

KCSE BRIGHT-MIND MOCK

ALL SUBJECTS

Series 1 of the Bright-Mind Mock Examinations for All Schools interested with the Joint Evaluation Test. A Standard KCSE Model Set of Exam Designed by the Mwalimu Consultancy Examiners Panel.

SUBJECTS EXAMINED;

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

SERIES 1

For Marking Schemes

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

MWALIMU CONSULTANCY

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

CHRISTIAN RELIGIOUS EDUCATION

313/1

PAPER 1

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education.

313/1

CHRISTIAN RELIGIOUS EDUCATION

PAPER 1

TIME: 2½ HOURS

INSTRUCTIONS TO CANDIDATES

1. Write your name, school and index number in the spaces provided above.
2. Write the date of examination and sign in the spaces provided above.
3. This paper consists of **six** questions.
4. Answer any **five** questions in the answer booklet provided.

FOR EXAMINER'S USE ONLY

Question	1	2	3	4	5	6	TOTAL SCORE
Candidates Score							

Answer any **five** questions

1. a) **Identify** six books of the Bible refer to as the Apocrypha. **6mks**
- b) **Outline** seven teachings from Genesis creation stories which support equality between man and woman. **7mks**
- c) **State** ways through which the church is spreading the word of God in Kenya. **7mks**
2. a) **Describe** how God prepared the Israelites for the making of Sinai Covenant. **7mks**
- (Exodus 19)
- b) **Give** the four reasons that made the Israelites to break the Covenant while at Mt. Sinai (Ex 32:1-32) **8mks**
- c) **What** do Christians learn about the nature of God from Exodus? **5mks**
3. a) **Identify six** factors which led to widespread of Idolatry in Israel during the time of Prophet Elijah. **6mks**
- b) **Describe** the incident in which Prophet Elijah challenged the Prophets of Baal at Mt. Carmel (1st Kings 18:19-41) **8mks**
- c) **State six** reasons that may influence some Christians to turn away from God today. **6mks**
- 4 a) **State four** differences between Prophets in the Old Testament and Traditional African Communities. **8mks**
- b) **Describe** the call of Amos to become a prophet in Israel. **7mks**
- c) **State five** challenges which leaders in Kenya face in their work. **5mks**
- 5 a) **Describe** the fall of Jerusalem. **8mks**
- b) **Give six** reasons why Nehemiah carried out reforms in Judah. **6mks**
- c) **What** do Christians learn from the renewal of the Covenant by Nehemiah. **6mks**
- 6 a) **Outline** the causes of death in Traditional African Communities. **5mks**
- b) **Explain** the significance of the rituals performed after the death of a person in traditional communities. **8mks**
- c) **List** Seven moral values promoted during funeral ceremonies in Traditional African Communities. **7mks**

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

CHRISTIAN RELIGIOUS EDUCATION

313/2

PAPER 2

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education.

CHRISTIAN RELIGIOUS EDUCATION

PAPER 2

TIME: 2½ HOURS

INSTRUCTIONS TO CANDIDATES

1. Write your name, school and index number in the spaces provided above.
2. Write the date of examination and sign in the spaces provided above.
3. This paper consists of **six** questions.
4. Answer any **five** questions in the answer booklet provided.

FOR EXAMINER'S USE ONLY

Question	1	2	3	4	5	6	TOTAL SCORE
Candidates Score							

Answer any **five** questions

1. (a) Identify the Jewish expectations of a Messiah. (7 marks)
(b) Describe the annunciation of the birth of Jesus Christ by angel Gabriel Lk 1:26-38. (8 marks)
(c) State five ways in which Christians celebrate the birth of a child in Kenya today. (5marks)

2. (a) Explain the significance of the parable of the sower Lk 8:4-15. (7 marks)
(b) Describe the incident when Jesus calmed the storm Lk 8: 22- 25. (7 marks)
(c) **State** lessons learnt about Jesus from His works of compassion. (6 marks)

3. (a) Jesus' teaching on watchfulness and readiness (Luke 12: 35-48) (6 marks)
(b) Identify seven evidences that confirm that Jesus resurrected from death Lk 24:1-50. (7 marks)
(c) State seven lessons Christians learn from the suffering and death of Jesus (7 marks)

- 4 (a) Outline Saint Paul's teaching on Love (1 **Corinthians 13**) (7 marks)
(b)The teachings of Peter concerning the people of God (1st **Peter 2:9-10**) (7 marks)
(c) **Give** six ways through which Christians can promote unity among themselves in Kenya today (6 marks)

5. (a) **Outline** seven Christian teaching on marriage (6 marks)
(b) **Identify** seven Leisure activities common to Christianity and Traditional African Communities (7 marks)
(c) **State** six ways through which Christians in Kenya are helping to reduce child labour in the society (6 marks)

- 6.(a)**List** seven ways in which wealth was acquired in Traditional African Community (7marks)
(b) **Give** six reasons why Christians are opposed to euthanasia (6 marks)
(c) **State** six reasons why Christians in Kenya should vote during the national general election (6marks)

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

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

- 1) This paper consists of **three** sections **A**, **B** and **C**.
- 2) Answer **ALL** the questions in section **A**, **THREE** questions from section **B** and **TWO** questions from Section **C**.
- 3) Answers to **all** the questions **must be** written in the answer booklet provided.
- 4) Candidates should answer the questions in English.

FOR EXAMINER'S USE ONLY

SECTION A	18	19	20	21	22	23	24	TOTAL

SECTION A (25MARKS)

Answer all questions in this section

1. Identify one branch in the study of History and Government of Kenya (1mk)
2. What was the main economic activity of the Cushites in the pre-colonial period? (1mk)
3. State two similarities in the political organization of the Ameru and Abagusii in Kenya during the 19th century (2mks)
4. Identify one way in which the Monsoon winds led to the development of trade between the Kenyan coast and the outside world (1mk)
5. State two functions of Fort Jesus during the Portuguese rule along the Kenyan coast (2mks)
6. Define the term dual citizenship (1mk)
7. Give two categories of human rights (2mks)
8. Give two rules that govern the concept of National justice (2mks)
9. State two terms of Anglo-German-Agreement of 1886 (2mks)
10. Give one reason why the British colonial government encouraged white settlers to come to Kenya (1mk)
11. What was the main reason for the formation of Ukamba Members Association? (1mk)
12. Why was the nomination of Eliud Mathu to the Legco important? (1mk)
13. Name two chambers of parliament under the new constitution (2mks)
14. Name one branch of the police service in Kenya (1mk)
15. Name one superior court in Kenya (1mk)
16. Identify one circumstance that would make a county governor to be removed from office (1mk)
17. State the main function of the National Security Council (1mk)

SECTION B

Answer any three questions from this section

18. a) Why did the Highland Nilotes migrate from their original homeland during the pre-colonial period? (5mks)
- b) Explain five results of the migration and settlement of the Highland Nilotes in Kenya (10mks)

19. a) Give three reasons for the coming of European Christian missionaries to Kenya in the 19th century (3mks)
b) Explain six factors that hindered the work of early Christian missionaries in Kenya (12mks)
20. a) What were the reasons for construction of the Kenya – Uganda railway? (3mks)
b) Explain 6 effects of the construction of Kenya – Uganda railway (12mks)
21. a) Why were Africans opposed to the British colonial rule between 1920 – 1939? (5mks)
b) Explain five methods used by African Nationalists in Kenya in their struggle for independence (10mks)

SECTION C

Answer any two questions from this section

22. a) State three factors that have undermined national unity in Kenya since independence (5mks)
b) Explain five challenges facing the correctional services in Kenya today (10mks)
23. a) Identify three groups of Kenya Defence Forces (KDF) (3mks)
b) Explain 6 functions of the Kenya Defence Forces (12mks)
24. a) Name five survival rights of a child (5mks)
b) Describe five features of the Independence constitution (10mks)

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

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

- 1) This paper consists of **three** sections A, B and C.
- 2) Answer **ALL** the questions in section A, **THREE** questions from section B and **TWO** questions from Section C.
- 3) Answers to **all** the questions **must be** written in the answer booklet provided.
- 4) Candidates should answer the questions in English.

FOR EXAMINER'S USE ONLY

SECTION A	18	19	20	21	22	23	24	TOTAL

SECTION A 25mks

(Answer all questions)

1. Give **Two** unwritten sources of information on History and **Government** (2mks)
2. Give **Two** reasons that made early human beings to live in groups during the stone Age period (2mks)
3. State **Two** ways in which the Sumerians in Mesopotamia reclaimed land for Agriculture (2mks)
4. State **one** theory of origin about the knowledge of iron working in Africa (1mk)
5. State **Two** ways in which Africans participated in the trans-Atlantic Trade (2mks)
6. Give **Two** benefits of the development of the railway transport in Europe during the 19th century (2mks)
7. State **Two** systems of administration used by the Europeans during the colonial period in Africa (2mks)
8. Identify **Two** reasons why early urban centres in ancient Egypt developed along the Nile valley (2mks)
9. Identify **Two** officials who assisted the ruler of the shone to administrate the kingdom (2mks)
10. State **One** characteristic of human **rights** (1mks)
11. State how humanitarian factors influenced the scramble for Africa (1mk)
12. State **One** economic problem that was experienced by British colonialist in **Nigeria** (1mk)
13. Name the political party that led Ghana to independence from British in **1957** (1mk.)
14. Name the country that was blamed for the outbreak of the First World War. (1mk)
15. Identify **One** weapon used during the cold war (1mk)
16. Give **One** function of the court of Justice of the Common Market for Eastern and Southern Africa. (1mk)
17. Name the country in Africa which was created to settle free slaves. (1mk)

SECTION B: 45mks

Answer any 3 questions

- 18a) State **Five** uses of stone tools by the Early man during the pre- colonial period (5mks)
- b) Explain **Five** reasons why Africa is regarded as the original homeland of mankind (10mks)

19a) State Five disadvantages using barter method of trade during the Trans-Saharan trade(5mks)

b) Describe the organisation of the trans-Saharan trade (10mks)

20a) State Five methods which were used by the Europeans to acquire colonies in Africa (5mks)

b) ExplainFive reasons why the Africans were defeated during the Maji Maji rebellion (10mks)

21a) Outline Three reasons why the policy of Assimilation was easily applied in the four communes of Senegal (3mks)

b)ExplainSix effects of the British direct rule in Zimbabwe (12mks)

SECTION C : 30mks

(Answer any two questions)

22a) Give Three reasons why the United States of America (USA) did not join the First World War 1917 (3mks)

b) Explain Six effects of the First World War (12mks)

23a) Describe Three characteristics of the commonwealth member states (3mks)

b) Describe Six achievements of the commonwealth since its formation (12mks)

24a) State Three ways in which the monarch is important in Britain (3mks)

b) Explain Five functions of the House of Lords in Britain (12mks)

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

GEOGRAPHY

312/1

PAPER 1

TIME: 2¾ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education

INSTRUCTIONS:

- a) This paper consists of **two** sections A and B.*
- b) Answer all the questions in section A.*
- c) Answer question **six** and any other **two** questions from section B*
- d) This paper consists of four printed pages. Candidates should check the question paper to ascertain that all the pages are printed and that no questions are missing.*

FOR EXAMINERS USE ONLY

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1-5	25	
B	6	25	
		25	
		25	
TOTAL SCORE			

SECTION A

Answer all questions in section A

1. (a) What is the relationship between geography and mathematics. (2mks)
(b) State **two** reasons why it is important to study geography. (2mks)
2. (a) What is a line of longitude? (2 marks)
(b) What is the local time of Alexandria 30°E when the local time at Malindi 40°E is 12.00 noon? (2 marks)
3. (a) State **three** causes of earth movement (3 marks)
(b) Name **two** main earthquake zones in the world (2 marks)
4. (a) Name **three** features found on emerged highland coast (3 marks)
(b) State **three** conditions necessary for the formation of a spit (3 marks)
5. (a) Highlight any **three** factors that necessitate the occurrence of an artesian basin (3 marks)
(b) Apart from lakes, rivers and sea, name any other **two** sources of underground water (3 marks)

SECTION B

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

6. Study the map of **NYERI 1:50,000(sheet 120/4)** provided and answer the following questions.
 - (a)
 - i) What is the title of the map extract (1 mk)
 - ii) Name two districts covered by the map extract (2 mks)
 - iii) Give three physical features found in grid square 5085 (3 mks)
 - (b)
 - (i) Give the longitudinal extent of the area covered by the map. (2mks)
 - (ii) What is the magnetic declination shown on the map? (2mks)
 - (c)
 - (i) What is the altitude at the peak of Nyeri hill? (2mks)
 - (ii) Give three methods used to represent relief on the map. (3mks)
 - (iii) Measure the length of the dry weather road (Naivasha road) from Tusha welfare centre junction school to the edge of the map towards North Kinangop and Naivasha in kilometres (2mks)
 - (d) **Describe** the drainage of the area covered by the map. (5mks)
 - (e) Citing evidence from the map, identify three social services offered in Mweiga municipality (3mks)

- 7.a)i) Name three types of faults (3mks)
- ii) Apart from compressional forces, explain two other processes that may cause faulting (4mks)
- b) i) **With** the aid of a well labeled diagram, describe how a rift valley is formed by compressional forces (6mks)
- ii) **Explain** three ways in which faulting may influence drainage system (6mks)
- c)**Explain** three ways in which faulting is of significance to human activities (6mks)

8. a) i) What is micro-climate? (2mks)
- ii) **State** two negative effect of desertification (2mks)
- b) Draw a sketch map Africa and indicate the ocean currents.
- i. Benguela, Guinea, Agulhas/ Mozambique (4mks)
- ii. State two effects of Benguela Current on the adjacent coastlands (2mks)
- c) **Describe** the characteristics of the Equatorial type of climate (8mks)
- d) **Explain** how the following factors influence climate:
- i. Altitude (4mks)
- ii. Distance from the sea (3mks)

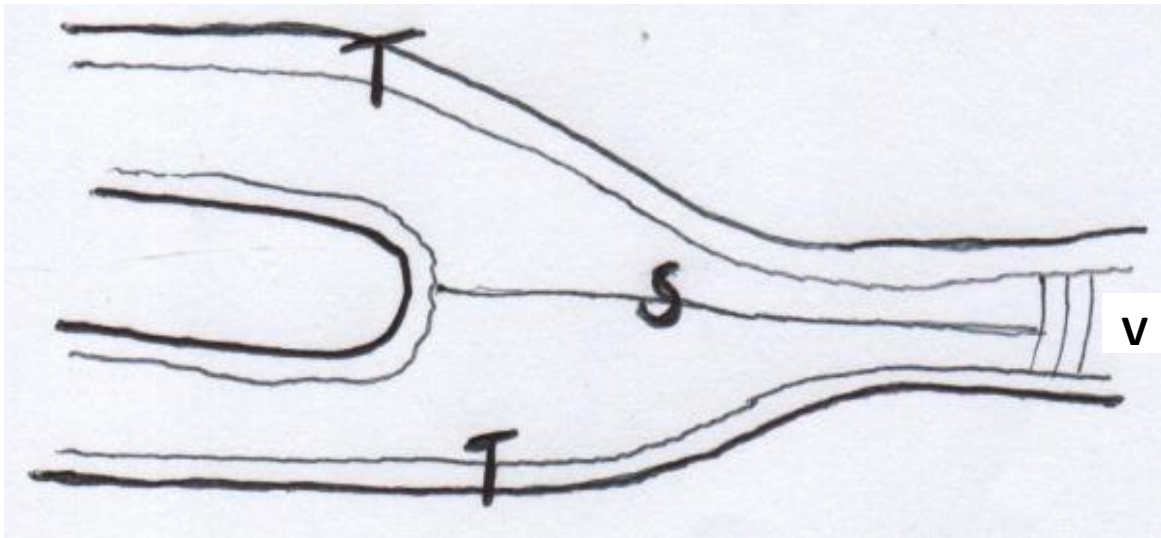
- 9.a) (i) Differentiate between a watershed and a drainage basin (2 marks)
- (ii) **State three** processes of river erosion (3 marks)
- b)(i) **Give three** ways in which river transport its load (3 marks)
- (ii) **State four** factors which influence river deposition (4 marks)
- c) **Give three** characteristics of a river in its middle stage (3 marks)
- d)(i) **Name two** features produced by river rejuvenation. (2 marks)
- (ii) Describe how river capture occur. (4 marks)
- (iii) **Explain two** positive effects of rivers to the human environment (4 marks)

- 10.a)(i) What is an ice sheet? (2 marks)
- (ii) Give **two** reasons why there are no ice sheets in **Kenya** (2 marks)
- (iii) **Explain three** factors that influence the movement of ice from the place of accumulation (6 marks)

b) Describe how an arête is formed

(4 marks)

c) The diagram below shows types of moraines in a valley glacier



(i) Name the type of moraines marked S, T and V

(3 marks)

(ii) Explain four positive effects of glaciations in lowland areas

(8 marks)

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

GEOGRAPHY

312/2

PAPER 2

TIME: 2¾ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education

INSTRUCTIONS TO CANDIDATES

- ❖ This paper has **two** sections: **A** and **B** Answer all questions in section **A**.
- ❖ In Section **B** answer Question **6** **and** any other **TWO** questions.
- ❖ **All** answers **must** be written in the answer booklet provided.

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1 - 5		
6		
7		
8		
9		
10		
TOTAL		

SECTION A

Answer all the questions in this section.

1. a) Give **two** examples of game sanctuaries in Kenya. (2mks)
b) State **three** problems experienced by Kenya in conservation of wildlife. (3mks)
2. a) Name **two** major forest blocks found along the Kenyan Coast. (2mks)
b) State **three** factors contributing to depletion of forests in Kenya. (3mks)
3. a) Outline **two** characteristics of plantation farming in Kenya. (2mks)
b) State **three** physical conditions that favours tea growing in Kenya. (3mks)
4. a) Name **two** minerals that occur as weathered products. (2mks)
b) State **three** uses of soda ash. (3mks)
5. a) State **two** factors which have contributed to decline in infants mortality in Kenya. (2mks)
b) Identify **three** problems resulting from decline in population in industrialized countries. (3mks)

SECTION B

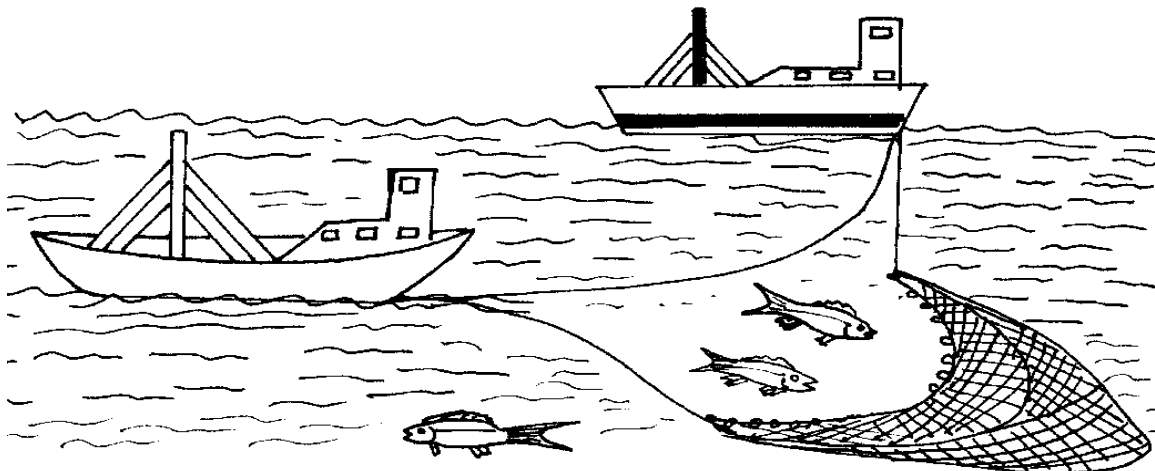
Answer Question 6 and any other two questions.

6. The table below shows total livestock in Kenya in 2007.

<u>Type of Livestock</u>	<u>Number in Millions</u>
Non-Dairy cattle	9.0
Dairy cattle	2.5
Sheep	8.5
Goats	9.5
Pigs	0.5
Total	30.0

- (a) Using a radius of 5cm, **draw** a pie chart to represent the above information (7mks)
- (b) Name **three** pastoralist communities in Kenya (3mks)
 - (i) State **four** characteristics of nomadic pastoralism (4mks)
 - (ii) Explain **four** ways in which the Kenya government assists nomadic pastoralists to improve the quality of their livestock. (8mks)
- (c) State **three** problems facing ranching in the tropical areas. (3mks)

7. (a) (i) Explain **three** conditions that favour irrigation farming in Kenya (6mks)
- (ii) State **five** problems experienced in irrigation farming in Kenya (5mks)
- b) Describe the stages in the reclamation of land from the sea in Netherlands (6mks)
- (c) (i) Apart from irrigation name **two** other methods of land reclamation. (2mks)
- (ii) Explain **three** factors that influenced the location of Perkerra Irrigation Scheme (6mks)
8. (a) (i) Apart from deep shaft mining, name **three** other mining methods (3mks)
- (ii) Describe how deep shaft mining is carried out (6mks)
- (b) Explain **four** ways in which the exploitation of minerals contributes to the economy of Kenya. (8mks)
- (c) (i) What is dereliction? (2mks)
- (ii) State **three** ways that can be used to combat dereliction (3mks)
- (iii) Apart from dereliction state **three** other negative effect of mining. (3mks)
9. a) i) Identify **three** characteristics of pelagic fish. (3mks)
- ii) State **three** reasons why marine fishing is not developed in Kenya. (3mks)
- b) Why should the Government of Kenya encourage fish farming. (4mks)
- c) (i) Identify the fishing method shown below. (1mk)



- (ii) Describe how the above method is used in Lake Victoria (4mks)
- iii) State **two** problems facing fishing in Japan. (2mks)
- d) Explain **four** factors that favour fishing in the Pacific fishing grounds. (8mks)

- 10.a)i)** State **two** advantages of railway transport over road transport (2mks)
- ii)** Describe **two** conditions of Kenyan roads which contribute to road carnage (4mks)
- b) Apart from different railway gauges, give **three** reasons why railway links among African countries are underdeveloped. (3mks)
- c) i)** State **two** physical factors which favour the location of settlements (2mks)
- ii)** Give **two** differences in the functions of New York and Nairobi cities (4mks)
- d) i)** Compare the ports of Mombasa and Rotterdam under the following Headings:
- i)** Transport to the interior (2mks)
 - ii)** The size of the hinterlands (2mks)

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

ENGLISH

101/1

PAPER 1 (*Functional Skills*)

TIME: 2 HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education

INSTRUCTIONS TO CANDIDATES

- a) Answer all the questions in this paper.*
- b) All your answers must be written in the spaces provided in the question paper.*

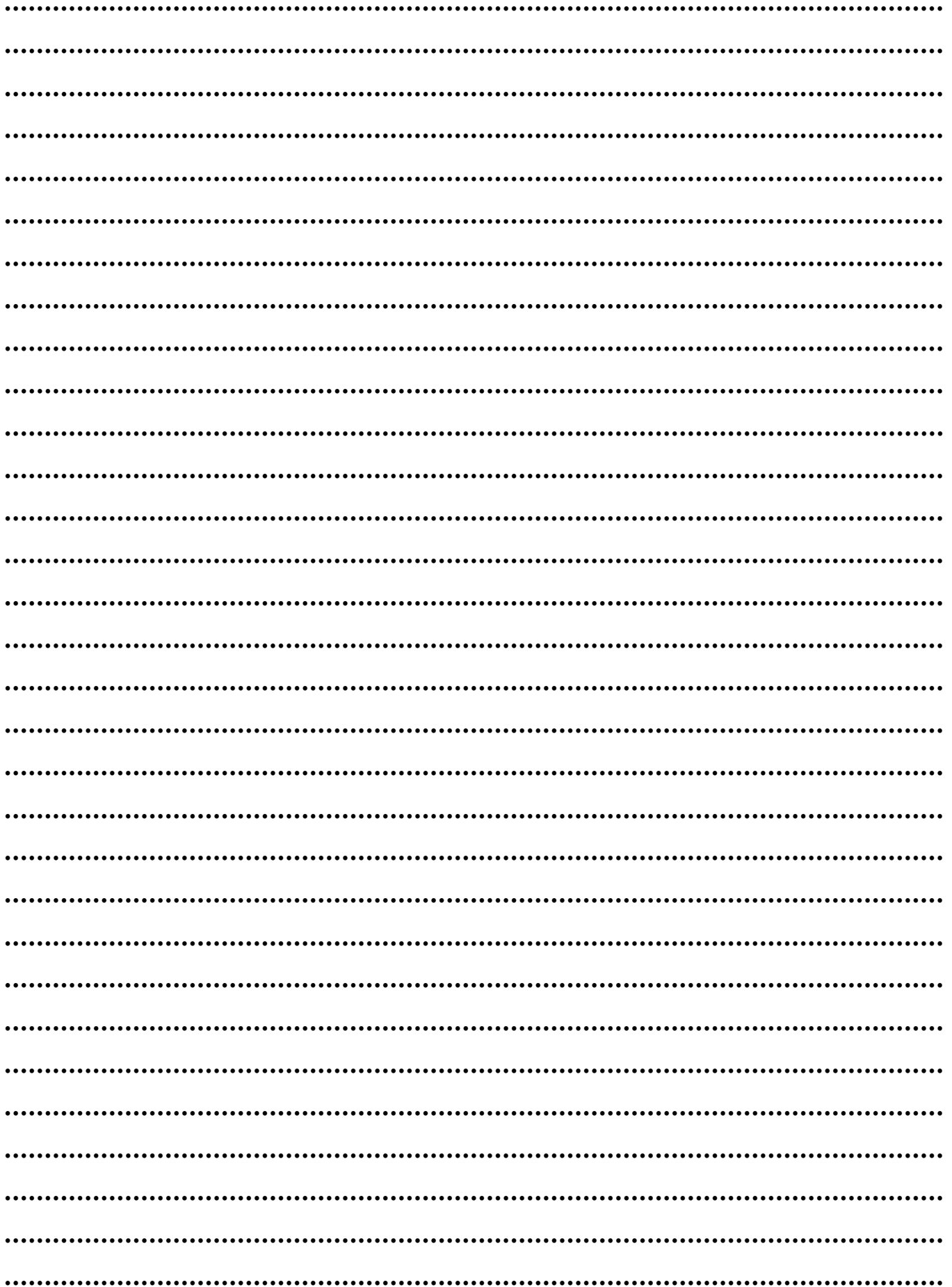
FOR EXAMINER'S USE ONLY

QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
1	20	
2	10	
3	20	
Total Score	60	

Q1.

