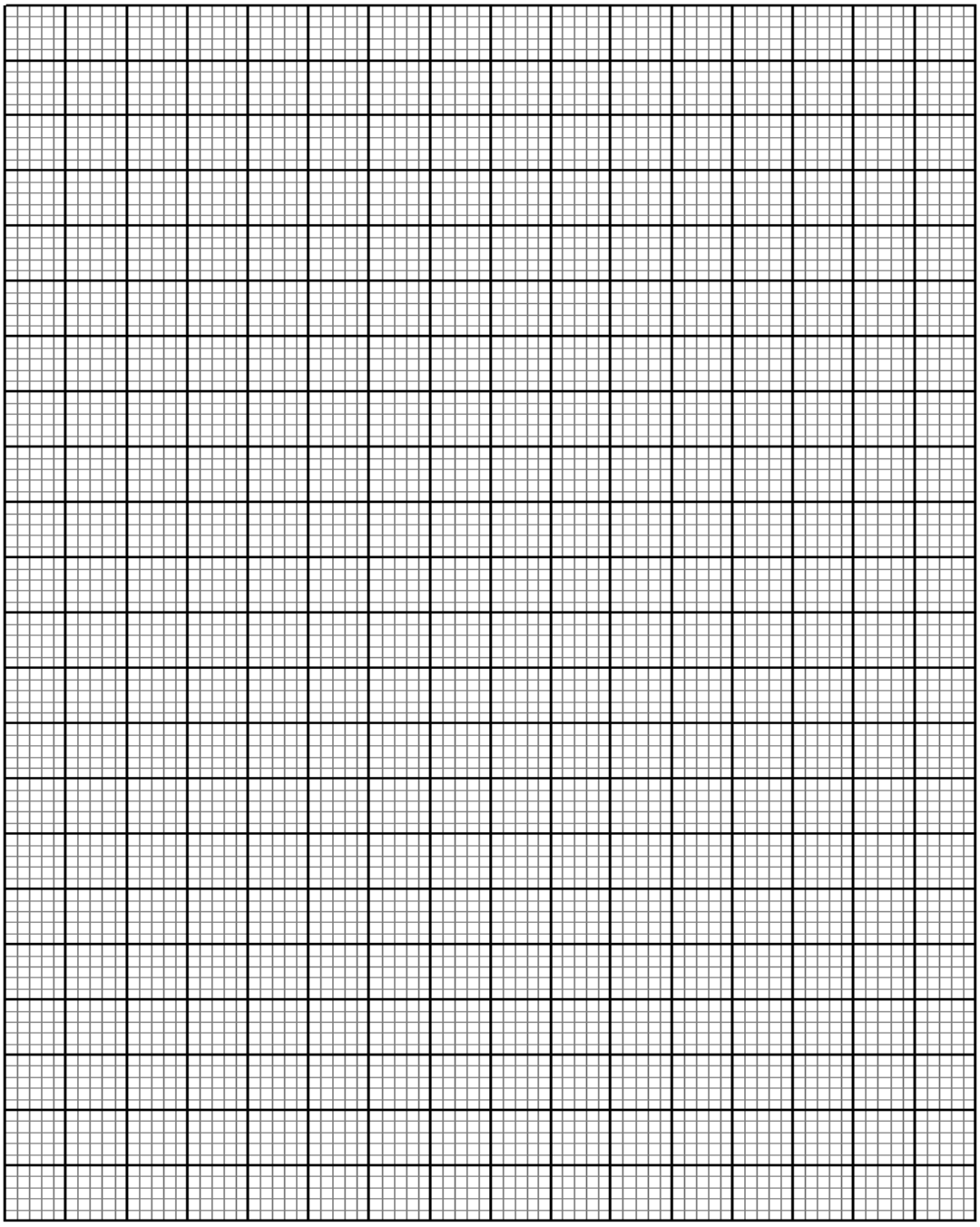

Determine the resistance of the lamp when a current of O.4A flows through it.**(3marks)**

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13. a) Define the term *principal focus* in relation to a thin convex lens **(1 mark)**

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b) Distinguish between a real and virtual image. **(1 mark)**

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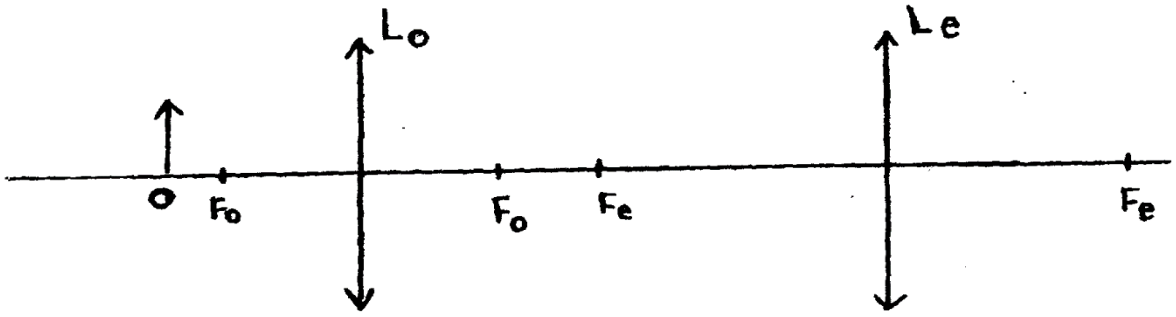
c) The diagram shows an arrangement of lenses; L_0 and L_e used in a compound microscope F_0 and F_e are principal foci of L_0 and L_e respectively.

Draw the rays to show how the final image is formed in the microscope. **(3marks)**



(d)The table below shows the object distance, U and the corresponding image distance, V for an object placed.

U (cm)	20	25	30	35	40	45
V(cm)						
$\frac{1}{u}\left(cm^{-1}\right)$						
$\frac{1}{v}\left(cm^{-1}\right)$						

(i) Complete the table and plot a graph of $\frac{1}{v}$ against $\frac{1}{u}$ **(7marks)**

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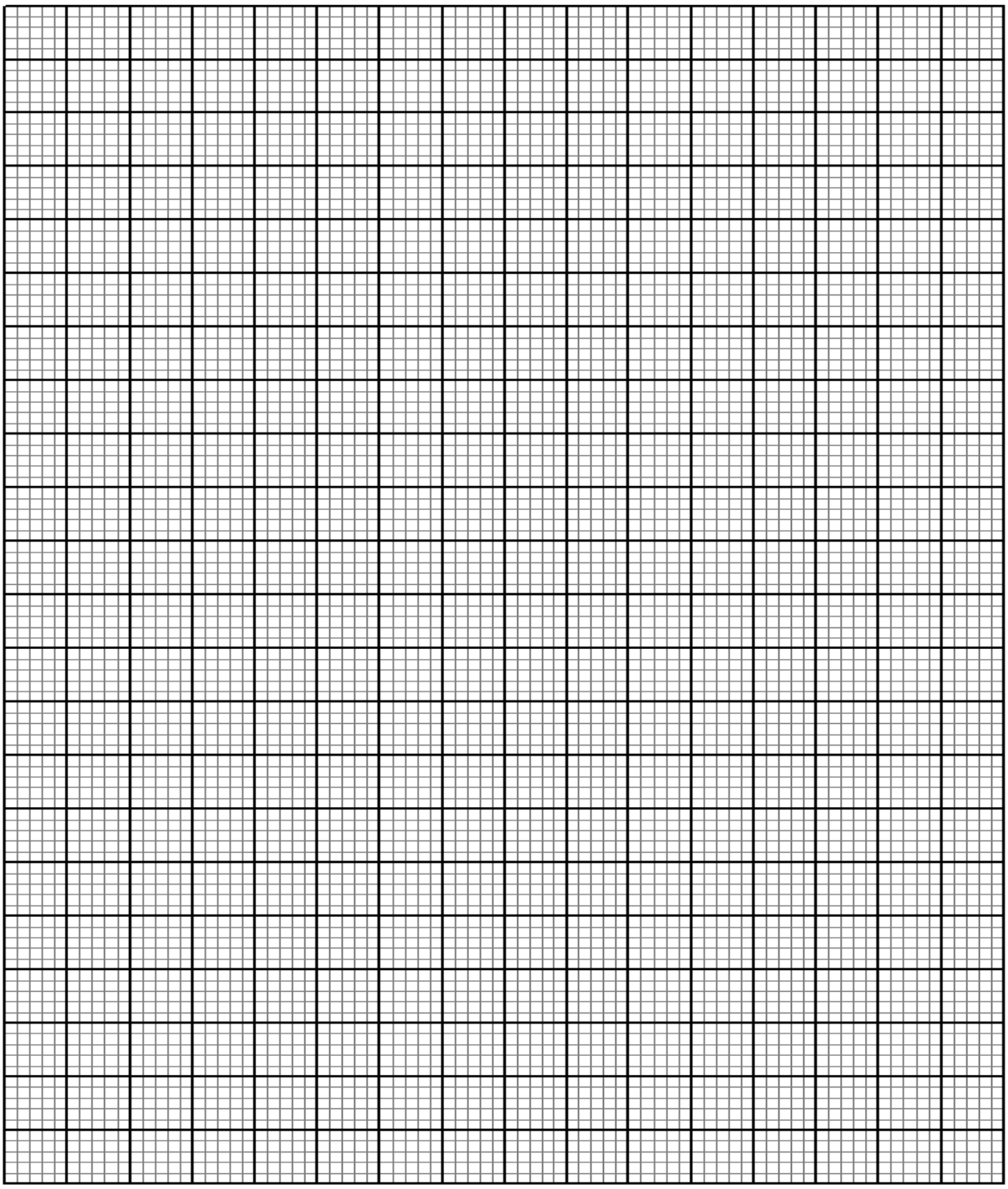

(ii) Determine the focal length of the lens. **(2marks)**

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14. a) Give two conditions necessary for total internal reflection to occur. **(2marks)**

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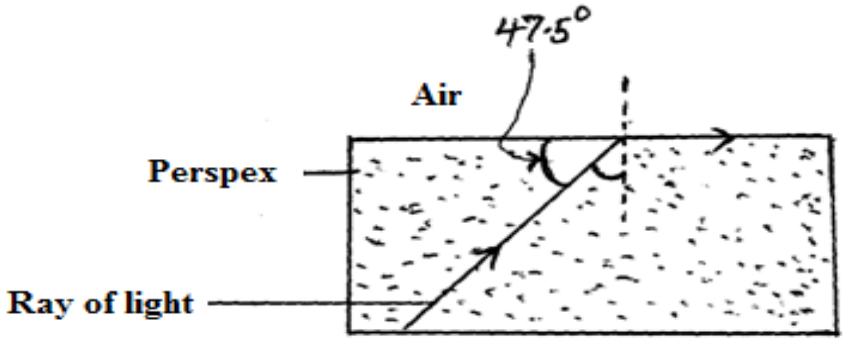
……

b) Figure below shows the path of a ray of light passing through a rectangular block of Perspex to air.



Calculate the refractive index of Perspex. **(3marks)**

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……

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……

c) Give one use of an optical fibre **(1 mark)**

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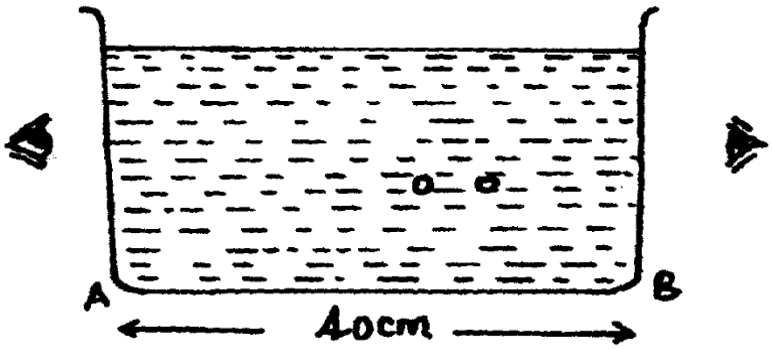
……

d) In a transparent liquid container, an air bubbles appears to be 18cm when viewed from end A and 12cm when viewed from end B as shown in figure below. Where exactly is the air bubble. If the length of the tank is 40cm? **(4marks)**



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15. **a) i)** Distinguish between longitudinal and transverse waves. **(1mark)**

……

……

ii) State one distinction between the way sound waves and electromagnetic waves are transmitted. **(1 mark)**

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……

b) A mine worker stands between two vertical cliffs 400m from the nearest cliff. The cliffs are X m apart, every time he strikes the rock once, he hears two echoes, the first one in *2.5s* while the second follows 2s later. From this information calculate:

i) The speed of sound in air. **(2marks)**

……

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……

ii) The value of X. **(3marks)**

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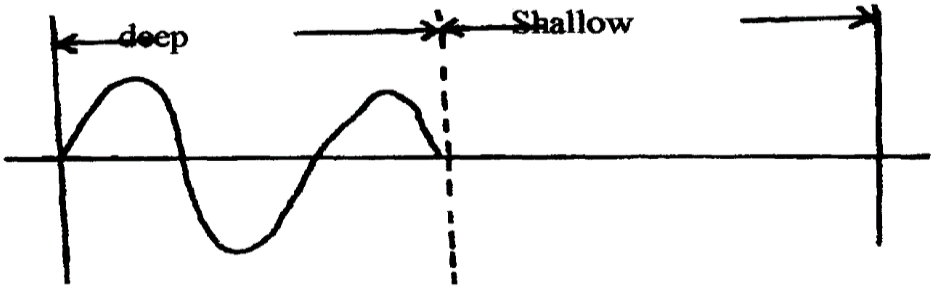
c)Figure 12 below shows the displacement of a particle in progressive wave incident on a boundary between deep and shallow regions.



i)Complete the diagram to show what is observed beyond the boundary. (Assume no loss of energy) **(2marks)**

ii)Explain the observation in C (i) above. **(2marks**

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16.(a) State two factors that affect the capacitance of a parallel plate capacitor. **(2marks)**

……

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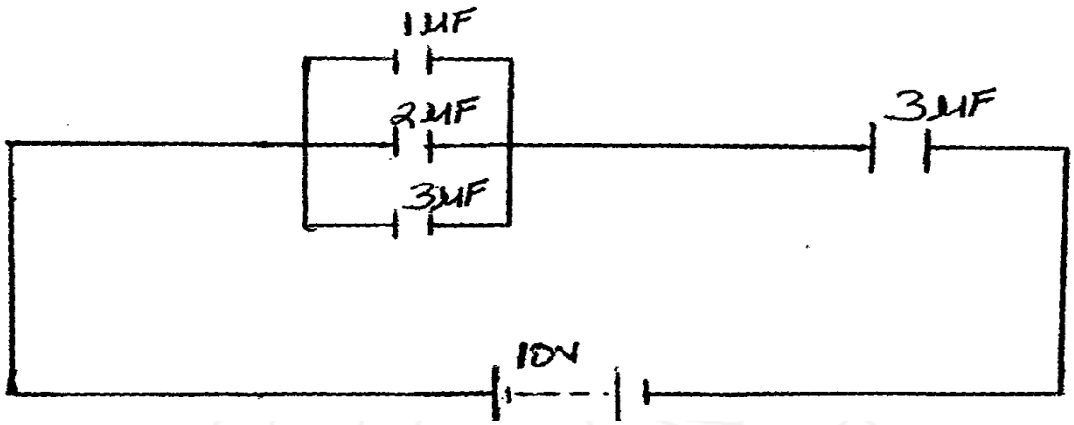
(**b)The** diagram below shows an arrangement of capacitors in a circuit.



Determine; i) The total capacitance **(3marks)**

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ii) The total charge **(2marks)**

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iii) The energy stored by the $2\mu F$ capacitor. **(3marks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

PHYSICS

232/3

PAPER 3 (PRACTICAL)

TIME: 2½ HOURS

SCHOOL…… SIGN……

Kenya Certificate of Secondary Education.

CONFIDENTIAL

Provide The Following Apparatus To The Candidates.

QUESTION ONE

- *A voltmeter (0-3v or 0-5v)*
- *An ammeter*
- *Two new dry cells*
- *Cell holder*
- *A resistance wire labeled W (teacher to provide a 30cm SWG 32 (0.28mm diameter) wire)*
- *A resistance wire mounted on a mm scale (SWG 28)*
- *A micrometer screw gauge (to be shared)*
- *Six connecting wires with crocodile clips*
- *A switch*

QUESTION TWO

- *A spiral spring with a pointer (4.6cm long and 1.23cm in diameter)*
- *A metre rule*
- *A complete stand*
- *Three 100g masses and one 50g mass*
- *A stop watch*

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

PHYSICS

232/3

PAPER 3 (PRACTICAL)

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 Admission number in the spaces provided above.*
(b) *Sign and write the date of Examination in the spaces provided above.*
(c) *Answer all questions in the spaces provided.*
(d) *You are supposed to spend the first 15 minutes of the 2½ hours allowed for this paper reading the whole paper carefully before commencing your work.*
(e) *Marks will be given for clear records of observations actually made, their suitability, accuracy and the use made of them.*

FOR EXAMINER'S USE ONLY

Question 1	**a**	**b (i)**	**b (ii)**	**c (i)**	**c (ii)**	**c (iii)**	**e**	**f (i)**	**f (ii)**	**g**	**h**	**TOTAL**
Max. Score	**2**	**1**	**1**	**1**	**1**	**1**	**3**	**5**	**1**	**2**	**2**	**20**
Candidate's Score												

Question 2		**d**	**e (i)**	**e (ii)**	**e (iii) (I)**	**e (iii) (II)**	**e (iii) (III)**	**TOTAL**
Max. Score	**1**	**6**	**5**	**3**	**2**	**1**	**2**	**20**
Candidate's Score								

GRAND TOTAL ☐

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QUESTION ONE

You are provided with the following apparatus,

- A voltmeter
- An ammeter
- A resistance wire labeled W
- A wire mounted on a mm scale and labeled T
- A micrometer screw gauge (to be shared)
- Six connecting wire with crocodile clips

Proceed as follows:

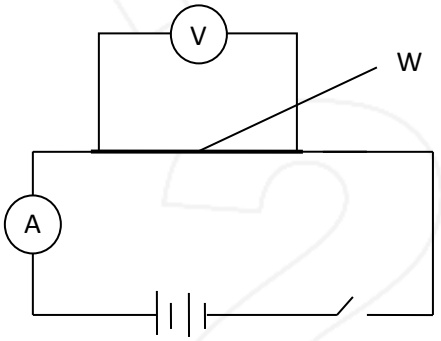
a) Using the micrometer screw gauge provided measure the diameter of the wire labeled T

d **……. mm** **(1mk)**

Determine the radius r of the wire

r = …… m **(1mk)**

b) Set up the apparatus as shown below



i) Record the voltmeter (V) and ammeter (I) readings

V ……. V **($\frac{1}{2}$ mk)**

I …….. A **($\frac{1}{2}$ mk)**

ii) Determine the resistance R_w of the wire W **(1mk)**

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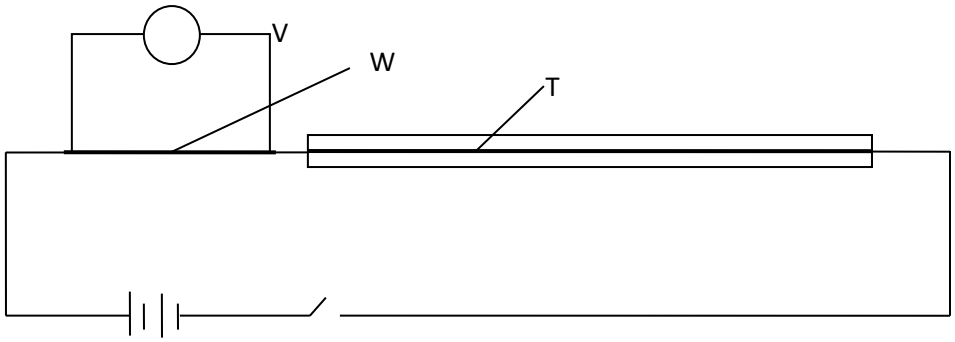
c) Set up your apparatus as shown below



i) Use the voltmeter provided to measure the p.d V_w across W and V_T across T when the switch is closed.