You are one of the presenters during a four day workshop organised for candidates in ACK schools' in your diocese. You have been tasked to deliver a speech on the synopsis of Blossoms of the Savannah by Henry Ole Kulet. Write down the speech that you will deliver. **(20 marks)**

[illegible]



Q2. Read the passage below and fill in each blank space with the most appropriate word.

(10 marks)

Personal hygiene is very important in everybody's (1) Many people do not understand how to take care of (2) properly. Personal hygiene is the (3) of keeping your body clean and healthy. To (4) with, personal hygiene is important. It is really important (5) take care of yourself, and take (6) of your body.

(7) excellent personal hygiene can make you (8) more confident, and increase your self-esteem because you feel (9) happy and clean. Having good personal hygiene can help a student feel (10) in life for when you feel healthy you are happy.

3 a) Study the following genre and answer the questions that follow.

The prince was theiridol

Though he was enjoying the peas

He was bored and need parrying

The regency took the queue

To enjoy from the generous air,

The kind sun of the kingdom

i) Replace the underlined words with appropriate homophones to bring out the intended literal meaning. **(6mks)**

1.
2.
3.
4.
5.
6.

ii) Suppose this piece had a regular rhyme scheme. State **THREE** effects that this would have achieved. (3mks)

- 1.....
.....
- 2.....
.....
- 3.....
.....

b) You are taking part in a narrative session. Mention **THREE** different ways that are at your disposal in introducing your narrative. (3mks)

1.
.....
2.
.....
3.
.....

c) Using an arrow indicate the correct intonation in the following sentences. (4mks.)

1. Is it over.
2. Who won the election?
3. It's okay, but I won't come.
4. Here comes the bride.

c) State the emotion that will be elicited by each of the following expressions. (4mks.)

Expression Emotion

1. We made it.
2. There is litter all over, someone has got to clean it up.
3. My little toe is bleeding.
4. I will hit you!

A friend of yours was vetted as the best group leader in class. State and explain the qualities that they embodied. (6mks.)

1.
.....
2.
.....
3.
.....

f) Give the appropriate polite responses to the following impolite remarks (4mks)

1) Wow what an awful hair cut you got.

.....
.....

2) I hate you.

.....
.....

3) What a bore you are.

.....
.....

4) I don't want to talk to you.

.....
.....

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

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 details in the spaces provided above.*
- b) Answer all the questions in this paper.*
- c) Answer the questions in English*

EXAMINER'S USE ONLY

QUESTION	MARKS	CANDIDATE'S SCORE
1	20	
2	10	
3	30	
TOTAL	60	

1. COMPREHENSION

Read the passage below and answer the questions that follow:

There are varied opinions as to why real pleasure ought to be. However, this is one view which approaches this **controversial** topic from the positive angle and lays down certain tests which true pleasure must satisfy.

Firstly, no pleasure can be right if its effects on the person who indulges in it are harmful. There are pleasures which can injure a man's body and which, in the end, can have a permanent ill-effect on his health. There are pleasures which can **coarsen** a man's moral fibre and lower his resistance against which is wrong. Any pleasures which leaves a man less physically fit, less mentally alert, less morally sensitive is wrong.

There are obvious instances of this. Excessive use of alcohol lowers a man's power of self-control and **renders** him liable to do things which he would not have done if he had soberly master of himself. The taking of drugs and stimulants can end in leaving a man a physical wreck. **Over indulgence** in eating and drinking can leave a man burden to himself, with his physical fitness seriously impaired. **Promiscuous** sexual relationships can leave a man with the most tragic of disease which will not only ruin his own life, but will be passed on to his children.

One of the simplest tests of pleasure is: What does it do to a man who indulges in it? If it is actively harmful, or even if it has a **built-in risk** in it, it cannot be right.

Secondly, no pleasures can be right if its effect on others is harmful. There are pleasures which can result in the corruption of other people, either physically or morally. To teach others to do wrong, to invite them to do, or to make it easier for them to do so, cannot be right. To take drugs should not be painted as adventurous and free. **An illicit relationship**, similarly, should not be presented as a beautiful friendship. Experiment with things that experience has proved to be disastrous cannot be looked on as the assertion of freedom.

Thirdly, pleasure which becomes an addiction can never be right. One of the old Greeks said that there were only two questions about any pleasure: 'Do I possess it or am I possessed by it?' and 'Do I control it or does it control me?' The minute a man feels that pleasure is **gripping** him in such a way that he cannot do without it, he will be well advised to break it before it breaks him.

Addiction can happen with things like tobacco and alcohol; it can also happen with drugs, so that a man becomes **hooked** on some drugs and thereby become a slave to them. It is better to have nothing to do with pleasure which is liable to become an addiction. It is essential, the moment we become aware of the growing addiction, to stop.

Fourthly, a pleasure is wrong if, to enjoy it, the essentials of life have to take second place. A pleasure should not cost too much, even if it is a good thing in itself. A man may spend on a game time and money which should have gone to his home and family. Anything in life that's gets out of proportion is wrong. Whenever any pleasure **annexes** time and money which should have gone to things and to people in life of even greater importance, then, however fine it is in itself, it is wrong.

N.B "Man" in this passage is used to refer to both man and woman.

Adapted from *Ethics in a Permissive Society*

by Mwalimu Consultancy-0746-222-000

QUESTIONS

a) According to the information given in paragraph two, how can pleasure affect a man? **(3mks)**

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b) What is the author's argument against excessive use of alcohol? **(2mks)**

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c) Apart from alcohol, what other so-called pleasures does the author discuss in paragraph three? **(3mks)**

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d) What is the author's recommended test for **pleasure**? **(1mk)**

.....

.....

e) How does pleasure become harmful to other people? **(3mks)**

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f) Make notes on what test true pleasure must satisfy **(4mks)**

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.....
g) How can pleasure become harmful to a person according to the passage (1mk)

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.....

h) State the author's definition of true pleasure according to the last paragraph (1mk)

.....
.....

i) There are obvious instances of this, (add a question tag) (1mk)

.....
.....

j) How can pleasure become harmful to other people (3mks)

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.....
.....
.....

k) Explain the meaning of the following words and phrases as used in the passage (3mks)

i) Controversial

ii) Over indulgence

iii) Illicit relationship

iv) Renders

2. A DOLLS HOUSE by Henrick Ibsen 25 marks.

Read the excerpt below and answer the questions that follow.

Krogstad: I am not asking your husband for a penny.

Nora: What do you want, then?

Krogstad: I will tell you. I want to rehabilitate myself, Mrs. Helmer; I want to get on; and in that your husband must help me. For the last year and a half, I have not had a hand in anything dishonorable, amid all that time I have been struggling in most restricted circumstances. I was content to work my way up step by step. Now I am turned out and I am not going to be satisfied by merely being taken into favor again. I want to get on, I tell you. I want to get into the bank again, in a higher position. Your husband must make a place for me-

Nora: That he will never do!

Krogstad: He will; I know him; he dare not protest. And as soon as I am in there with him, then you will see! Within a year I shall be the manager's right hand. It will be Nils Krogstad and not Torvald Helmer who manages the Bank.

Nora: That's a thing you will never see!

Krogstad: Do you mean that you will-?

Nora: I have courage enough for it now.

Krogstad: Oh, you can't frighten me. A fine, spoilt lady like you-

Nora: You will see, you will see.

Krogstad: Under the ice, perhaps? Down into the cold, coal-black water? And then, in the spring, to float up to the surface, all horrible and unrecognizable with your hair fallen out –

Nora: You can't frighten me.

Krogstad: Nor you me. People don't do such things, Mrs. Helmer. Besides, what use would it be? I should have him completely in my power all the same.

Nora: Afterwards? When I no longer-----

Krogstad : Have you forgotten that it is I who have the keeping of your reputation? (*Nora stands speechlessly looking at him.*) Well, now, I have warned you. Do not do anything foolish. When Helmer has had my letter; I shall expect a message from him. And be sure you remember that it is your husband himself who has forced me into such ways as this again. I will never forgive him for that. Goodbye, Mrs. Helmer. (*Exit through the hall*)

Nora: (*goes to the hall door, opens it slightly and listens*) He is going. He is not putting the letter in the box. Oh no, no! that's impossible! (*Opens the door by degrees*) What is that? He is standing outside. He is not going downstairs. Is he hesitating? Can he-?
(*A letter drops into the box; then KROGSTAD'S footsteps are heard until they die away as he goes downstairs. NORA utters a stifled cry,*

and runs across the room to the table by the sofa. A short pause)

Nora : In the letter box . (*steals across the hall door*) There it lies-
Torvald , Torvald, there is no hope for us now! (*Mrs Linde comes in
From the room on the left, carrying the dress*)

Mrs. Linde There, I can't see anything more to mend now.
Would you try to try it on-?

Nora : (*in a hoarse whisper*) Christine, come here.

Mrs. Linde : (*throwing the dress down on the sofa*) What is the matter with you?
You look so agitated!

Nora: Come here. Do you see that letter? There, look -you can see it
through the glass in the letter box.

QUESTIONS.

a) Explain why Krogstad visited Nora in the excerpt. (2mks)

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.....

b) i). People don't do such things (provide a question tag) 1mk

.....

.....

ii). I will never forgive him for that (write in reported speech) 1mk

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.....

c) "I want to rehabilitate myself.....?" From the context of the drama, explain what
Krogstad means by this assertion. (3mks)

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d) Discuss the character of Krogstad as brought out in the excerpt. (4mks)

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e) Identify and illustrate any two themes brought out in this excerpt. (4mks)

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f) With clear illustrations, give any two styles found in the excerpt. (4mks)

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.....

g) Why does Krogstad say that he keeps Nora's reputation? (3mks)

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.....

h) What is the content of the letter that Nora fears Krogstad would drop in Helmer's letter box? (3mks)

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3. POETRY 20MKS.

Read the following poem and answer the questions that follow;

MADAM AND HER MADAM

I worked for a woman
She wasn't mean
House to clean
But she had a twelved room
House to clean
Had to get breakfast
Dinner, and supper too
Then take care of her children
When I got through
Wash, iron and scrub
Walk the dog around,
It was too much
Nearly broke me down

I said, madam
Can it be

You are trying to make a
Pack-horse out of me
She opened her mouth
She cried, "oh no!

You know Alberta
I love you so!"
I said "madam,
That may be true-
But I will be dogged
If I loved you.

QUESTIONS.

a) Briefly explain what the poem is about.

(4mks)

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b) Who is the persona in the poem?

(1mk)

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.....

c). **Contrast** the character trait of the persona and that of Madam.

(4mks)

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d). Identify and illustrate the stylistic devices evident in the poem.

(6mks)

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e). Identify and explain one theme evident in the poem.

(2mks)

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f). Comment on the tone of the poem.

(2mks)

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.....

.....

g). Explain the meaning of the following line used in the poem **(1mk)**

“can it be you are trying to make a park-horse out of me?”

.....
.....
.....

4. GRAMMAR (15MKS)

i) Rewrite the following sentences according to the instructions given. **(4mks)**

a) If he comes, he will not be punished

Begin: Unless.....

b) The snail reached the ark only by perseverance .

Begin: Only.....

c) They had just walked out of the building when the bomb went off.

Begin: No sooner.....

d) These books belong to the daughter of our teacher

Begin: These are

ii) Replace the underlined words with phrasal verbs that begin with the words given in the brackets. (3mks)

a) Parents should not yield to their children unreasonable demands. **(give)**

b) The officials cancelled the match because of the heavy rain. **(call)**

c) Disagreeing with his parents was his worst mistake. **(fall)**

iii) Explain the difference in the meaning of the following pair of sentences. (2mks)

a) I only heard the news in brief.

b) I only heard the news briefly

.....

.....

.....

iv) Complete the following sentences using the appropriate form of the word given in the

a) Sophie's mother _____ of Sophie wearing very tight clothes
church. (approve)

b) His _____ cost him his job. (efficient)

c) The _____ of the traveler's was hindered by the poor roads. (mobile)

v) Give the meaning of the idiomatic expression used in the following sentences. (3mks)

i). The long - awaited guests arrived at the eleventh hour.

ii) After thorough revision of the text the teacher told the students 'the ball is in your court.'

iii) After being arrested the thief spilt the beans about their spoil.

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

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	

Answer three questions only

1. IMAGINATIVE COMPOSITION (COMPULSORY)

(20marks)

either

a). Write a composition to illustrate the following proverb: “Honesty is the best policy”

Or

b). Write a composition on the measures the government of Kenya should take in order to ensure peace prevails in the country.

2. THE COMPULSORY SET TEXT

(20marks)

BLOSSOMS OF THE SAVANNAH by Henry Kulet

“Self-interest is a vice that whoever engages in it is bound to fail.” Using Blossoms of the Savannah, write an essay to support this assertion.

3. THE OPTIONAL SET TEXT

(20 marks)

a). The short story ;A Silent Song’s and other stories

Some cultural practices do not add value hence should be done away with. Show the truthfulness of this assertion basing on Eric Ng’maryo's 'Ivory Bangles'.

b). Drama

David Mulwa , Inheritance

“Depriving people of their dignity has far-reaching consequences.” validate this statement with close reference to the play, Inheritance

c). The Novel

An Artist of the Floating World, Kazuo Ishiguro

“Sometimes intentions become part of self-delusion” With close reference from the Novel **Artist of the Floating world**, show the truth of this statement.

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

KISWAHILI

102/1

PAPER 1 (INSHA)

TIME: 1¾ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Hati ya Kuhitimu Cheti cha Sekondari (KCSE)

MAAGIZO

1. Andika insha **mbili**. Insha ya kwanza ni ya **lazima**.
2. Kisha chagua insha moja nyingine kutoka kwa hizo tatu zilizobakia.
3. Kila insha isipungue **maneno 400**
4. Kila insha ina **alama 20**
5. Kila insha **lazima** iandikwe kwa lugha ya Kiswahili.

KWA MATUMIZI YA MTAHINI PEKEE

SWALI	1	2	3	4	JUMLA

MASWALI

1. LAZIMA

Andika hotuba utakayotoa katika mkutano wa vijana uliondaliwa na katibu wa baraza wa mawaziri wa uratibu wa ndani bwana **Profesa Kithure Kindiki** katika kaunti yako ukilalamika madhara ya pombe haramu huku ukipendekeza njia za kukabiliana nayo.

2. Fafanua jinsi ambavyo Elimu huchangia kupata umoja wa kitaifa.

3. Andika insha inayoambatana na methali;-

Mui huwa mwema;-

4. Andika insha itakayo malizika kwa maneno;

“...Nilipogutuka nilikuwa nimezungukwa na aila yangu huku hali ya wasiwasi ikiwa imetanda.”

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

KISWAHILI

102/2

PAPER 2

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Hati ya Kuhitimu Cheti cha Sekondari (KCSE)

MAAGIZO

- (a) Andika jina lako na nambari yako ya mtihani katika nafasi ulizoachiwa hapo juu.
(b) Tia sahihi yako kisha uandike tarehe ya mtihani katika nafasi ulizoachiwa hapo juu.
(c) Jibu maswali yote.
(d) Majibu yote yaandikwe katika nafasi ulizoachiwa katika kijitabu hiki cha maswali.
(e) Majibu yote lazima yaandikwe kwa lugha ya Kiswahili.

KWA MATUMIZI YA MTAHINI PEKEE

SWALI	UPEO	ALAMA
1	15	
2	15	
3	40	
4	10	
Jumla	80	

Soma masimulizi yafuatayo kisha ujibu maswali yanayofuata.

Tuliongozana sote watatu hadi ofisi ya *Hatubagui Publishers*. Njiani Pam aliyenichukulia zawadi, alinichangamkia na kunizungumzia kama kurumbiza. Tim alijitia tabasamu bandia, lakini kainama kama kondoo. Haikosi alibeba mazito moyoni.

Meneja wa uchapishaji wa kampuni hiyo ya uchapishaji alikuwa mwanamme mmoja wa makamo, mwembamba, aliyevalia miwani. Alikuwa hana ubaguzi hasa. Alitupokea kwa mawili-matatu hata kabla ya kutujua sisi nani. Hakuwa na vikwazo vya kumwona. Nilipojitambulisha kwake alionyesha msisimko mkubwa.

“Umemlanda babako kweli kweli, hukumbakisha,” alimaka. “Hamjambo?”

“Mgonjwa, ndio maana amenituma kwako,” nikajibu. “Ataka ajue diwani yake itachapishwa lini? Mbona nyie wachapishaji mnakawia sana na miswada ya watu? Kama muswada ni mbaya hauchapishiki rejeshea mwenyewe haraka.”

“Lo! Hajapokea kifurushi chetu bado?” aliniuliza meneja.

“Kipi?”

“Diwani ya Mzee Sululu tuliichapisha miezi sita iliyopita. Tulimtumia nakala zake sita kwa njia ya posta.”

“Kweli?”

“Basi hajazipata bado?”

“Nimetoka nyumbani siku chache zilizopita na alikuwa bado hajapata chochote.”

“Basi wafanyikazi wa posta wamenyakua kifurushi hicho. Wengi wao ni kama paka waliowekwa kulinda kitoweo. Kawaida yao kudondoa mali za watu, na kuzichelewesha barua kufika.”

Meneja wa uchapishaji alinyanyuka kitini. Akafungua kabati alimotoa nakala sita za diwani ya babangu akazitia kwenye katoni ndogo na kunipa.

“Mpelekee Mzee nakala hizi,” akaniambia.

“Ahsante bwana,” nikamshukuru. “Amesubiri miaka zaidi ya kumi na kitu tangu kuwasilisha muswada wake. Hapana shaka kwamba atafurahi sana. Alikuwa anahofia kupatwa na kifo pasi kukiona kitabu chake kwenye chapa.”

“Na hii hapa nakala yako Bwana mdogo,” alinipa nakala moja ya kitabu hicho.

Kilikuwa na jalada ya binti mrembo na anwani Kero za Mkiwa. Nilishukuru, tukamuaga na kwenda zetu.

Hayawi hayawi huwa. Ndoto ya baba imetimia hatimaye. Furaha yangu kwa kukiona kitabu cha babangu mahabubu kimechapishwa ilihafifisha mengine yaliyonitendekea kutwa hiyo, mabaya na mazuri. Nilitafahari. Niliterema. Nilijitanua kifua. Hatubagui publishers sio kampuni uchwara ya uchapishaji. Ni miongoni mwa mashirika ya uchapishaji vitabu yenye kuheshimika sana nchini. Baba alikuwa kafaulu kutenda kilichowashinda hata baadhi ya wanachuo, licha ya kisomo chake haba. Ari na bidii yake havikwenda bure yao. Subira yake ilikuwa imevuta heri.

Nilikumbuka alivyojiendeleza mwenyewe kimasomo baada ya ya kuhitimu elimu ya ngumbaru. Nikafikia hitimisho kuwa nia ni nguzo muhimu katika maisha ya binadamu; humkokota mtu ikamfikisha kusikotarajiwa katu.

MASWALI

a) Linganua hasia za marafiki za msimulizi walipokuwa njiani. **(Alama 2)**

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b) Meneja wa Hatubagui Publishers ni mtu mbaraza. Toa ushahidi kifunguni. **(Alama 3)**

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c) Kifungu hiki kinaonyesha hali kadha za kutamausha. Thibitisha. **(Alama 3)**

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d) Kwa kumrejelea Mzee Sululu, tetea kauli “...nia ni nguzo muhimu...humkokota mtu ikamfikisha...” **(Alama 2)**

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.....

e) Tambua mbinu zozote tatu za lugha zilizotumika kifunguni. **(Alama 3)**

.....

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.....

.....

f) Fafanua maana ya vifungu hivi kama vilivyotumika kwenye masimulizi. (Alama 2)

i. Haikosi alibeba mazito moyoni

.....

ii. Ni paka waliowekwa kulinda kitoweo

.....

2. UFUPISHO

(ALAMA 15)

Soma kifungu kifuatacho kisha ujibu maswali

Je, mtazamo hasi ni nini? Huwa na athari gani kwa binadamu? Mtazamo hasi ni kukata tamaa, kutamauka kuhusu hali, mtu au jambo fulani. Ni hisia ya kutotaka kushiriki wala kuhusishwa na jambo au hali fulani. Mtazamo huu ndio huwafanya wanafunzi 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 siku iliyotangulia na asilimia 80 ya fikra hizi zilizorudiwa huwa hasi. Isioshe, fikra hizi nyingi hutokea bila mtu mwenyewe kutambua na huwa ni mazoea. Hii ina maana kwamba watu wengi hawana ufahamu wa atahri za fikra hizi maishani mwao.

Mitazamo hasi ina vyanzo na pia suluhu. Mwanzo kabisa ni imani potovu. Hiki ndicho chanzo cha mitazamo 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 kulithamini kila tukio maishani kama tukio huru; lisilo na uhusino na yaliyowahi kukutamausha.

Kujikwamua kutoka katika imani duni unahitaji kuibuka na idadi kubwa ya imani chanya kuliko zilizo hasi kuhusu hali mahususi. 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 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 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 kukukatiza 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 kuyaozoea hata ukafikiri huwezi kuyabadilisha. Kadri unavyohisi huna uwezo wa 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 kukubakishia kuyabadilisha mazingira yako. Unapojikuta ukilalamika jinsi ulivyokerwa na hali fulani, hii ndiyo sababu ya kuwa na mtazamo hasi kuhusu hali hizo. Inaweza kukuwia vigumu kulikubali hili lakini kadiri utakavyolikubali mapema ndivyo utayaboresha maisha yako mapema. Kulalamika tu kutakudunisha katika hali zisizokuridhisha. Kwa hivyo ili uyabadilishe maisha yako, sharti ukome kulalamika tu kuanza kujikwamua toka kwenye hali hizo. 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 huwa chanya. Kwa jinsi hii utayabadilisha maisha yako yawe ya kuridhisha zaidi na kuwa kielelezo kwa wengi waliotamaushwa na mitazamo hasi.

MASWALI

a) Fupisha aya ya kwanza na ya pili kwa maneno 60. (utiririko 1)

(alama 5)

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b) Eleza namna ya kukabiliana na mitazamo hasi kwa maneno 80. (utiririko 1)

(alama 8)

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3. MATUMIZI YA LUGHA (ALAMA 40)

(a) Andika sauti zenye sifa zifuatazo: **(alama 1)**

(i) irabu ya juu, viringe

.....

(ii) king'ong'o cha kaakaa gumu

.....

(b) (i) Eleza maana ya sauti mwambatano. **(alama 1)**

.....

.....

(ii) Andika sauti mwambatano zinayotamkwa katika midomo. **(alama 1)**

(c) Andika neno lenye mofimu zifuatazo: kikanushi cha nafsi ya kwanza umoja, kikanushi cha wakati uliopita, yambwa, mzizi, kauli tendea, kauli tenda.

.....

.....

(d) Onyesha aina za nomino katika sentensi ifuatayo: **(alama 2)**

Uadilifu wa wanafunzi hao uliwapendeza wakurugenzi wa Shule ya Tumaini.

.....

.....

.....

(e) Tumia kielezi cha idadi kamili badala ya kile kilichopigwa mstari. **(alama 1)**

Wazalendo huimba mara kwa mara.

.....

.....

(f) Andika katika wingi **(alama 2)**

Mwanafunzi huyu alinunua uzi ambao nitautumia kushona.

.....

.....

(g) Ainisha vishazi katika sentensi ifuatayo **(alama 3)**

Ijapokuwa Sikitu aliwahonga Wanatomoko, alishindwa katika uchaguzi uliofanyika juzi.

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(h) Eleza matumizi ya viambishi vilivyopigiwa mstari katika sentensi ifuatayo. **(alama 3)**

Huyu ndiye mkimbiaji aliyeksifu uwanjani.

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.....

(i) Tumia kitenzi ‘la’ kama nomino katika sentensi. **(alama 1)**

.....

.....

(j) Changanua sentensi ifuatayo kwa njia ya mstari.

(alama 3)

Unga uliomwagika sakafuni umefagiliwa na Jerotich.

.....

.....

.....

.....

.....

.....

(k) Tofautisha maana:

(alama 2)

(i) Ningepiga kura ningekuchagua.

.....

.....

(ii) Ningalipiga kura ningalikuchagua.

.....

.....

(l) Tunga sentensi moja kutofautisha maana ya **futa** na **vuta**.

(alama 2)

.....

.....

(m) Tunga sentensi mbili kubainisha maana mbili za neno: **koo**

(alama 2)

.....

.....

.....

(n) Andika katika msemu wa taarifa

“Nitaenda mahakamani kesho kukushtaki kwa kuniibia ng’ombe wangu,” Yama alimwambia
Birirei.

(alama 3)

.....

.....

.....

.....

(o) Tunga sentensi kuonyesha matumizi ya vitenzi katika jinsi iliyo mabanoni. **(alama 2)**

(i) toa (kutendesha)

.....

.....

(ii) cha (kutendeka)

.....

.....

(p) Huku ukitoa mifano mwafaka, eleza miundo ya majina katika ngeli ya Li-Ya. **(alama 2)**

.....

.....

.....

(q) Kanusha **(alama 1)**

Kucheza kwake kulimkasirisha Kapaloti.

.....

(r) Sahihisha sentensi ifuatayo **(alama 1)**

Furaha zao zilibainika walipokiona kiziwi akituzwa.

.....

.....

(s) Andika sentensi ifuatayo katika hali ya udogo **(alama 2)**

Miguu yake ilimuuma alipokuwa akibeba mlango huo.

.....

(t) Unganisha sentensi zifuatazo ili kuunda sentensi changamano **(alama 1)**

(i) Mwangeka alifiwa na mkewe.

(ii) Mwangeka alimuoa Apondi.

.....

.....

(u) Andika sentensi ifuatayo kama ulivyoshauriwa.
Mwanafunzi ambaye hana kitabu hataweza kusoma.
Anza kwa: Kusoma...

(alama 1)

.....
.....

(v) Bainisha silabi zinazowekwa shadda katika maneno yafuatayo

(alama 1)

(i) angalia

.....
.....

(ii) mwananchi

.....
.....

(w) Bainisha kiima na yambwa katika sentensi ifuatayo.

(alama 2)

Huyu mzee alimnunulia Karori zawadi nyingi.

.....
.....
.....

4. ISIMU-JAMII (ALAMA 10)

(a) Fafanua jinsi kanuni zifuatazo zinavyoathiri matumizi ya lugha katika jamii. **(alama 4)**

(i) Hali

.....
.....
.....

(ii) Uhusiano

.....
.....
.....

(iii) Lugha azijuazo mtu

.....

.....

.....

(iv) Jinsia

.....

.....

.....

(b) Ukiwa shuleni ulipata nafasi ya kumsikiliza mtaalamu wa masuala ya vijana kuhusu maadili ya jamii. Ni mambo gani ambayo ungezingatia ili kuupata ujumbe wake barabara? **(alama 6)**

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KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

KISWAHILI

102/3

PAPER 3

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Hati Ya Kuhitimu Kisomo Cha Sekondari (K.C.S.E)

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	

1. SEHEMU YA A: FASIHI SIMULIZI

Soma utungo ufuatao kasha ujibu maswali yanayofuata.

Nilipokukopoa,
Cheko la mwivu wangu lilipaa sana
Ukewenza ukamshawishi kuchukua buruji kueneza habari.
“Njoooni mwone jana la ajabu.”
“Hajawahi kuonekana kama huyu
Tangu kuumbwa kwa ulimwengu.”
Ndivyo walisema walokubeza
Kijiji kizima kilimiminika mwangu nyumbani
Kuyatuma maozi kukutazama weye
Uso na thamani walikwona,
Wakaupa unyonge moyo wangu toto,
Wakanituma kuola viungo vyako
Wakanitanabahisha upungufu ulokulemaza!
Chozi chungu likapukitika
Likalovya change kidari
Likalovya chaoko kipaji
Tabasamu ukatoa kunihakikishia
“Mimi si mjalana!
Katu sivyo wasemavyo walimwengu!”
Neno lako hili likanipa tulivu
Nikaamua alakulihali kupambana na yangu jumuiya
Ilpema kwa moja kauli utokomezwe, chakani utupwe.
Tazameni mahasidi mloteke
Teko la dharau mlonimwaiya
Mkanitia ukiwa usomithilika!
Oleni! Tungeni macho!
Mwana mliaoambaa ukoma
<lomwinga ja nyuni wala mtama, tazameni
Mekuwa malaika, anowaauni
Kiguru mlomtajia hakimzuwii kufuma mishale!
Maadui wamwonapo hutetema kama jani
Mefagia vijiji vinane kwa pigo moja la kiganja chake
Mepigana vita visohisabika
Na Wetu mahasimu waliotupoka na mifugo.

Jamii yetu sasa metawala kote
Umekuwa nahodha mwenye kubwa saburi
Akili yako nyepesi sumaku kweli kweli

Hupakata yote ya neema na shwari
Mwili wako japo lemavu,
Mesheheni nguvu za majagina mia moja!
Naposhika zana, maadui elfu huanguka!
Umeifaa jamii hii, ilotaka kuangamiza
Majagina wote, wakusujudia
Walokufurusha wamebaki hizika
Watukuka ewe shibli
Mfano wa Shaka Zulu
Alowayeyusha kama barafu.

Limwengu mzima wakujua, mwana
Alozawa kishika mkuki
Ulosema na miungu, alfajiri lipoukumbatia ulimwengu
Wla mwana jihadhari usaliti wao waja
Wasije kutosi lindini kwa nduli kukukabidhi.

MASWALI

- a) Ainisha utungo huu kimuundo na kimaudhui. (ala. 2)
- b) Eleza sifa tatu za mighani ambazo zinajitokeza katika utungo huu. (ala.6)
- c) Jadili fani katika wimbo huu. (ala.5)
- d) Jadili sifa za jamii iliyoizaa kazi hii. (ala. 2)
- e) Ni nani anayimba wimbo huu (nafsineni)? (ala.1)
- f) Eleza **tofauti 4** kati ya mighani na visasili (ala.4)

SEHEMU YA B: CHOZI LA HERI

Jibu swali la 2 au 3.

- 2. Fafanua jinsi riwaya ya chozi la Heri ililenga kuiadilisha **jamii**. (ala. 20)
- 3. Usalama ni mojawapo ya mahitaji ya kibinadamu, kwa hakika, tunaweza kusema kuwa usalama ni mojawapo ya mahitaji ya kimsingi. Bila usalama binadamu hawezi hata kushiriki shughuli.....”
- a) Eleza muktadha wa dondoo hili (ala.4)
- b) Eleza umuhimu wa mzungumzaji katika kujenga ploti (ala.8)
- c) Mzungumzaji anazungumzia swala la usalama. Jadili matokeo ya ukosefu wa usalama ukirejelea matukio katika riwaya ya Chozi la Heri. (ala.8)

SEHEMU C: TAMTHILIA YA BEMBEA YA MAISHA

Jibu swali la 4 au 5

- 4. *Teknolojia na maendeleo ni baadhi ya mabadaliko ya lazima katika jamii ya Afrika.* Jadili ukweli wa kauli hii kwa kurejelea tamthilia ya **Bembea ya Maisha**.

(alama20)

5. Elimu ni mafundisho muhimu yanayotolewa katika jamii. Jadili kwa kurejelea tamthilia ya *Bembea ya maisha*.

(alama20)

SEHEMU YA D: HADITHI FUPI, MAPAMBAZUKO YA MACHWEO

Jibu swali la 6 au 7

6. *...iwapo penzi hili litatia doa, basi nirudishie mfuko huu kama ishara ya kulitupa penzi langu kama jongoo na mti wake...* "

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

b) Fafanua mbinu mbili ambazo zimetumika katika dondoo hili.

(alama 4)

c) Eleza sifa sita za msemaji wa maneno haya.

(alama

6)

d) Eleza umuhimu wa msemewa wa hadithi hii katika kujenga ploti.

(alama 6)

7. Kwa kurejelea hadithi zifuatazo, jadili maudhui ya **nafasi ya vijana** katika jamii.

(alama 20)

i. Toba ya kalia

ii. Ahadi ni deni iii.

iii. Nilitamani

iv. Pupa

SEHEMU YA E: USHAIRI

8. Soma shairi lifuatalo kisha ujibu maswali yaliyofuata.

1. Jambo lolote ni nia, kuweka yako azima,

Hasa ukikusudia, kulepuka la lawama,

Mola takusaidia, kila la ovu kuzama,

Ukiitaka salama, jua hasira hasara.

2. Hakika si masikhara, wa kale waliyosema,

Ni maneno ya busara, tena ni wasia mwema,

Kuwa hasira hasara, ghadhabu zisizokoma,

Ukiitaka salama, jua hasira hasara.

3. Mja katu haitaki, hasira kuziandama,

Punguza zako hamaki, moyo uwe na huruma,

Kwani zikizidi chuki, hapo huja uhasama,

Ukiitaka salama, jua hasira hasara.

4. Na uhasama ujapo, uadui kukwegema,
Hapo ndipo upatapo, kukufikia zahama,
Mwisho ndipo ujutapo, ikabaki kulalama,
Ukiitaka salama, jua hasira hasara.

5. La usawa sinyamai, kukweleza ni lazima
Chuki nyingi hazifai, hebu tuliza mtima,
Waweza tupa uhai, au nyingi darahima,
Ukiitaka salama, jua hasira hasara.

6. Upunguze wako mori, mwana na mtu mzima,
Upoze moyo wa hari, hasira zipate hama,
Subira huvuta heri, ikaleta na neema,
Ukiitaka salama, jua hasira hasara.

7. Kifaya nilipofika, hapa ndiyo kaditama,
Sahibu wasia shika, hasira si kitu chema,
Mtegemee Rabuka, atakulinda Karima,
Ukiitaka salama, jua hasira hasara.

MASWALI

- a) Toa anwani mwafaka kwa shairi hili. (Al. 1)
- b) Ainisha shairi hili kwa kuzingatia:- (Al. 4)
 - i) Mishororo
 - ii) Vipande
- c) Fafanua umbo la shairi hili. (Al. 4)
- d) Dhihirisha matumizi ya idhini ya mshairi katika shairi hili. (Al. 3)
- e) Andika ubeti wa sita kwa lugha tutumbi. (Al. 3)
- f) Eleza toni ya shairi hili. (Al. 2)
- g) Ni nani nafsineni katika shairi hili? Eleza (Al. 1)
- h) Fafanua msamiati ufuatao kama ulivyotumika shairini. (Al. 2)
 - i) Mtima
 - ii) Darahima

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

AGRICULTURE

443/1

PAPER 1

TIME: 2 HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education

INSTRUCTIONS TO CANDIDATES

- a) Write your name and Index Number in the spaces provided above.*
- b) Sign and write the date of examination in the space provided above*
- c) This paper consists of THREE sections A, B and C.*
- d) Answer ALL the questions in section in sections A and B.*
- e) Answer any two questions from section C.*
- f) All answers should be written in the spaces provided.*

FOR EXAMINER'S USE ONLY

SECTION	QUESTION	MAXIMUM	CANDIDATES SCORE
A	1-19	30	
B	20-24	20	
C	25	20	
	26	20	
	27		

SECTION A (20MARKS)

Answer all questions in this section in the spaces provided

1. Differentiate between organic farming and agroforestry (2mks)

.....

.....

.....

2. Name **four** types of farm records kept by poultry farmers (2mks)

.....

.....

.....

.....

3. State **three** benefits of a land title deed to a farmer (1½mks)

.....

.....

.....

4. State **two** advantages of tractor hire services (1mk)

.....

.....

5. State **four** factors considered in timing of planting (2mks)

.....

.....

.....

.....

6. State **four** reasons for staking in tomatoes (2mks)

.....

.....

.....

.....

7. Outline roles of mulching in soil and water conservation (2mks)

.....

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8. Give **four** functions of the Pyrethrum Board of Kenya (2mks)

.....

.....

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.....

.....

9. State **four** advantages of zero grazing (stall feeding) (2mks)

.....

.....

.....

.....

10. Differentiate between Gross Domestic Product (GDP) and Per Capital income (2mks)

.....

.....

.....

.....

.....

11. Name **three** chemicals added to water during the water treatment process (1½mks)

.....

.....

.....

12. State **four** characteristics of sandy soils (2mks)

.....

.....

.....

.....

13. State **four** factors considered when selecting a site for a nursery bed. (2mks)

.....

.....

.....

.....

14. Give **four** pieces of information contained in an invoice (2mks)

.....

.....

.....

.....

15. State **four** physical measures of controlling crop pests (2mks)

.....

.....

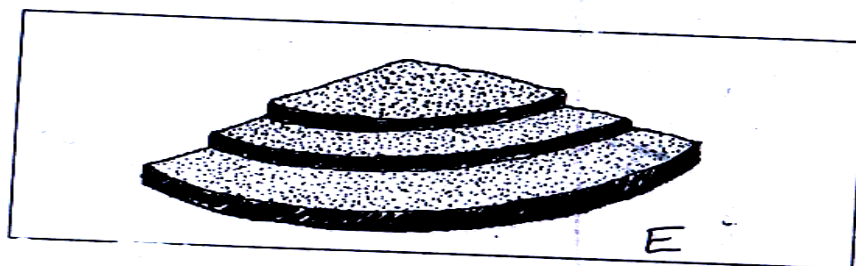
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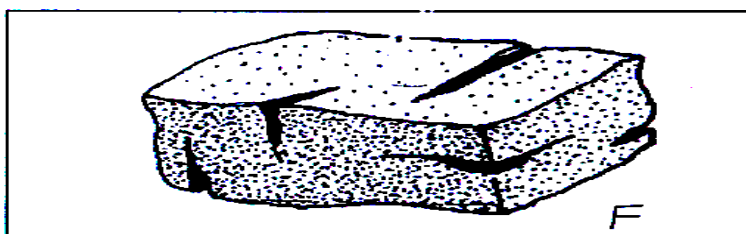
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SECTION B (20 MARKS)

Answer all questions in this section in the spaces provided

16. The diagrams below show various types of soil structure.





a. Name the soil structure labeled E and F

(2mks)

E

F

b. State **two** ways how soil structure influences crop production

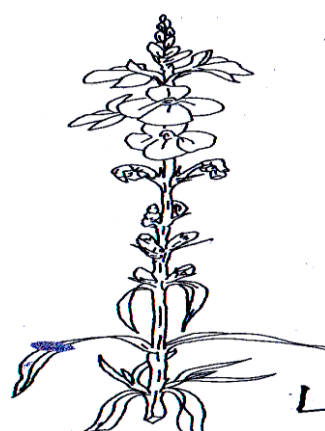
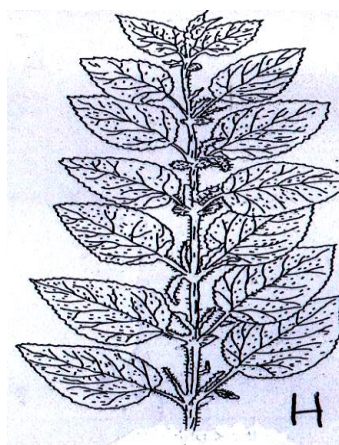
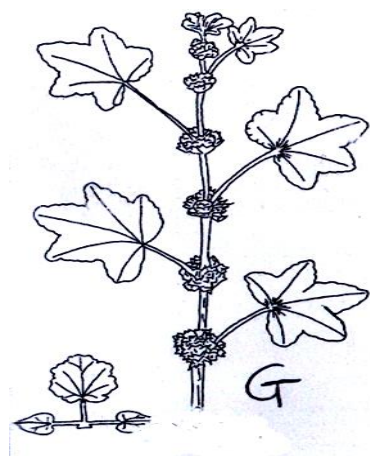
(2mks)

.....

.....

.....

17. The diagram below show common weeds on the farm.



a. Identify the weeds labeled G, H and L

(3mks)

G

H.....

L.....

b. How does the weed labeled H affect labour productivity?

.....

.....

.....

18. The diagrams below show a common organic practice in agriculture



a. Name the methods of pruning labeled M and N

(2mks)

M.....

N.....

b. Name the tool being used in P above

(1mk)

.....

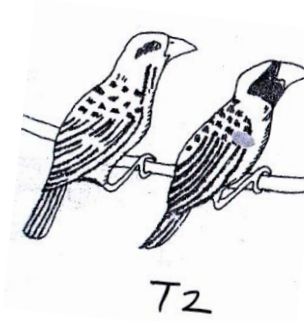
c. Name **two** crops where pruning method M is applied

(1mk)

.....

.....

19. The diagram below shows common crop pests



a. Name the pests labeled T₂ and T₃ (2mks)

T₂

T₃.....

b. State **one** damage caused by pest labeled T₁ (1mk)

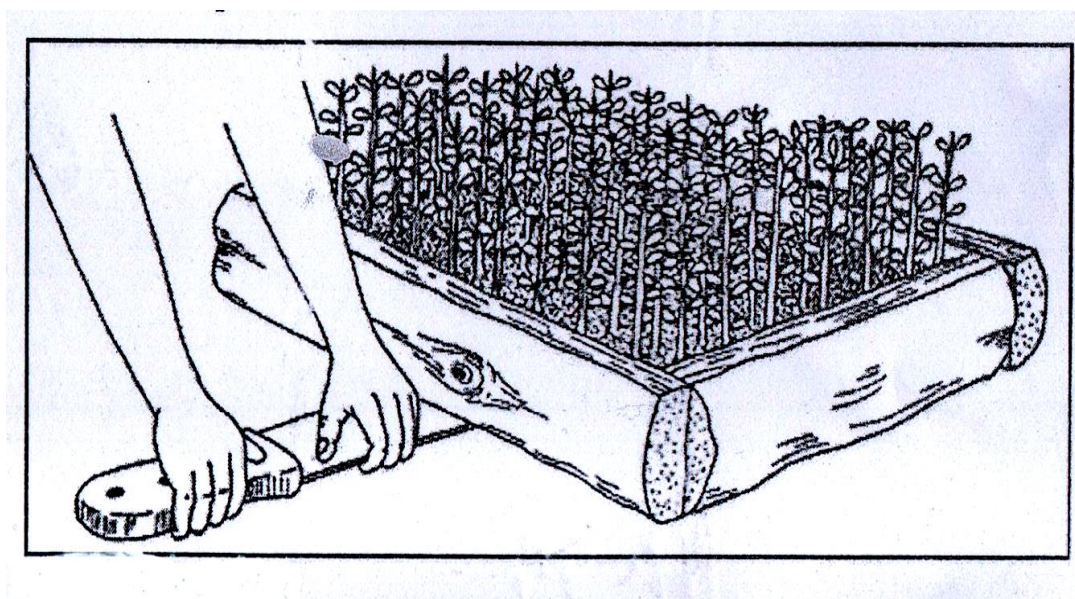
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c. State **two** effective methods used to control the pest labeled T₂ (1mk)

.....

.....

20. The diagram below shows a practice carried out in agroforestry.



(a) Name the practice (1mks)

.....

(b) State **two** benefits of the above named practice (2mks)

.....

.....

(c) State **one** advantage of raising seedlings in polythene sleeves (1mk)

.....

.....

SECTION C

Answer any two questions in this section in the spaces provided after question 23

21. (a) State and explain **four** methods of fertilizer application (8mks)
 (b) Outline **four** advantages of row planting (4mks)
 (c) State and explain the importance of crop rotation (8mks)
22. (a) State and explain **four** factors influencing soil erosion (8mks)
 (b) Outline the roles of trees in soil and water conservation (4mks)
 (c) Outline the advantages of using herbicides in weed control (8 mks)
23. (a) State the reasons for carrying out minimum tillage (6mks)
 (b) Outline the reasons why budgeting is important (6mks)
 (c) state and explain **four** factors influencing the supply of a commodity (8mks)

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

AGRICULTURE

443/2

PAPER 2

TIME: 2 HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education

INSTRUCTIONS TO CANDIDATES

- a) Write your name, school and index number in the spaces provided above*
- b) Sign and write the date of examination in the spaces provided above.*
- c) This paper consists of **three** sections **A,B** and **C***
- d) Answer **All** the question in section **A** and **B***
- e) Answer **ANY TWO** questions in section **C***
- f) All answers should be written in the space provided in the question paper.*

FOR EXAMINER'S USE ONLY

Section	Question	Maximum	Candidate's score
A	1-17	30	
B	18-21	20	
C		20	
		20	
	TOTAL SCORE	90	

SECTION A [30 MARKS]

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

1. Name two dairy breeds of goats.

[2marks]

.....

.....

2. Give four characteristics of clean and high quality milk.

[2marks]

.....

.....

.....

.....

3. Name two classes of livestock feedstuff.

[1mark]

.....

.....

4. Give three systems of out breeding.

[1.5marks]

.....

.....

.....

5. Give the pathogens that cause the following livestock diseases .

[a] Anthrax

[0.5marks]

.....

[b] Gumboro

[0.5marks]

.....

6. State two reasons for hoof trimming in livestock.

[1mark]

.....

.....

.....

7. Give four symptoms of Newcastle disease. [2marks]

.....

.....

.....

.....

8. State four reasons why bees swarming (2mks)

.....

.....

.....

.....

9. Give four pre disposing factors of mastitis in dairy cows. [2marks]

.....

.....

.....

.....

10. State four routine management practices carried out on a replacement stock that is a heifer. [2marks]

.....

.....

.....

.....

11. Outline two control measures of roundworms. [1mark]

.....

.....

.....

12. Give two methods of selection. [1mark]

.....

.....

13. [a] Name a pig breed that is purely black with a long back and drooping ears . [0.5mark]

.....

[b] Name four materials collected by bees. [2marks]

.....

.....

.....

.....

14. State four mechanical methods of controlling ticks. [2marks]

.....

.....

.....

.....

15. Give two roles of ovaries in a cow’s reproductive system. [1mark]

.....

.....

16. State four importance of identification in livestock. [2marks]

.....

.....

.....

.....

17. Give two roles of a bee drone. [1 mark]

.....

.....

18. State four management practices carried out in a deep litter system of poultry keeping.

[2marks]

.....

.....

.....

.....

19. Name two functions of lubrication system.

[1mark]

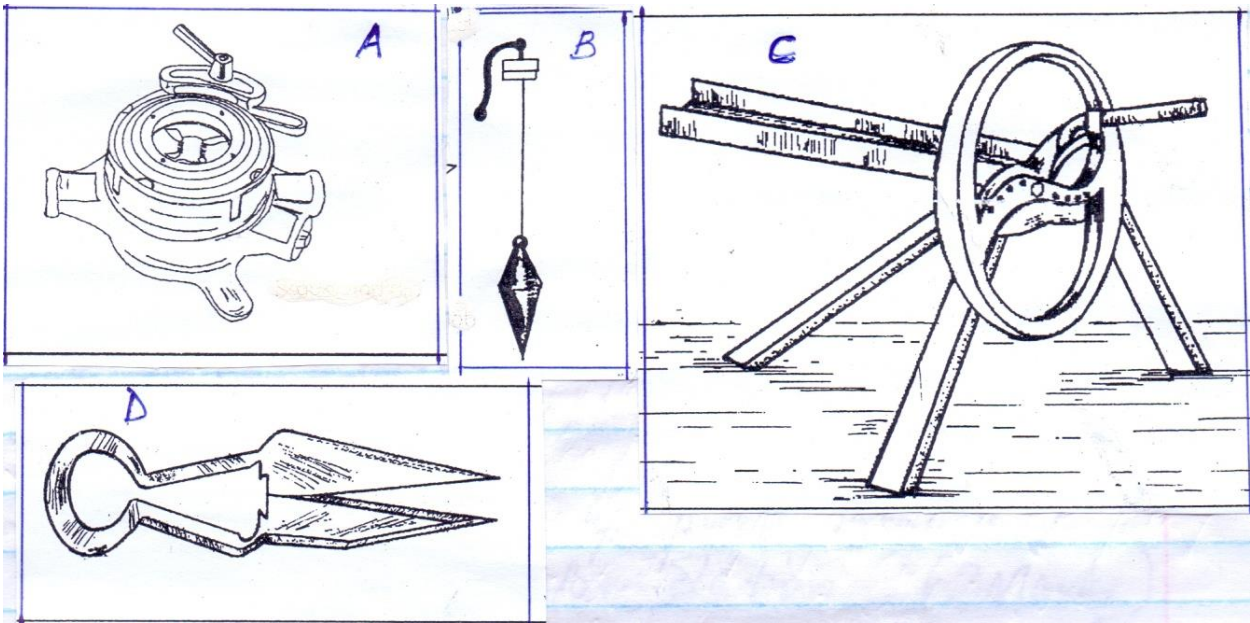
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SECTION B [20MARKS]

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

20. The diagrams below represent some farm tools and equipment .Study them and answer the questions that follow .



[a]Identify the tools labeled A and B

A.....

[1mark]

B.....

[1mark]

[b]State one use of each of the tools labeled C and D

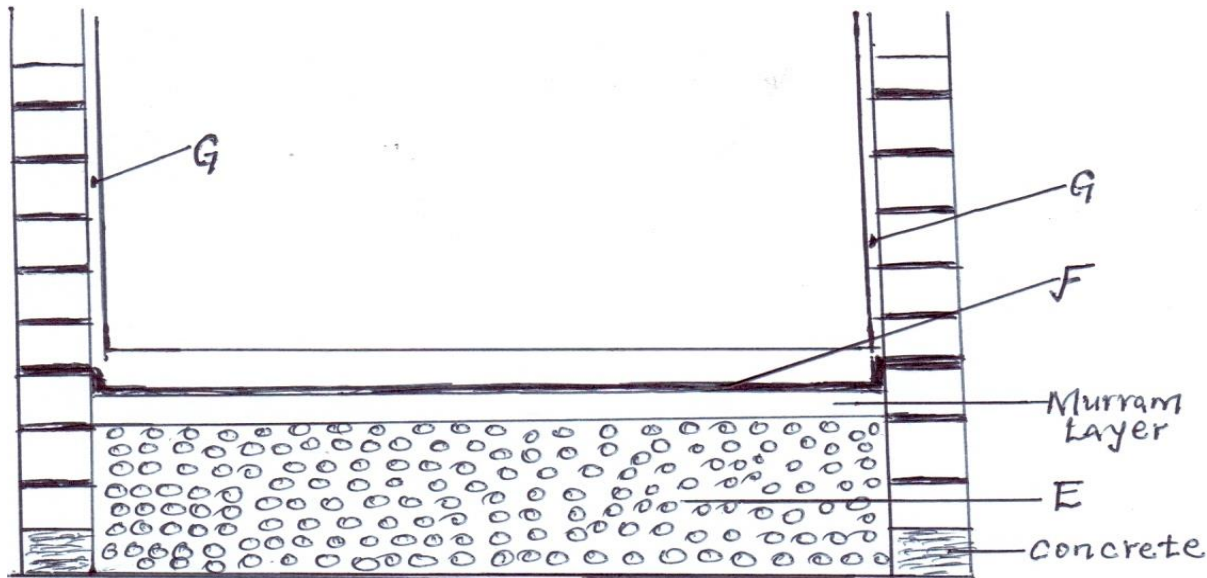
C..... [1mk.]

D..... [1MK.]

[c] Explain one maintenance practice carried out on tool D. [1mk.]

.....
.....

21. The diagram below represents a foundation of a farm structure .Study it and answer questions that follow.



[a] Identify the parts labeled E and F .

E..... [1mk.]

F..... [1mk.]

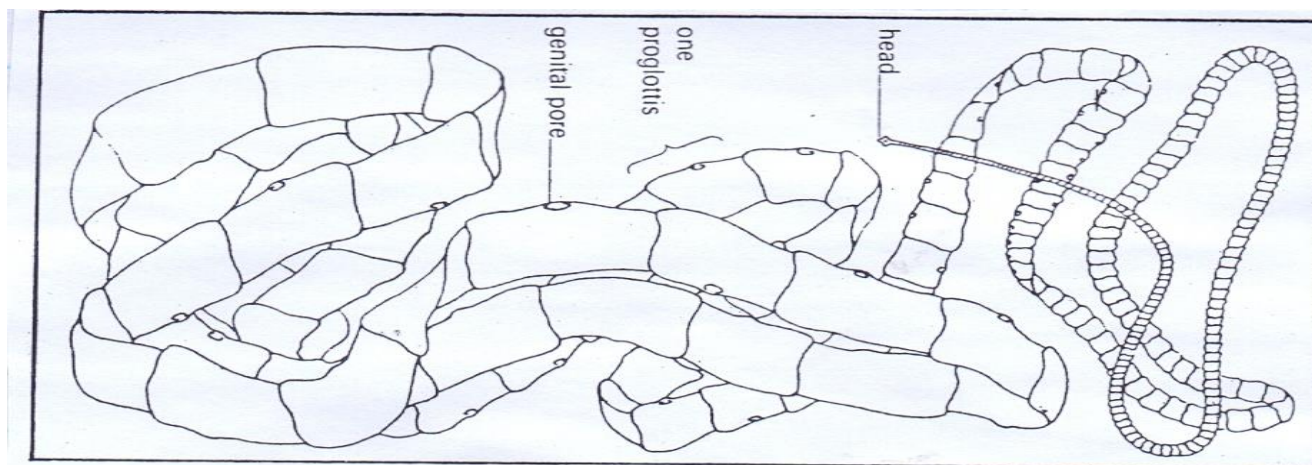
[b]State two uses of part labeled F in a foundation structure . [2mks.]