V_w = …… V **($\frac{1}{2}$ mk)**

V_T = …… V **($\frac{1}{2}$ mk)**

Open the switch.

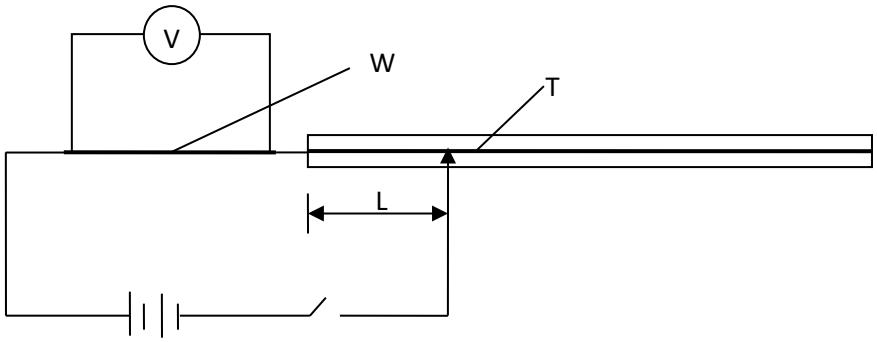
ii) Use the value of R_w calculated in b (ii) and the value of V_w to calculate the current I flowing through W when the switch was closed.

I = …….. **(1 mk)**

iii) Determine the constant K and its units given that, **(1mk)**

K= $\frac{R_W \ .I}{V_T}$

d) Connect the voltmeter across R as shown below,



Adjust the position of the crocodile clip on the wire T to a point where L is 5cm. close the switch.

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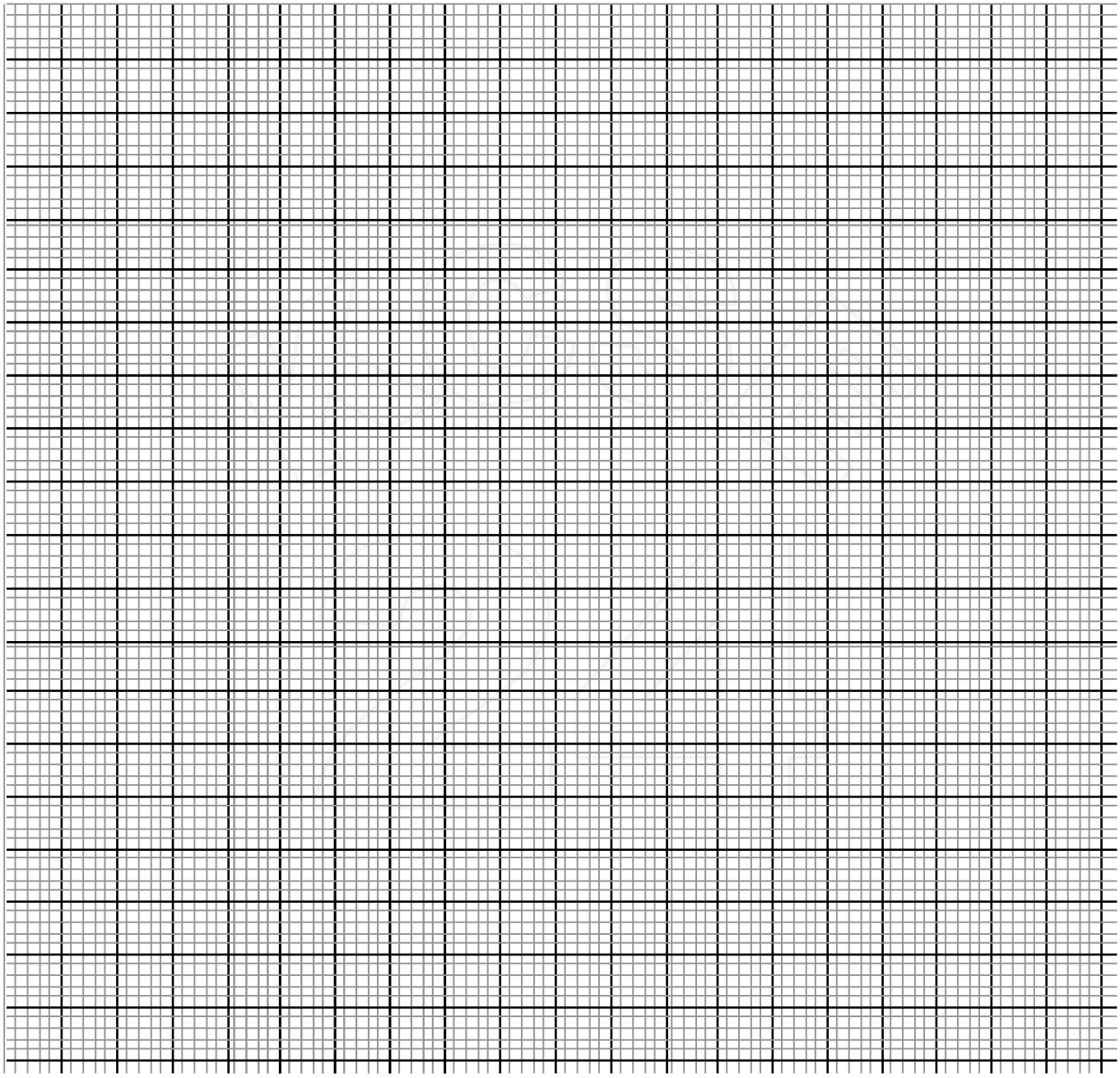
Read and record in the table the value of p.d across W. open the switch.

e) Repeat the procedure in (d) above for other values of L as shown in the table. **(3mks)**

Distance L (cm)	10	20	40	60	80	100
p.d across W (v)						

f) i) on the grid provided plot a graph of V (y-axis) against L **(5mks)**



ii) From the graph, determine L_1, the value of $\frac{V_o}{2}$ where V_o is the p.d when $L_1 = 0$ **(1mk)**

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g) determine the constant M for the wire given that,

$$M = \frac{R\ X\ 300}{L1\ X\ V_o}$$ **(2mks)**

h) Determine the constant N given that, **(2mks)**

$N = \frac{\pi r^2}{2}(M + K)$

QUESTION 2

You are provided with the following apparatus;

- A spiral spring with a pointer
- A metre rule
- Clamp
- Stand
- A boss
- Three 100g masses and one 50g mass
- A stop watch

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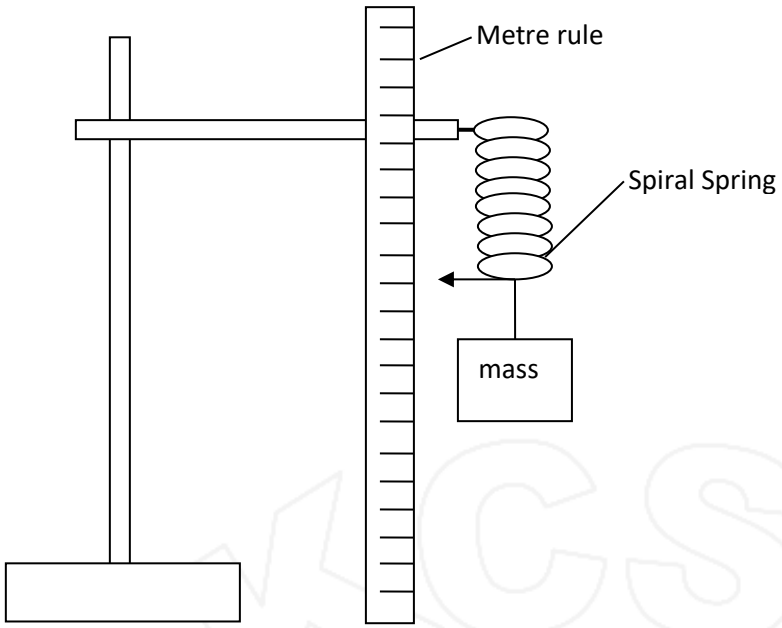
Proceed as follows;

a) Set up the apparatus as shown in the figure below.



Suspend the spring and mount the metre rule vertically. Measure the length of the spring L_o.

L_o = …… (1mk)

b) Load the spring with a mass of 50g and measure the length of the spring. Record the value in table 2 below.

c) Give the spring a small vertical displacement and record the time for 20 oscillations t

d) Repeat for masses of 100g, 150g, 200g, 250g and 300g and record the corresponding length of the spring and time t for 20 oscillations. **(6mks)**

Table 2

Mass (g)	**Length of spring L(m) x 10^{-2}**	**Time for 20 oscillations t (s)**	**Period T (s)**	**T^2 (s^2)**
50				
100				
150				
200				
250				
300				

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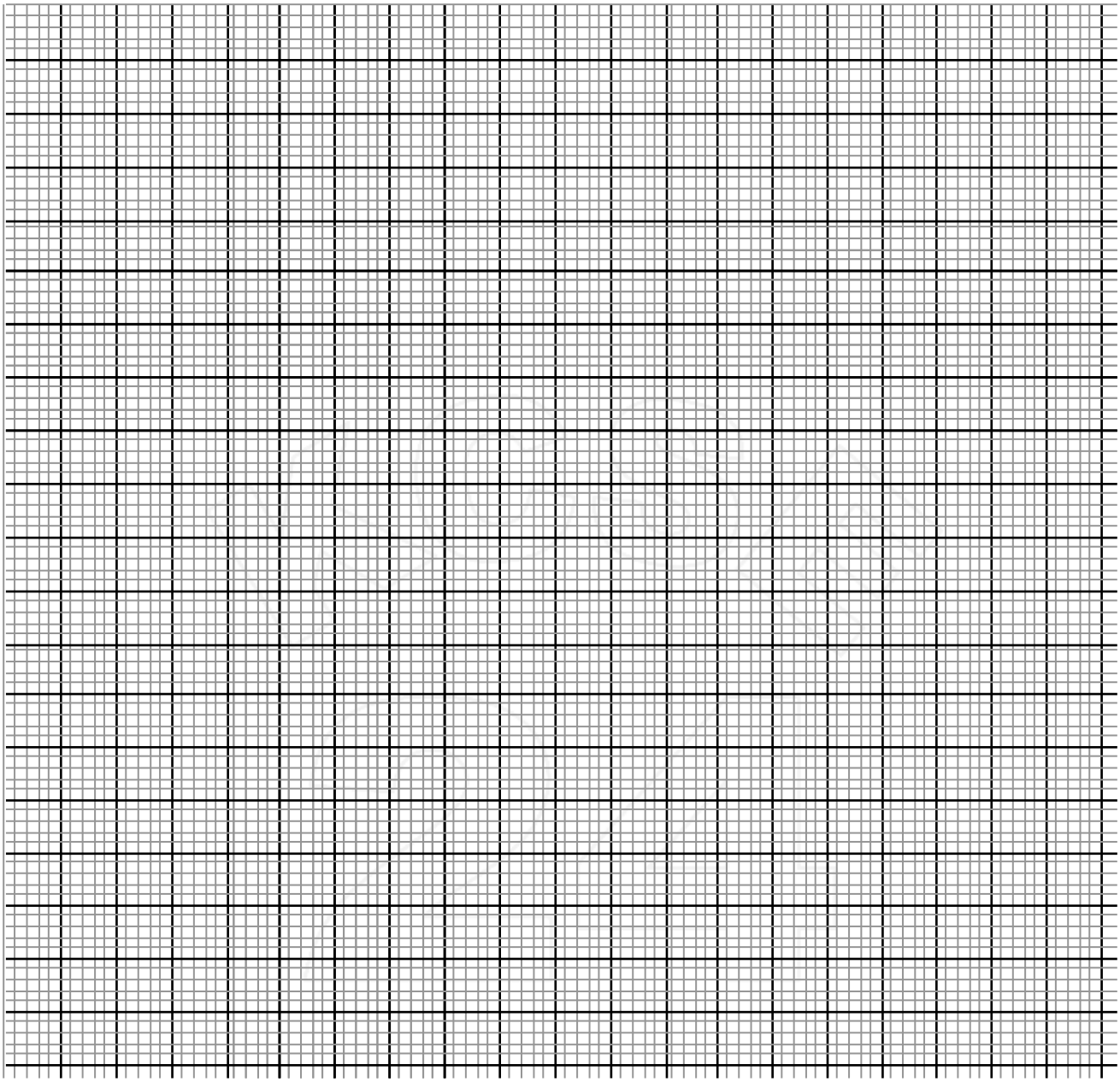
e) i) On the grid provided plot a graph of $T^2(s^2)$ (y-axis) against the length of the spring L

(5mks)



ii) Determine the slope of the graph **(3mks)**

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iii) Given that the equation of the graph is;

$T^2 = KL - R$ where K and R are constants,

I) Determine the value of m given that;

$\frac{4\pi^2}{m} = K$ **(2mks)**

II) Use your graph to determine X_0, the value of L when $T^2 = 0$ **(1mk)**

III) The value of Q given that ;

$K.Q = -X_0$ **(2mks)**

KCSE 24

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

AGRICULTURE

443/1

PAPER 1 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INTRODUCTION TO CANDIDATES

i) Write your name and index no in the spaces provided

ii) Put your signature in the spaces provided above

iii) Write your answers in the spaces provide after every question

FOR EXAMINER'S USE ONLY

Question	1	2	3	4	5	6	7	8	9	10	11	12
Marks												

Question	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Marks														

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SECTION A (30 MKRS)

1. What is nomadic pastoralism as a method of farming? **(½)**

……

……

2. State two reasons why it is necessary to cultivate land before planting **(1mk)**

……

……

……

3. Give two reasons why leguminous plants are prefered for green manure **(1mk)**

……

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4. State two methods of increasing soil PH **(1mk)**

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5. State two effects of pests in crop production **(1mk)**

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6. Give two forms in which nappier grass may be used to feed livestock **(1mk)**

……

……

7. List three signs shown by crops when nitrogen is deficient in the soil **(1mk)**

……

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8. State four factors that determine the choice of an irrigation system to use in a far **(2mks)**

……

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……

9. Give four advantages of using zero grazing system **(2mks)**

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10. State four factors considred in selection of planting materials **(2mks)**

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11. State four factors that determine the quality of grass hay **(2mks)**

……

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12. Give four roles of trees in soil and water conservation **(2mks)**

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13. State the importance of each of the following in a farm **(1mk)**

a) Strip cup

……..

b) Ball pen hammer

……..

14. State two cultural weed control measures in maize plantation **(1mk)**

……

……

15. Give four factors that determine the method of fertilizer application **(2mks)**

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16. Give four ways of harvesting water in the farm **(2mks)**

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17. State four advantages of crop rotation practice in a farm **(2mks)**

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18. State four factors that affects the efficiency of psetcides **(2mks)**

……

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19. Explain two ways monocropping leads to soil infertility **(2mks)**

……

……

……

20. Name four farming practices farmers can use to achieve minimum tillage **(2mks)**

……

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……

SECTION B (20 MKS)

21. A) A farmer in Kabondo was advised to apply 80 kg of nitrogen to his maize plantation during top dressing. The fertilizer available was calcium ammonium nitrate (20% N) .Calculate the amount of this fertilizer in kilograms the farmer should purchase **(2mks)**

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……

……

B. At what stage should the farmer top dress his maize crop

……

C. State three applications practices the farmer should consider to maximize the use of the fertilizer by the crop for top dressing **(3mks)**

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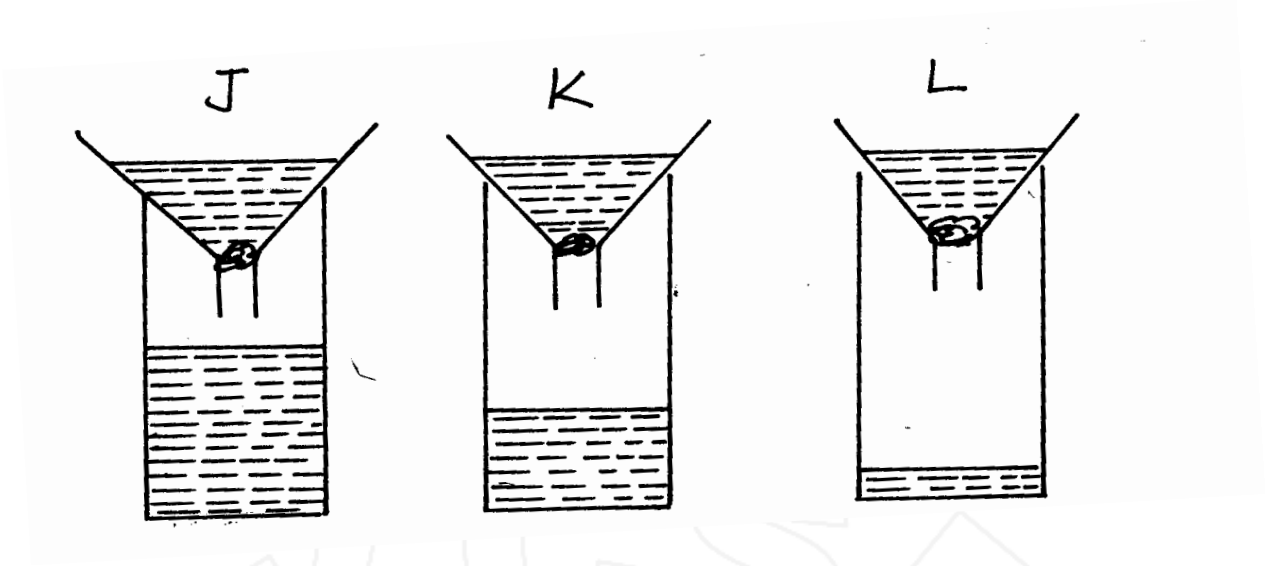
22. The diagram below illustration an investigation on property of soil using samples labeled J,K and L



a.) If the level of water drained into the test tubes were observed after two hours, name the property of soil being investigated **(1mk)**

……

……

……

b.) What is the relationship between this property of soil and the size of soil particles **(1mk)**

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c.) Which soil sample will be suitable for growing paddy rice ? **(1mk)**

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……

d.) Name the type of soil labeled **(2mks)**

J. ……

L. ……

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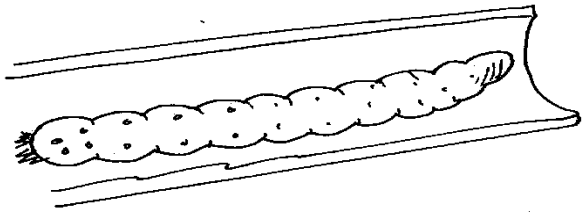
23.