.....
.....

[c]What ingredients are used to complete part G. [1mk.]

.....
.....

22.The diagram below illustrates an internal parasite of livestock .



[a] Identify the parasite above . [1mk.]

.....

[b]Name two common species of the parasite illustrated above. [2mks.]

.....

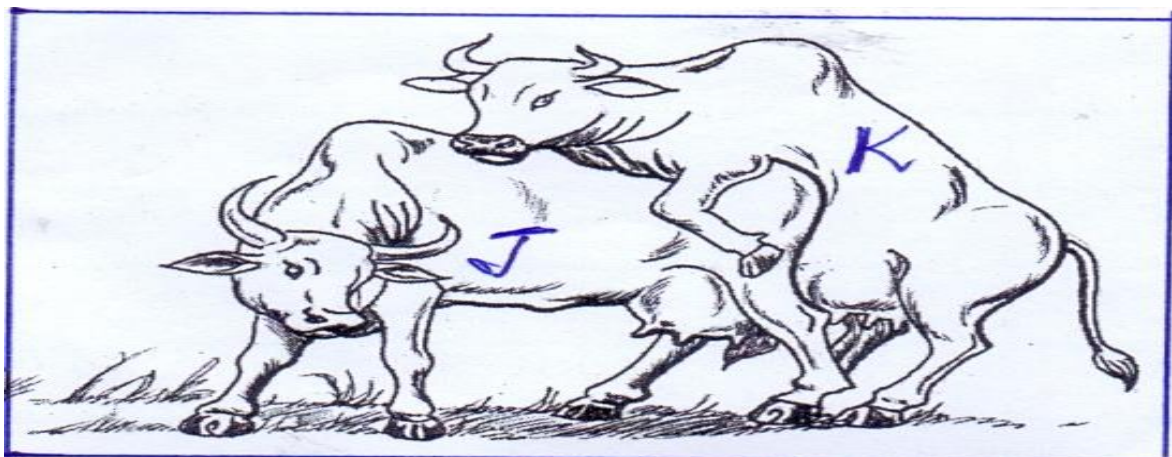
.....

[c] Give two control measures of the above parasite. [2mks.]

.....

.....

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



[a] Which of the above cows shows the signs of heat ? [1mk.]

.....

[b]Give one reason to confirm your answer in [a] above.

.....

[c] State two benefits of natural mating system . **[2mks.]**

.....

.....

[d] Name a disease that is easily spread by this method of mating. **[1mk.]**

.....

SECTION C [40MARKS]

Answer any two questions from this section in the spaces provided.

24. [a] Describe six Advantages of battery cage system of rearing poultry . **[6mks.]**

[b]Explain six requirement of calf pens. **[6mks.]**

[c]Explain 4 factors considered when siting farm structures. **[4mks.]**

d Explain 4 essentials of clean milk production **(4 mk)**

25. [a] Describe anthrax disease under the following sub headings .

Animals affected . **[2marks]**

Causal organism . **[1 mark]**

Symptoms of attack . **[5 marks]**

Control measures . **[2 marks]**

[b] Describe the lifecycle of one host tick. **[5marks]**

[c] STATE five Characteristics of eggs used for incubation . **[5marks]**

26. [a]State differences between petrol and diesel engine **[5mks.]**

[b]Explain five factors considered when siting a fish pond. **[5mks.]**

[c]Explain five reasons for swarming of bees. **[5mks.]**

d) Explain the predisposing factors of livestock diseases **5mks**

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

BUSINESS STUDIES

565/1

PAPER 1

TIME: 2 HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education

INSTRUCITONS TO CANDIDATES

- a) Write your name and index number in the spaces provided above.*
- b) Sign and write the date of examination in spaces above.*
- c) Answer ALL the questions in the spaces provided.*
- d) Candidates should answer the questions in English*

FOR EXAMINER'S USE ONLY

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

Question	16	17	18	19	20	21	22	23	24	25	Total
Marks											

Answer ALL the questions

1. State the unit of carriage for each of the following modes of transport

4mks)

Mode of transport

unit of carriage

Porterage

Cartage

Sea

Air

2. Outline **four** elements of demographic environment that may influence the operation of a business.

(4 marks)

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.....
.....
.....

3. State **four** reasons why consumers have to make choices between competing wants.(4marks)

.....
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.....
.....

4. In the spaces provided below, indicate the type of utility created by each of the following business activities

Business activity

Type of utility

(4marks)

Selling face masks to customers –

Transporting onions-

Storing onions in a granary-

Making a camera-

5. Outline **four** circumstances under which differed payment may be used

(4marks)

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.....

6. State four advantages of transacting business through the internet. (4marks)

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.....

7. The following information relates to Mumbua traders for the year ended 31st April 2015.

	Shs.
Cash at bank	30,000
Cash in hand	40,000
Current liability	500,000
Sales	920,000
Opening stock	150,000
Closing stock	230,000
Margin 25%	
Expenses 15% of sales	

Determine

i) Gross profit (1mark)

ii) Cost of sales (1mark)

iii)Purchase for the year (1mark)

iv) Net profit (1mark)

8 For each of the following transactions indicate the account to be debited and credited.4 marks

Transaction	A/c debited	A/c credited
1. Received discount from Top Suppliers		
2. Allowed discount to Shujaa Traders		
3. Sold furniture to Owuor in cash		
4. Took stock worth sh.200 for personal use		

9. Identify four benefits of international trade to a country (4marks)

.....

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.....

10. Alice a retailer had a capital balance of sh.160,000 as at 30th June 2016. During the year ended June 30th 2017, the business made a profit of 130,000. Alice the proprietor made drawings of 1500 each month for her personal use. Compute the business capital as at 30th June 2017 (3marks)

11. Highlight four reasons that would make an organization use cell phones for communication within and outside the organization. (4marks)

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12. State four benefits of “pooling of risks” to insurance company. (4marks)

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13. **Outline four** circumstances under which a firm may locate its operations near the source of raw materials. (4 marks)

.....

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14. **Highlight four** measures that the government can take to reduce mortality rate in the country. (4marks)

.....

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15. **Many** countries in Africa, Latin America and Asia are considered as under developed. Outline four characteristics underdeveloped countries have in common. (4marks)

.....

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.....

16. **State four** ways of improving service delivery in parastatals and State Corporation. (4marks)

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.....

17. State four locations in a country where bonded warehouse are likely to be found. **(4marks)**

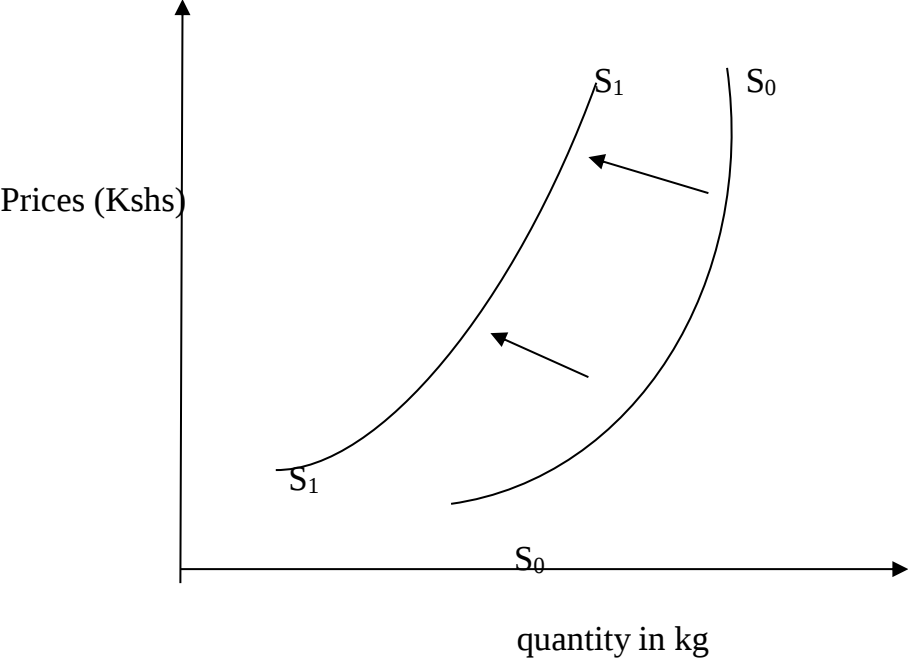
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18. The following information was extracted from the books of Amani traders on 31st Dec 2022

Commission received	22,000
Sales	763,000
Loan interest	52,500
Purchases	474,000
General expenses	30,000
Drawings	96,000
Rent	120,000
Salaries owing	72,000
Electricity pre paid	85,000

Prepare Amani traders trial balance for the month ended 31st Dec 2022. **(5 marks)**

19. The diagram below shows a shift in supply curve from S_0S_0 to S_1S_1 .



State **four** factors that may account for the above shift. (4marks).

.....

.....

.....

.....

20. Outline **four** contributions of the households to the national income of a country. (4marks)

.....

.....

.....

.....

21. State four circumstances under which a customer would prefer to be paid by a banker's cheque. (4 marks)

.....

.....

.....

.....

.....

22. **Outline** four benefits of becoming a member of a savings and credit cooperative society.(SACCO). **(4marks)**

.....

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.....

.....

23 **Highlight** four methods used by a monopolistic firm to differentiate products. **(4marks)**

.....

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.....

24. **State four** circumstances under which a business firm may use photocopying as a means of reproducing documents. **(4 marks)**

.....

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.....

.....

25. **Apart** from government borrowing, outline four other sources of government revenue.(4mks)

.....

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.....

.....

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

BUSINESS STUDIES

565/2

PAPER 2

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education

INSTRUCTIONS TO CANDIDATES

- a) This paper consists of **six** questions*
- b) Answer any **five** questions*
- c) All questions carry equal marks*
- d) Write your answers in spaces provided.*

FOR EXAMINER'S USE ONLY

Question	Maximum score	Candidate's Score
1	20	
2	20	
3	20	
4	20	
5	20	
6	20	
	TOTAL SCORE	

Answer any **five** questions

1 a) Describe **five** features of economic resources (10marks)

b) Explain **five** internal economies of scale that a firm can enjoy as its scale of production increases. (10marks)

2a) Explain **five** important of filing documents in an organization (10marks)

b) Explain **five** factors that determine the size of a firm (10marks)

3a) The following trial balance was prepared from the books of Muranga traders as at 31st Dec 2022

Muranga traders
Trial balance
As at 31st Dec 2022

	Dr (shs)	Cr (shs)
Sales		900,000
Purchases	500,000	
Returns	60,000	20,000
Carriage inwards	30,000	
Carriage outwards	3,000	
Stock (jan 2018)	100 ,000	
Rent	12,000	60,000
Delivery van	300,000	
Bank	60,000	
Creditors		50,000
Debtors	100 000	
Interest	18,000	
General expenses	7,000	
Capital		178,000
	1,190,000	1,190,000

Stock on 31st Dec 2022 was at sh.130,000 required,

Prepare a trading profit and loss account for the year ended **31st Dec 2022**. (10marks)

3b) Explain **any five** limitations of advertising goods in newspapers (10marks)

4a) Explain 5 ways of correcting balance of payment deficit. (10marks)

b) Explain **five** factors that are likely to lead to high birth rate in Kenya. (10 marks)

5a) Explain **five** challenges that may be faced by a producer who sells goods directly to consumers. (10 marks)

b) On March 1 2017, Lyon had cash in hand sh.87,000 and cash at bank sh.250,000. During the month, the following transactions took place:

2017

March 2: Cash sales sh.60,000

3: Paid salaries sh.101,500 by cheque

7: Received a cheque of sh.76,000 from Henry after allowing him a cash discount of 5%

13: Bought office furniture by cheque sh.86,000

17: Settled Marita's account for sh.34,200 in cash, having deducted sh.800 cash discount.

20: Received a cheque for sh.165,000 in respect of cash sales.

22: Paid wages sh.25,000 in cash.

24: Withdrew sh.32,000 from the bank for office use.

25: Withdrew sh.4000 cash for personal use

29: received sh.17,000 cash from Alvin in settlement of his account less sh.1000 cash discount.

31: Deposited all the money into the bank except sh.24,000.

Required:

Prepare a three column cash book duly balanced. (10 marks)

6a) Differentiate between life assurance and property insurance (10marks)

b) Explain **five** circumstances under which personal selling may be most appropriate. (10 marks)

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

BIOLOGY

231/1

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 **name of your school** in the spaces provided above*
- b) **Sign** and write the **date** of examination in the spaces provided.*
- c) Answer **all** the questions in the spaces provided.*

FOR EXAMINERS USE ONLY

QUESTIONS	MAXIMUM SCORES	CANDIDATE'S SCORE
1 – 31	80	

Answer ALL the questions

1. a) Name the causative agents of the following diseases in humans.

i) Typhoid. (1mk)

.....

ii) Amoebic dysentery. (1mk)

.....

2. State the function of the following cell organelles.

i) Ribosome. (1mk)

.....

.....

ii) Lysosomes (1mk)

.....

.....

iii) Nucleolus. (1mk)

.....

.....

3. a) Name **one** defect of the circulatory system in humans. (1mk)

.....

.....

b) State **three** functions of blood other than transport. (3mks)

.....

.....

.....

4. a) Distinguish between epigeal and hypogeal germination in plants. (2mks)

.....

.....

.....

b) Name the gland that secretes the following hormones. (2mks)

i) Ecdysone

.....

ii) Juvenile

.....

5. a) Give two sex linked genes found on the Y-chromosome. (2mks)

.....

.....

.....

b) Below is a nucleotide strand

A	A	G	T	C
----------	----------	----------	----------	----------

i) Identify the type of nucleic acid. (1mk)

.....

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

.....

.....

6. a) Distinguish between homologous and analogous structures. (2mks)

.....

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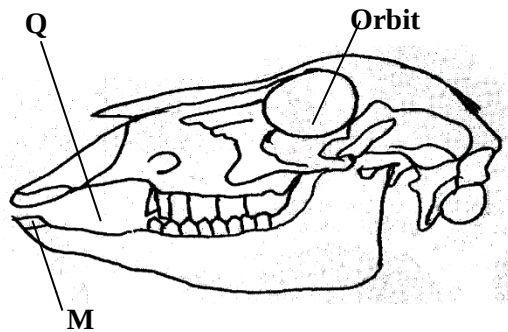
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b) Give one reason why organisms become resistant to drugs. (1mk)

.....

.....

7. The following specimen was extracted from a newly discovered organism.



a) Name the tooth labeled M. (1mk)

.....

b) Name the part labeled Q and state its role. (2mks)

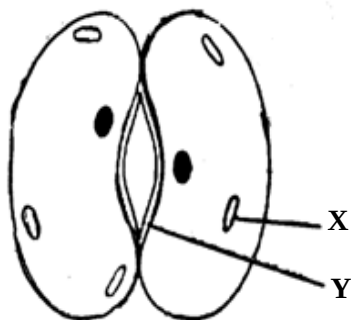
Name.....

Role

.....

.....

8. The diagram below represents a cell organelle



a) Name the part labeled Y. (1mk)

.....

b) State the function of the part labeled X. (1mk)

.....

.....

c) Explain how dark stage of photosynthesis is dependent on the light stage. (2mks)

.....

.....

.....

9. a) Name **two** gaseous exchange surfaces in plants. (2mks)

.....

.....

b) What is the importance counter current flow system in fish? (2mks)

.....

.....

.....

10. Form three students wanted to estimate the population in 5km² grass field near a school compound. They captured 36 grass hoppers and marked them before returning them to the field. After a few days they made another catch of grasshoppers. They collected 45 grasshoppers out of which only 4 had marks.

a) Name the method of population estimation the students used. (1mk)

.....

b) State **two** assumptions that were made by the students during the study. (2mks)

.....

.....

.....

c) From the data, calculate the population size of grasshopper. (2mks)

.....

.....

.....

11. State the functions of the following parts. (2mks)

i) a) Endometrium

.....

.....

b) Epididymis

.....

.....

ii) What mechanism facilitates the movement of the ovum towards uterus. (1mk)

.....

.....

12. The diagram below represents the flow of energy in a food chain.

Sun → Grass → Antelope → Leopard → Bacteria → P

a) Suggest a reason why the energy labeled P does not enter food chain (1mk)

.....

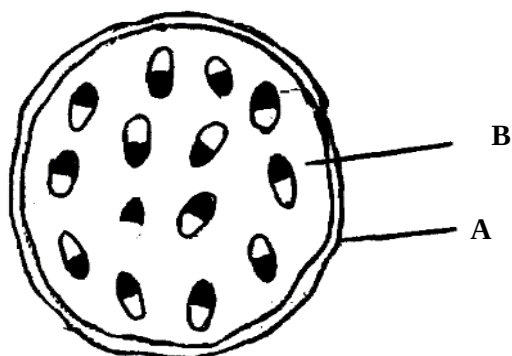
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b) State **one** way in which energy is lost from the food chain. (1mk)

.....

.....

13. The diagram below represents the cross section of a part of a certain plant.



a) Name the class of the plant from which the section was taken. (1mk)

.....

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

.....

.....

c) Name the parts labeled **A** and **B**. (2mks)

.....

.....

14. State **two** reasons why the study of biology is important. (2mks)

.....

.....

.....

15. State the economic importance of the following plants excretory procedures. (3mks)

a) Caffeine

.....

.....

b) Quinine

.....

.....

c) Colchicine

.....

.....

16. Define the following terms

a) Irritability (1mk)

.....

.....

b) Stimulus (1mk)

.....

.....

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



a) Name the process. (1mk)

.....

b) State the importance of the process named in a) above. (2mks)

.....

.....

18. a) What is Binomial Nomenclature? (1mk)

.....

.....

b) State **two** rules that are followed when printing scientific names. (2mks)

.....

.....

.....

19. Name **three** strengthening tissues in dicotyledonous plants. (3mks)

.....

.....

.....

20. Name the site for gaseous exchange in insects. (1mk)

.....

21. a) What is alternation of generations (2mks)

.....

.....

.....

b) Explain why leaves of Peridophytes are referred to as Fronds. **(1mk)**

.....

.....

22. State **four** adaptations of red blood cells to its functions. **(4mks)**

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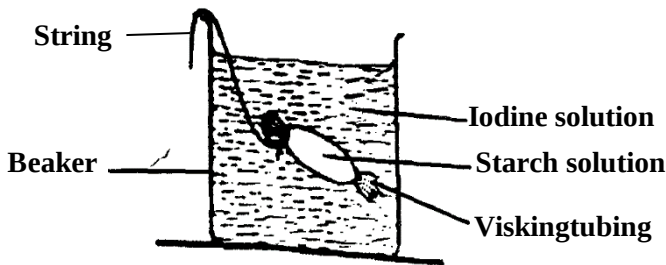
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23. The experiment illustrated below was set up to investigate a certain physiological process



a) Name the physiological process that was being investigated. **(1mk)**

.....

b) State the observations that were made after at the end of the experiment

(i) Inside the Visking tubing **(1mk)**

.....

.....

(ii) Outside the Visking tubing **(1mk)**

.....

.....

c) Account for the observations in b) above. **(2mks)**

.....

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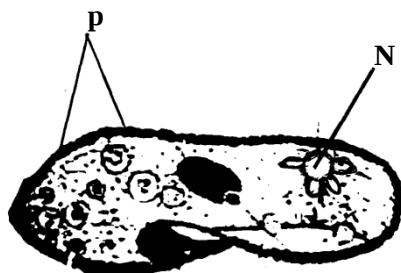
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24. State the differences between the following structures in wind and insect pollinated flowers. (3mks)

- (i) Anther
- (ii) Pollen grains
- (iii) Stigma

Wind Pollinated	Insect Pollinated flower

25. A student placed a drop of pond water in a cavity slide and observed it under the microscope. The student observed many fast moving organisms, one of which is represented in the diagram below.



a) Name the kingdom to which the organism belongs. (1mk)

.....

b) Name the structures labeled **P** and **N** (2mks)

P.....

N.....

26. A person was found to pass out large volumes of dilute urine frequently. Name the;

a) Disease the person was suffering from (1mk)

.....

b) Hormone that was deficient (1mk)

.....

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

BIOLOGY

231/2

PAPER 2 (THEORY)

TIME: 2 HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education

INSTRUCTIONS TO CANDIDATES

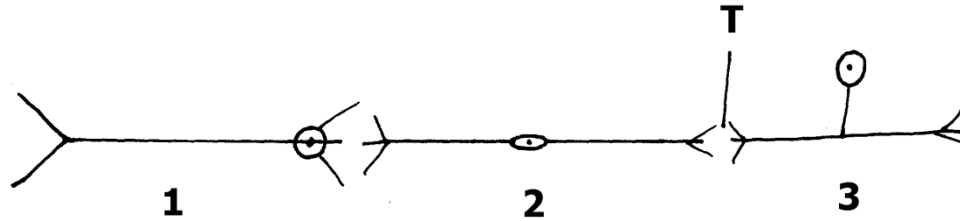
- a) Write your **name** and **index number** in the spaces provided above*
- b) Sign and write the date of examination in the spaces provided*
- c) Answer all questions in section A*
- d) In section B answer **question 6 (compulsory)** and either question 7 or 8*

FOR EXAMINERS USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
SECTION A		
1.	8	
2.	8	
3.	8	
4.	8	
5.	8	
SECTION B		
6.	20	
7.	20	
8.	20	
TOTAL	80	

QUESTIONS

1. The diagram below shows three different types of neurons along a reflex arc.



a) Identify the Neuron labelled 1,2 and 3.

(3mks)

.....

.....

.....

b) Using arrows show the direction of impulse transmission on the diagram.

(1mk)

c) Name the part where the cell body of neurons 1 and 2 are located.

(2mks)

.....

.....

d) Describe the transmission of impulses across the part labelled T.

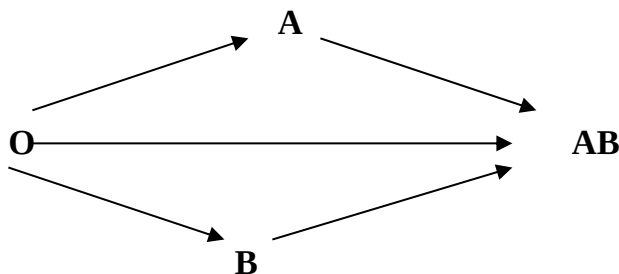
(2mks)

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2.The flow chart below shows blood transfusion pathway



a) What five conclusions can you draw from the flow chart?

(5 mks)

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b) Why is the knowledge of blood groups necessary before blood transfusion? (1 mk)

.....

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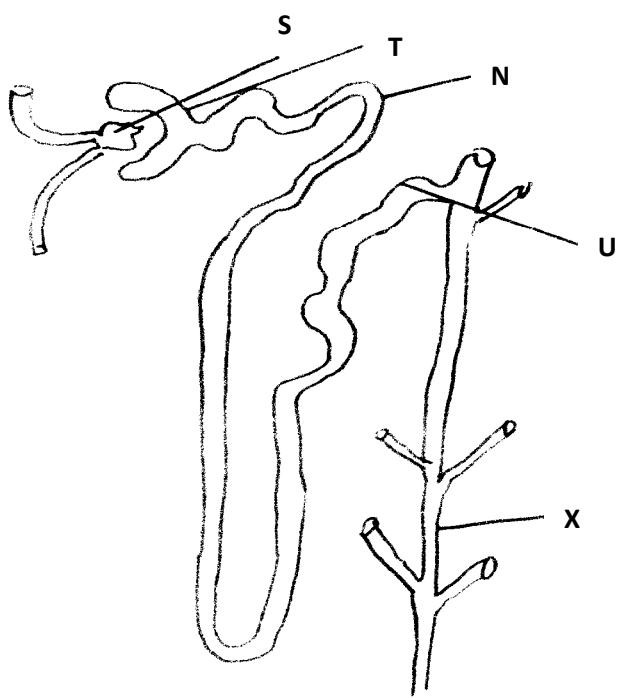
c) Apart from knowledge of blood groups state two precautions that must be observed during blood transfusion. (2 mks)

.....

.....

.....

3. The diagram shown below is a section through the mammalian nephron.



(i) Name parts :- (2mks)

T.....

U.....

ii) a) Name one hormone that has an effect on part labelled X and where is it produced (2mks)

.....

.....

b) How will the concentration of urine be affected at region U in the absence of hormone referred to in (ii) (a) above. (1mk)

.....

.....

c) Name the fluid formed in part labelled T. (1mk)

.....

d) Which conditions are responsible for formation of fluid at part labelled T. (2mks)

.....

.....

.....

4 The genetic disorder haemophilia is due to a recessive sex linked gene. A man who is haemophilia married a woman who is a carrier for the condition.

a) Using the letter (H) to represent the normal condition and (h) for the haemophiliac condition.

(i) What is the genotype of the man and woman? (1 mk)

Man.....

Woman.....

(ii) Work out a cross between the man and woman. (4 mks)

.....

.....

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.....

.....

b) What is the chance that both the first and second sons will be haemophiliac? (2 mks)

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.....

.....

d) Haemophilia is more common in males than in female humans. Explain. (1 mk)

.....

.....

5. A freshly obtained Tradescantia stem measuring 5 cm long was split lengthwise to obtain two similar-pieces. The pieces were placed in solutions of different concentrations in Petri dishes for 20 minutes.

The appearance after 20 minutes is as shown



(a) Account for the appearance of the pieces in solutions L₁ and L₂ (6 mks)

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(b) State the significance of the biological process involved in the experiment (2 mks)

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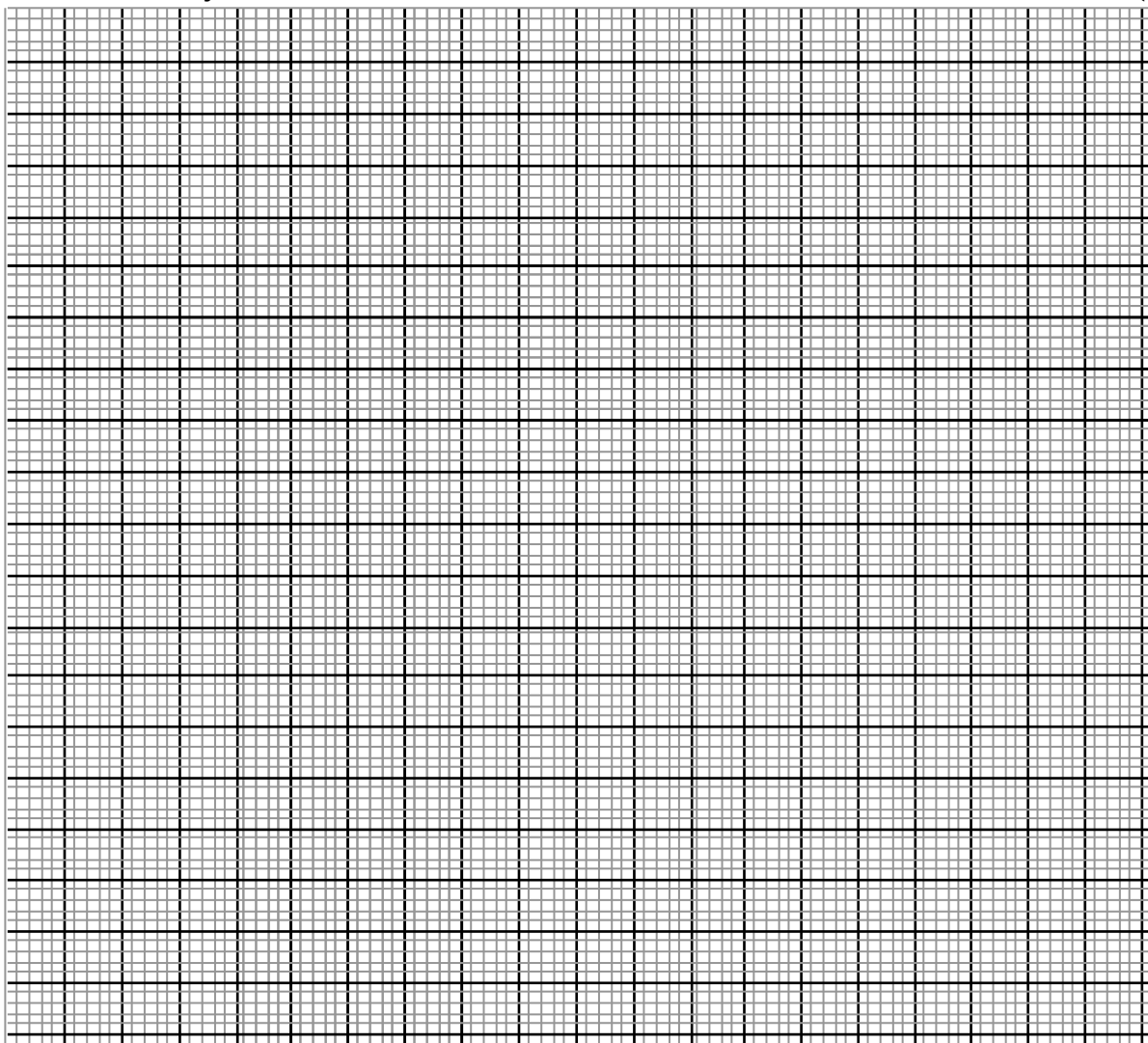
SECTION B(40 MKS)

Answer question 6 (Compulsory) and either question 7 or 8 in spaces provided.

6. An experiment was carried out to investigate transpiration and absorption of water in sunflower plants in their natural environment with adequate supply of water. The amount of water was determined in two hour intervals. The results are shown in the table below.

Time of day	Amount of water in grammes	
	Transpiration	Absorption
11.00 – 13.00	33	20
13.00 – 15.00	45	30
15.00 – 17.00	52	42
17.00 – 19.00	46	46
19.00 – 21.00	25	32
21.00 – 23.00	16	20
23.00 – 01.00	08	15
01.00 – 03.00	04	11

- (a) Using the same axes, plot graphs to show transpiration and absorption of water in grammes against time of day. (7mks)



(b) At what time of day was the amount of water the same for transpiration and absorption?(1 mk

.....

(c) Account for the shape of graphs of:

(i) Transpiration

(3marks)

.....

.....

.....

.....

(ii) Absorption

(3 marks)

.....

.....

.....

.....

(d) What would happen to transpiration and absorption of water if the experiment was continued
untill 05.00 hours? **(2 marks)**

.....

.....

(e) Name **two** factors that may affect transpiration and absorption at any given time.(2 marks)

.....

.....

(f) Explain how the factors you have named in (e) above affect transpiration. **(2 marks)**

.....

.....

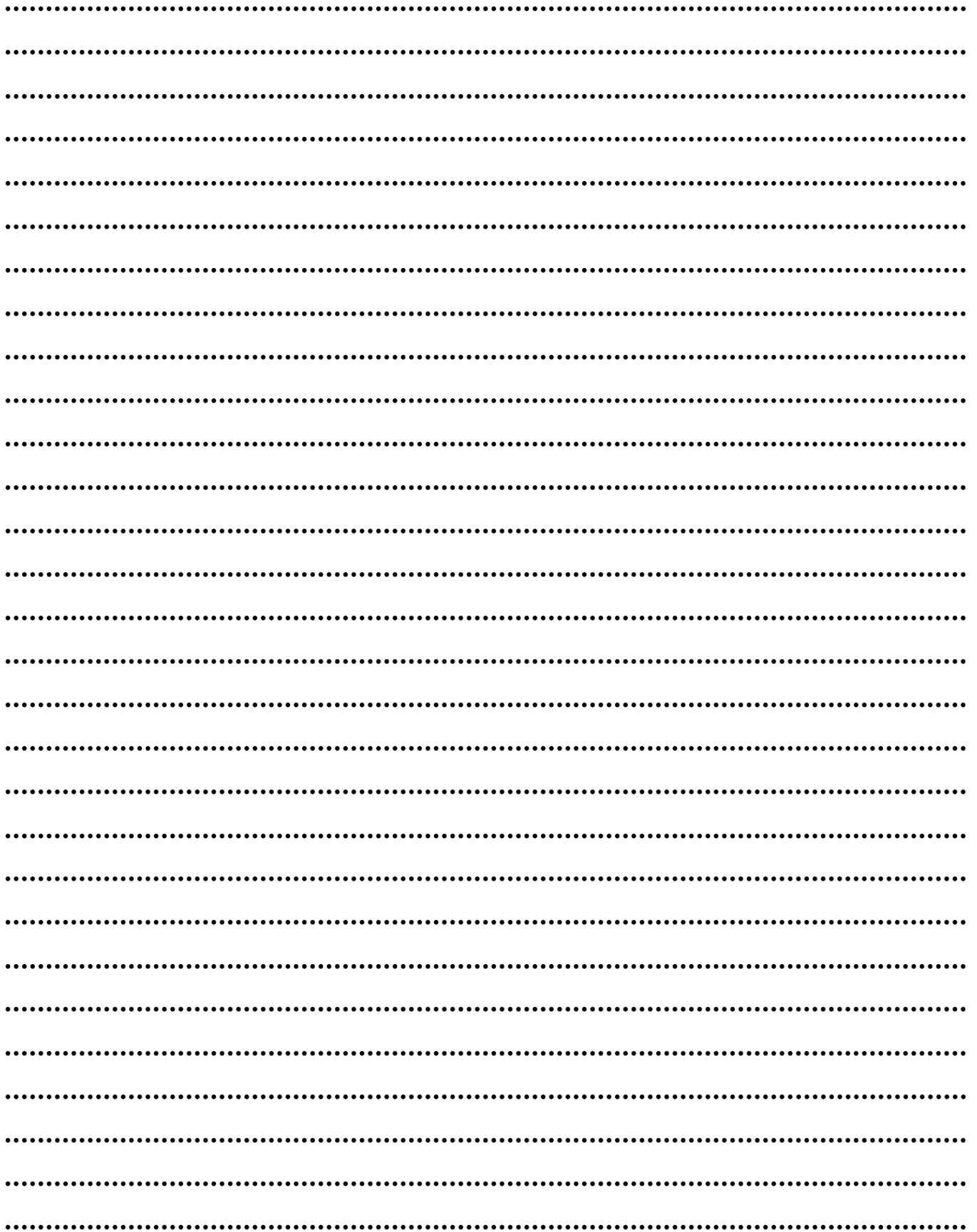
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7. **(a)** Explain how the gills of fish are adapted to the process of gaseous exchange.(5 marks)

(b) Describe how gaseous exchange occurs in leaves of a terrestrial plant. **(15 marks)**

8. How is the mammalian eye adapted to its functions? **(20marks)**

This image shows a full page of white paper with horizontal dotted lines, typical of primary-ruled notebook paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

BIOLOGY

231/3

PAPER 3

TIME: 1¾ HOURS

SCHOOL..... SIGN.....

CONFIDENTIAL INSTRUCTIONS TO SCHOOLS

- a) Specimen R-** a piece of ripe pineapple fruit
- b)** 2mls Benedict's solution placed in a test tube with a dropper
- c)** 2mls of 10% Sodium hydroxide solution placed in a test tube with a dropper
- d)** 2mls of 1% Copper sulphate solution placed in a test tube with a dropper
- e)** Source of heat
- f)** 4 test tubes in a rack
- g)** 2 Droppers
- h)** Scalpel/Razor blade
- i)** Pestle and mortar
- j)** Filter paper
- k)** A funnel
- l)** A boiling tube
- m)** 4mls DCPIP solution placed in a small beaker with a dropper
- n)** 4mls of 0.1% solution of Ascorbic acid supplied in a test tube
- o)** White tile
- p)** A twig of Lantana camara with flowers **labeled Q**
- q)** A twig of Tradescantia **labeled P**

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

BIOLOGY

231/3

PAPER 3 (PRACTICAL)

TIME: 1¾ 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 at the top of this page.
- ❖ Answer all the questions in the spaces provided.

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1.	14	
2.	12	
3.	14	
TOTAL	40	

Answer **ALL** the questions

1. Study the specimen **R** provided.

(a) Identify the type of fruit. (1 mark)

.....

(b)i) What is the method of dispersal for the specimen R. (1 mark)

.....

ii) Give reason(s) for your answer in (i) above (2 marks)

.....

.....

.....

(c) Peel the sliced specimen **R** to show the inner juicy part. Extract a small portion of the juicy part, place in a mortar and mash it using a pestle.

Filter the extract from the specimen R into a boiling tube.

Divide the extract from specimen **R** into two portions and use them as follows;

PORTION ONE

Use the reagents provided to test for the food substances present in portion 1. Use the table below as a guide. (6 marks)

Food substance	Procedure	Observation	Conclusion

--	--	--	--

PORTION TWO

(d)(i) To 1cm³ of DCPIP in a test tube, add 0.1% solution of Ascorbic acid drop by drop until the colour of DCPIP disappears. Shake the test tube after addition of each drop. Record the number of drops used. **(1 mark)**

.....

ii) To another 1cm³ of DCPIP in a test tube add the **portion two of extract** drop by drop, shaking the test tube after addition of each drop until the colour of DCPIP disappears. Record the number of drops used **(1 mark)**

.....

iii) From the results obtained in (d) (i) and (ii) above, calculate the percentage of Ascorbic acid in the juice obtained from specimen **R**. Show your working **(2 marks)**

.....

2. You are provided with photographs A, M and D representing certain plants and specimens P and Q .Use them to answer the questions that follow.

Photograph A

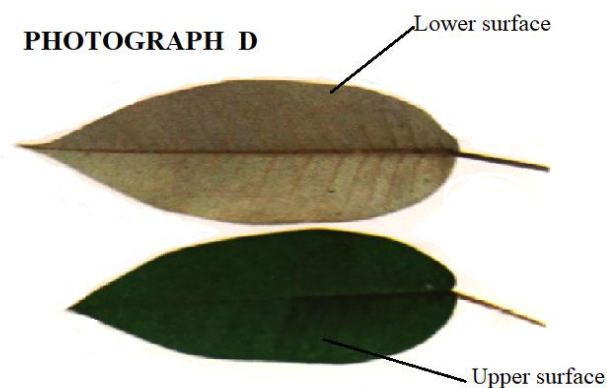


PHOTOGRAPH M



K

PHOTOGRAPH D



(a).i.Name the sub division to which the plant in photograph A and specimen Q belong.(1 mrk)

.....

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

.....

(b). State the differences between the leaves of specimen P and Q **(3 marks)**

Specimen P	Specimen Q

c) Name the unique features observed on stems of specimen Q and stem of photograph M and state their function. **(2mks)**

Specimen Q

.....

Photograph M

.....

d) Account for the differences observed on the upper and lower surfaces of leaves on photograph D **(2mks)**

.....

e) The stem of specimen Q and that of photograph M are green in colour. What does the colour imply? **(1mk)**

.....

f) (i) Name the part labelled K on photograph labelled M (1mk)

.....

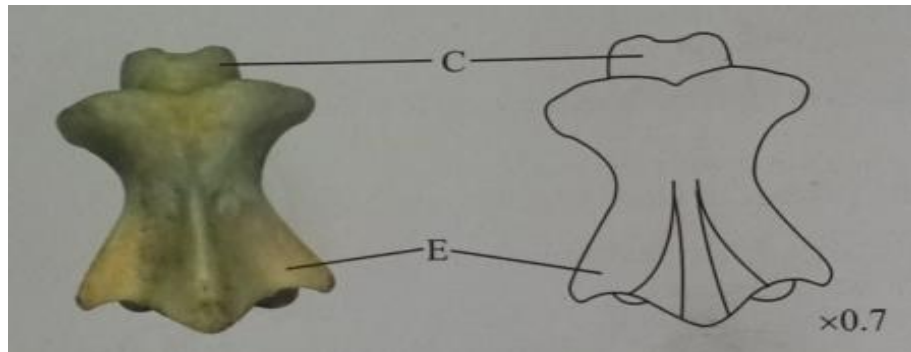
(ii) Explain how the coiling of the structure occurred (2mks)

.....

.....

.....

3 a) Use the photograph provided to answer the questions that follow.



(i) identify the bone (1mk)

.....

ii) Give reason for your answer in (i) above (1mk)

.....

.....

iii) Name the region of the body from which the above bone was obtained (1mk)

.....

(iv) Name the bone which articulates with the above bone at its anterior end (1mk)

.....

(v) Identify the type of joint formed in (iv) above (1mk)

.....

(vi) Name the structure that joins the two bones in c(i) together at the joint formed above (1mk)

.....

vii) Identify the view of the above bone in the photograph (1mk)

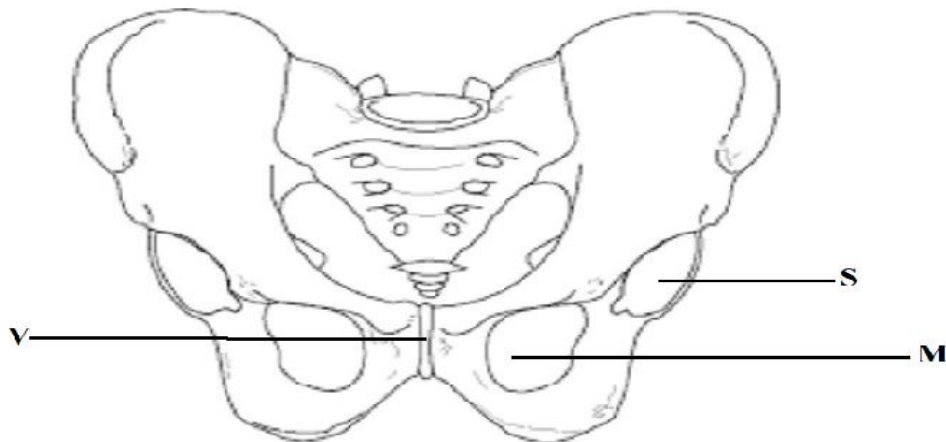
.....

viii) State two differences between the above bone and the bone it articulates with at the anterior end. (2mks)

.....
.....
.....

b)(i) Identify the bone in the photograph below (1mk)

.....



(ii) Name the structure labeled S and state the structure that it articulates with. (2mks)

.....
.....

(iii) Name the structure labelled V and state its function (2mks)

.....
.....

(iv) Name the part labelled M on the diagram (1mk)

.....

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

CHEMISTRY

233/1

PAPER 1

TIME: 2 HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education

INSTRUCTIONS

- a) Answer ALL questions in the spaces provided*
- b) Show your working clearly.*
- c) Electronic calculators and Mathematical tables may be used.*
- d) All answers must be written in English language*

QUESTIONS	TOTAL SCORE	STUDENT'S SCORE
1 –25	80	

Answer **ALL** the questions

1. Below is a table showing the solubility of salts **Q** and **R** at different temperatures.

Temperature °C		0	10	20	30	40	50
Solubility in grams per 100g of water	Salt Q	3.0	5.0	7.4	10.0	14.0	19.0
	Salt R	15.0	17.0	20.7	25.7	28.7	33.0

(a) Define the term “Solubility of salt” (1mk)

.....
.....

(b) If both salts **Q** and **R** are present in 100cm³ of saturated solution at 50°C, what will be the total mass of crystals formed if the solution was cooled to 20°C? (2mks)

.....
.....
.....

(c) Name **two** areas where knowledge of solubility curves is applied (2mks)

.....
.....

2. Two samples of hard water **C** and **D** were boiled. When tested with drops of soap, sample **D** formed lather easily while **C** did not:-

(a) Name the possible salt that caused hardness in sample **D** (1mk)

.....

(b) Explain how distillation can remove hardness in sample **C** (1mk)

.....
.....

(c) Give **two** advantages of hard water (1mk)

.....
.....

3. You are provided with a mixture of Lead (II) Chloride, ammonium chloride and sodium chloride. Explain how you would separate all the three solids (3mks)

.....

.....

.....

.....

.....

4. Sodium Carbonate Decahydrate crystals were left exposed on a watch glass for two days.

a) State the observations made on the crystals after two days. (1mk)

.....

.....

b) Name the property of salts investigated in the above experiment (1mk)

.....

5. When water reacts with potassium metal the hydrogen produced ignites explosively on the surface of water.

(i) What causes this ignition? (1mk)

.....

(ii) Write an equation to show how this ignition occurs (1mk)

.....

.....

6. How does the pH value of 0.25M KOH_(aq) compare with that of 0.25M ammonia solution? Explain (2mks)

.....

.....

.....

.....

7. i. State Gay Lussac's law.

(1mk)

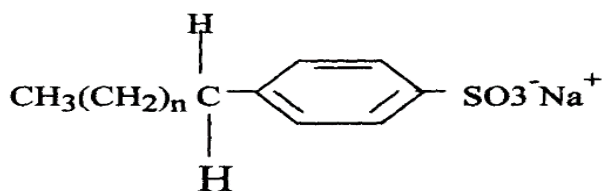
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ii. 10cm³ of methane (CH₄) gas is exploded with 150cm³ of air containing 20% oxygen and 80% nitrogen. The products were allowed to cool to room temperature. What will be the total volume of the gases at the end of the reaction

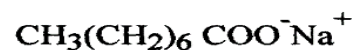
(3mks)

.....
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.....
.....
.....

8. The formulae below represents active ingredients of two cleansing agents A and B



Agent A



Agent B

(a) Name the class to which each of the cleansing agent belongs

(2mks)

.....

(b) Which one of the cleaning agent above is not environmental friendly? Explain

(2mk)

.....
.....
.....

(c) Which one of the cleansing agent would be suitable to be used in water containing magnesium hydrogen carbonate? Explain

(2mks)

.....
.....
.....

(d) During Saponification process, a small amount of Sodium Chloride is added Give a reason (1mk)

.....
.....

9. (a) Write an equation showing how ammonium nitrate may be prepared starting with ammonia gas (1mk)

.....
.....

(b) Calculate the maximum mass of ammonium nitrate that can be prepared using 5.3kg of ammonia (H=1, N=14, O=16) (2mks)

.....
.....
.....

10. Plastics and rubber are extensively used to cover electrical wires.

(a) What Name is used to describe plastic and rubbers used in this way? (1mk)

.....

(b) Explain why plastics and rubbers are used for this purpose (1mk)

.....
.....

11. G grams of a radioactive isotope take 120days to decay to 3.5grams. The half-life period of the isotope is 20days

11

(a) Find the initial mass of the isotope (2mks)

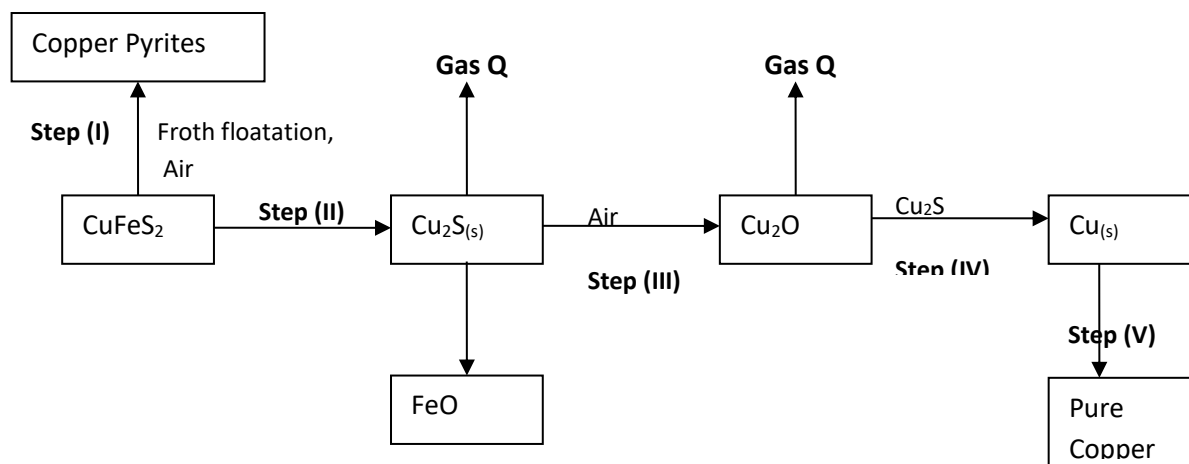
(b) Give **two** applications of radioactivity in medicine (2mks)

.....
.....

(c) Uranium -238 disintegrates by emitting an alpha particle to form substance **Y**.

Nuclide **Y** emits a beta particle to form substance **Z**. Write down nuclear equations to show how substance **Y** and **Z** are formed (U=92) (2mks)

12. Study the flow chart below and answer the questions that follow:



(a) Name gas **Q** (1mk)

.....

(b) With the help of diagram, describe how step (V) is carried out (3mks)

- (c) During purification of copper by electrolysis, 1.48g of copper were deposited when a Current was passed through aqueous copper (II) sulphate for 2 ½ hours. Calculate the amount of current passed (Cu = 63.5 1Faraday = 96500C) (3mks)

.....

.....

.....

.....

- (d) What is meant by the term Froth Floatation (2mks)

.....

.....

.....

- (e) Name two impurities present in the ore of **copper** (1mk)

.....

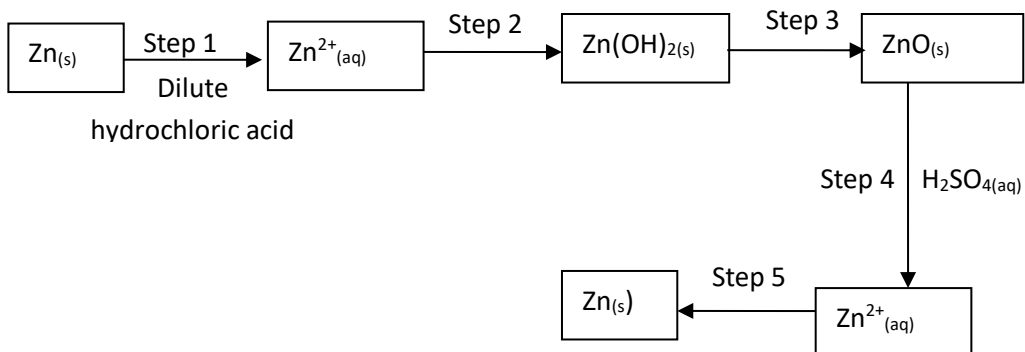
.....

13. State **two** properties of Duralumin that make it suitable for use in making aircraft parts?(1mk)

.....

.....

14. The flow chart below shows a sequence of chemical reactions starting with Zinc. Study it and answer the questions that follow:-



a) In step 1, excess 3M hydrochloric acid was added to 0.5g of Zinc powder

i) State one observation which were made when the reaction was in progress (½ mks)

.....
.....

ii) Explain why hydrogen gas is not liberated when dilute nitric acid is used in **step 1** (1mk)

.....
.....

iii) a) Write an ionic equation for the reaction that took place in **step 1** (1mk)

.....
.....

b) Calculate the volume of 3M hydrochloric acid that was needed to react completely with 0.5g of Zinc powder ($Zn = 65.0$) (2mks)

15. Briefly describe how a pure sample of lead (II) iodide can be prepared in the lab given Distilled water, solid lead (II) nitrate and solid Potassium iodide (3mks)

16. Use equations only to explain how slag is formed in the Blast furnace during the extraction of iron (2mk)

17. Using dots and crosses to represent electrons draw the structure Phosphorous chloride (PCl₃)
(1mk)

19. **Study** the information in the table below and answer the questions that follow:
(The letters do not represent the actual symbols of the elements)

Element	Electronic configuration	Ionization energy KJmol ⁻¹
P	2:1	519
Q	2:8:1	494
R	2:8:8:1	418

i. What is meant by ionization energy? (1mk)

.....
.....

ii. Element **R** has the lowest ionization energy. Explain. (1mk)

.....
.....

iii. When a piece of element **Q** is placed on water it melts and a hissing sound is produced as it moves on the water surface. Explain these observations. (1 1/2mks)

iv. Write the equation for the reaction between element **Q** and water. (1mk)

.....
.....

20. Chlorine has a higher boiling point than Argon. Give a reason (1mk)

.....
.....

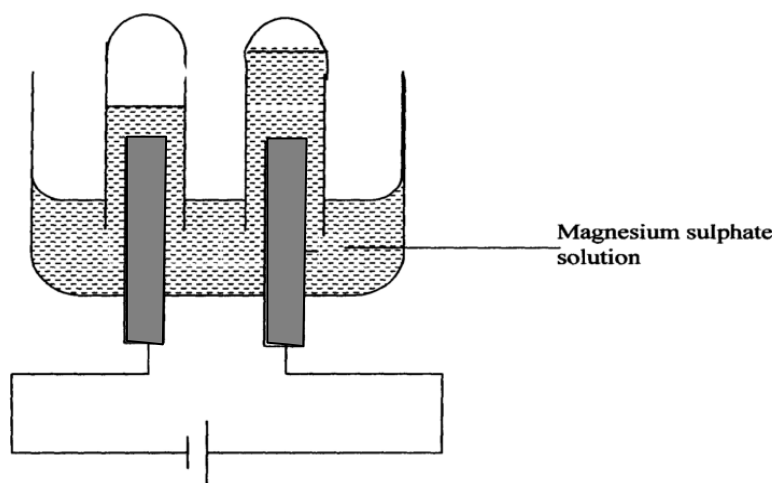
21.i) State Graham's Law of diffusion (1mk)

.....
.....

ii) Gas **B** takes 110 seconds to diffuse through a porous pot, how long will it take for the Same amount of ammonia to diffuse under the same conditions of temperature and pressure?