The diagram above shows a pest in production of cereal crops ,use it to answer the question below.

a. Identify the pest

……

b. Give two damages caused by the pest indentified in (a) above

……

……

c. Give two control measures of the pest above **(1mk)**

……

……

d. Give four reasons why pest control practices should be effectively implemented in a farm. **(2mks)**

……

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SECTION C

24.A. Explain six cultural methods of controlling crop diseases **(12mks)**

B. Describe the effects of land fragmentation and subdivision **(8mks)**

25.a. Explain how five factors leads to loss of soil fertility **(10mks)**

b. Explain five ways by which farmers minimizes grain loses in stores **(10mks)**

26.a. Explain three reasons for pruning coffee **(3mks)**

b. Discuss the production of kales under the following sub headings **(12mks)**

- Transplanting
- Weed control
- Pests and diseases

c. State five factors that would influence soil erosion **(5mks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

AGRICULTURE

443/2

PAPER 2 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INTRODUCTION TO CANDIDATES

i) Write your name and index no in the spaces provided

ii) Put your signature in the spaces provided above

iii) Write your answers in the spaces provide after every question

For examiner's use only

Question	1	2	3	4	5	6	7	8	9	10	11	12
Marks												

Question	13	14	15	16	17	18	19	20	21	22	23	24	25
Marks													

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SECTION A (30MARKS)

(Answer all question in the spaces provided)

1. Name three types of dairy goats reared in Kenya **(1 ½)**

……

……

……

2. a. What is raddling in sheep management **(1mk)**

……

……

b. Give two reasons for raddling in sheep management **(1mk)**

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3. Give three advantages of contemporary comparison method in selection of livestock **(1 ½)**

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4. State four advantages of animal power in the farm **(2mks)**

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5. Give two qualities of a creep feed that make it suitable for piglets **(1mk)**

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6. Give two reasons for spreading a polythene paper (pvc) on the slab of a permanent farm building **(2mks)**

……

……

7. Name three types of Fresh warm water fish reared in Kenya **(1 ½ mks)**

……

……

……

8. a) Give three disadvantages of inbreeding in cattle production **($1^1/_2$mks)**

……

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……

b). Give three ad vantages of embryo transplant in cattle **(1^1/2mks)**

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9. Give two factors inhibiting milk let-down **(1mk)**

……

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10.a. Differentiate between "Flushing "and "Steaming up " in livestock management **(2mks)**

……

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b. Give three characteristics of succulent roughage **($1^1/_2$mks)**

……

……

……

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11. State two characteristics of a air cooled engines **(1mk)**

……

……

……

12. Give four characteristics of a good vaccine **(2mks)**

……

……

……

……

13. State five factors that necessitate culling of a dairy cow **($2^1/_2$mks)**

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14. Give two reasons why the afterbirth is removed immediately the sow farrows **(1mk)**

……

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15. Give two reasons why bees swarm **(1mk)**

……

……

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16. List three chemical methods of treating timber **(2mks)**

……

……

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17. Give four importance of farm buildings **(1mk)**

……

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……

……

18. State two control measures of controlling fleas in a flock of layers **(1mk**

……

……

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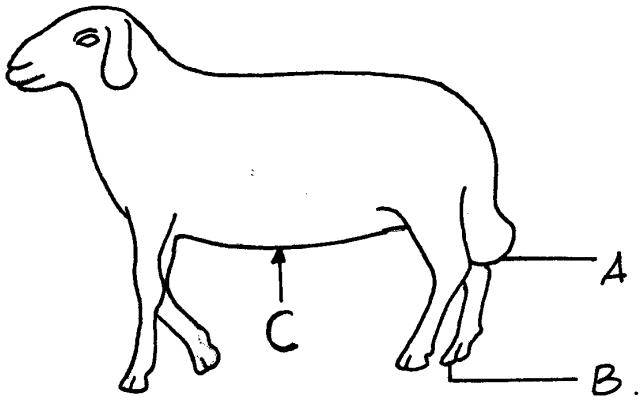
SECTION B (20 MARKS)

Answer all question s in the spaces provided

19. Below is an illustration of a shep with some parts labeled A,B and C.Study the diagram and answer questions that follows?



a. State the practices carried out on the part labeled A,B and C

……

……

……

b. State two reasons for carrying our the operation on the part labeled A. **(1mk)**

……

……

……

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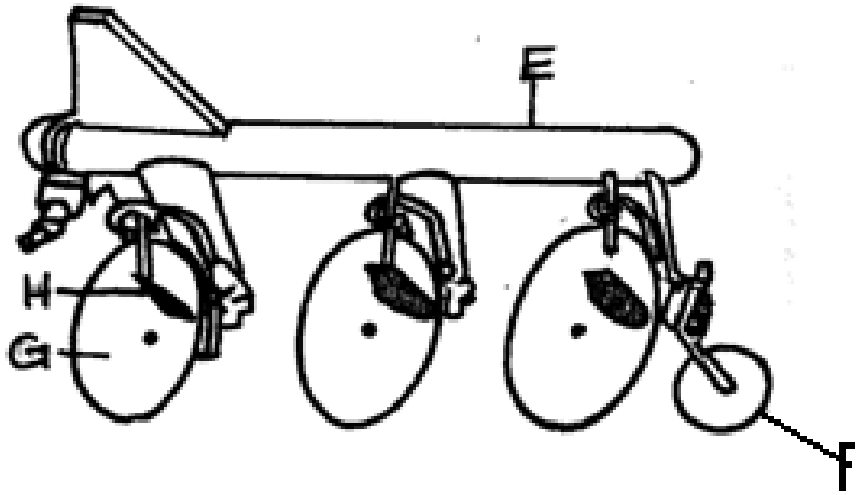
c. Name one tool used for operation carried out on the part labeled B and C **(1mk)**

B……

C……

20. Study the illustration below and answer questions that follows



i) Identify the implement illustrated above **(1mk)**

……

ii) Name the parts labeled E,F,G and H **(2mks)**

A_____

B_____

C_____

D_____

iii) State three ways in which the depth of ploughing can be increased when using the implement above **(3mks)**

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21. The illustration below represents the digestive system of a poultry.Study and answer question s that follow.



i)Name the parts Q,R and S **($1\frac{1}{2}$)**

Q._____

R. _____

S. _____

ii) State the functions of the part labeled Q and R **(2mks)**

Q. _____

R. _____

iii). Give two characteristics of the part labeled S that make it effective in it's function **(2mks)**

……

……

……

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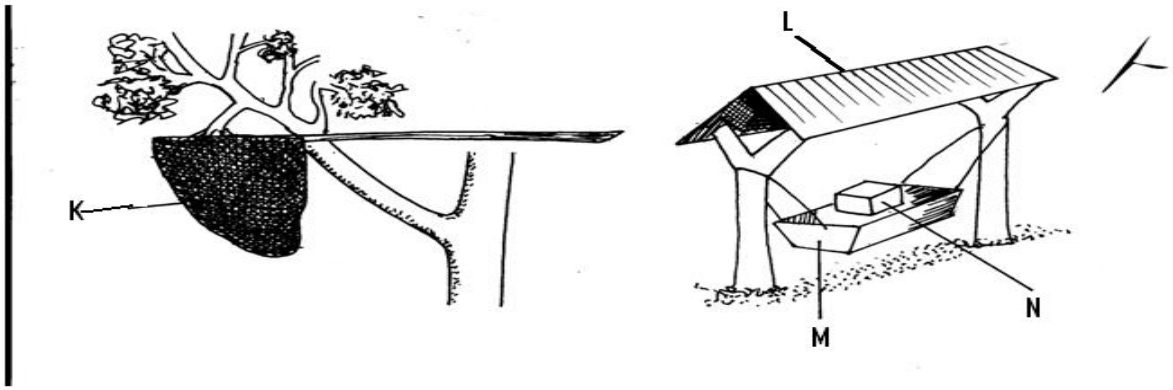
22. Below is an illustration of a bee keeping structure



a.)Name the parts labeled K,L,N and M **(2mks)**

K. _____

L. _____

N. _____

M. _____

b. Give two factors that affects quality of honey **(2mks)**

……

……

C.Name two types of pests that affects bees **(1mk)**

……

……

SECTION C 40 MARKS

Answer any two questions from this section

23. a. Describe the characteristics of eggs selected for incubation **(5mks)**

b. Discuss five factors which affects the quality of honey **(5mks)**

c. Describe the management of growers from the 9th week to the point of lay **(10mks)**

24. a. Outline ten function s of Rumen **(10mks)**

b. Describe the digestion of grass in the rum en of an adult ruminant **(8mks)**

c. . Describe two reasons why raddling is necessary in sheep management **(2mks)**

25. Describe the component parts of a plunge dip for cattle **(20mks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

BUSINESS STUDIES

565/1

PAPER 1

TIME: 2 HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INTRODUCTION TO CANDIDATES

i) *Write your name and index no in the spaces provided*

ii) *Answer all the questions*

iii) *Write your answers in English*

FOR EXAMINER'S USE ONLY

Question	1	2	3	4	5	6	7	8	9	10	11	12
Marks												

Question	13	14	15	16	17	18	19	20	21	22	23	24
Marks												

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Answer all the questions

1. Identify any four differences between life assurance and general insurance **(4mks)**

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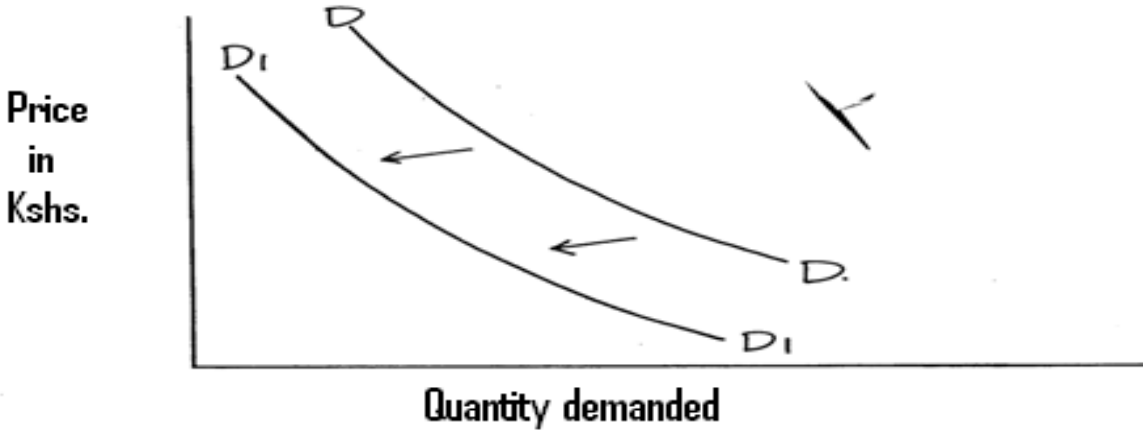
2. Study the diagram below about a shift in the demand curve



Outline four factors that brought about a shift of demand curve DD to DD as shown above **(4mks)**

……

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3. Identify four channels that can be used to distribute locally manufactured goods **(4mks)**

……

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4. Identify the type of office machine described below **(4mks)**

i) Destroys unwanted papers /documents

_____

ii) Prints stamp impression on envelopes

_____

iii) Reproduces documents using stencils

_____

iv) Puts holes on papers to be filed

_____

5. List four methods that commercial banks use in transferring funds **(4mks)**

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6. Draw a duly balanced double column cashbook from the following transaction that took place in the business of Onyango in may 2013.

May 1st the balances brought forward were cash Sh 2500 and bank Shs 7000.
May 3rd paid wages in cash shs 2000.
May 10th sold goods in cash Shs 6000.
May 15th withdraw Shs 1000 from the bank for office cash **(4mks)**

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7. Highlight four circumstances under which a public company may be dissolved **(4mks)**

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8. Outline four ways in which the Kenyan government may motivate industries to delocalize **(4mks)**

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9. Explain the meaning of the following terms as used in the accounting

a. Networth_____

b. Depreciation_____

c. Assets _____

d. Order of liquidity _____

10. Show the effects of the following transactions on the balance sheet totals by using a (+) for an increase, (-) for decrease or (o) for no effect

	Transaction	Effects on balance sheet total
a	Buys stock at Shs. 1000 on credit	
b	Invests shs 10,000 in the business	
c	Deposited shs 2000 in the bank	
d	Sells goods that cost shs 1800 for shs 1000	

(4mks)

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11. Kenyan government has been experiencing an increase in the level of its national income .Identify four factors that may have contributed to this **(4mks)**

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12. List four benefits that may accrue to community that practices trade **(4mks)**

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13. Outline four factors that may make communication between two parties more effective **(4mks)**

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14. Outline four advantages a country may enjoy by having a low population **(4mks)**

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15. Explain the meaning of the following words as used in public finance **(4mks)**

a. Impact of a tax

_____

b. Incidence of a tax_____

c. Tax avoidance_____

_____

d. Tax evasion_____

_____

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16. Outline four essentials of a market **(4mks)**

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17. Identify four roles an entrepreneur in a bussinesss organization **(4mks)**

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18. Classify the following environmental factors into either internal or external business environment. **(4mks)**

	Factors	External environment	Internal environment
A	Tools and equipment		
B	Inflation		
C	Politics		
D	The manager		

19. Enter the following information in the relevant ledger accounts/

On 1st February 2014 Kemo enterprises purchased a latop(computer) for use in the business at shs 100000 cash /

On 3rd February 2014/Kemo enterprises borrowed shs 170,000 from the bank .

On 7th February 2014 Kemo paid shs 500 for transport expenses in cash/

On 10th February 2014 Kemo brought furniture valued to shs 4,000 at the business from his home. **(4mks)**

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20. The following is trial balance of Kendu traders for period ending 31st Dec.2013

Trial Balance

Details	Dr	Cr
Carriage out	6,000	
Discount	2,000	4,000
Transport	1000	
Insurance	8,000	
Wages	10,000	
Rent		16,000
Gross profit		37,000
Carriage inwards	15,000	
Purchasese	14,000	
	57,000	57,000

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Required

Draw a profit and loss account for Kendu traders for period ending 31st Dec 2013

(5mks)

21. List any four features of a private warehouse **(4mks)**

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22. Outline four tools that the central bank of Kenya may use to lower money supply in the country **(4mks)**

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23. Name the four types of cheques used in home trade **(4mks)**

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24. State four limitations of using hand carts to transport goods from a wholesaler to a retailer shop **(4mks)**

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25. Highlight four benefits that accrue to a manufacturer as aresult of advertising his products **(4mks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

BUSINESS STUDIES

565/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INTRODUCTION TO CANDIDATES

i) *Write your name and index no in the spaces provided*

ii) *Answer Any FIVE questions*

iii) *Write your answers in English*

FOR EXAMINER'S USE ONLY

Question	1	2	3	4	5	6
Marks						

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Answer Any FIVE questions

1. a. Explain five reasons why you would advise your friend against starting a sole proprietorship form of business **(10mks)**

b .Explain five measures that can be taken to reduce unemployment in a country **(10mks)**

2. a. Explain five advantages of non-verbal communication **(10mks)**

b. Explain five factors that have led to the survival of small scale retailers despite competitions from supermarkets **(10mks)**

3. a. Office equipments includes all the necessary office machines and office furniture .Explain five roles played by equipments in an office **(10mks)**

b. On November 2022,Sandra traders had cash in shs 87,000 and cash at bank 250,000.Durind the month,the following transaction took place **2022.**

Nov 2 :cash sale shs 50,000
Nov 3 : paid salaries shs 101,500 by cheque
Nov 6: Received a cheque of shs 76,800 from Wambua after allowing him a discount of 4 %
Nov 12 :bought office furniture by cheque shs 85,000
Nov 16:Settled katunge's account of shs 40,000 in cash having deducted shs 800 cash discount
Nov 18 :Received a cheque of shs 150,000 in respect of cash sales
Nov 21:Paid wages shs 24,000 in cash
Nov 22:Withdrew shs 5,000 csh for private use
Nov 28 :Received shs 16,500 cash from Mochere in settlement of his account less shs 660 cash discount
Nov 30 :Deposited all the money into bank except shs 25,000
Prepaire a three colum cash book dul;y balance **(10mks)**

4. a. Explain five functions of commercial banks in Kenya **(10mks)**

b. Explain five reasons for the popularity of sea transport in Kenya's export trade **(10mks)**

5. a. Explain five uses of National income statistics **(10mks)**

b. Outline five factors that you woulkd consire when establishing a warehouse for imported goods **(10mks)**

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6. a. Explain four criteria for determining the size of a firm **(8marks)**

b. The following trial balance was extracted from the books of Bush traders on the 31st Dec 2022

Bush Traders
Trial Balance

	Dr	Cr
Sales		720,000
Purchases	340,000	
Returns	20,000	18,000
Rent	16,000	
Advertising	24,000	
Commision		9000
Deptors	54,000	
Creditors		64,000
Stock(1/1/2022	60,000	
Insuarance	30,000	
Drawings	40,000	
Furnitures /fittings	100,000	
Cash in hand	15,000	
Premises	400,000	
Capital		288,000
	1,099,000	1,099,000

Additional information

i)Stcok as at 31st Dec 2022 ,shs 52 000

Required

a. prepaire trading profit a gross account for the year ended 31st Dec 2022

b. calculate

i) Gross profit margin

ii) The rate of stock turn over **(12mks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

ENGLISH

101/1

PAPER 1

TIME: 2 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.

b) Answer ALL the questions in this paper in the spaces provides.

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	20	
2	10	
3	30	
TOTAL	60	

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1. FUNCTIONAL WRITING

You are the secretary of the Maisha Fiti Youth Empowerment group which has eight members. The group is holding the second meeting of the year in which the following agenda will be discussed.

- Income generating project
- Elections
- Chairman person's report

Write an email, notifying members about the meeting. **(20mks)**

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2. THE CLOZE TEST (10MRKS)

Read the following passage and fill in the blank spaces with the most appropriate words.

As schools get to the homestretch of the last _____ of the year, class eight and form four candidates will be gearing up for the October/November KCPE and KCSE examinations _____.This is a very delicate period for them because all their efforts could go to waste if proper guidance is not provided.

Having spent eight and four more years respectively preparing for their 3_____

examinations, candidates need to be guided appropriately as we inch 4 _____ the examination period. It is important to understand the role each education stakeholder must play. Today I want to address myself to one of the key players; the parents.

First, parents must speak to their 5_____with empowerment. Avoid disagreeing language that could cast doubt in the child's preparedness. Bear in 6_____that your relationship with your child is not depended on KCPE or KCSE, or does 7_____? Secondly, parents must be there for their children. 8_____parents will cause emotional and psychological burdens to candidates. Sometimes a well prepared candidate performs dismally because of parental issues. Fourthly, parents must 9_____all the required examination materials for their children. Buy them new materials for there is some energy that comes with doing an examination with brand new stationery. They should not just be 10_____ but sufficient. Fourthly, visit your child who is in boarding school for this gives them much needed parental support.

3. ORAL SKILLS (30MKS)

Read the poem below and answer the questions that follow. (10 marks)

If we Must Die - Claude Mckay.
If we must die - let it not be like hogs.
Haunted and penned in an inglorious spot
While round us bark the mad and hungry dogs.
Making their mock at our accursed lot,
If we must die - oh let us nobly die
So that our precious blood may not be shed
In vain; then even the monsters we defy
Shall be constrained to honour us through dead!
Oh Kinsmen! We must meet the common foe;
Though far outnumbered, let us show us brave

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And for their thousand blows deal one deathblow
What though before us lies the open grave?
Like men we'll face the murderous, cowardly pack
Pressed to the wall, dying, but fighting back!

QUESTIONS.

i) Describe the rhyme scheme of this poem. **(2 marks)**

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……

……

ii) Which words would you stress in the last line of this poem and why? **(3 marks**

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iii) Apart from rhyme, how else has the poem achieved rhythm? **(2 marks)**

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(b) Your former school has invited you as a guest speaker to give a talk on discipline. At the end of the speech, the students comment that the talk was well delivered. Suggest reasons why they commented so**.** **(4 marks)**

……

……

……

……

……

(c) For each of the following words, underline the part that is stress. **(3 marks)**

col - league

re . gis . ter (verb)

ap . proach (noun

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(d) Identify and number any four pairs of words that are pronounced the same. **(4 marks)**

plain	mourn	plane	mad	berry	mud
burrow	cat	bred	cut	bury	you
pool	ewe	pull	father	fool	farther
bread	moan	full	sea	further	see

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(e) Suppose you were asked to make a speech at a friend's graduation party. What would you do to capture the audience attention? **(4 marks)**

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(f) ***Study the following item of oral literature and answer the questions that follow.(2 marks)***

Kot took Kot's coat, Kot went to court, the court told Kot to return Kot's coat to Kot.

Questions.

i) Identify the above genre. **(1 mark)**

……

ii) If the above genre was to be translated to another language, what would be the effect of translation? **(1 mark)**

……

……

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

ENGLISH

101/2

PAPER 2

(Comprehension, Literary Appreciation and Grammar)

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

c) *Answer **all** the questions in this paper.*

d) *All your answers **must** be written in the **spaces provided** in the question paper.*

FOR EXAMINER'S USE ONLY

QUESTION	MAX SCORE	SCORE
1	20	
2	25	
3	20	
4	15	
TOTAL SCORE	80	

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Q1. COMPREHENSION PASSAGE (20MKS)

Read the following passage and answer the questions that follow.

You may think that expecting food to change your life is too much to ask. But have you considered that eating the right food at the right time will increase your energy, help you manage weight and ward off major illnesses?

Researchers have found that eating a meal with plenty of protein leaves you feeling more satisfied for longer when compared to a meal loaded with low - quality carbohydrates. Your body takes longer to digest protein, leading to a gradual increase in blood sugar. The high protein breakfast will therefore carry you through the morning and, more importantly, through your tea break. Many high - carbohydrate meals are absorbed quickly and send blood sugar on a roller coaster ride, taking your appetite with it and depleting your energy.

Many foods contain antioxidants, but fruits and vegetables may be the richest source. Behaving like chemical warriors, antioxidants neutralize molecules known as free radicals before they damage arteries and body cells. This protects you from heart diseases, high blood pressure, cancer and diabetes; you can now see why antioxidant foods should be consumed in generous portions. Actually, forget pills - antioxidants work best when consumed in foods. In fact, nutritionists recommend that we eat five portions of fruit and vegetables a day. It's less daunting than it sounds: a portion equals a piece of fruit, three tablespoons of cooked vegetables or a glass of flesh juice.

And do you desire to relieve yourself of some baggage? Calcium is the latest weight - loss star to appear on the scene. Scientist stumbled on its magic by accident. From a study that measured the blood pressure of obese people, it was discovered that those who took one large tub of yoghurt a day in their diet lost an average of eleven pounds of body fat in one year, even though they did not eat less.

A follow - up study found that people on a high - calcium diet lost more weight and fat than did people on a low calcium diet -and again, both consumed the same number of Calories. Researcher* believe calcium encourages fat cells to stop "getting fatter". Instead, the cells burn extra fat without you having to go anywhere near a gymnasium.

It probably sounds strange to say that you can eat more in order to lose weight. Obviously, the question you should ask immediately is, "Eat more of what?" We are talking about foods rich in fibre. They have what is referred to as low energy density; that translates to few calories relative to weight. This means that you can down a mountain without fear of calorie overload.

Fibre also aids weight loss because it's filling. Most high fibre foods take a lot of chewing, triggering your body's fullness sensors. Moreover, you absorb the food more slowly so you feel full longer. Will the wonders of food ever cease? Not if researchers in nutrition keep up their pace. Let them keep the good news flowing - such as the fact that we don't have to starve ourselves to lose weight and keep disease at bay.

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QUESTIONS

a) From the information given in the first paragraph, how can you improve your life?**(2mk)**

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b) In not more than 35 words, summarize the effects of eating carbohydrates **(4 mks)**

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c) Explain how free radicals contribute to the occurrence of high blood pressure and cancer. **(2 mks)**

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(i) In what two forms can antioxidants-'be consumed? **(2mks)**

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……

……

e) "In fact nutritionists recommend that we eat five portions of fruits and vegetable a day."

Rewrite the sentence above as a question without changing the meaning, beginning:

Don't…….. **(1 mark)**

……

……

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(f) What is the attitude of the author towards calcium as a weight-cutting measure?**(2mk)**

……

……

……

(g) According to the passage, how can you use up excess fat? **(2mks)**

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(h) Identify an instance of irony in the passage. **(2mks)**

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……

(i) Explain the meaning of the following words as used in the passage. **(3mks)**

(a) Daunting –

(b) Baggage –

(c) Down to earth –

2. Read the excerpt below and then answer the questions that follow.

"I'm sorry I've disappointed you, Ms McKenzie."

"Forty?"

"What?"

"Your age: forty?"

"No, forty-five."

"To my thirty-five, imagine that! Go have your picture taken right now, Dr Afolabi. You won't always look this good. I am not joking. Go."

"Ms McKenzie, was there something else you wanted us to talk about?"

She slapped herself on one cheek as if to punish herself."I was beginning to ramble on, wasn't I? Enough! Now then, Africa's heads of state will soon start a debate at the Pinacle Hotel, two streets from here, and I'll be covering the debate for the *Gambian News*. I understand you will be an advisor to the heads of states during the debate. Could you give me some background? What will be the heart of their debate?"

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"They will be debating a document titled *Way Omega.* You see, not long ago, twenty Nobel laureates discovered a way to develop Africa and then published that discovery in a document with that title. Africa's ministers for planning had a look at it. They liked it. Now Africa's heads of state are in Banjul to adopt it as a common development strategy for all of Africa. That's the background, Ms McKenzie. Or did you want actual content?"

She shook her head. "What are your expectations of the summit, Dr Afolabi?"

"What are my expectations? Please don't get me started! I expect the summit to be a historic moment. If adopted, *Way Omega* will change African politics dramatically. Just think: no more military coups; no more rigged elections; well, no more foul play, period."

"Dr Afolabi, not all of the heads of state assembled here are fair players. In fact, a few are out-and-out foul players- they rose to power through military coups or rigged elections. Those won't be walking along *Way Omega* any time soon, will they?"

"Change is always like that, Ms McKenzie. One side of it has **defenders** of existing arrangements. These, sure about their loss if those arrangements end, fight tooth and nail to keep them. The other side has **challengers** of existing arrangements, do not fight so hard to win them."

"Huh? What did you say, Dr Afolabi?"

"You are not listening to me anymore, are you, Ms McKenzie? Anyway, I was saying Way Omega will put Africa on a new course, free from the obstacles that have defeated its past efforts. Imagine this, Ms McKenzie: Africa without coups, without civil wars, without…" He stopped himself. "Look who is rambling on now, Ms McKenzie?

Yet can you blame me? I told you not to get me started, remember?"

"Yes I remember, and yet we have your book*: Failure of States.* Dr Afolabi, may I ask you something? What makes you this optimistic about Africa's future now, when in that book you were very pessimistic? Is it the content of *Way Omega* or the prestige of its authors?"

QUESTIONS

a) What were Ms. Mckenzie's expectations as she reveals just before this excerpt**. (2 marks)**

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……

b) According to this excerpt, why are heads of states meeting in Banjul? **(2 marks)**

……

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……

c) Describe the current political environment of Africa from Dr. Afolabi's point of view

(4marks)

……

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d) State and illustrate two other **themes** that can be inferred from the excerpt. **(4 marks)**

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e) Illustrate the **styles** used in this excerpt. **(6 marks)**

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f) Give the meaning of the following words used in the excerpt. **(2 marks)**

i) defenders –

ii) challengers –

(a) ***Read the poem bellow and then answer the questions that follow.***

My grandmother

She kept an antique shop – or it kept her.
Among Apostle spoons and Bristol glasses,
The faded silks, the heavy furniture,
She watched her own reflection in the brass
Salvers and silver bowls, as if to prove
Polish was all, there was no need for love.

And I remember how I once refused
To go out with her, since I was afraid.

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It was perhaps a wish not to be used
Like antique objects. Though she never said
That she was hurt, I still could feel the guilt
Of that refusal, guessing how she felt.

Later, too frail to keep a shop, she put
All her best things in one long, narrow room.
The place smelt old, of things too long kept shut,
The smell of absences where shadows come
That can't be polished. There was nothing then
To give her own reflection back again.

And when she died I felt no grief at all,
Only the guilt of what I once refused.
I walked into her room among the tall
Sideboards and cupboards – things she never used
But needed: and no finger-marks were there,
Only the new dust falling through the air.

- Elizabeth Jennings

(i) Identify the persona in the above poem. **(2 marks)**

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(ii) In note form, summarize what each stanza is talking about**.** **(4 marks)**

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(iii) Identify and briefly explain the use of any two images in the poem**.** **(4 marks)**

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(iv) What does the persona feel towards the subject matter? **(2 marks)**

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……

(v) What do the following lines mean in the poem? **(2 marks)**

"too frail to keep a shop"

……

……

……

"Only the new dust falling through the air"

……

……

(vi) Describe the tone the persona uses in the poem above. **(2 marks)**

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(vii) Explain the paradox in the line: **(2 marks)**

-things she never used

But needed:

(viii) Explain the persona's sense of guilt. **(2 marks)**

……

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……

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4. GRAMMAR

a) ***Fill in the blanks with the correct alternative from the choices given. (2 marks)***

i) Since the introduction of community policing in our estates_____ of theft have reduced. (Incidence / incident / incidents)

ii) An elephant looks after _____ calf. (it's / its)

b) ***Rewrite the following sentences as instructed.***

i) Someone is following us. (Rewrite in the passive voice)

ii) The victim and the neighbours did not speak to the reporters. (Begin; Neither .....)

iii) We light fire in the kitchen (Rewrite in past tense).

iv) Okoyo will not win the elections if he does not clear himself of the corruption charges. (Begin: unless .....)

c) ***Use the correct form of the word in brackets to complete each of the foI1owing sentences.*** **(3 marks)**

i) Owino did not know that a tree had _____ (strike) his house.

ii) Nobody expected the company to make _____ (lose)

iii) The three _____ (passer-by) were arrested.

d) ***For each of the following sentences replace the underlined phrasal verb with a word that has the same meaning*** (2 marks)

i) I wished to meet him after classes yesterday but he didn't <u>show up</u>.

ii) After a hard day's work, I sat on an easy chair and <u>dozed off</u>.

(e) Provide the most suitable prepositions for the sentences below.

i) The soldier was punished_____ neglect of duty.

ii) The thief was disguised _____ an official from the Ministry of Education.

iii) They descended _____ a noble family.

iv) The doctor died _____Corona virus.

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

ENGLISH

101/3

PAPER 3

(Creative Composition and Essays Based on Set Texts)

TIME: 2½ HOURS

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	

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1. Imaginative Composition **(20 marks)**

Either

a) Write a story beginning with the sentence:

When I saw James rushing towards me, I sensed that something was amiss…

Or

b) Write a composition to show how the Kenyan youth can contribute towards environmental conservation.

2. The Compulsory Set Text **(20 marks)**

***The Samaritan*; John Lara**

It is always good to defend what is right even if it means standing alone since it eventually pays. Using Nicole in *The Samaritan*, justify this statement.

3. Optional Set Texts **(20 marks)**

Answer one question only

Either

The Short Story: A Silent Song and Other Stories (ed) Siundu Godwin

a) People's cultural practices are hard to alter. Citing relevant illustrations from the story Ivory Bangles by Erick Ng'maryo, write a composition to illustrate this assertion.

Or

b) The Play; Adipo Sidang'; Parliament of Owls

For every decision we make we should always prepare to face the consequences. Using valid illustrations from the play *Parliament of Owls*, write an essay to support this statement.

Or

c) The Novel: Kazuo Ishiguro; An Artist of the Floating World

Whenever countries fight a lot of damage happens. Show the truth of this statement using relevant examples from *An Artist of the Floating World* by Ishiguro Kazuo

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

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 jina lako na nambari ya usajili kwenye nafasi ulizoachiwa hapo juu.*

b) *Tia sahihi yako kisha uandike tarehe ya mtihani katika nafasi ulizoachiwa hapo juu.*

c) *Andika insha **mbili**. Insha ya kwanza ni ya **lazima.***

d) *Kisha chagua insha nyingine moja kati ya hizo tatu zilizobakia.*

e) *Kila insha isipungue maneno **400**.*

f) *Kila insha ina alama **20.***

g) *Kila insha lazima iandikwe kwa lugha ya **Kiswahili.***

KWA MATUMIZI YA MTAHINI PEKEE

SWALI	UPEO	ALAMA
1.	20	
2.	20	
3.	20	
4.	20	
JUMLA	40	

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MASWALI

1. Kumekuwa na visa vingi vya mauaji hapa nchini, mhariri wa gazeti la Taifa Leo amewatangazia wasomaji katika toleo la Jumatatu kutuma makala yao ili kuchangia katika kuandika tahariri itakayohusu chanzo cha mauaji hayo na suluhisho. Andika makala hayo.

2. Pesa za hazina ya ustawi wa maeneo bunge zapaswa kuondolewa chini ya usimamizi wa wabunge.Jadili

3. Mkono usioweza kuukata, ubusu

4. Andika insha itakayoisha kwa:

…….. Nilishusha pumzi, nikashukuru Mola nilipojipata hoi bin taabani miongoni mwa wafu.

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

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

Jibu maswali yote.

Majibu yote yaandikwe katika nafasi zilizoachwa katika kijitabu hiki cha maswali.

Kwa matumizi ya mtahini pekee.

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

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1.UFAHAMU (Alama 15)

Soma kifungu kifuatacho kisha ujibu maswali.

Miaka mingi ya kutaliwa na wakoloni iliwafanya wananchi wengi kupuuza umaarufu na uadilifu wa lugha ya Kiswahili kama lugha ya taifa kwa manufaa ya kuarifiana habari mbalimbali kwa ufasaha na kuelewana vyema.

Wakoloni pia waliwashawishi wananchi waone, kwamba lugha ya Kiswahili ni kwa ajili ya watu wale wasiokuwa na elimu na kwa wale ambao hawajastaarabika. Kwa wale wenye 'elimu ya wastaarabu,' wakoloni waliwashawishi kuamini kwamba lugha ya kigeni, yaani Kiingereza, ndiyo hasa lugha inayofaa kwa kujieleza na kufahamishana habari.

Kutokana na vikwazo hivi si ajabu kuona hadi hivi sasa, mwananchi halisi akijitwaza kwamba hawezi kujieleza kwa ufasaha au kumpasha mwenzie habari kwa ukamilifu mpaka atumie lugha ya Kiingereza. Hata katika maofisi mengi ya serikali, hadi hii leo, japo imeshapitishwa kwamba Kiswahili ndiyo lugha ya taifa bado utawaona wananchi wengine wanapendelea kuzungumza Kiingereza wao kwa wao, ili wajulikane kwamba wana kisomo na wamestaarabika.

Vikwazo vya namna hii vimewalemea wananchi vile vile kwa upande wa magazeti. Utaona mwananchi ambaye anafahamu Kiingereza kidogo sana, akijinunulia gazeti kubwa la Kiingereza na kuanza kuzurura nalo kutwa nzima bila kuambulia mengi ndani yake. Pia utawasikia wananchi wengi wakijidai kwamba hawataki kusoma magazeti ya Kiswahili kwa sababu inakuwa vigumu kwao kuelewa mambo yaliyomo kama vile ambavyo wangelielewa katika gazeti la Kiingereza.

Mabeberu wameshagundua kwamba tunao upotovu wa aina hiyo, ndipo utaona mara nyingi wanawaletea wananchi magazeti mengi ya Kiingereza, mengine yakiwa na nia ya kuwapotosha wakijua kwamba watayasoma tu, mradi yameandikwa kwa lugha ya Kiingereza.

Mara nyingi taifa fulani la kibeberu likitaka tuchukiane na taifa jingine ambalo ni adui yake kisiasa au kiuchumi, taifa hilo la kibeberu linaandika habari za uchochezi kwenye magazeti yao kwa lugha ya Kiingereza, mambo kuhusu taifa lile adui yake (ambalo si adui yetu).

Magazeti hayo huandikwa kwa lugha nadhifu ya Kiingereza na kuletewa wananchi hapa nchini. Maskini wananchi wengine waliotopea kwa kudhani Kiingereza ndicho lugha nzuri ya Kigazeti , wanayanunua mara moja na kuanza kuyasoma magazeti hayo, na pia kuwapa watoto wao wayasome. Matokeo yake ni kwamba, bila kujitambua, wanajikuta wanayafanya yale mabeberu waliyotarajia wayafanye, yaani wanaanza kuchukiana bure na taifa lile ambalo ni adui wa mabeberu hao, lakini si adui zetu. Madhumuni ya kuandika habari kwenye magazeti, ni kutaka kuwafahamisha wasomaji mambo yaliyotokea au yatakayotokea siku hata siku, kwa lugha inayofahamika na kueleweka kwa urahisi bila kumtatiza msomaji. Ikiwa basi ndiyo madhumuni, kuna haja gani kutumia lugha ya kigeni ili kuwaelezea wasomaji wako jambo wangaliweza kuelezwa kwa lugha yao wenyewe ambayo wanaielewa vyema.

Mtu aelezeapo jambo kwa maandishi akitumia lugha yake mwenyewe anaielewa vyema na ambayo pia wasomaji wake wataielewa kwa ukamilifu. Kwa ujumla jambo ambalo mwandishi huyo ataliandika kwa lugha ambayo ni ya asili yake ambayo anaielewa vyema, halitamtatiza msomaji wake ambaye pia anaielewa vyema lugha hiyo.

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Maswali

a) Eleza mbinu zinazotumiwa na wakoloni kuwafanya wananchi kuidunisha lugha ya Kiswahili **(al 3)**

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b) Thibitisha kuwepo kwa ukoloni mamboleo katika habari uliyosoma **(al 4)**

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c) Eleza jinsi wabeberu wanaweza kuzua vurugu katika mataifa mbalimbali **(al 2)**

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4. Taja sababu ambayo imewafanya wananchi wengi kupuuza lugha ya Kiswahili **(al 1)**

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5. Wakoloni wana mtazamo gani kuhusu lugha ya Kiswahili? **(al 2)**

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6. Eleza maana ya maneno yafuatayo kama yalivyotumiwa katika taarifa **(al 3)**

a)Uadilifu……

b)Akijitwaza……

c)Waliotopea**…….**

2. UFUPISHO: (Alama 15)

Soma kifungu kifuatacho kisha ujibu maswali.

Mtazamo hasi ni kukata tamaa, kuhusu hali, mtu au jambo fulani. Ni hisia ya kutotaka kushiriki wala kuhusishwa na jambo au hali fulani. Mtazamo huu ndio huwafanya wanafunzi wengi kuchukia au hata kudunisha baadhi ya masomo na walimu wanaoyafundisha. Licha ya wengi kuwa na mtazamo huu, kwa kweli huwa hawatambui. Asilimia kubwa ya wanaotambua hutatizika kujikwamua kutoka katika hali hii.

Inakadiriwa kwamba mtu wa wastani huwa na takribani mawazo elfu sitini ya kibinafsi kwa kila saa 24. Asilimia 95 ya fikra hizi huwa sawa na za siku iliyotangulia na asilimia 80 ya fikra hizi zilizorudiwa huwa hasi. Isitoshe, fikra hizi nyingi hutokea bila mtu mwenyewe kutambua na huwa mazoea. Hii ina maana kwamba watu wengi hawana ufahamu wa athari za fikra hizi maishani mwao. Kuna vyanzo kadha wa kadha vya mitazamo hii. Mwanzo kabisa ni imani potovu. Hiki ndicho chanzo kikuu cha mtazamo hasi. Kushikilia imani potovu kuhusu maisha pamoja na matukio fulani maishani hujenga mtazamo hasi. Unayaona maisha kwa macho ya imani zako na iwapo imani hizo ni potovu, basi hutayathamini maisha yako. Ili kukabiliana na hali hii, sharti kwanza ubadili imani yako.

Uamini kwamba mabadiliko yanaweza kutokea na uchukue hatua ya kuanzisha mabadiliko hayo maishani mwako. Unahitaji kuepuka fikra hasi zinazoambatana na maisha yako ya awali na kulitathmini kila tukio maishani kama tukio huru, lisilo na uhusiano na yaliyowahi kukutamausha.