(RMM of **B** = 34 RMM of ammonia = 17) (2mks)

22. The setup below was used to carry out the electrolysis of Magnesium sulphate solution using Inert electrodes



i. Name a suitable pair of electrode that can be used in the above process. (½ mk)

ii. State and explain the changes on the concentration of magnesium sulphate solution as the process proceeds. (1mk)

iii. Label on the diagram the Cathode and anode (1mk)

23.i. Bond energies for some bonds are tabulated below:-

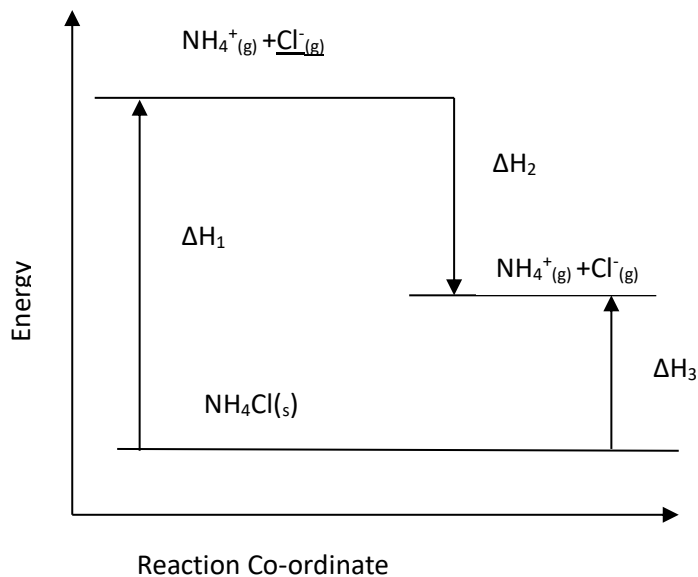
BOND	BOND ENERGY KJ/mol
H – H	436
C = C	610
C- H	410
C - C	345

Use the bond energies to estimate the enthalpy for the reaction



(2mks)

ii. Study the diagram below and answer the questions that follow:



a) What do ΔH_1 and ΔH_2 represent?

(1mk)

ΔH_1

ΔH_2

c) Write an expression to show the relationship between ΔH_1 , ΔH_2 and ΔH_3 .

(1mk)

24. (a) Name one substance that is added to Aluminium oxide during electrolysis in the manufacture of Aluminium metal (½ mk)

.....

(b) Give a reason why the substance named above is added (1mk)

.....

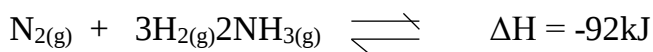
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25.a) State Le Chatelier's Principle (1mk)

.....

.....

b) An equilibrium exists in the Haber process as shown in the equation below



State and explain the effect of the following factors on the yield of Ammonia

(i) Increase in Pressure (1 ½ mks)

.....

.....

.....

.....

(ii) Increase in Temperature (1 ½ mks)

.....

.....

.....

.....

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

CHEMISTRY

233/2

PAPER 2 (THEORY)

TIME: 2 HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education

INSTRUCTIONS TO CANDIDATES

1. Write your name and admission number in the spaces provided above.
2. Sign and write the date of the examination in space provided.
3. Answer ALL the questions in the spaces provided in the question paper.
4. All working MUST be clearly shown where necessary.
5. Mathematical tables and silent electronic calculators may be used.

FOR EXAMINER'S USE ONLY

QUESTION	CANDIDATE'S SCORE
1	
2	
3	
4	
5	
6	
7	
TOTAL SCORE	

QUESTION 1

(a) The grid below represents part of the periodic table. Study it and answer the questions that follow: The letters do not represent the actual symbols of the elements.

								A
					B			
	C			D			E	
	F							

(i) What name is given to the group of elements to which **C** and **F** belong? (1mk)

.....

(ii) Explain the difference in reactivity between element **C** and **D** (2mks)

.....

.....

.....

.....

(iii) Using(.) and cross (x) illustrate the bond between **B** and **E** (2mks)

(iv) Write a balanced chemical equation for a reaction between element **D** and oxygen gas (1mk)

.....

.....

(v) On the grid indicate a tick(✓) the position of element **G** which is in the third period of the periodic table and forms G^{3-} ions (1mk)

(b) Study the information in the table below and answer the questions that follow: (The letters do not represent the actual symbols of the substance)

Substance	Melting point °C	Boiling points °C	Solubility in water	Density at room temp in g/cm ³
H	-117	78.5	Very Soluble	0.8
J	-78	-33	Very Soluble	0.77x10 ⁻³
K	-23	77	Insoluble	1.6
L	-219	-183	Slightly Insoluble	1.33x10 ⁻³

(i) Which substance would dissolve in water and could be separated from the solution by fractional distillation in the school laboratory **(1mk)**

.....

(ii) Which substance is a liquid at room temperature and when mixed with water two layers would be formed. **(1mk)**

.....

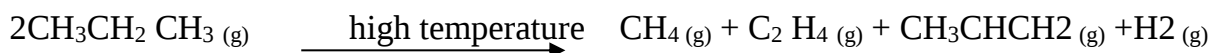
(iii) Which letter represents substance that is a gas at room temperature and which can be collected (density of air is 1.225x10⁻³ g/cm³)

(i) Over **water** **(1mk)**

(ii) By downward displacement of air **(1mk)**

QUESTION 2

(a) Propane can be changed into methane as shown below:



(i) Name the process undergone by propane **(1mk)**

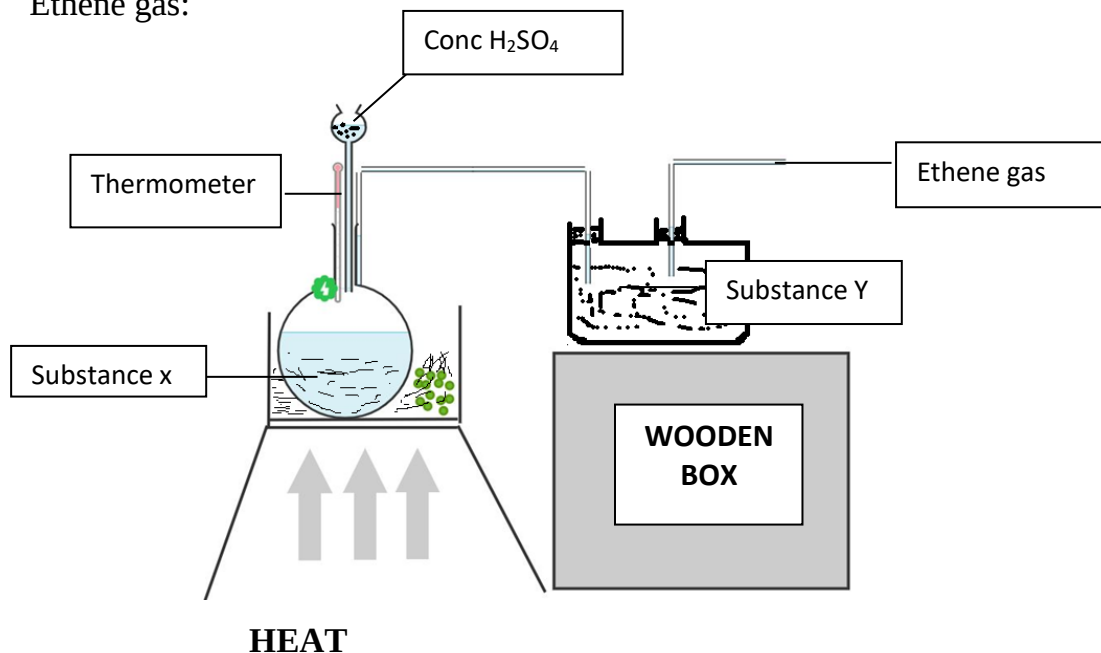
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(ii) Write the equation of reaction between ethene and chlorine gas and name the product. **(2mks)**

.....

.....

(b) The diagram below shows an incomplete set-up of the laboratory preparation and collection of Ethene gas:



- (i) Complete the diagram to show how Ethene gas is collected. (2mks)
- (ii) Name substances X and Y (2mks)

.....

.....

(iii) Apart from being colourless and odourless, state another physical property of ethene.(1mk)

(c). the table below gives information about the major components of crude oil. Study it and answer the questions that follow.

Components	Boiling points ⁰ C
Gases	Below 40
Petrol	40-175
Kerosene	175-250
Diesel oil	250-350
Lubricating oil	350-400
Bitumen	Above 400

(i) Which of the compounds of crude oil has molecules with the highest number of atoms?

Explain.

(2mks)

.....

.....

.....

(ii) Explain the condition that could cause a poisonous gas to be formed when kerosene is burnt?

(2mks)

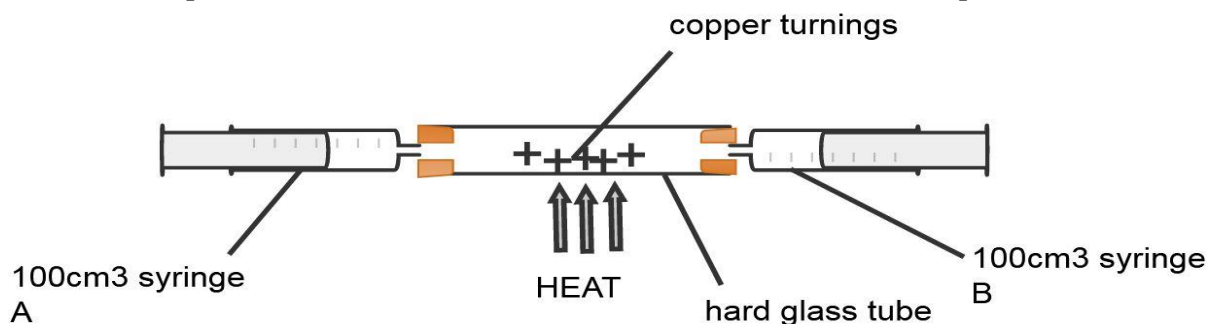
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QUESTION 3

(a) Air is a mixture of gases that can be classified as active and inactive part. The diagram below represents an experiment that can be carried out to determine the active part of air.



(a) Describe how this set-up can be used to determine the active part of air (4mks)

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.....

.....

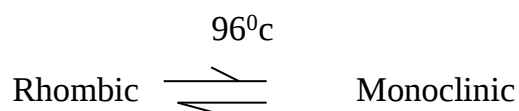
(b) When magnesium ribbon is heated in air the mass of the product is more than the mass of magnesium ribbon used. **Explain** (1mks)

.....

.....

QUESTION 4

- (a) Rhombic and Monoclinic are allotropes of sulphur. They are interconvertible as shown below:



- (i) What does the temperature 96°C represent (1mk)

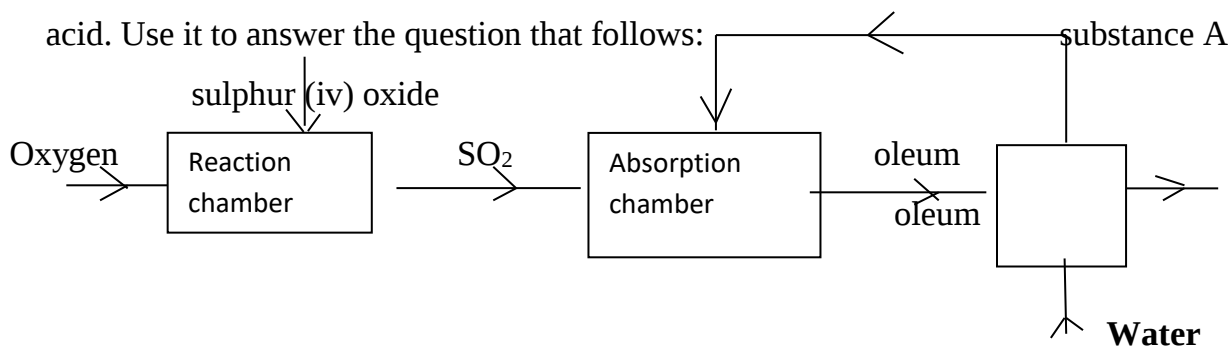
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- (ii) State the differences in crystalline appearances between rhombic and monoclinic crystals. (1mk)

.....

.....

- (b) The chart below shows some process involved in large scale production of sulphuric (VI) acid. Use it to answer the question that follows:



- (2)(i) Name substance A (1mk)

- (ii). Write an equation that takes place in the absorption chamber (1mk)

- (iii) Vanadium (V) oxide is commonly used as a catalyst in the contact process:

- (I) Name another catalyst that can be used in this process. (1mk)

- (II) Give two reasons why vanadium V oxide is the commonly used catalyst. (2mks)

.....

.....

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(III) State and explain the Observation made when concentrated sulphuric (VI) acid is added to crystals of copper (II) sulphate in a beaker. **(2mks)**

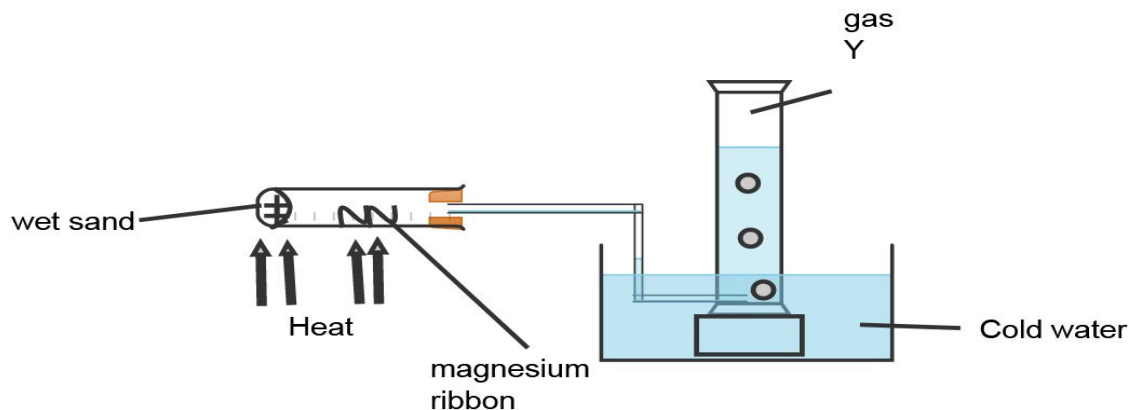
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(v). If 100kg of sulphur(IV) oxide is used in one day by this plant, determine the mass of oleum produced in one day. (S=32. O=16 H=1) **(3mks)**

QUESTION 5

(a) Draw a well labeled diagram of set-up that can be used to prepare dry hydrogen gas in the laboratory. **(3mks)**

(b) The experiment below was carried out to investigate the reaction between steam and magnesium. Use it to answer the questions that follow:



(i) Explain why wet sand is heated. **(1mk)**

.....

.....

(ii) State and explain what was observed in the combustion tube. **(2mks)**

.....

.....

.....

(iii) Name the gas Y and state how it is tested in the laboratory. **(1mk)**

.....

.....

(c) Distinguish between:

Drying and dehydration. **(2mks)**

.....

.....

.....

(d). A student found two liquids labeled A and B placed on the bench in the laboratory. The liquids were colourless and did not have a smell. One liquid was water.

Describe a test that you would carry out to determine the beaker that contained water. **(3mks)**

.....

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QUESTION 6

(a) Give the name of the process involved in each of the following:

(i) Crystals of hydrated sodium carbonate($\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$) when left in open air change to white powder. **(1 mk)**

.....

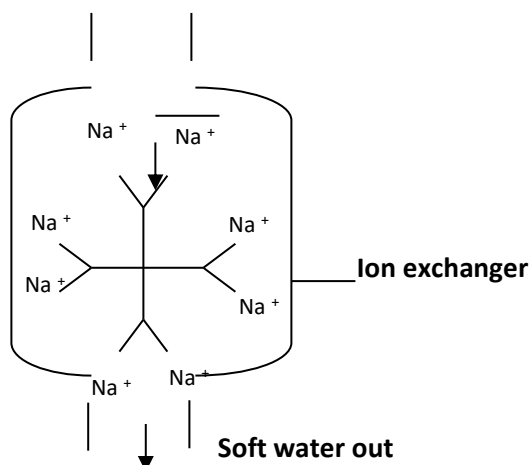
(ii) When anhydrous calcium chloride is used to dry hydrogen gas for a long time, it changes to a solution. **(1mk)**

.....

(b) Complete the table below by indicating the observations, type of change (permanent or temporary) and name of new compound formed. **(6 mks)**

Experiment	Observations	Type of change	Name of product
(i)Heating solid zinc oxide in a test tube.			
(ii)Anhydrous cobalt (II) chloride is left exposed overnight.			
(iii)Iron wool is soaked in tap water for two days			

(c) The diagram below shows a sample of hard water being passed through a vertical column to remove its hardness. **Hard water containing MgCl_2**



(i) Write the formula of the two cations present in the sample of hard water. (2mks)

.....

(ii) What name is given to the above method of softening hard water. (1 mk)

.....

(iii) Write an ionic equation to show how the hard water is softened. (1 mk)

.....

(iv) Study the table below and answer the questions that follow.

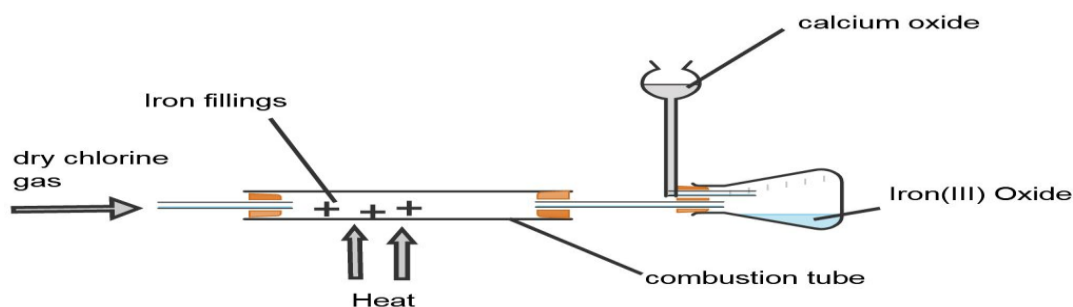
Salt	Solubility (g/100g of water) at 20°C	Solubility (g/100g of water) at 50°C
P	10	20
Q	15	12

A solution 9g of P and 14g of Q in 100g of water at 20°C is warmed while stirring up to 50°C .

State and explain the observations made. (2 mks)

QUESTION 7

- (a) A student set out to prepare iron (III) chloride using the apparatus shown in the diagram below:



(i) Explain why

- (a) It's necessary to pass chlorine gas through the apparatus before heating begins. (2mks)

.....

.....

- (b) Calcium oxide is used in the guard tube. (1mk)

.....

- (c) The total mass of Iron III chloride formed was found to be 0.5g. Calculate the volume of chlorine gas that reacted with Iron.

(Fe=56.0 Cl=35.5 and molar gas volume at 298k is 24,000cm³) (3mks)

- (d) What property of Iron (III) chloride makes it possible to be collected as shown in the diagram? (1mk)

.....

- (e) In the large scale production of hydrogen chloride gas, hydrogen gas burned in chlorine gas. State the source of the two gases. (1mk)

.....

.....

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

CHEMISTRY

233/3

PAPER 3 (PRACTICAL)

TIME: 2¼ HOURS

SCHOOL..... SIGN.....

CONFIDENTIAL

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

- | | |
|--|---|
| 1. About 100cm³ of 0.2M Hydrochloric acid labeled solution A . | |
| 2. Accurately weighed 2.4g anhydrous sodium carbonate labeled solid X . | |
| 3. About 80cm³ of 1M sodium hydroxide solution labeled solution B . | |
| 4. About 120cm³ of 0.7 M sulphuric (vi) acid solution labeled solution C . | |
| 5. 250 ml volumetric flask. | 21. Metallic spatula |
| 6. 100 ml measuring cylinder | 22. 1.5 g of solid K |
| 7. Distilled water | 23. 1 g of solid P |
| 8. 250 ml plastic beaker (empty) | 24. About 0.5g sodium hydrogen carbonate |
| 9. 0 – 110°C thermometer. | 25. Glass rod |
| 10. One burette (0 – 50ml) | |
| 11. One 25.0 ml pipette. | |
| 12. Two conical flasks (250 ml) | <u>Access to</u> |
| 13. Methyl orange indicator | 1. Means of heating |
| 14. Retort stand | 2. 2M NaOH with a dropper |
| 15. Pipette filler | 3. 2M Ammonia solution with a dropper |
| 16. A white tile | 4. 2M nitric acid with a dropper |
| 17. 6 dry test tubes | 5. 0.09M Barium nitrate solution |
| 18. 1 boiling tube | 6. Universal indicator with a dropper |
| 19. One filter funnel | 7. Standard PH chart |
| 20. 1 label | |

NOTE:

1. Solid **K** is a mixture of **ZnSO₄** and **(NH₄)₂ SO₄** in the ratio **1:1**.
2. Solid **P** is oxalic acid.
3. Solution **A** is **0.2M** Hydrochloric acid prepared by dissolving **17.2cm³** of concentrated hydrochloric acid in **1** litre.
4. Solution **B** is **1M** sodium hydroxide prepared by dissolving **40g** in **1** litre.
5. Solution **C** is **0.7M** sulphuric (vi) acid prepared by dissolving **38.5** litres of the acid in a litre of solution.

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

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) Answer all the questions in the spaces provided in the question paper.
- (b) You are NOT allowed to start working with the apparatus for the first 15 minutes of the 2 ¼ hrs allowed for this paper. This time is to enable you to read the question paper and make sure you have all the chemicals and apparatus that you may need.
- (c) All working must be clearly shown where necessary.

FOR EXAMINER'S USE ONLY.

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

Answer ALL the questions

1. You are provided with

- Anhydrous sodium carbonate solid x.
- Distilled water.
- 0.2m Hydrochloric acid solution A.

You are required to determine molar heat of solution of solid x.

PROCEDURE I

- i. Place 50.0ml of water in 250ml plastic beaker.
- ii. Note the temperature of the water and record it in the table I below.
- iii. Add all the solid X provided to the water in the beaker, stir gently with the thermometer and record the final temperature of the solution in the table I below. Keep the resulting solution for procedure 2.

TABLE I

Final temperature ($^{\circ}\text{C}$)	
Initial temperature ($^{\circ}\text{C}$)	
Change in temperature ($^{\circ}\text{C}$)	

(2 mks)

- (a) What is the enthalpy change for the reaction? (Assume the density of solution is 1g/cm^3 , and specific heat capacity is $4.2\text{ Jg}^{-1}\text{ K}^{-1}$).

(2 mks)

PROCEDURE II

Transfer the contents of the beaker into 250ml volumetric flask. Rinse both the beaker and the thermometer with distilled water and add this water into the solution in the volumetric flask. Add more water to make up to the mark. Label this solution as solution X. fill the burette with solution A. Using a pipette place 25.0ml of solution X into a conical flask. Add 3 drops of methyl orange indicator and titrate with solution A. record your readings in table II below. Repeat the titration two more times and complete the table.

TABLE II

Experiment			
Final burette reading (cm ³)			
Initial burette reading (cm ³)			
Volume of solution A used (cm ³)			

(3 mks)**(b)** Calculate average volume of solution A used.**(1 mk)****(c)** the number of moles of solution A used.**(1 mk)****(d)** The number of moles of solution X that reacted with the number of moles of solution A in (c) above.**(1 mk)****(e)** The number of moles of solid X used in procedure I.**(1 mk)****(f)** Molar heat of solution of anhydrous sodium carbonate.**(2 mks)**

2. You are provided with:

- A solution of sodium hydroxide labeled B.
- A solution of sulphuric(vi)acid labeled C.

You are required to determine the concentration of the alkali using the following procedure.

PROCEDURE:

- (i) Place 40cm^3 of sodium hydroxide solution into a 250 ml plastic beaker.
- (ii) Measure 60cm^3 of sulphuric (vi) acid solution.
- (iii) Determine the temperature of sodium hydroxide solution at half a minute intervals for two minutes and record it in the table below.
- (iv) At $2\frac{1}{2}$ minutes, place the 60cm^3 of solution C into the plastic beaker while stirring and resume taking the temperature in the 3rd minute.
- (v) Complete the table below.