Kujikwamua kutoka katika imani duni unahitaji kuibuka na idadi kubwa ya imani chanya kuliko hasi kuhusu hali mahsusi. Baada ya hilo, zikabili imani zako potovu moja baada ya nyingine huku ukijiuliza endapo imani hizo ni kweli na endapo zina mashiko. Tumia dakika tano hivi kila siku kushadidia fikra chanya inayokinzana na ile inayokudidimiza. Ukifanya hivi kwa takribani siku thelathini, imani yako itaanza kuchukua mkondo unaofaa. Familia au rafiki anaweza kuwa kikwazo. Pasipo kufahamu, familia yako na rafiki unaoandamana nao huathiri pakubwa hisia zako. Wakiwa na mtazamo hasi huweza kukushawishi ukaanza kuhisi wanavyohisi na kuyaona mambo kwa mtazamo wao. Kukabiliana na hali hii wapaswa kudhibiti hisia zako.

Tawala namna unavyohisi na kukabiliana na hali mbalimbali bila kuathiriwa na wandani hawa. Epuka wandani wa aina hii kadri inavyowezekana, ikiwezekana jitenge nao ili ujifunze kuwa na uhuru wa kufanya maamuzi yako binafsi bila kuathiriwa nao. Unapaswa kupunguza ushirika hata na jamaa zako wanaokuingiza katika hali ya kutamauka. Punguza muda wa kukaa nao hasa wanapogeukia mkondo huu wa kukatiza tamaa.

Mazingira hasi ni kizingiti kingine. Pengine huoni ukuruba baina ya maisha yako na mazingira unamokulia au unamokaa. Ukweli ni kwamba, huenda umedumu katika mazingira hayo na kuyazoea hata ukafikiri huwezi kuyabadilisha. Kadri unavyohisi huna uwezo wa

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kuyabadilisha ndivyo unajizamisha zaidi katika mtazamo hasi. Ili kukabiliana na hali hii, unahitaji kuelewa kwamba fikra zako au za watangulizi wako ndizo zilikuingiza katika mazingira haya.

Kwa hivyo, unapaswa kubadili mkondo wa fikra zako na kuanza kujaribu mazoezi ambayo umekuwa ukiyaona kama usiyoyaweza. Hatua kwa hatua utagundua panapo jitihada na uelekezi unaofaa kwamba mazoezi hayo yamekuwa mepesi na hivyo kukuhakikishia kuyabadilisha mazingira yako.

Hali zisizoridhisha huweza pia kuchangia mtazamo wako. Unapojikuta ukilalamika jinsi ulivyokerwa na hali fulani, hii ndiyo sababu hasa ya kuwa na mtazamo hasi kuhusu hali hizo. Inaweza kukuwia vigumu kulikubali hili lakini kadri utakavyolikubali mapema ndivyo utayaboresha maisha yako mapema. Kulalamika tu kutakudumisha katika hali zisizokuridhisha. Kwa hivyo, ili uyabadilishe maisha yako sharti ukome kulalamika na kuanza kujikwamua kutoka kwenye hali hizi. Katika kufanikisha jambo lolote jema sharti viwepo vizingiti njiani. Mtendaji wa jambo lolote jema liwalo ana jukumu la kuibuka na mikakati mwafaka ya kuvikabili vizingiti hivi ili afanikishe ndoto yake. Hii ndiyo sababu unapaswa kuchukua hatua kutokea sasa ili kupanga na kutekeleza mikakati itakayoupindua mtazamo wako hasi uwe chanya. Kwa jinsi hii utayabadilisha maisha yako yawe ya kuridhisha zaidi na kuwa kielelezo kwa wengi waliotamaushwa na mitazamo hasi.

Maswali.

a) Kwa kurejelea kifungu hiki, eleza njia za kukabiliana na mtazamo hasi.

Maneno 100-110 (alama 9, 1 utiririko)

Matayarisho

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Nakala Safi

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(b) Kwa kurejelea taarifa hii, eleza vyanzo vya mtazamo hasi kwa maneno 45

(alama 5, 1 mtiririko)

Matayarisho

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Nakala Safi

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3. MATUMIZI YA LUGHA: (Alama 40)

(a) Zilinganishe sauti /p/ na /b/ **(alama 2)**

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(b) Bainisha majukumu ya viambishi tamati katika neno: **viliwavyo.** **(alama 3)**

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(c) Tunga sentensi moja ukitumia nomino ambatano na nomino milikishi. **(alama 2)**

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(d) Fafanua miundo yoyote miwili ya ngeli ya U-ZI **(alama 2)**

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(e) Ainisha viwakilishi katika utungo huu. **(alama 2)**

Sote tutagawana na wale ambacho nyinyi mtapata.

……

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(f) Kanusha. **(alama 2)**

Mwanasiasa aliyeshindwa alitoka na kuacha kura zikiendelea kuhesabiwa

……

……

(g) Tunga sentensi moja kutofautisha vitate hivi. **(alama 2)**

Pasa

……

Pasha

……

(h) Andika utungo huu upya bila kutumia vitenzi visaidizi. **(alama 2**

Wao huenda wakawa wanaweza kutuzwa na rais alasiri ya leo.

……

……

……

(i) Andika katika usemi wa taarifa. **(alama 3)**

"Wageni wetu mliotutembelea hapa, mko huru kujionea maendeleo ya kaunti yetu," gavana akatamka.

……

……

(j) Kistari kifupi (-) hutumiwa kuendeleza sauti katika vihisishi. Onyesha matumizi mengine mawili ya akifishi hii. **(alama 2)**

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(k) Eleza maana mbili zinazoweza kujitokeza katika sentensi hii. **(alama 2)**

Menjo aliletewa ng'ombe na watoto wake.

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(l) Andika katika udogo hali ya wingi. **(alama 2)**

Aligongwa katika kichwa kwa nyundo alipotoroka kuumwa na nyoka.

……

(m) Tumia neno ‘maskini’ kudhihirisha dhana hizi. **(alama 2)**

i) Kivumishi

……

ii) Kihisishi

……

(n) Pambanua kwa jedwali. **(alama 4)**

Waliochelewa waliadhibiwa vikali na mwalimu wao.

Tunga sentensi kudhihirisha chagizo ya namna ya nomino ifuatayo: unyama. **(alama 2)**

……

……

(o) Fafanua miundo yoyote miwili ya kiima. **(alama 2)**

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(p) Andika upya sentensi ifuatayo ukianza kwa yambwa tendewa **(alama 2)**

Farida aliwapikia wageni chai kwa jiko.

……

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(q) Tunga sentensi moja kubainisha kishazi huru na kishazi tegemezi. **(alama 2)**

……

……

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(r) Eleza uamilifu wa kiambishi ‘ji’ katika sentensi hii. **(alama 2)**

Mtoto aliyejikata kijidole alipelekwa zahanatini kutibiwa.

……

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……

(s) Andika methali inayoafiki maelezo yafuatayo. **(alama 1)**

Viongozi wanapogombana raia/watu wadogo ndio wanaoumia.

……

……

(t) Kamilisha:

Kutia kitumbua mchanga ni…… **(alama 1)**

4. ISIMU JAMII (alama 10)

(a) Eleza maana ya lugha ya Taifa**.** **Alama 2**

……

……

……

(b) Fafanua michango minane ya lugha ya Kiswahili katika kufanikisha ruwaza ya 2030 .**ala 8**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

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 KWA WATAHINIWA

a) *Andika jina lako, shule, nambari ya mtihani kisha utie sahihi katika nafasi ulizoachiwa hapo juu*

b) *Jibu maswali manne pekee*

c) *Swali la kwanza ni la lazima*

d) *Maswali hayo mengine matatu yachaguliwe kutoka sehemu nne zilizobaki yaani Riwaya, Tamthilia, Hadithi fupi na Ushairi*

e) *Usijibu maswali mawili kutoka sehemu moja.*

KWA MATUMIZI YA MTAHINI PEKEE

SWALI	UPEO	ALAMA
1.	20	
	20	
	20	
	20	
	JUMLA	

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SEHEMU YA A: RIWAYA

Clara Momanyi: Nguu za Jadi

LAZIMA

3.Fafanua ufaafu wa anwani ya ,'Nguu za Jadi'. **(alama 20)**

SEHEMU B: TAMTHILIA

Bembea ya Maisha.

Jibu swali la 2 au la 3

2. Fafanua mabadiliko yanayojitokeza katika tamthilia ya **Bembea ya maisha** **(alama20)**

3. ***La! Kila mbegu ipandwayo haina budi kuzaa na izaapo mazao yake huvunwa. Mtu hutakasa sahani akijua itamfaa tena. Kinacholelewa hakina budi kulea***

a) Eleza mutadha wa dondoo **(alama4)**

b) Chambua mtindo katika dondoo **(alama4)**

c) Kauli iliypigiwa mstari inaonyesha majukumu ya watoto kwa wazazi. Thibitisha kwa kuonyesha wazi alivyowajibika anayerejelewa na msemaji katika mjadala.

(alama4)

SEHEMU YA C: HADITHI FUPI

Mapambazuko ya Machweo

4. ***Wanaume katika mataifa mengi barani afrika wametawaliwa na ubabedume***. Jadili kauli hii ukirejelea hadithi ya ***"Fadhila za Punda"*** **(al.20)**

5. Huku ukitolea mifano mwafaka ,eleza jinsi ambavyo haki za watoto/vijana zimekiukwa katika hadithi ya ***Mapambazuko ya Machweo*** **(alama 20)**

SEHEMU D: SHAIRI

WASIA

5. Huno wakati mufti, vijana nawausia
Msije juta laiti, mkamba sikuwambia
Si hayati si mamati, vijana hino dunia
Uonapo vyang`aria, tahadhari vitakula

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Japo aula kushufu, na machoni vyavutia
Dunia watu dhaifu, yaugua nasikia
Vijana nawasarifu, falau mkisikia
Uonapo vyang'aria, tahadhari vitakula.

Jepusheni na zinaa, mlale penye sheria
Msije andama baa, makaa kujipalia
Jepusheni na zinaa, madhara kukadiria
Uonapo yyang'aria, tahadhari vitakula.

Ngawa waone wazuri, nadhifu kukuvalia
Wajimwaie uturi, na mapoda kumichia
Si mlango nyumba nzuri, ngia ndani shuhudia
Uonapo vyang'aria , tahadhari vitakula.

Wawapi leo madume, anasa walopapia?
Wamepita ja umeme, leo yao sitoria
Shime enyi wana shime, bora kumcha Jalia
Uonapo vyang'aria, tahadhari vitakula

Nambie faida gani, nambie ipi fidia
Upatayo hatimani, waja wakikufukua
Ila kufa kama nyani, kasoro yako mkia
Uonapo vyang`aria, tahadhari vitakula.

Vyatiririka tariri, vina vyanikubalia
Alo bora mshairi, pa tamu humalizia
Nahitimisha shairi, dua ninawapigia
Uonapo vyang'aria , tahadhari vitakula.

Ewe Mola mtukuka, si shaka wanisikia
Wakingie wanarika, na anasa za dunia
Amina wangu Rabuka, dua yangu naishia
Uonapo vyang'aria, tahadhari vitakula.

MASWALI:

a) Ni ujumbe gani wanaopewa vijana kupitia shairi?. **(alama 4)**

b) Bainisha tamathali mbili za usemi katika shairi hili. **(alama 2)**

c) Eleza bahari ya shairi hili kwa kuzingatia vigezo vifuatavyo. **(alama 2)**

i)idadi ya vipande katika mshororo

ii) mpangilio wa vina katika beti.

d) Eleza mbinu zozote mbili za kishairi zilizotumika katika shairi hili. **(alama 2)**

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e) Andika ubeti wa pili kwa lugha nathari **(alama 4)**

f) Eleza toni ya shairi hili. **(alama 1)**

g) Tambua: **(alama 2)**

i) Nafsi neni

ii) Nafsi nenewa

h) Eleza umuhimu wa mbinu ya kimtindo iliyotumika katika ubeti wa tano. **(alama 2)**

i) Eleza maana ya msamiati: 'aula' **(alama 1)**

SEHEMU YA E: FASIHI SIMULIZI

6. a) Eleza maana ya miviga. **(alama.2)**

b) Eleza sifa tano za miviga. **(alama.5)**

c) Miviga ina udhaifu gani. **(alama.3)**

d) Fafanua umuhimu wa ngomezi katika jamii. **(alama.6)**

e) Eleza vizingiti viwili vinavyokumba ngomezi. **(alama.4)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

COMPUTER STUDIES

451/1

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.*
2) *This paper consists of TWO sections: A and B*
3) *Answer **ALL** questions in **section A***
4) *Answer question **16** and any other **THREE** questions from **section B***
5) *All answers should be written in the spaces provided in the question paper*

FOR EXAMINERS USE ONLY.

Section	Question	Candidates Score
A	1 – 15	
B	16	
	17	
	18	
	19	
	20	
Total Score		

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SECTION A (40 Marks)

Answer all the questions in this section

1. Differentiate between master file and transaction file. **(2 mark)**

……

……

……

……

2.Give two reasons why smaller computers like laptops tend to be more expensive than desktop computers. **(2marks)**

……

……

……

3.List t**wo** disadvantages of using traditional file management method. **(3marks)**

……

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4. List three sources of graphics that can be used in Microsoft word. **(3marks)**

……

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……

5. Mention **two** things that are likely to cause eye strains. **(2marks)**

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……

6. State two reasons why magnetic tapes are not commonly used as computer data storage medium today. **(2marks)**

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8. Explain the difference between Gas Plasma Display and Liquid Crystal display Monitors. **(2marks)**

……

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……

9(a) Differentiate between logical and syntax errors encountered in programming. **(2marks)**

……

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……

(b) What is a computational error? Give an example to illustrate. **(2marks)**

……

……

……

10. Anne was working on her computer studies project. She was worried of the media to use for storing her data.She settled on a media that used serial file organization.

a) How are files organized on a storage medium using this method? **(2marks)**

……

……

……

b) List two advantages offered by this type of file organization. **(2marks)**

……

……

11. Define the following terms in relation to computer security: **(4marks)**

a) Data Encryption

……

……

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b) Firewall

……

……

12. State what is meant by each of the following and give an example of where each is used.

(a) Magnetic Ink Character Recognition (MICR) **(1 mark)**

……

……

(b) Optical mark reader (OMR) **(1 mark)**

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……

13. (a) Describe the term data integrity. **(2 marks)**

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(b) State four situations in which data may lose integrity. **(2 marks)**

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14. State three advantages of using robots in manufacturing of goods. **(3marks)**

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15. State three ways in which ICT can be used in shipping control. **(3 marks)**

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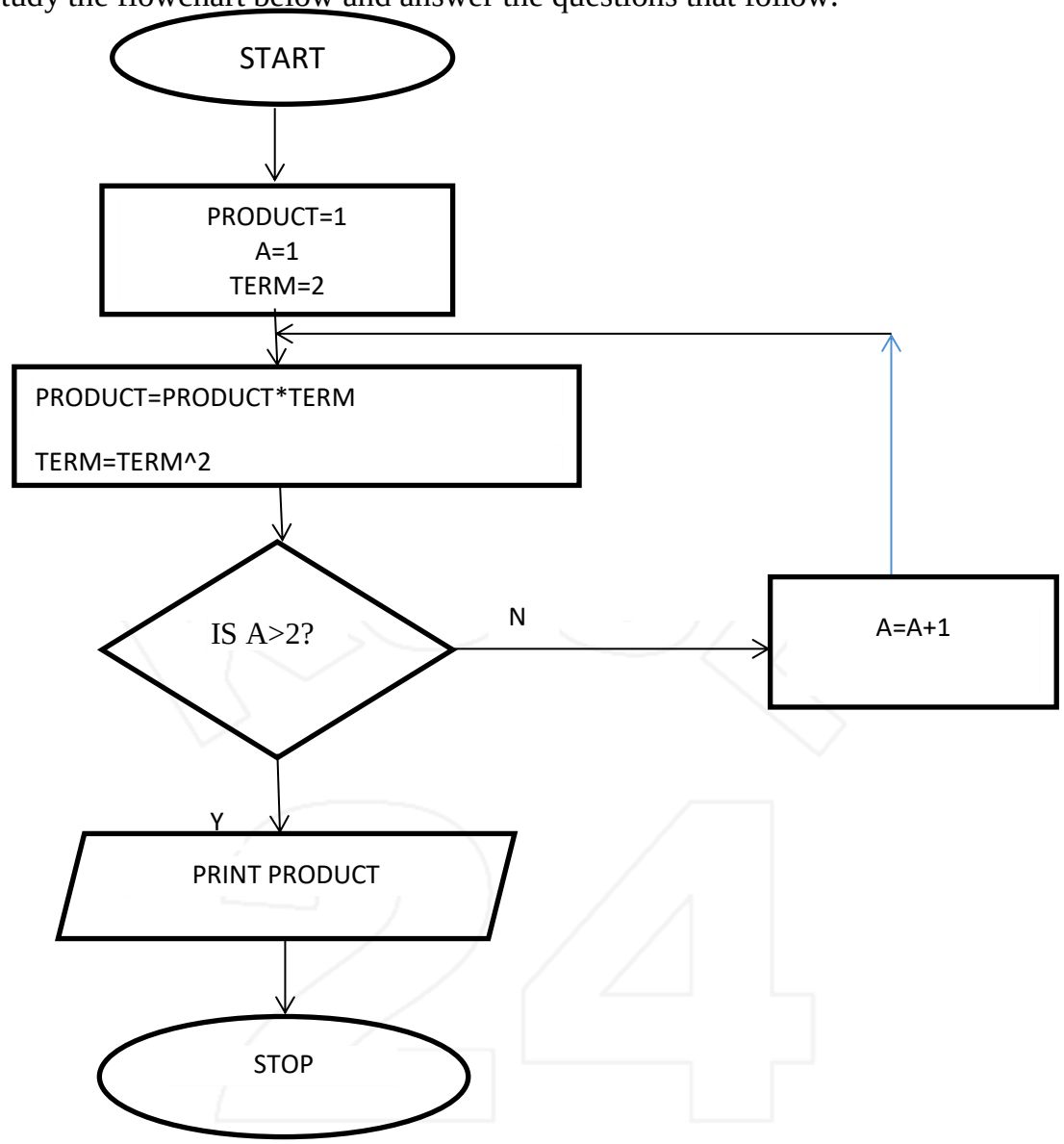
SECTION B (60 Marks)

Answer Question 16(Compulsory) and any other three questions in this section

16.(a). Study the flowchart below and answer the questions that follow.



(i) State the main type of control structure used in the flowchart. **(1 mark**

……

(ii). Dry run the flowchart and give the expected output. **(5 marks)**

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(iii) What will be the value of product when printed in the following flow chart? Show how you arrive at your answer. **(5 marks)**

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(b). Explain what happens when the expression A = A+1 is changed to A = A-1 **(2 marks)**

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c) Give two benefits of structured programming **(2 marks)**

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17. (a) State three reasons why it is difficult to detect and prevent computer crimes. **(3marks)**

(b) State three characteristics of a suitable password. (**3marks)**

(c) What is a spyware? **(2marks)**

(d) A school intends to set up an e-learning system. List three problems that are likely to be encountered. **(3marks)**

(e) What is a search engine? **(1mark)**

(f) Give two examples of search engine. **(1mark)**

(g) Differentiate between internet and intranet. **(2marks)**

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18.(a) State three standard data coding schemes used in computing and electronic systems. **(3marks)**

(b). Convert each of the following numbers:

i. 110.101_2 to decimal **(3marks)**

ii. 12.6875_{10} to binary **(3marks)**

(c). Subtract 110.01_2 from 11001.0101_2 **(2marks)**

(d). Using seven-bit twos compliment, perform the following binary arithmetic leaving the answer in binary notation.

$1101_2 - 100101_2$ **(4marks)**

19. (a) Give three benefits of using a **DTP software** in publishing over a **Word processor** **(3 marks)**

(b). Robots are introduced in a factory which makes car engines. Mention three ways this could affect the workers. **(3 marks)**

(c). Name any two computer related courses that are offered at public universities in Kenya. **(1 mark)**

(d). List two duties performed by each of the following personnel.

(i). Database administrator **(2 marks)**

(ii). Computer trainer. **(2 marks)**

e) Briefly describe the two types of spreadsheets **(4 marks)**

20.(i) Define a system. **(1mark)**

(ii) Explain system entropy. **(1mark)**

(b) Describe three circumstances that can lead to development of new information system. **(3marks)**

(c) Distinguish parallel changes over from straight change over as used in system implementation. **(2marks)**

(d) Explain two fact finding methods used during system analysis and design. **(2 marks)**

(e) Name any two types of cables used in data communication **(2 marks)**

(f) State four differences between LAN and WAN **(4 marks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

COMPUTER STUDIES

451/2

PAPER 2

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 at the top right hand corner of each print out.*
2. *Write your name and index number on the Compact Disk.*
3. *Write the name and the version of the software used for each question attempted in the answer sheet.*
4. *Answer **ALL** the questions.*
5. *All questions carry equal marks.*
6. *Passwords **should NOT be used** while saving in the Compact Disk.*
7. *All answers **MUST BE** saved in your CD.*
8. *Make a print out of the answers on the answer sheets provided.*
9. *Arrange your printouts and tie/staple them together and use the best fit i.e. landscape or portrait for your printouts.*

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QUESTION 1

2 a) Type the following passage exactly as it appears using a word processor and save it as **EXERCISE** **(20marks)**

PROCESS OF INFORMATION SYSTEM DEVELOPMENT

INTRODUCTION TO INFORMATION SYSTEM DEVELOPMFNT

The methodology area can justly be described as a jungle. Firstly there appears to exist many hundreds of the system development methodologies. Longworth (1985) in a recent study identified over 300. If all these are different, then it is no wonder that there is so much confusion. However, it may be that the differences are trivial and are made solely to differentiate methodologies in the market place

WHAT I S A METHODOLOGY?

The term methodology is not well defined either in Literature or by practitioners.

There is very little agreement as to what it means other than at a general level. The term is usually used very loosely and yet it is used very extensively.

This loose use does not mean that there are no definitions, simply that there are no universally agreed definitions. At the general level, it is regarded as a recommended series of steps and procedures to be followed in the course and developing an information system. In a brief adhoc survey, this proves to be about the maximum that people will agree to and of course such a definition raise many more questions than it answers.

For example:

- What is the difference between a methodology and a method?
- Does a methodology include a specification of the techniques and tools which are to be used?
- Does a collection of techniques and tools constitute a methodology?
- Should the use of a methodology produce the same results each time?

The questions that arise are fundamental as well as numerous. Unfortunately the most that can be achieved is to air the issues. The information system community is in the process of debating the meaning of the term methodology in an information system context, and it may one day have a universal definition. However, it may be more realistic to assume that this will never be achieved. An information system's methodology has been defined as a recommended collection o f philosophies, phase, procedures, rules, techniques, tools, documentation, management and training for developers o f information systems.(Madison 1983). According to this definition, a methodology has a number of components.

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Which specify:

- How a project is to be broken down into stages
- What tasks are to be carried out at each stage
- What outputs are to be produced
- When they are to be carried out
- What constraints are applied
- What support tools may be utilized

In addition, the methodology is supposed to specify how the project is to be managed and controlled and support the training needs of the users of the methodology. This is all encompassed in a view or philosophy concerning the important and critical aspects of information systems development.

Required:

b) Remove the underline from all the underlined and change the text to bold and italics. Apply hanging ident to the first two paragraphs. Save the document as EXERCISE 2. **(6marks)**

c) Select the text starting from the words "For example:…….information systems development" (at the end of the passage) and move it to a new page and save as EXERCISE 3. **(5 marks)**

d) (i) Retrieve **EXERCISE** document and convert it to two columns of the same width and height and justify them. **(6marks)**

(ii)Double space the first paragraph of the passage and fit the entire passage into onepage**(4mks)**

(iii) Insert your name into the passage as a footer so as to appear as © your name. Save the document as **EXERCISE 4.** **(5marks)**

d) Print **EXERCISE, EXERCISE 2, EXERCISE 3, EXERCISE 4** **(4marks)**

2. Table 1, table 2 and table 3 are extracts of records, kept in a carpentry shop. Use the information to answer the questions that follow;

Carpenter Table

CAPENTER _ID	CAPENTER NAME
CAP_001	JAMES
CAP_002	JOHN
CAP_003	ALEX
CAP_004	ISAAC
CAP_005	MAURICE

Customer Table

CUSTOMER _ID	CUSTOMER NAME
CUST_01	MARY K.
CUST_02	DIANA K.
CUST_03	ALEX N.
CUST_04	MARTHA K.
CUST_05	SARAH W.
CUST_06	JOHNSON G.

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Order Table

CARPENTER _ID	CUSTOMER _ID	ORDER _NO	ITEM ORDERED	MONTH	AMOUNT
CAP_001	CUST _01	1721	Bench	January	18,000
CAP_002	CUST _02	1722	Coffee table	January	25,000
CAP_003	CUST _03	1723	Office table	January	10,000
CAP_004	CUST _04	1724	Single bed	January	18,000
CAP_005	CUST _05	1725	Arm chair	January	60,000
CAP_001	CUST _01	1726	Double bed	February	75,000
CAP_002	CUST _04	1727	Dining table	February	85,000
CAP_004	CUST _03	1728	Arm chair	February	60,000
CAP_001	CUST _02	1729	Double decker bed	February	72,000
CAP_002	CUST _06	1730	Kitchen table	February	82,000
CAP_004	CUST _02	1731	Bench	March	18,000
CAP_003	CUST _06	1732	bench	march	18,000

a) i) Using database application package, create a database file named; CARPENTERINFORMATION **(1mk)**

ii) Create three tables named Carpenter Table, Customer Table and Order Table that will be used to store the above data. **(10mks)**

iii) Set the appropriate primary key for the tables **(2mks)**

iv) Create relationship among the tables **(2mks)**

b) i) Create a data entry form for each table and give them relevant names **(3mks)**

ii) Enter the data in Carpenter Table, Customer Table and order Table respectively **(11mks)**

c) i) Create a query named **individual income** to display the amount received from each customer every month. **(4mks)**

ii) Create a query that computes Total income for each month. Save the query as **totalIncome**. **(6mks)**

d) Create a query named loyalty to compute the total number of orders made by each customer over the three months. **(3mks)**

e) Create a report to display order details, save the report as Order report **(4mks)**

f) Print the three tables and the report **(4mks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

HOME SCIENCE

441/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

1. *Write your name, school and index number in the spaces provided above.*
2. *Sign and write the date of the examination in the spaces provided above.*
3. *This paper consists of **three** sections **A**, **B** and **C**.*
4. ***All** the questions in Section **A** and **B** are compulsory.*
5. *Answer any other **two** questions in section **C**.*
6. *Answers to all the questions must be written in the spaces provided.*

FOR OFFICIAL USE ONLY

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1 – 20	40	
B	21	20	
C		20	
		20	
TOTAL SCORE		100	

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SECTION A (40 MARKS)

Answer ALL the questions from this section in the spaces provided

1. Give **two** reasons for folding clothes when storing. **(2 marks)**

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2. Give **two** reasons for thawing frozen food completely before cooking. **(2 marks)**

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3. State **two** points to note on the care of ears when cleaning your face daily. **(2 marks)**

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4. Give **two** importance of classifying clothes before storage. **(2 marks)**

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5. Identify **two** ways of preventing insect bites and stings. **(2 marks)**

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6. Mention **two** disadvantages of cross method of ventilating a room. **(2 marks**

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7. State **two** disadvantages of roasting as a method of cooking food. **(2 marks)**

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8. Name **two** categories of convenience foods. **(2 marks)**

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9. Differentiate between a dart and a pleat in clothing construction. **(2 marks)**

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10. State **two** ways of saving energy when lighting a home. **(2 marks)**

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11. Define simmering in cookery. **(1 mark)**

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12. List **two** food substances used for coating food during deep frying of foods. **(2 marks)**

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13. Identify **two** characteristics of fabric which develop static electricity. **(2 marks)**

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14. State **two** advantages of using self-neatening seams in garment construction. **(2 marks)**

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15. Give **two** causes of drowning in children. **(2 marks**)

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16. Give **two** reasons why aluminium is widely used in making kitchen equipment**.(2 marks)**

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17. Give **two** functions of water in the body. **(2 marks)**

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18. State **two** properties that make linen suitable for making kitchen tea towels. **(2 marks)**

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19. Mention **three** qualities of a well-made seam. **(3 marks)**

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20. Give **two** reasons why hot water is not suitable for cleaning wooden surfaces. **(2 marks)**

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SECTION B (20 MARKS)

COMPULSORY

21. You are to visit your grandmother over the weekend. Describe how you would;

a) Launder her acrylic sweater. **(10 marks)**

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b) Clean her earthen water pot. **(5 marks)**

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c) Clean her gourd for storing porridge. **(5 marks)**

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SECTION C (40 MARKS)

Answer any TWO questions from this section in the spaces provided after question 24

22.a) State **six** signs of pregnancy. **(6 marks)**

b) Identify any **six** problems that may arise during pregnancy which need to be reported to the doctor. **(6 marks)**

c) Mention any **three** points on meeting the following needs of an expectant woman.

i) Physical needs **(3 marks)**

ii) Emotional needs **(3 marks)**

d) Define haemorrhoids and give their cause in pregnancy. **(2 marks)**

23.a) Give **five** reasons for caring for the stick at home. **(5 marks)**

b) Mention **five** factors to consider when packing meals. **(5 marks)**

c) State **five** factors to consider when choosing fastenings. **(5 marks)**

d) Discuss **five** ways of conserving nutrients when cooking vegetable. **(5 marks)**

24.a) State **six** desirable qualities of fabric for making curtains. **(6 marks)**

b) Explain **four** uses of openings in garment construction. **(8 marks)**

c) Explain **three** reasons for ironing / pressing garments at every stage of construction. **(6 marks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

HOME SCIENCE

441/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

CLOTHING AND TEXTILES

PAPER 2

(Practical)

TIME 2 ½ HOURS

A pattern of dress bodice is provided.

You are advised to study the question paper the sketches and the lay out before you begin the test.

MATERIALS PROVIDED

Pattern pieces for the dress:

1. A- Front
   B – Back
   C - Sleeve
   D – Tie collar
   E – Yoke

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F – Sleeve facing

2. Plain light weight cotton fabric 67cm long by 91cm wide.
3. Sewing thread to match the fabric.

THE TEST

Using the materials provided, cut out and make up the RIGHT HALF of the dress bodice to show the following:

a) The attaching of the back yoke to the back bodice using an overlaid/lapped seam.
b) The working of the waist dart.
c) The neatening of the raw edge of the front facing.
d) Joining of the shoulder seam using any seam.
e) The attaching of the collar including the preparation of the tie collar extension.
f) The joining of the side seam using a neatened open seam.
g) The preparation of the sleeve using a neatened open seam for the underarm seam
h) The preparation and attaching of the sleeve facing to the right of the sleeve.
i) The attaching of the sleeve to the bodice and neatening half of the armhole seam.
j) The working of the top buttonhole.

At the end of the examination, firmly sew on to your work, on a single fabric, a label bearing your name and index number. Remove the needle and pins from your work. Then fold your work carefully and place it in the envelope provided. Do not put scraps of materials in the envelope.

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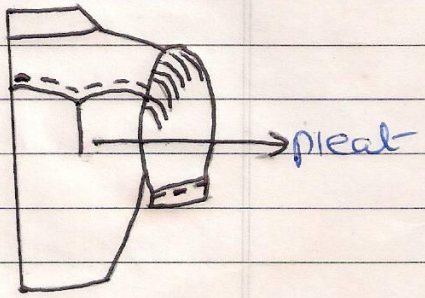
CHILD'S DRESS BODICE:

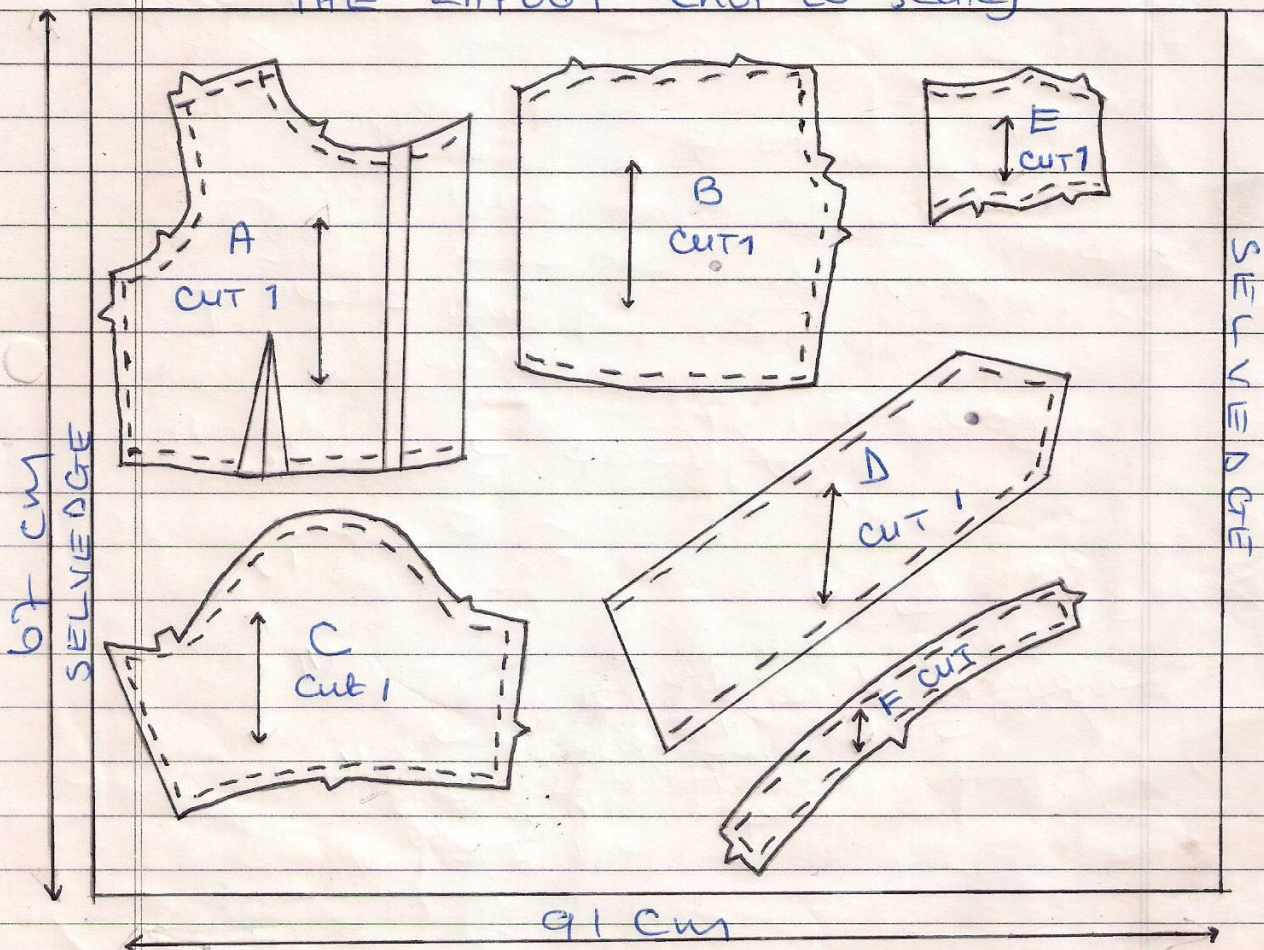
FRONT VIEW



BACK VIEW



THE LAYOUT (not to scale)



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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

HOME SCIENCE

441/3

PAPER 3

TIME: 1¾ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

(FOOD & NUTRITION)

(Practical)

Instructions to candidates

PLANNING SESSION 30 minutes

PRACTICAL TEST SESSION $1^{1}/_{4}$ hour

Instructions to Candidates

a) Read the test carefully

b) Write your name and Admission number on every sheet of paper used

c) Text books and recipes may be used during the planning session as reference materials

d) You will be expected to keep to your order of work during the practical session

e) You are only allowed to take your reference materials at the end of the planning session

f) You are not allowed to bring additional notes to the practical session.

g) Previously written plans are not allowed into the examination.

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

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THE TEST

Your teenage sister has just come home from boarding school for half term break. Using the ingredients below:

Prepare, cook and serve a one-course supper and a nutritious drink for both of you.

Ingredients

Spaghetti/rice/potatoes

Beef/chicken/green grams

Green leafy vegetables

Cooking oil/fat

Carrots

Capsicum

Tomatoes

Dhania

Salt

Sugar

Fruits in season

Onions

Planning Session - 30 minutes

Use separate sheets of paper for each task listed below and a carbon paper to make duplicate copies then proceed as follows:

1. Identify the dishes and write down their recipes
2. Write down your order of work
3 Make a list of foodstuff and equipment you will require

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

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*
2. *Answer **all** questions in section I and any five questions in Section II*
3. *All markings and answers **must** not be clearly written in the spaces below*
4. *Marks may be awarded for correct working even if the answer is wrong.*
5. *Non programmable silent electronics and KNEC Mathematical tables may be use, except where otherwise.*

FOR EXAMINERS USE ONLY

SECTION I

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

SECTION II

QUESTION	17	18	19	20	21	22	23	24	TOTAL
MARKS									

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SECTION 1 (50 MARKS)

Answer all questions in this section

1. Evaluate without using a calculator **(3mks)**

$\frac{1}{4} + \frac{1}{5} \div \frac{1}{2}$ of $\frac{1}{3}$

$\frac{1}{2}$ of $(\frac{4}{5} - \frac{3}{4} + \frac{1}{2})$

2. Simplify completely. **(3mk)**

$$\frac{3a^2 + 5ab - 2b^2}{9a^2 - b^2}$$

3. Solve for x in the equation.

$27^x \times 3^{(2x-2)} = 9^{(x+2)}$ **(3 marks)**

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4. Given that $Sin\ \theta = 2/3$ and θ is an acute angle, find without using tables or calculators

(a) $Tan\ \theta$, giving your answer in surd form. **(2mks)**

(b) $Cos\ (90 - \theta)$ **(1mk)**

5. Four machines give out signals at intervals of 24, 27, 30 and 50 seconds respectively. At 5.00pm all the four machines gave out a signal simultaneously. Find the time this will happen again. **(3mks)**

6. Two pipes **A** and **B** can fill an empty tank in 3hrs and 5hrs respectively. Pipe **C** can empty the full tank in 6 hours. If the three pipes **A**, **B**, and **C** are opened at the same time, find how long it will take for the tank to be full **(3mks)**

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7. A tourist arrived in Kenya with sterling pound (£) 4680 all of which he exchanged into Kenyan money. He spent Ksh. 51,790 while in Kenya and converted the rest of the money into U.S dollars. Calculate the amount he received in U.S dollars. The exchange rates were as follows.