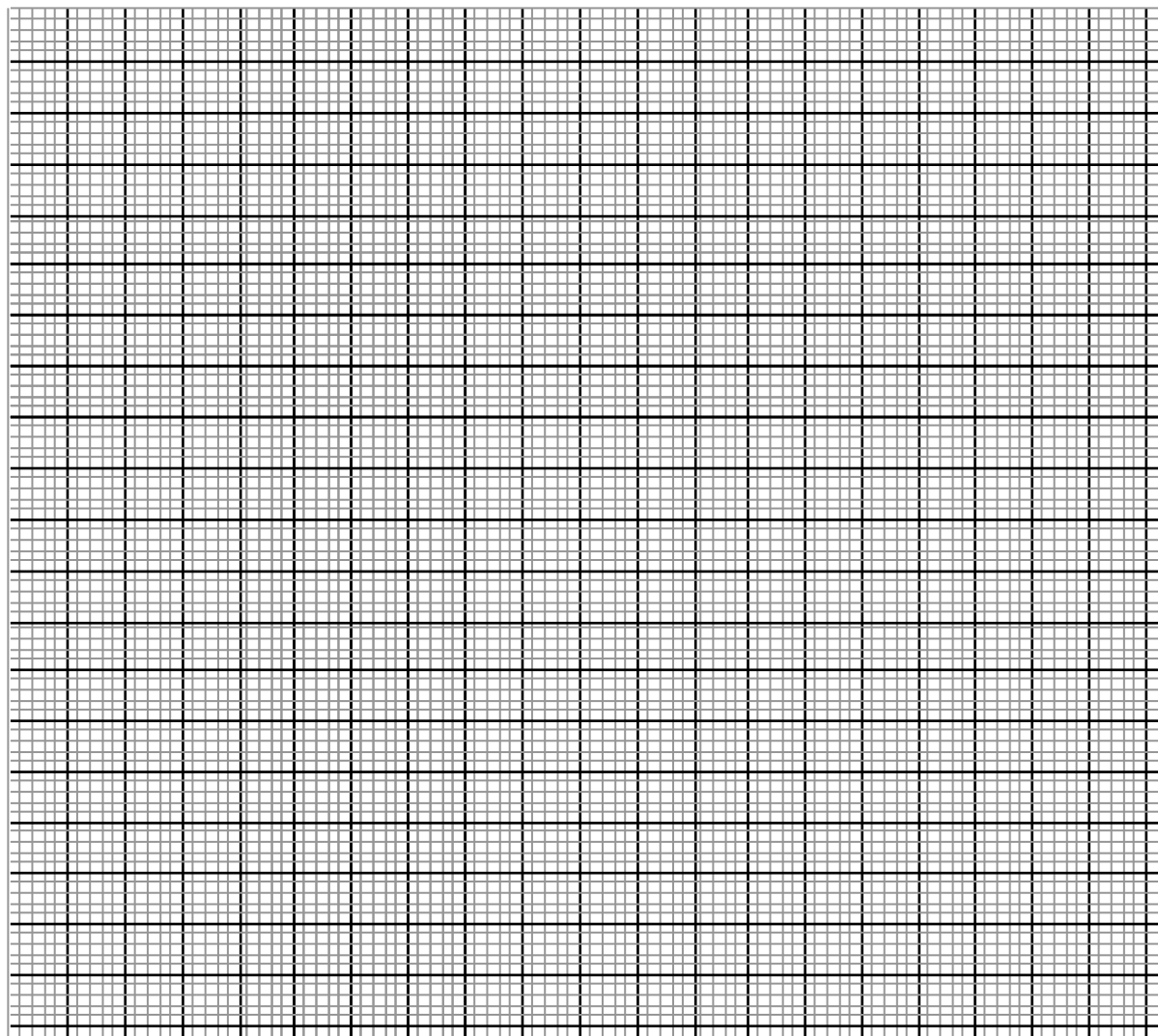
Time in minutes	0	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Temperature in $^{\circ}\text{C}$									

Time in minutes	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6	$6\frac{1}{2}$	7
Temperature in $^{\circ}\text{C}$						

(3 mks)

(a) Plot a graph of temperature against time.

(3 mks)



(b) From the graph, determine the highest temperature change.

(1 mk)

(c) Determine the heat evolved in this experiment (Density of solution = 1 g/cm^3 specific heat capacity of solution = $4.2 \text{ Jg}^{-1} \text{ K}^{-1}$)

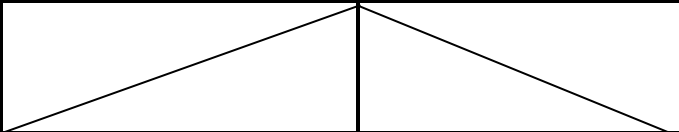
(2 mks)

(d) Given that the molar heat of neutralization is 56KJ/mole, determine the number of moles of sodium hydroxide used in the neutralization reaction above. (2 mks)

(e) Determine the molarity of sodium hydroxide. (2 mks)

3. You are provided with solid K. carry out the following tests and write your observations and inferences in the spaces provided.

	TEST	OBSERVATION	INFERENCE
(a)	Place a spatula full of sample K in a clean dry test tube. Heat gently and then strongly.	(1 mk)	(1 mk)
(b)	Put the remaining solid K in a boiling tube. Add about 8cm ³ of distilled water. Shake well and divide the solution into 3 portions.		
(i)	To the first portion add 3 drops of sodium hydroxide solution and then excess.	(1 mk)	(1 mk)

(ii)	To the second portion add 3 drops of ammonia solution and then excess.	(1 mk)	(1 mk)
(iii)	To the third portion add 3 drops of Barium nitrate followed by 3 drops of nitric acid.	(1 mk)	(1 mk)
(c)	You are provided with solid P. carry out the tests below and record your observations and inferences.		
(i)	Place half spatula of solid P in a non-luminous flame of a Bunsen burner.	(1 mk)	(1 mk)
(ii)	Dissolve the remaining solid in water and divide into two portions		
(a)	Add 3 drops of universal indicator to the 1 st portion and determine the PH of the solution.		
(b)	To the 2 nd portion add a little sodium hydrogen carbonate	(1 mk)	(1 mk)

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

PHYSICS

232/1

PAPER 1 (THEORY)

TIME: 2 HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education

INSTRUCTIONS TO THE CANDIDATE:

- (a) Write your **name** and **index number** in the spaces provided above.
- (b) **Sign** and write the **date** of examination in the spaces provided above.
- (c) This paper consists of **two** Sections **A** and **B**.
- (d) Answer **all** the questions in sections **A** and **B** in the spaces provided.
- (e) All working **must** be clearly shown in the spaces provided.
- (f) Mathematical tables and electronic calculators **may be** used.

FOR EXAMINER'S USE ONLY:

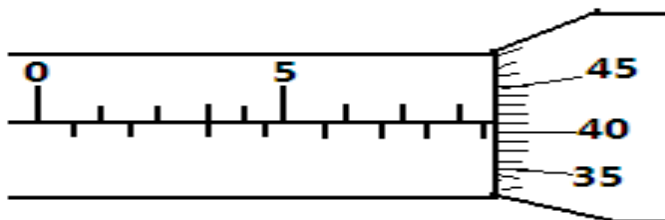
Section	Question	Maximum Score	Candidate's Score
A	1 – 13	25	
	14	11	
	15	10	
B	16	13	
	17	12	
	18	9	
Total Score		80	

SECTION A (25 MARKS)

(Answer ALL the questions in the spaces provided)

1. What is the reading on the micrometer screw gauge shown below with an error of +0.5mm?

(1mk)



2. 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 $F = ma$. State **two** other forces that act on the same body

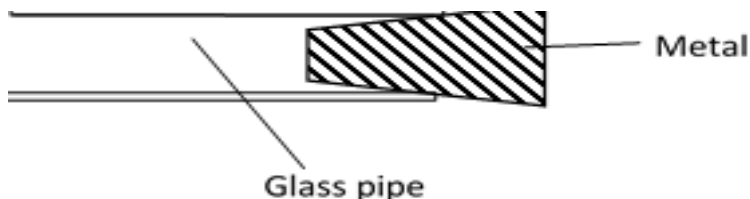
(1mk)

3. State **two** facts which show that heat from the sun does not reach the earth surface by convection.

(2mks)

4. The figure below shows a piece of metal stuck in a hollow glass pipe. Explain how temperature change may be used to separate **them**

(2mks)



5. The water in a burette is 30.6cm^3 , 50 drops of water each of volume V are added to the water in the burette. The final reading of the burette was 20.6cm^3 . Calculate the radius of the drop of water.

(2mks)

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6. In an experiment to demonstrate Brownian motion, smoke was placed in a smoke cell and observed under a microscope. State and explain the observation.

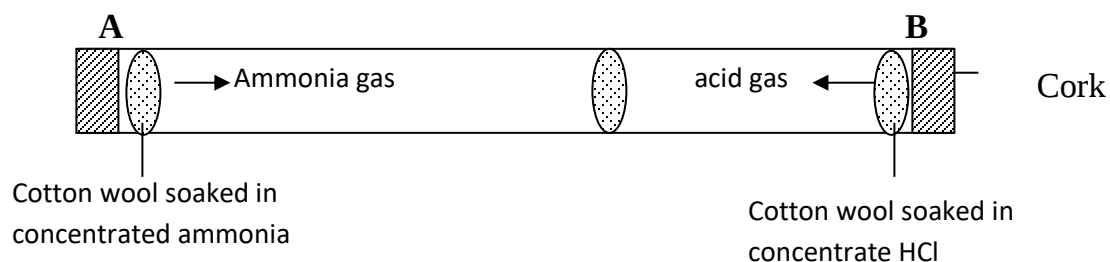
(2mks)

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7. In the figure below, ammonia gas and an acid gas diffuse and react to form a white deposit on the walls of a long glass tube as shown.



(i) What conclusion can be made from the result of this experiment?

(1mk)

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(ii) How does the size and mass of a gas affect its rate of diffusion?

(1mk)

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(iii) The experiment is performed at a lower temperature. Explain how the time taken to form the white deposit would be affected.

(1mk)

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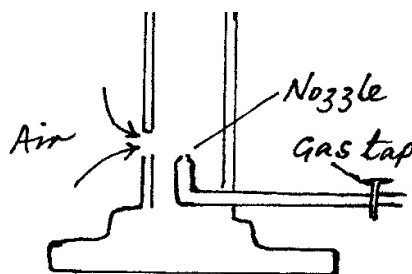
8. Determine the change in momentum produced when a force of $3500N$ acts on a body which is at rest for 0.002 seconds. (2mks)

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9. The figure below shows a Bunsen burner. Explain how air is drawn into the burner when the gas tap is opened. (2mks)



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10. A mass of $100g$ is hung at the $10cm$ mark and a $50g$ mass at the $70cm$ mark of a uniform metre rule balanced at the $40cm$ marks. Determine the weight of the rule. (3 marks)

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11. Four students were playing football during which the ball got deflated. Explain what happened to its density (2mks)

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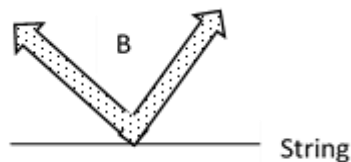
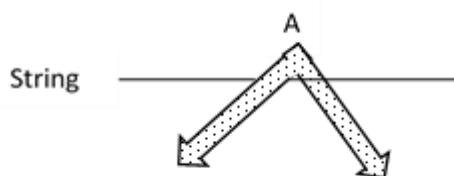
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12. State the branch of physics that deal with kinetic energy of matter. (1mk)

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13. A student balances a V - shaped uniform wire on a tight string as shown in figure A and B. state with reason the one which is easier to do (2mks)



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SECTION B (55 MARKS)

14. A student in LubinuGirls set up an experiment to study the acceleration of a trolley using ticker tape timer. The timer made 50 dots per second on the tape. Dots A to E measured 2.5cm apart and dots E to I measured 4.5cm apart.

a) Using a scale drawing show the dots A, B C, D, E, F, G and I as they appeared on the tape.

(3mks)

b) Determine the velocity of the trolley from:

i) A to E.

(2mks)

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.....

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ii) E to I.

(2mks)

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c) Calculate the acceleration of the trolley.

(2mks)

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d) What end of the tape was fixed onto the trolley?

(1mk)

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e) State **two** precautions that the student should take before she takes her final samples of the dots.

(2mks)

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15. a) An astronaut in orbit round the earth may feel weightless even when the earth's gravitational field still acts on him. **Explain**

(2mks)

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b) Distinguish between angular velocity and linear velocity

(1mk)

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c) A stone is whirled with uniform speed in a horizontal circle of radius 15 cm. it takes the stone 10 seconds to describe an arc of length 4 cm. calculate

i) Angular velocity (3mks)

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ii) Linear velocity of the stone (2mks)

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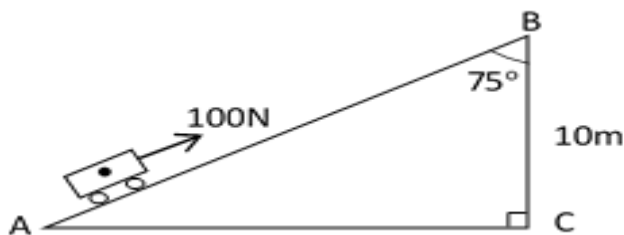
iii) Periodic time (2mks)

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16. The figure below shows an inclined plane on which a trolley of mass 30 kg is pulled up a slope by a force of 100 N, parallel to the slope. The trolley moves so that its centre of mass travels from points A to B.



(i) Determine the work done on the trolley against the gravitational force in moving from A to B. (2mks)

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(ii) Determine the work done by the force in moving the trolley from A to B. (3mks)

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(iii) Determine the percentage of the work input that goes to waste (3mks)

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(iv) Determine the frictional force. (1mk)

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(v) Determine the mechanical advantage of the system. (1mk)

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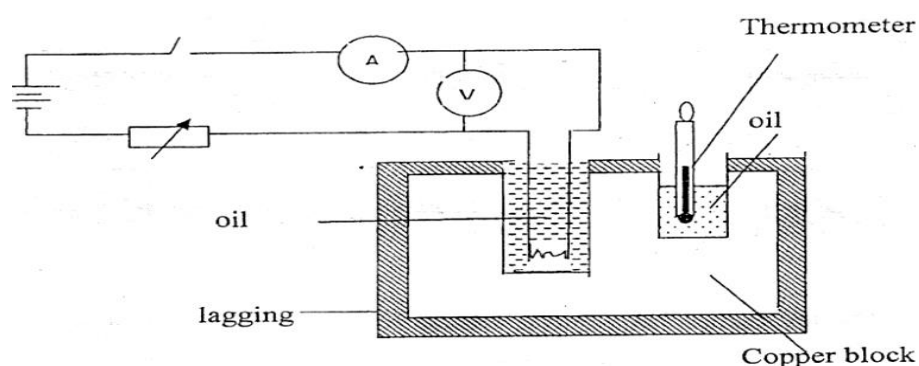
(vi) Find the velocity ratio (1mk)

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17.a. The figure below shows a set-up that can be used to determine the specific heat capacity of a metal block.



I) Other than temperature and current, state **two** measurements that should be taken in the experiment to determine the specific heat capacity of the block. (2mks)

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II) Describe how the method can be used to determine the specific heat capacity of the metal block. (3mks)

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III) State the purpose of oil in the set-up. (1mk)

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(b) A well lagged copper can together with a copper stirrer of total heat capacity 60J K^{-1} contains 200g of water at 20°C . Dry steam at 100°C is passed in while the water is stirred until the content reach a temperature of 50°C . Determine the mass of condensed steam.

(Specific latent heat of vaporization of water is $2.26 \times 10^6 \text{ J/kg}$ and specific heat capacity of water is 4200 J/kgK) (4mks)

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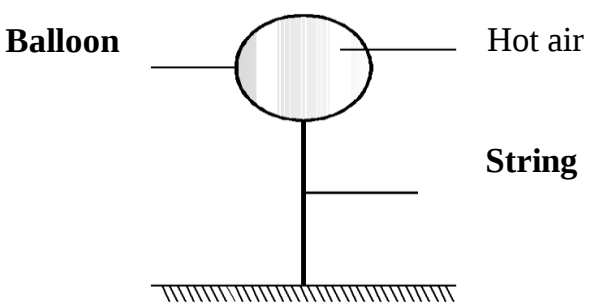
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18.a) State the law of floatation (1mk)

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b) The diagram below shows a hot air balloon tethered to the ground on a calm day. The balloon contains 1300 m^3 of hot air of density 0.82 kg/m^3 . The mass of the material making the balloon without hot air is 420 kg . The density of the surrounding air is 1.35 kg/m^3 . Determine



i) The total weight of hot air balloon (3mks)

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ii) The weight of air displaced by the balloon (2mks)

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iii) Upthrust force on the balloon (1mk)

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iv) The tension in the rope holding the balloon in the ground. (2mks)

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iv) The acceleration with which the balloon begins to rise when released. (3mks)

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KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

PHYSICS

232/2

PAPER 2 (THEORY)

TIME: 2 HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education (K.C.S.E.)

INSTRUCTIONS TO THE CANDIDATES:

- Write your **name** and **index number** in the spaces provided above
- Sign and write the date of the examination in the spaces provided.
- This paper consists of **two** sections: **A** and **B**.
- Answer **all** questions in section **A** and **B** in the spaces provided.
- All working **must** be clearly shown in the spaces provided in this booklet.
- Scientific calculators and KNEC mathematical tables may be used except where stated otherwise.

FOR EXAMINER'S USE ONLY

SECTION	QUESTION	MAX SCORE	CANDIDATE'S SCORE
A	1-12	25	
B	13	09	
	14	08	
	15	10	
	16	11	
	17	09	
	18	08	
	TOTAL	80	

SECTION A (25 MARKS)

Answer ALL the questions in this section.

1. State one use of magnets. (1mk)

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2. Two mirrors are incline at 60° to each other. Determine the number of images observed and state one application of this arrangement. (3mks)

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3. Explain the purpose of manganese (IV) oxide in a dry cell. (1mk)

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4. The period of a wave is T seconds. Its wavelength is λ metres. Show that $V = f\lambda$ where v is the speed of the wave and f is the frequency. (2mks)

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- 5.a)State one application of force on a current carrying conductor placed in magnetic field. (1mk)

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- b) Your house is supplied with 240 v from a power source which is fitted with a 13 A safe fuse.
What is the maximum number of 60w bulbs that can be fitted in the house? (2mks)

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6. What causes electrical resistance in conductors?

(1mk)

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7. Figure 3 shows how the displacement of a point varies with time as α waves passes it.

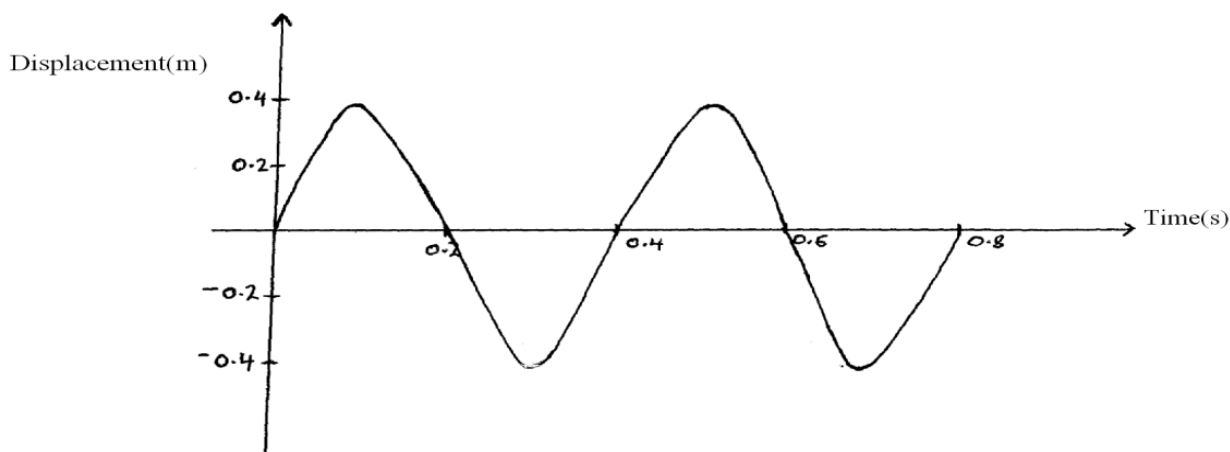


Figure 3

On the same diagram, draw a wave which passes the point with twice the frequency and half the amplitude of the one shown. (2 marks)

8. Figure 8 shows a ray of light incident on the face of a water prism.

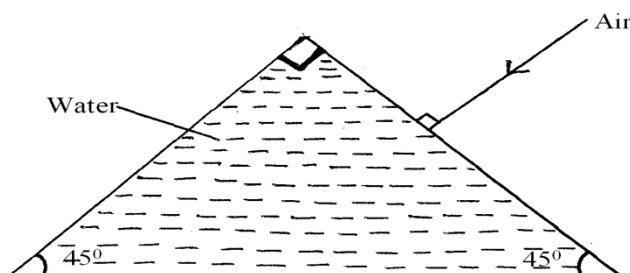


Figure 8

Sketch the path of the ray as it passes through the prism. Critical angle for the water is 49° .

(2mks)

9. A boy observes his face in a concave mirror of focal length 100cm. If the mirror is 80cm away, state one characteristics of the image **observed** (1mks)

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10. Describe how microwaves are used in determining distances of objects as in the radar. **(3mks)**

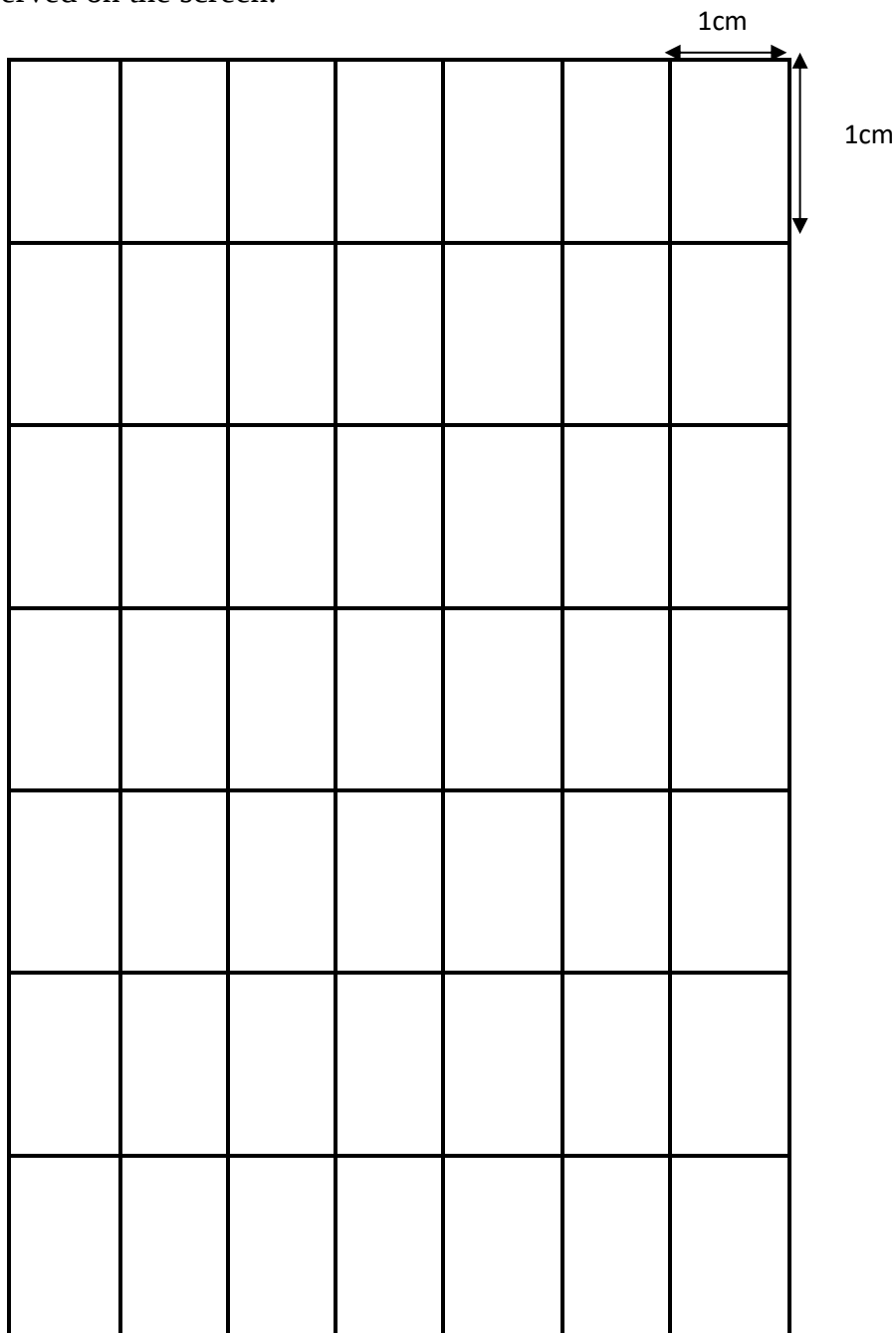
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11. An alternating voltage of peak value 15v and frequency 25Hz is applied to the terminals of a Cathode ray oscilloscope. The Y-gain is set at 5 v/cm and the time base at 10 ms/cm. Draw the trace observed on the screen. **(2mks)**

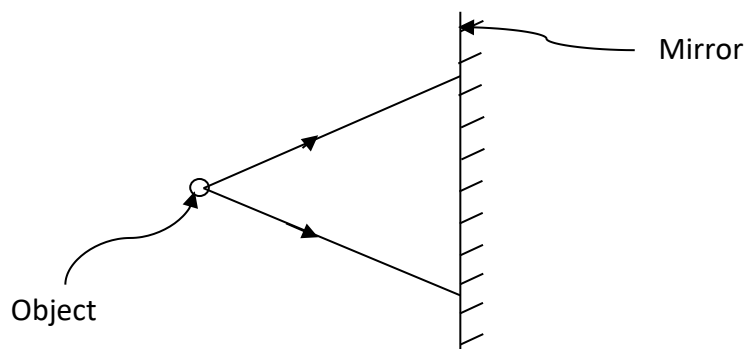


12. (a) Name all the radiations of the electromagnetic spectrum which have higher wavelengths than the visible light. (1 mark)

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.....

- (b) State the radiation that is detected using a blackened bulb of a thermometer. (1 mark)

13. The figure below shows two rays drawn from an object on to the mirror.



Complete the ray diagram to show the position of the image. (2 marks)

SECTION B (55 MKS)

14. (a) Figure 4 below shows an X – ray tube

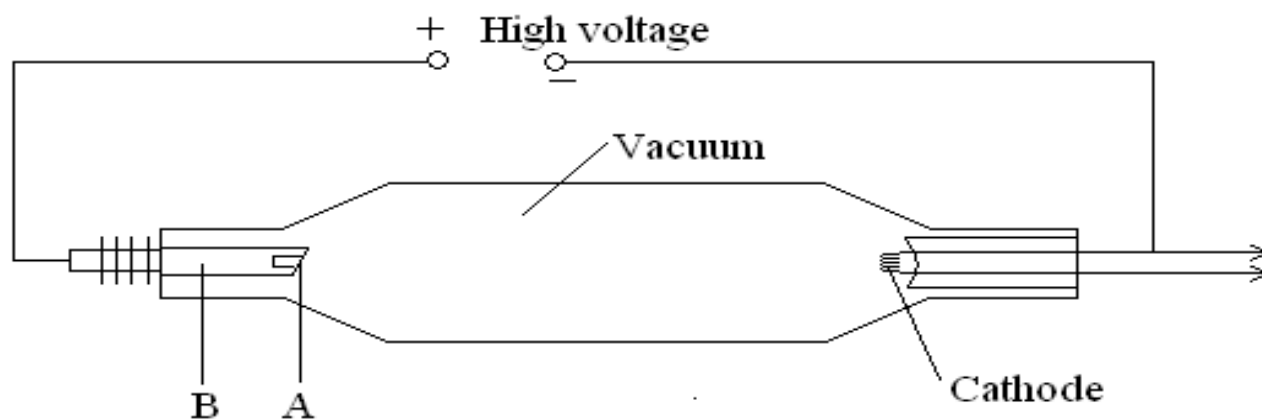


Figure 1

(i) Label the parts A and B. (2mks)

A.....

B.....