	Buying	**Selling.**
US $	65.20	69.10
Sterling Pound (£)	123.40	131.80

(4mks)

8. A straight line through the points A (2,1) and B(4,n) is perpendicular to the line 3y+2x=5. Determine the value of n and the equation. **(4mks)**

9. Determine the quartile deviation of the set of numbers below. **(2mks)**

8, 2, 3, 7, 5, 11, 2, 6, 9, 4

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10. Solve the equation $2\cos 2(x + 30^0) = 1$ for $0^0 \leq x \leq 360^0$. **(3 marks)**

11. Without using tables or calculators, find the value of **t** in

$\log_8(t + 5) - \log_8(t - 3) = {}^2/_3$ **(3mks)**

12. Solve for x :$3(x + 2) - \frac{20x - 5}{} > 3\frac{1}{4}$ **(3 mks)**

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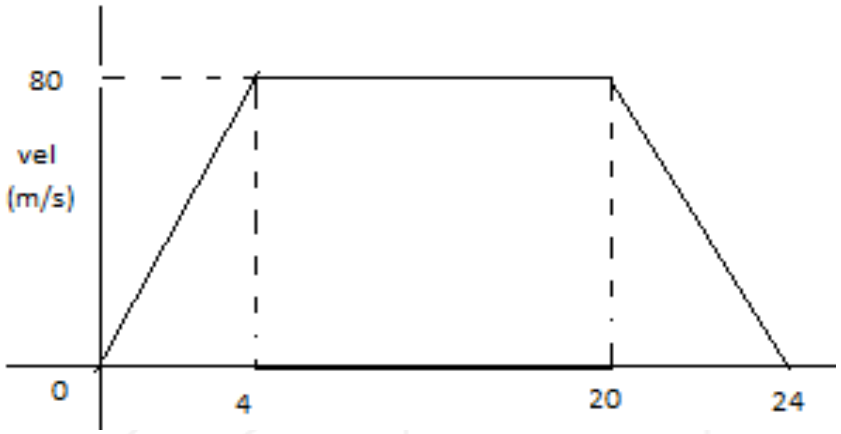
13. Three years ago John was four times as old as his son Peter. In five years' time the sum of their ages will be 56. Find their present ages. **(3mks)**

14. The figure below show a velocity time graph for a wagon.



(a) Find the total distance travelled by the wagon. **(2 marks)**

(b) For how long did it maintain a constant speed? **(1mark)**

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15. The volumes of two similar solids are $800cm^3$ and $2700cm^3$. If the surface area of the larger one is $2160cm^2$, find the surface area of the smaller figure. **(3mks)**

16. A ball is in the shape of a sphere. It weighs 125g. The material used to make it has a density of $2.5g/cm^3$. What is the volume of the material to make a dozen such balls? **(3 marks)**

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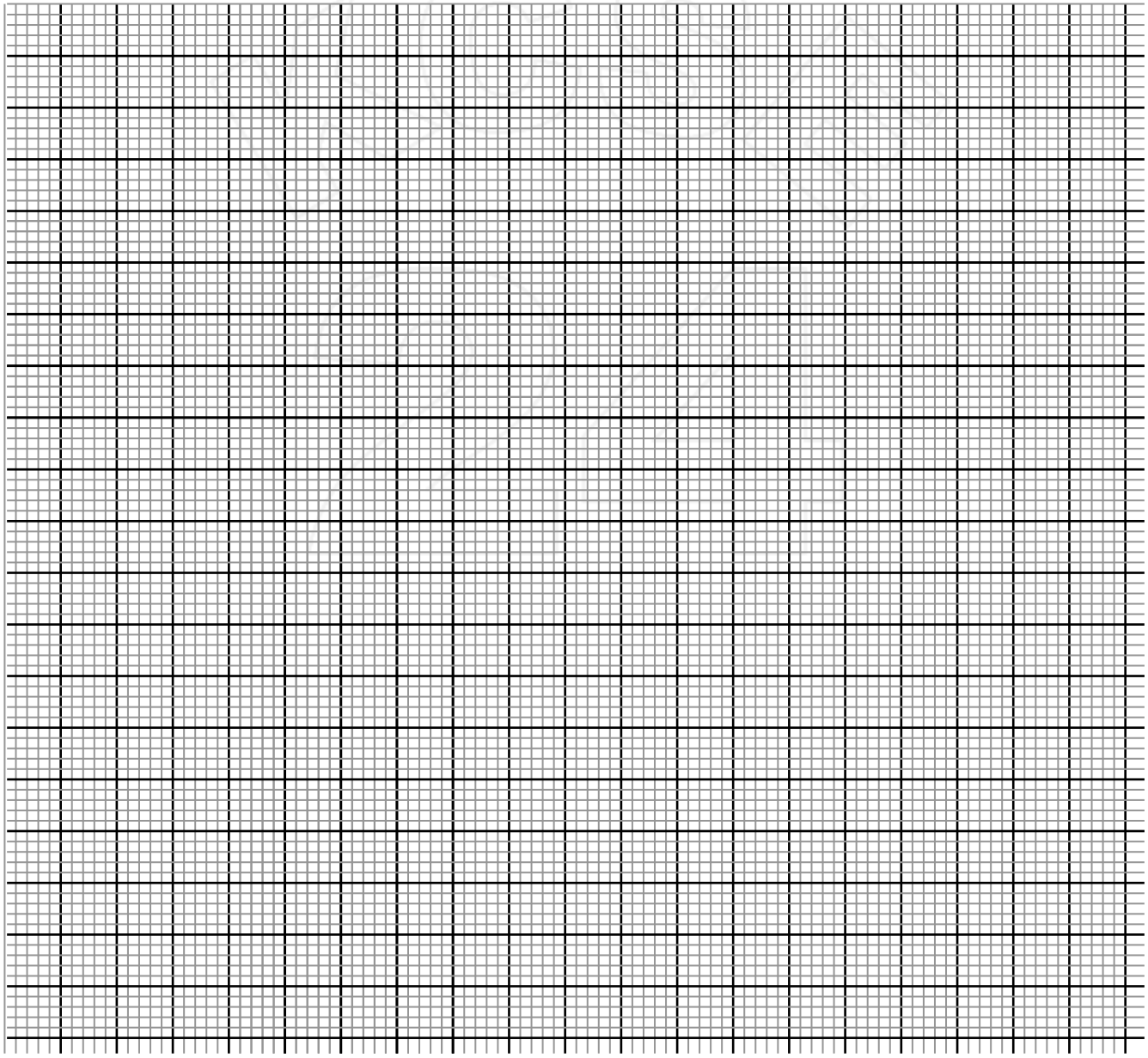
SECTION II (50 MARKS)

Answer any five questions in this section.

17. (a) Complete the table below for the equation $y = x^2 + 3x - 6$ given $-6 \leq x \leq 4$ **(2mks)**

x	-6	-5	-4	-3	-2	-1	0	1	2	3	4
y											

(b) draw the graph of $y = x^2 + 3x - 6$ **(3mks)**



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(c) Use your graph to solve the quadratic equations.

(i) $x^2 + 3x - 6 = 0$ **(2mks)**

(ii) $x^2 + 3x - 2 = 0$ **(3mks)**

KCSE 24

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18. A saleswoman is paid a commission of 2% on goods sold worth over ksh. 100,000. She also paid a monthly salary of ksh. 12,000. In a certain month, she sold 360 handbags at ksh. 500 each.

a) Calculate the saleswoman's earnings that month. **(3 mks)**

b) The following month the sales woman's monthly salary was increased by 10%. Her total earnings that month were ksh. 17600. Calculate:

(i) The total amount of money received from the sales of hand bags that month. **(5 mks)**

ii) The number of handbags sold that month. **(2 mks)**

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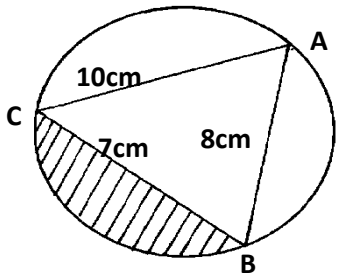
19. The figure below shows a triangle **ABC** inscribed in a circle. **AC** = 10cm, **BC** = 7cm and **AB** = 10cm.



(a) Find the size of angle **BAC**. **(2mks)**

(b) Find the radius of the circle. **(2mks)**

(c) Hence calculate the area of the shaded region. **(6mks)**

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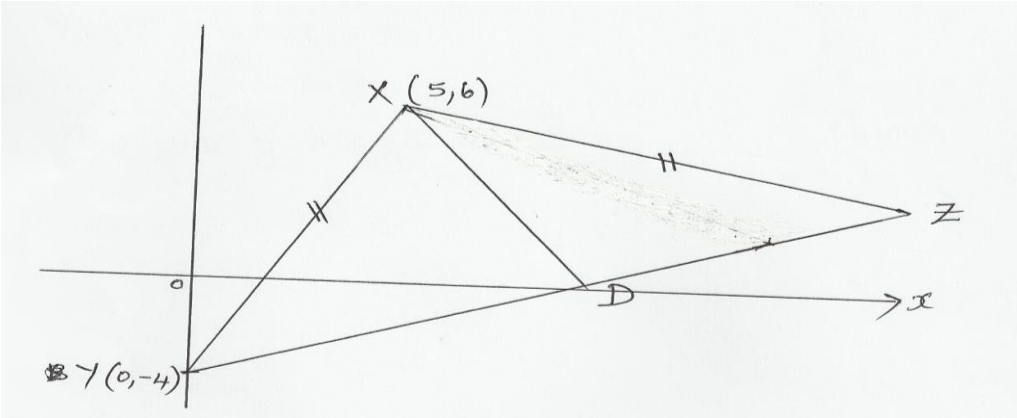
20. The diagram below which is not drawn to scale, shows an isosceles triangle XYZ in which XY=YZ. The Coordinates of x and y are (5, 6) and (0, -4) respectively.



Given that the equation of line YZ is y=3/4x – 4 and that the perpendicular from X to YZ meet YZ at D, find.

(i) The equation of **XD** **(2 marks)**

(ii) The coordinate of **D** **(2 marks)**

(iii) The coordinates of **Z** **(2 marks)**

(iv) The area of triangle **XYZ** **(4 marks)**

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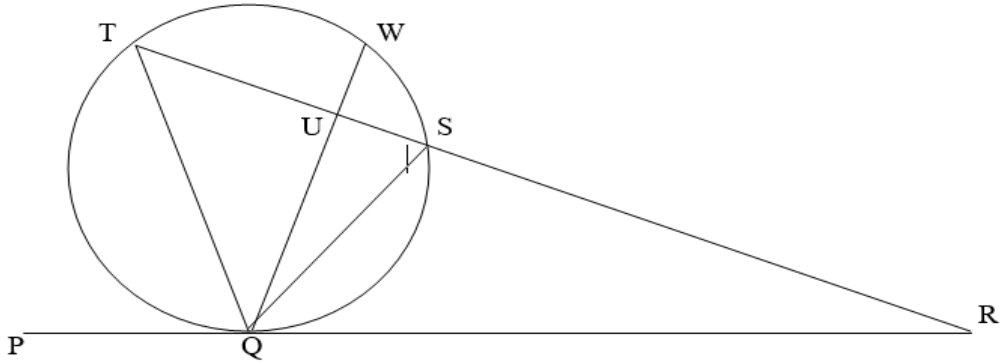
21. In the figure below, PQR is a tangent at Q and RST is a straight line. $\angle$ QTU = 50^0, $\angle$ UTW = 33^0 and $\angle$ TRQ = 25^0



Giving reasons in each case, calculate

(i) Angle TSQ **(3 marks)**

(ii) Angle TSW **(3 marks)**

(iii) Angle TUQ **(2 marks)**

(iv) Angle PQW **(2 marks**

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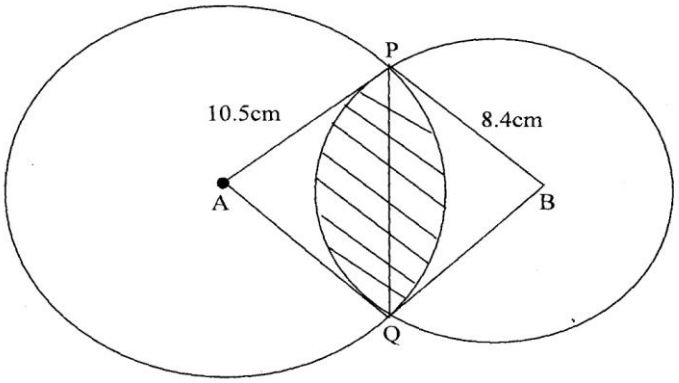
22. The figure below shows two circles of radii 10.5 and 8.4cm and with centres A and B respectively. The common chord PQ 9cm.



(a) Calculate angle PAQ. **(2 mks)**

(b) Calculate angle PBQ. **(2 mks)**

(c) Calculate the area of the shaded part. **(6 mks)**

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23. A and B are two towns 360 kilometers apart. A bus left **A** at 8.00 am travelling at 60km/h for town **B**.After forty minutes, a saloon car left **A** travelling in the same direction as the bus at a speed of 80km/h.

a) How far from **B** did the saloon car catch up with the bus?

b) At what time did it catch up with the bus?

c) When the saloon caught up with the bus it got a break - down and had to be repaired before proceeding to **B** at the same speed. If they both reached **B** at the same time, find how long it took to repair the saloon?

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24. An arithmetic progression (AP) has the first term a and the common difference d.

(a) Write down the third, ninth and twenty fifth terms of the AP in terms of a and d.**(1mk)**

(b) The AP above is increasing and the third, ninth and twenty fifth terms form the first three consecutive terms of a Geometric Progression (G.P) The sum of the seventh and twice the sixth terms of the AP is 78. Calculate:-

(i) the first term and common difference of the AP. **(5mks)**

(ii) the sum of the first nine terms of the AP. **(2mks)**

(iii)The difference between the fourth and the seventh terms of an increasing AP. **(2mks)**

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KCSE 2024 PREDICTION EXAM

(BRIGHT-MIND SERIES)

MATHEMATICS

121/2

PAPER 2

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*
2. *Answer **all** questions in section I and any five questions in Section II*
3. *All markings and answers **must** not be clearly written in the spaces below*
4. *Marks may be awarded for correct working even if the answer is wrong.*
5. *Non programmable silent electronics and KNEC Mathematical tables may be use, except where otherwise.*

FOR EXAMINERS USE ONLY

SECTION I

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

SECTION II

QUESTION	17	18	19	20	21	22	23	24	TOTAL
MARKS									

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SECTION I (50 MARKS)

1. Use logarithm tables to evaluate **(4mks)**

$$\sqrt[3]{\frac{0.0485\times \log 3.846}{(0.9834)+88.3}}$$

2. Make Q the subject of the formula. **(3mks)**

$$T=\sqrt[3]{\frac{Q^2}{Q^2-1}}$$

3. A student misreads $(p+q)^2$ as P^2+q^2 find the percentage error if p = 5 and q = 3. **(3mks)**

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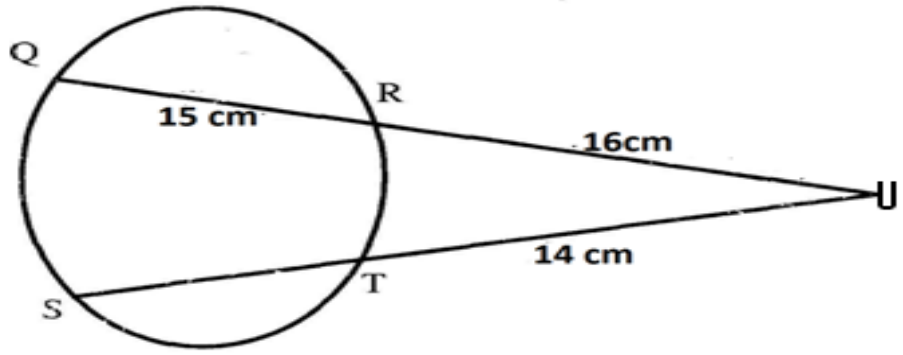
4. (a) Expand $(x-y)^6$ upto the term with y^3 **(2mks)**

(b) Use the first four terms in ascending powers of y to find the approximate value of $(0.98)^6$.Correct to 4 significant figure **(2mks)**

5. Given that matrix $\underset{\sim}{A} = \begin{pmatrix} 2 & 1 \\ 3 & 4 \end{pmatrix}$, Find matrix $\underset{\sim}{B}$ such that: $A^2 = \underset{\sim}{A} + \underset{\sim}{B}$ **(3mks)**

6. Chord QR and ST intersect at U. QR = 15cm, RU = 16cm and TU = 14 cm. **(3mks)**



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Find the length SU to 2 dp

7. Simplify $\frac{3}{\sqrt{5}-2}+\frac{1}{\sqrt{5}}$ leaving your answer in the form $a+b\sqrt{c}$, where a, b and c are rational numbers. **(3mks)**

8. Achang'a deposited sh. 20 000 in a saving account. Find the interest after two years. If the intrest was paid at 16% per annum compound semi-annually. **(3mks)**

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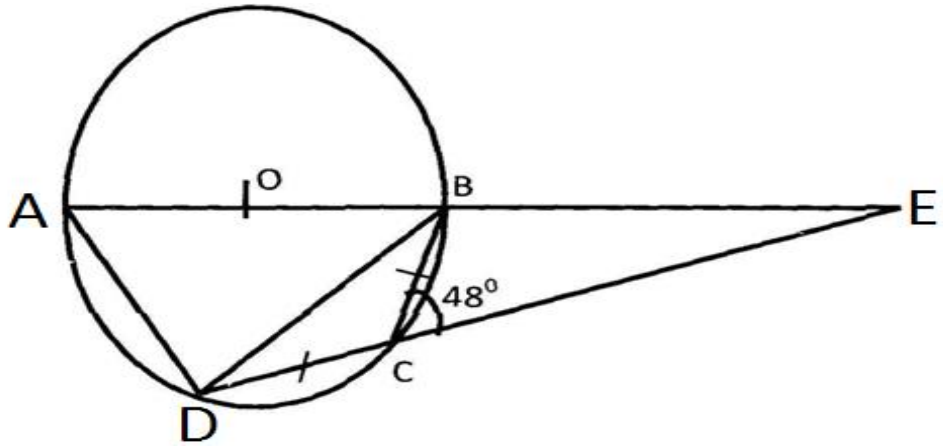
9. A coffee blender has two brands of coffee, Tamu and Chungu. A kilogram of Tamu costs sh. 70 while a kilogram of Chungu costs Shs. 64. In what ratio should he mix the two brands to make a blend which costs Shs. 68 per kilogram? **(3mks)**

10Find the centre and radius of a circle whose equation is $x^2 + 8 + y^2 - 2y - 1 = 0$. **(3mks)**

11. In the figure below ABCD is a circle with centre O. AB and DC meet a point E outside the circle. DC = BC and $\angle BCE = 48^0$. Find the angles **(3mks)**



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(i) BAD

(ii) BDC

(iii) BEC

12. Given that $4x^2 - 32y - 20 + k$ is a perfect square , Find K. **(3mks)**

13. Given the triangle ABC below, AB = 9.2cm, AC = 7.9cm and $\angle ABC = 48^0$. **(2mks)**

Calculate to 1 decimal place the angle A C B.

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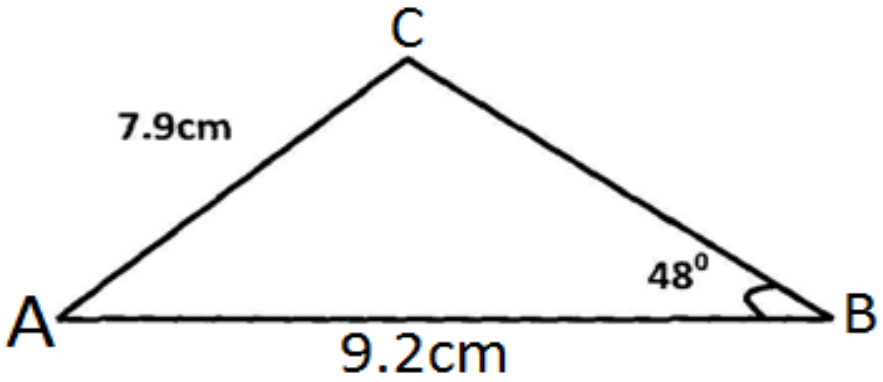

14. A geometric progression has its first and second terms as 128 and 32 respectively. If the sum of the first five terms of the progression is $\frac{2^x-1}{6}$, find x **(4mks)**

15. P varie directly as the square of B and inversely as the square root of C. Find the percentage change in P when C increases by 4% and B decreases by 10%. **(3mks)**

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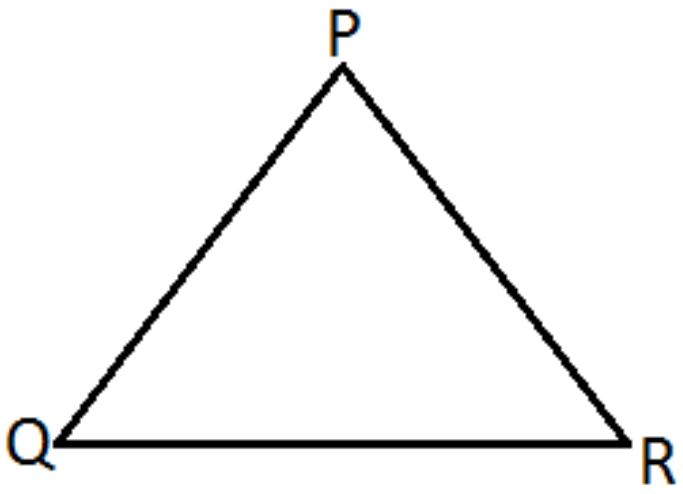
16. The diagram below represents a field PQR



(a) Draw the locus of points equidistant from sides PQ and PR. **(1mk)**

(b) Draw the locus of points equidistant from points P and R. **(1mk)**

(c) **(i)** Label the point of intersection of the two loci (a) and (b) as X. **(1mk)**

(ii) Measure QX **(1mk)**

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SECTION II (50 MARKS)

Answer any five questions in this section

17. James' earning are as follows:- Basic salary 38,000 p.m, House allowance Sh. 14, 000p.m Travelling allowance Sh. 8,500p.m. Medical allowance sh. 3,300

The table for the taxable income is as shown below

Income tax in k£ p.a	Tax in Sh. Per pound
1 – 6000	2
6001 – 12000	3
12001 – 18000	4
1001 – 24 000	5
24001 - 30 000	6
30001 - 36000	7
36001 – 42 000	8
42001 – 48 000	9
Over 48 000	10

(a) Calculate Jame's taxable income in p.a **(2mks)**

(b) Calculate Jame's P.A.Y.E if he is entitled to a tax relief of Sh. 18 000 p.a **(4mks)**

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(c) **James** is also deducted the following per month:-

NHIF	Sh.	320
Pension scheme	Sh.	1000
Co-operative shares	Sh.	2000
Loan repayment	Sh.	5000
Interest on loan	Sh.	500

(i) Calculate James' total deduction per month in Ksh. **(2mks)**

(ii) Calculate his net salary per month. **(2mks)**

KCSE 24

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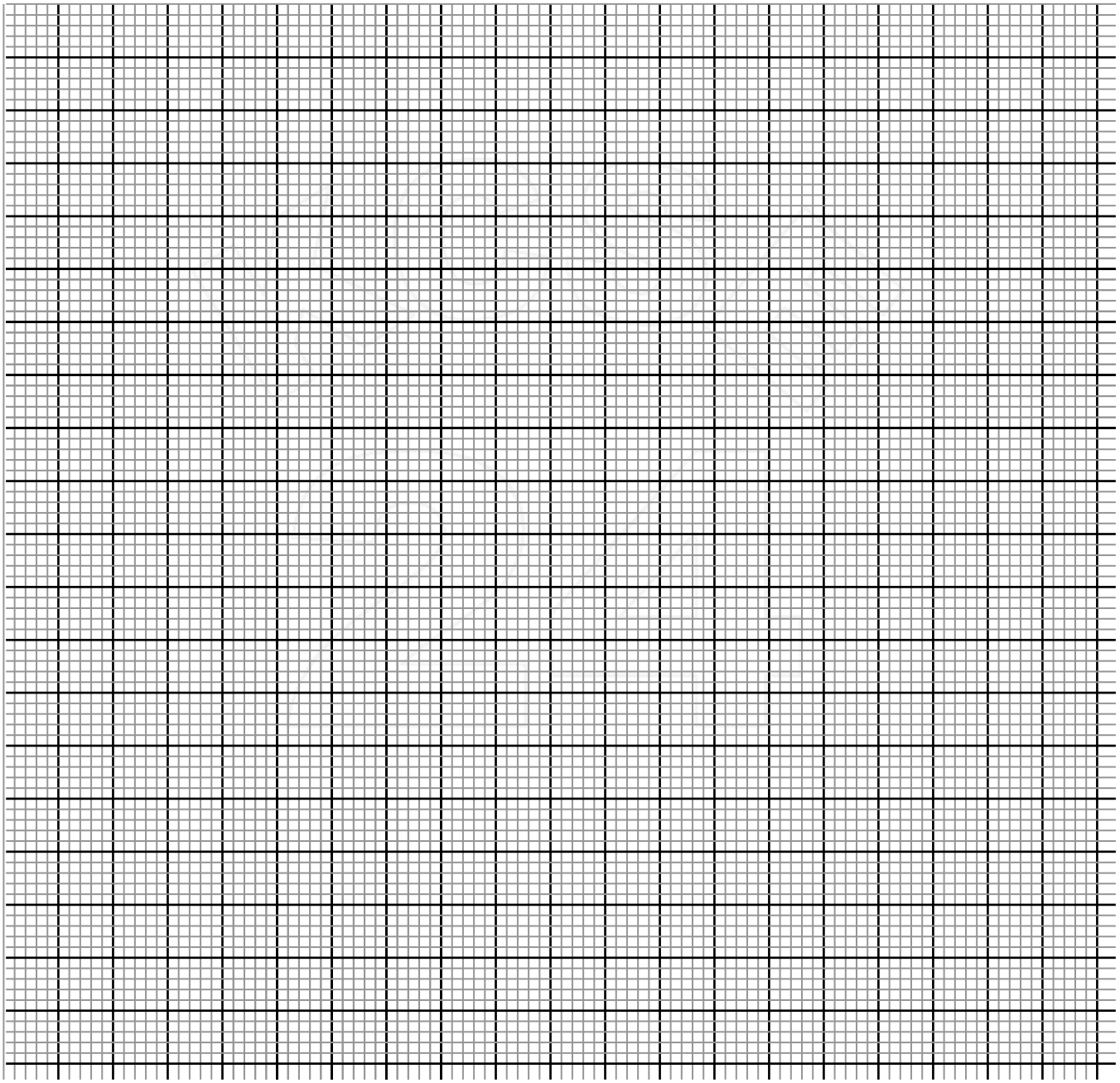
18 .i) Fill the table, below of the function $y = 2x^2 + 5x - 12$ *for* $-8 \leq x \leq 4$ **(2mks)**

x	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4
y	76					-9		-5					40

ii) Using the table draw the graph of the function $y = 2x^2 + 5x - 12$. Use the scale of 1cm to 1 unit for x – axis and 1cm for 10units for y-axis. **(3mks)**



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(b) Using the graph drawn above, solve the following equation.

(i) $2x^2 + 5x - 12 = 0$ **(2mks)**

(ii) $3 - 7x - 3x^2 = 0$ **(3mks)**

KCSE 24

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19. The first three consecutive terms of a geometric progression are $3^{2x+1}, 9^{x}$ *and* 81 *respectively*.

(a) Calculate the value of x. **(3mks)**

(b) Find the common ratio of the series **(1mk)**

(c) Calculate the sum of the first 4 terms of this series. **(3mks)**

(d) Given that the fifth and the seventh terms of the G.P form the first two consecutive terms of an arithmetic sequence, Calculate the sum of the first 20 terms of the sequence. **(3mks)**

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20. The table below shows marks scored by some students in a Maths exam

Marks	30 – 39	40 – 49	50 – 59	60 – 69	70 – 79	80 - 89
No. of candidates	3	17	27	23	8	2

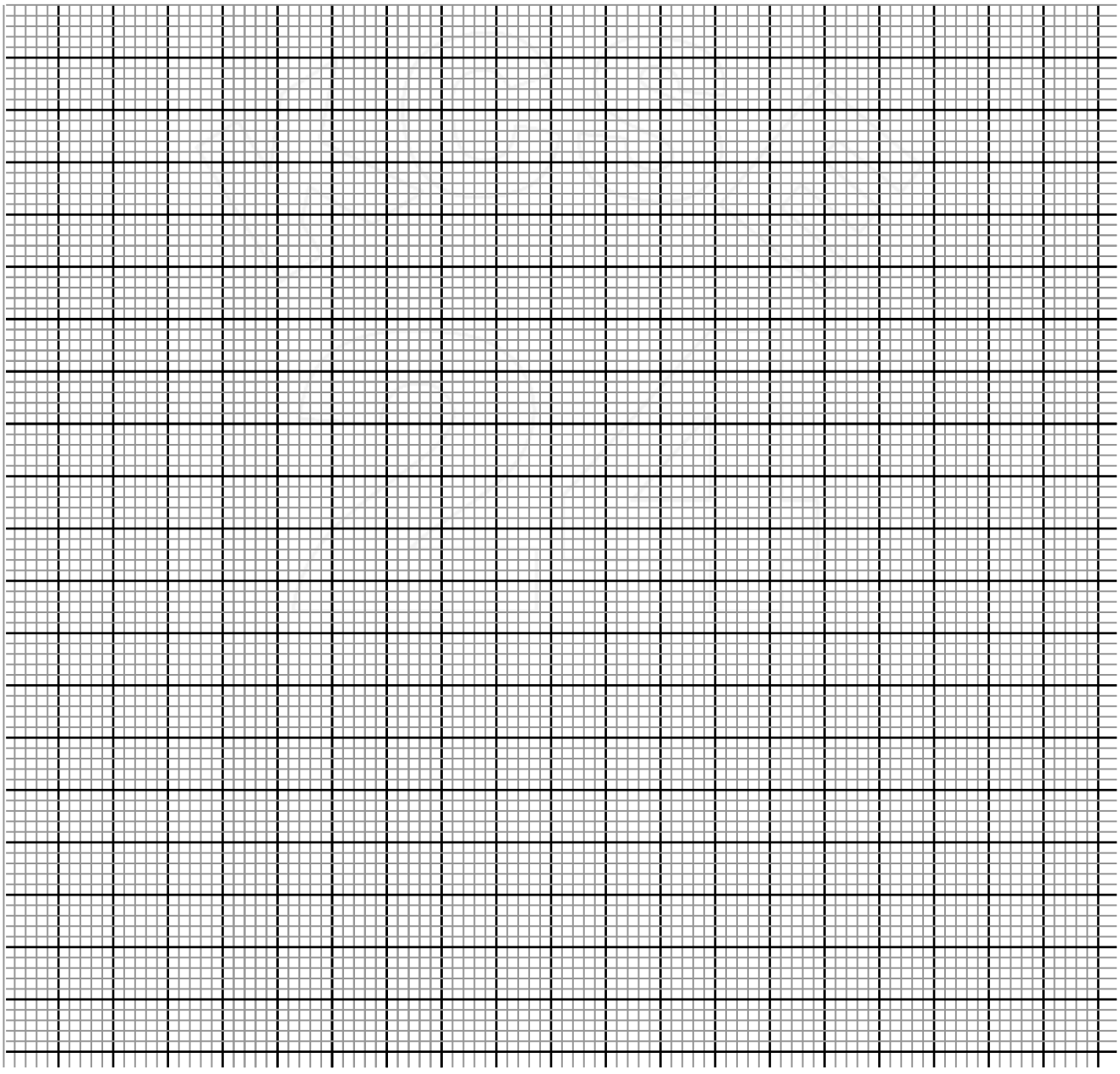
(a) Draw a cumulative frequency curve for the data. **(4mks)**

(b) Use your graph to find

(i) The median **(1mk)**

(ii) Quartile deviation **(3mks)**

(iii) The pass mark if 55 students passed the exam. **(2mks)**



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21. A tank has two inlet taps P and Q and an outlet tap R. When empty, the tank can be filled by tap P alone in 4 ½ hour or by tap Q alone in 3 hours. When full, the tap can be emptied in 2 hours by tap R.

(a) The tank is initially empty. Find how long it would take to fill up the tank.

(i)If tap R is closed and taps P and Q are opened at the same time. **(2mks)**

(ii) If all the three taps are opened at the same time. **(2mks)**

(b) The tank is initially empty and the three taps are opened as follows
P at 8.00 a.m
Q at 8.45 a.m
R at 9.00 a.m

(i) Find the fraction of the tank that would be filled by 9.00 a.m **(3mks)**

(ii) Find the time the tank would be filled up. **(3mks)**

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22. At a rifle contest, the probability of any particular rifle being accurate is $\frac{1}{16}$. A soldier chooses a rifle at random. If the rifle is accurate, the probability of hitting the target is $\frac{4}{5}$. If the rifle is inaccurate the probability of hitting target is $\frac{6}{25}$.

By use of a tree diagram determine the probability that;

(a) The soldier selecting an accurate rifle and hitting the target in the first **shot. (3mks)**

(b) The soldier selecting an inaccurate rifle and hitting the target in the first shot.**(2mks)**

(c) The soldier misses the target in the first shot. **(4mks)**

(d) the soldier gets the target in the first shot. **(1mk)**

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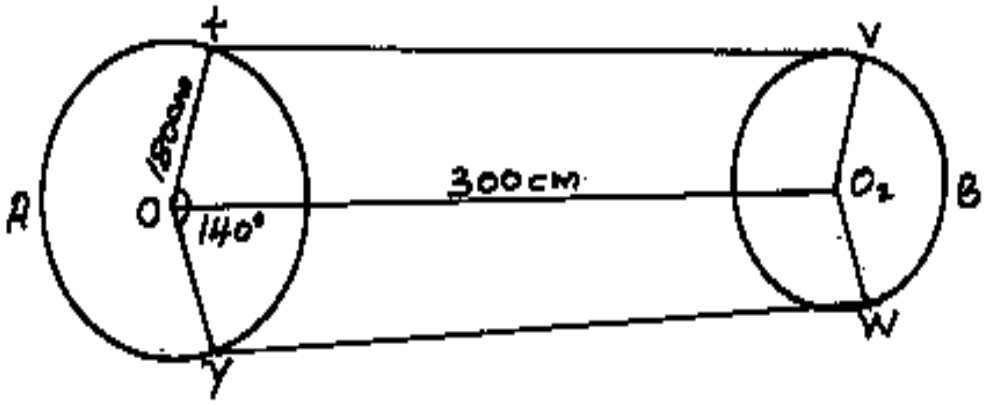
23. The figure below shows a pulley system where a conveyor belt is tied round the two wheels. The radius of the large wheel is 180cm and the distance between the centres of the wheel is 300cm and $\angle XOY = 140^0$



Determine

(a) Length XV **(2mks)**

(b) Length VBW **(3mks)**

(c) Length XAY **(3mks)**

(d) The total length of the conveyor belt **(2mks)**

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24. The vertices of a triangle ABC are A(3,1) B(0,2) and C(2,-1) is $A^1B^1C^1$ the image of ABC under a reflection on the line $y + x = 0$

(a) State the coordinates of $A^1B^1C^1$ hence draw triangles ABC and $A^1B^1C^1$ on the grid provided. **(3mks)**

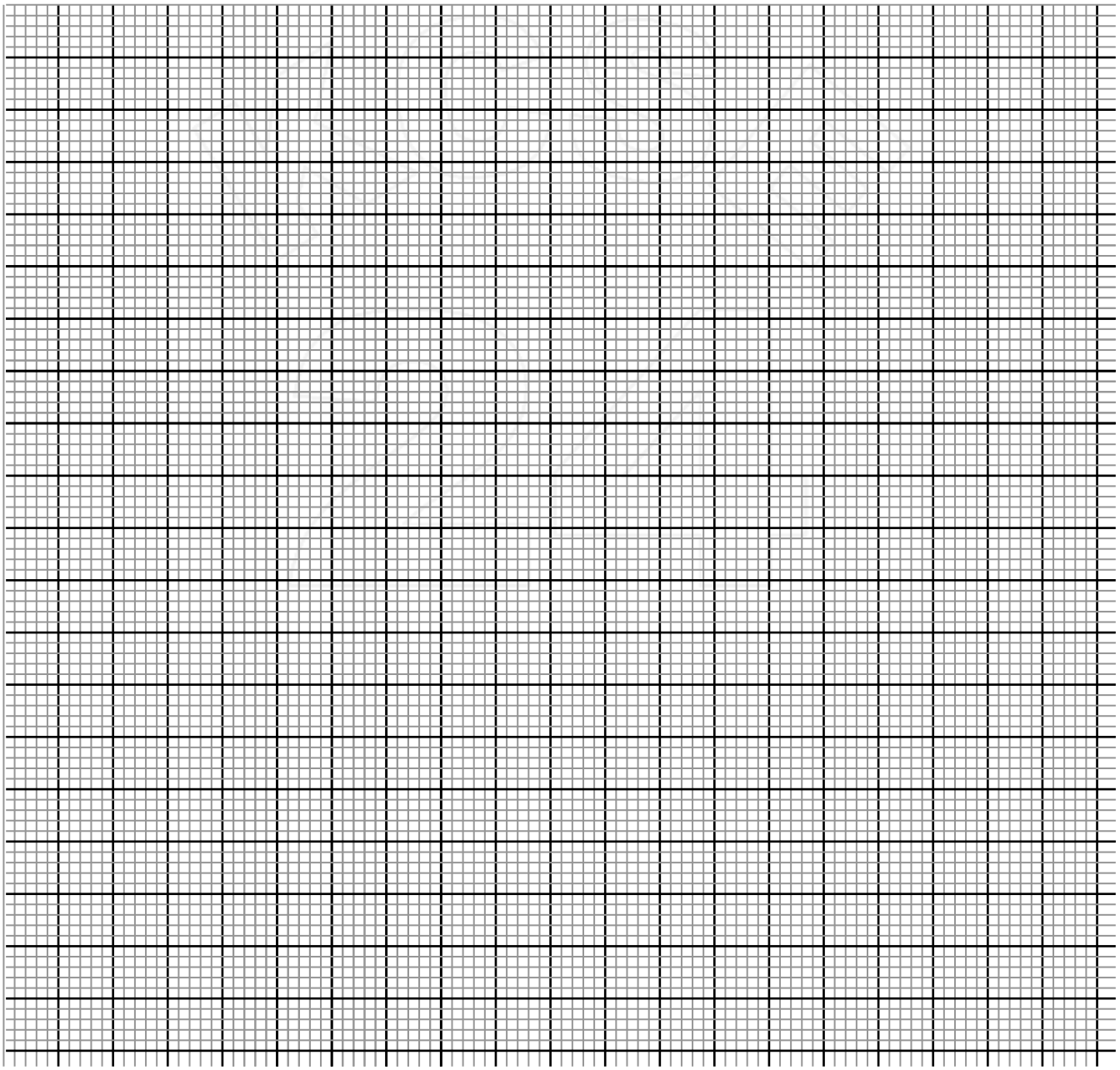
(b) $A^{11}B^{11}C^{11}$ is the image of $A^1B^1C^1$ under positive quarter turn about the origin. Draw $A^{11}B^{11}C^{11}$ and state the coordination of the vertices. **(2mks)**

(c) $A^{111}B^{111}C^{111}$ is the image of $A^{11}B^{11}C^{11}$ under a shear matrix with y axis invariant and linear scale factor 3.

(d) (i)Write down the shear matrix **(1mk)**

(ii) Find the coordinates of the vertices of triangle $A^{111}B^{111}C^{111}$. **(2mks)**

(iii) Find the ratio of area of triangle ABC to that of $A^{111}B^{111}C^{111}$. **(2mks)**



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THE END

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