(ii) Suggest with a reason the material used for A. (2mks)

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(iii) State the reason why the X –ray tube is evacuated. (1mk)

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(iv) For the X – ray tube how would the following be controlled;

I. The intensity (1mk)

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II. Quality of X- rays (1mk)

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III. The exposure to patients (1mk)

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(b) (i) A potential difference of 50KV is applied across an X-ray tube. Given that the charge of an electron $e = 1.6 \times 10^{-19}$ coulombs and the mass of an electron $M_e = 9.1 \times 10^{-31} kg$. Calculate the kinetic energy of the electrons. (3mks)

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- (ii) If 12% of the electron energy is converted into X-ray, **determine** the minimum wavelength of the emitted X –ray given planks constant $h = 6.63 \times 10^{-34}$ (3mks)

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15. (a) **Figure 7** below shows the deflection from a radioactive isotope by an electric field.

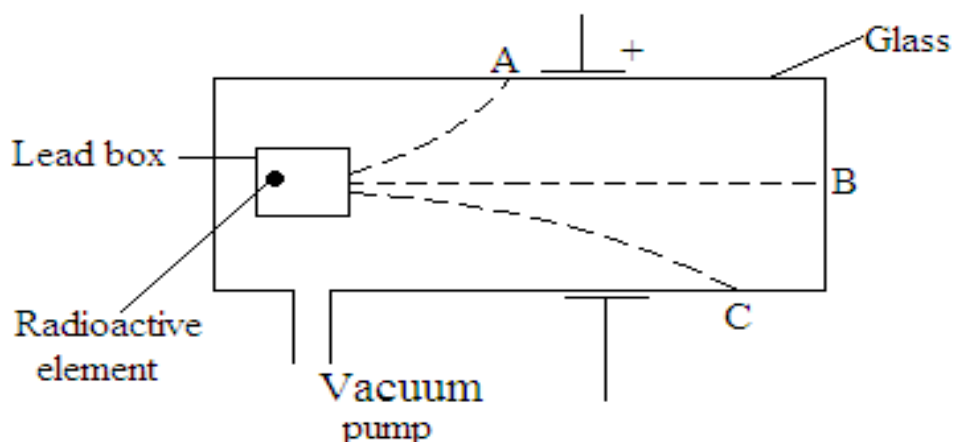


Figure 2

- (i) **Define** the term isotope. (1mk)

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- (ii) **Identify** the radiations A,B, and C (3mks)

A

B

C

- (b) **Give one** use of a radioactive isotope in medicine. (1mks)

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(c) Radium $^{226}_{88}\text{Ra}$ disintegrates into a new stable element lead $^{206}_{82}\text{Pb}$ how many alpha and Beta particles are emitted (3mks)

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(d) A 32g sample of radioactive substance was reduced to 2g in 96 days. What is the half life of the substance. (2mks)

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16. (a) **Distinguish** between self-induction and mutual induction. (2mks)

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(b) In what form is energy lost in a cable during transmission. (1mk)

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(c) **State** the difference between a step-up transformer and an induction coil. (1mk)

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(d) **Figure 5** below shows a diagram of a bicycle dynamo. The wheel A is connected by an axle to a permanent cylindrical magnet and is rotated by the bicycle tyre.

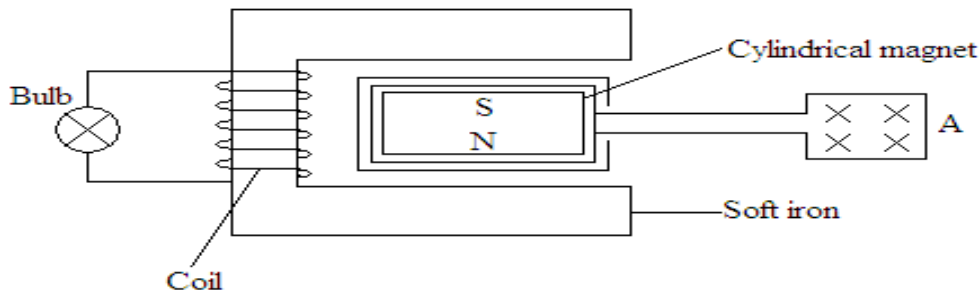


Figure 3

I. **Explain** why the bulb lights. (2mks)

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II. If you were riding the bicycle, what would you do to make the bulb light more brightly? (2mks)

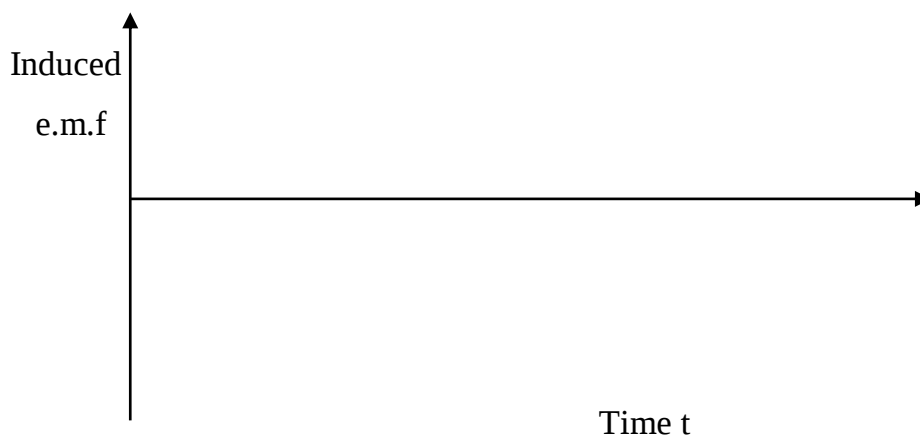
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III. On the axes provided, sketch the graph of induced e.m.f with time(1mk)



17. I a) A $10\text{ }\mu\text{F}$ capacitor is charged to a potential difference of 300V and isolated. It is then connected in parallel to a $5\text{ }\mu\text{F}$ capacitor. Find the resultant potential difference. (3mks)

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b) The energy stored before connection.

(3mks)

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c) The energy in the two capacitors after connection.

(3mks)

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II.a) State how distance of separation between the plates affect the capacitance of a parallel plate capacitor.

(1mks)

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b) Three capacitors of capacitance $100\mu f$, $500\mu F$ and $400\mu f$ are connected together in a circuit. Draw a circuit diagram to show the arrangement of the capacitors which gives an effective capacitance of $250\mu f$

(1mks)

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18. (a) Differentiate between an Ohmic and non-ohmic conductor giving **one** example in each case.

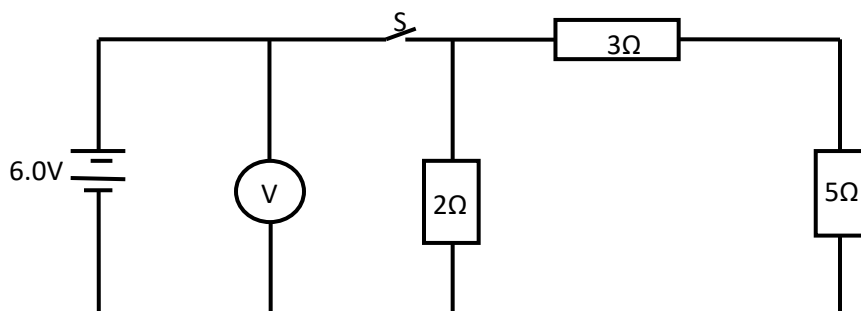
(2marks)

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(b) **Figure 7** shows a circuit with resistors and voltmeter connected to a battery.



(i) If each cell has an internal resistance of 0.7Ω , determine the total resistance in the circuit. **(3mk)**

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(ii) What amount of current flows through the 3Ω resistor when the switch is closed? **(3mks)**

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(iii) What is the reading of the voltmeter when the switch S is

(I) Open **(1mk)**

.....

(II) Closed **(1mk)**

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(iv) Account for the difference between the answers in (I) and (II) above. **(1mk)**

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KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

PHYSICS

232/3

PAPER 3 (PRACTICAL)

TIME: 2½ HOURS

SCHOOL..... SIGN.....

CONFIDENTIAL INSTRUCTIONS TO SCHOOLS

INSTRUCTIONS TO SCHOOLS:

1. The information contained in this paper is to enable the head of school and the teacher in charge of Physics to make adequate preparation for this Physics practical examination. **NO ONE ELSE** should have access to this paper or acquire knowledge of its contents. Great care **MUST** be taken to ensure that the information herein does not reach the candidates either directly or indirectly.
2. The apparatus required by each candidate for the Physics Practical examination are set out on below. It is expected that the ordinary apparatus of a Physics laboratory will be available.
3. The **Physics teacher** should note that it is his/her responsibility to ensure that each apparatus acquired for this examination agrees with the specifications as indicated on the list of apparatus below.
4. The question paper will not **be** opened in advance.
5. The Physics teacher is **not** expected to perform the experiments.

NB: Any use of apparatus other than the ones specified may lead to candidates being penalized.

QUESTION ONE

2 new dry cell size D

A cell holder for two cells

A switch

A milliammeter of range 0 – 1mA

A capacitor labelled C 2200 μ F and 25V

8 connecting wires at least four with crocodile clips on one end

A stop watch

A carbon resistor labelled R 4700 Ω

QUESTION TWO

Each candidate should have:-

- *A retort stand, clamp and boss*
- *A spiral spring*
- *A stop watch*
- *Three 100g masses*
- *A 250ml glass beaker*
- *A Bunsen burner*
- *A thermometer (-10 to 110⁰C)*
- *A tripod stand and wire gauze*
- *A measuring cylinder 100ml*
- *A source of heat*
- *Some water in a container about 500ml*

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

PHYSICS

232/3

PAPER 3

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

INSTRUCTIONS TO CANDIDATES

1. Write your **name, index number, class, date** and **signature** in the spaces provided above.
2. This paper consists of two questions 1 and 2.
3. Answer all questions in the spaces provided.
4. Non-programmable calculators and mathematical tables may be used.
5. Show all your workings.

QUESTION 1	c	g	h	i	j	k	l
Maximum score	1	8	5	2	1	2	1
Candidates score							

QUESTION 2	b	c	d	e		GRAND TOTAL
Maximum score	3	2	6	9		
Candidates score						

QUESTION ONE

You are provided with the following

2 new dry cell size **D**

A cell holder

A switch

A millimeter of range **0 – 1mA**

A capacitor labelled **C**

8 connecting wires at least four with crocodile clips on one end

A stop watch

A carbon resistor labelled **R**

Proceed as follows

a) Connecting the circuit as shown in the **figure 1** below, where **P** and **Q** are crocodile clips

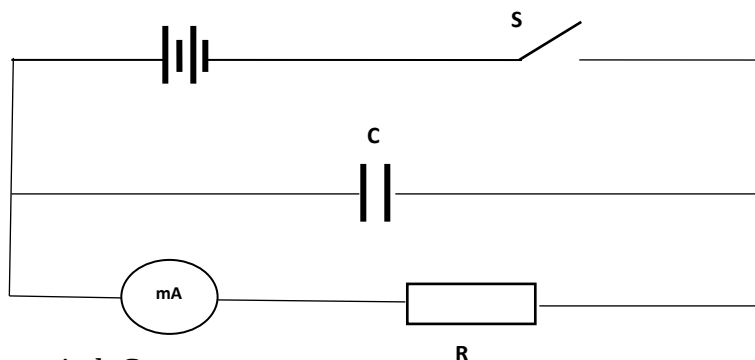


Figure 1

b) Close the switch **S**

c) Record the highest reading of the milliammeter **I₀** and then open the switch.

I₀ =

(1 mark)

d) Use **I₀** above to calculate $\frac{4}{5}I_0$, $\frac{3}{4}I_0$, $\frac{2}{3}I_0$, $\frac{1}{2}I_0$, $\frac{2}{5}I_0$, $\frac{1}{3}I_0$ and $\frac{1}{4}I_0$. Record in the **table 1** below.

e) Close switch **S** for a second time and observe the deflection in the milliammeter (*the pointer should rise back to the same initial value I₀.*)

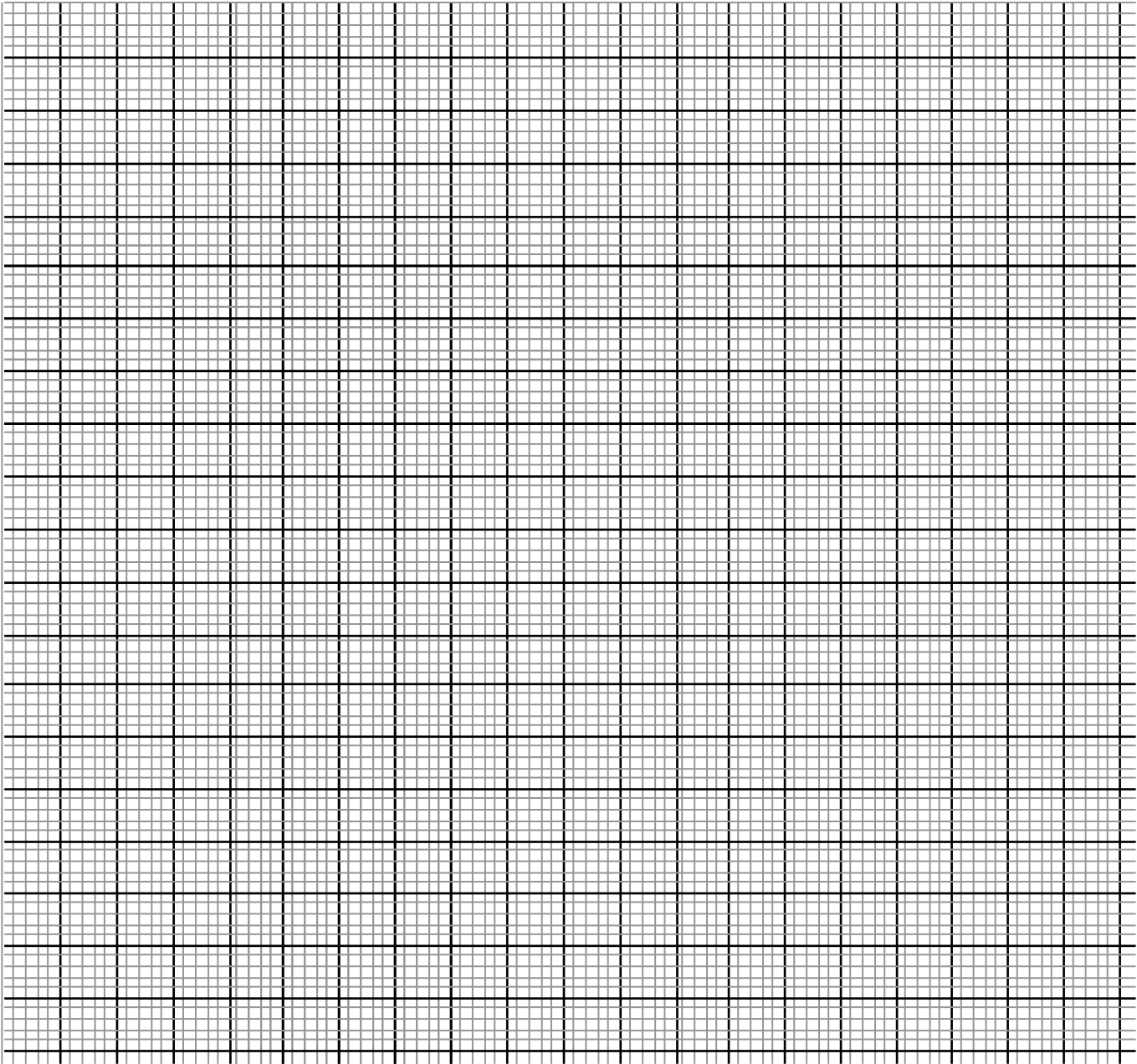
f) Open switch **S** and at the same time start the stop watch to measure the time taken for the current to decrease to four fifth the value of **I₀**. i.e. $\frac{4}{5}I_0$. Record your value in the **table 1** below.

g) Repeat steps **e** and **f** for other values of current as shown on the **table 1** below

Current I (mA)	I₀	$\frac{4}{5}I_0$	$\frac{3}{4}I_0$	$\frac{2}{3}I_0$	$\frac{1}{2}I_0$	$\frac{2}{5}I_0$	$\frac{1}{3}I_0$	$\frac{1}{4}I_0$
Your calculated fraction of I₀ (mA)								
Time t (s)								

(8marks) **Table 1**

h) Plot a graph of current **I** (y-axis) (mA) against time **t** (s) (5marks)



i) From your graph, find **W** the value of **I** when **t = 7.00s** in **SI** units. (2marks)

j) Given that **A = 10W**, determine the value of **A**. (1mark)

k) Determine the voltage across **R** at **t = 7.00s** given that **R = 4.7 K Ω** (2marks)

l) State the quantity represented by the area under the graph (1mark)

2. QUESTION TWO

This question has two parts A and B. Answer both parts.

PART A

You are provided with the following:-

- A retort stand, clamp and boss.
- A spiral spring.
- A stop watch.
- Three 100g masses.

Proceed as follows:

- (a) Suspend a 100g mass at the end of the spring as shown in figure 1.

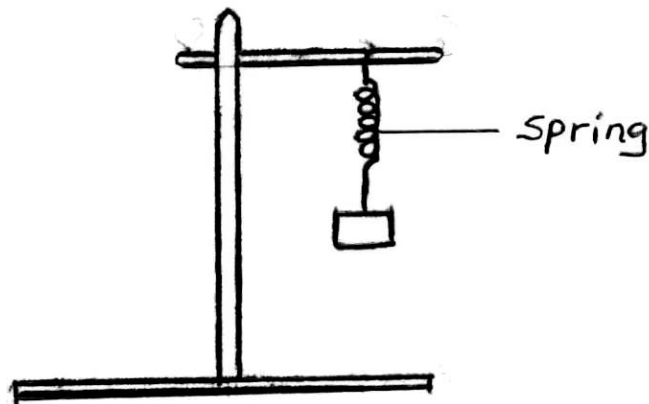


Fig. 1

Now give the mass a small vertical displacement and release so that it performs vertical oscillations.

Time ten oscillations and determine the period T . Enter your results in table 1.

- (b) Repeat the experiment for the other values of mass and complete the table.

Table 1

Mass m (g)	100	200	300
Time for 10 oscillations (s)			
Periodic time T (s)			

(3mks)

- (c) Given that $T = \frac{2\pi}{K} \sqrt{\frac{m}{K}}$, where k is the spring constant, find the average value k for the spring. (2mks)

PART B

You are provided with the following:-

- A 250ml glass beaker
- A Bunsen burner
- A Thermometer
- A Stop watch
- A Tripod stand and a Wire gauze
- A measuring cylinder 100ml
- Water

Set the apparatus as shown in figure 2 below.

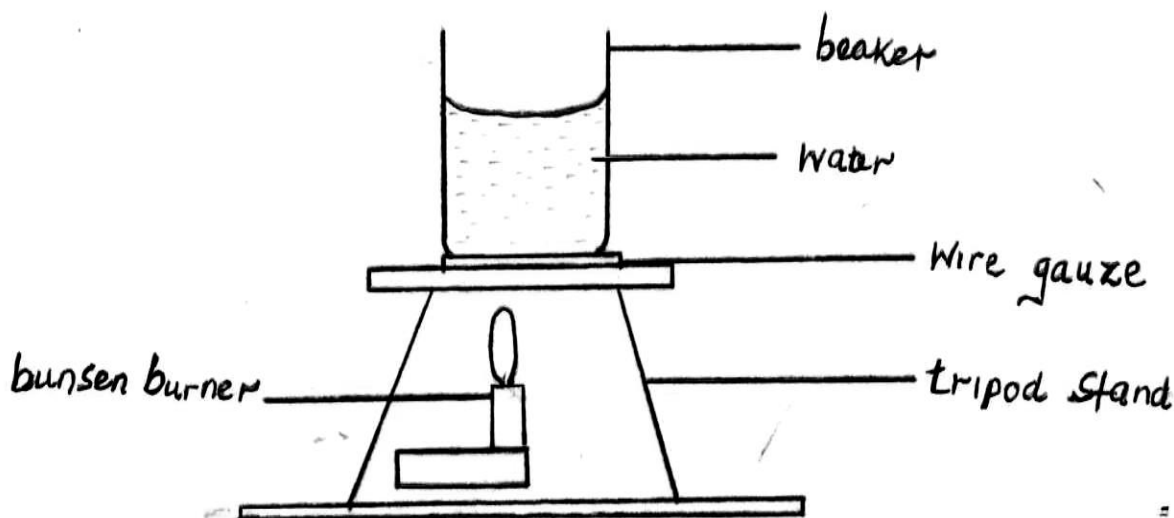


Fig. 2

- (d) Measure 100cm³ of water and pour it into the beaker. Take the initial temperature of the water.

$T_0 = \dots\dots\dots^{\circ}\text{C}$ (1mk)

Now heat the water to a temperature of 80⁰C. switch off the gas tap and place a thermometer into the beaker and start the stop watch when the temperature is 65⁰C. Take the temperature T⁰C of water ever two minutes. Record your results in the table 2 below.

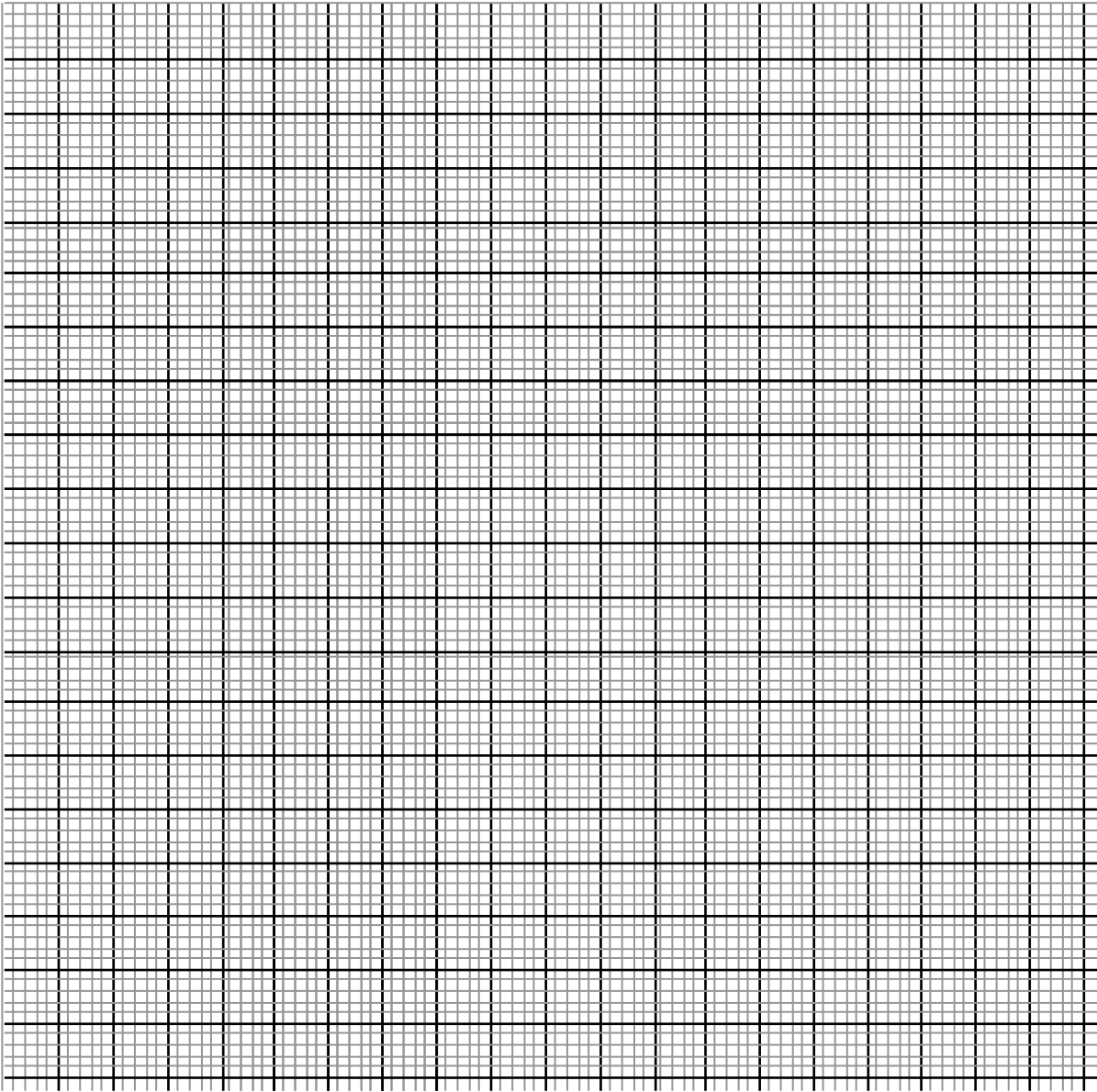
Table 2

Time, t(min)	2	4	6	8	10	12	14
Temperature (T) °C							
(T - T ₀)							
Log (T - T ₀)							

(5mks

(e) Plot a graph of Log (T - T₀) against Time (t).

(5mks)



(a) Find the value of P of $\log (T - T_0)$ when $t = 0$. **(1mk)**

(b) Determine N , where N is the antilog of P . **(1mk)**

(c) Calculate the temperature of the surrounding T_R using the expression $N = 65 - T_R$ **(2mks)**

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

COMPUTER STUDIES

451/1

PAPER 1 (THEORY)

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education

Instructions to candidates

- 1. This paper consists of TWO sections; A and B*
- 2. Answer all questions in sections A.*
- 3. Answer question 16 and any other THREE questions from section B.*

FOR EXAMINERS USE ONLY

SECTION	QUESTION	
A	1 – 15	
B	16	
	17	
	18	
	19	
	20	
TOTAL MARKS		

SECTION A (40MKS)

Answer all the questions in this section

1. A computer must go through the process of booting before use. State what happens during Power On Self-Test (POST) (1mk)

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.....

2. State two differences between a traditional mouse and a trackball (2mks)

.....

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.....

.....

3. State any two circumstances where sound output devices would not be appropriate (2mks)

.....

.....

.....

4. Software can be categorized according to end user licence. Differentiate between a proprietary software and an open source software (2mks)

.....

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.....

5. State the function of each of the following features when creating a word processing document

- (a) Word wrap (1mk)

.....

.....

(b) Watermark

(1mk)

.....

.....

(c) Clipboard

(1mk)

.....

.....

6. Different types of cables are suitable for different applications



a. Identify the cables in the diagram above

(1mk)

.....

b. State one advantage of using the above cable

(1mk)

.....

.....

7. State any two factors to consider when selecting a computer for an **organization**

(2mks)

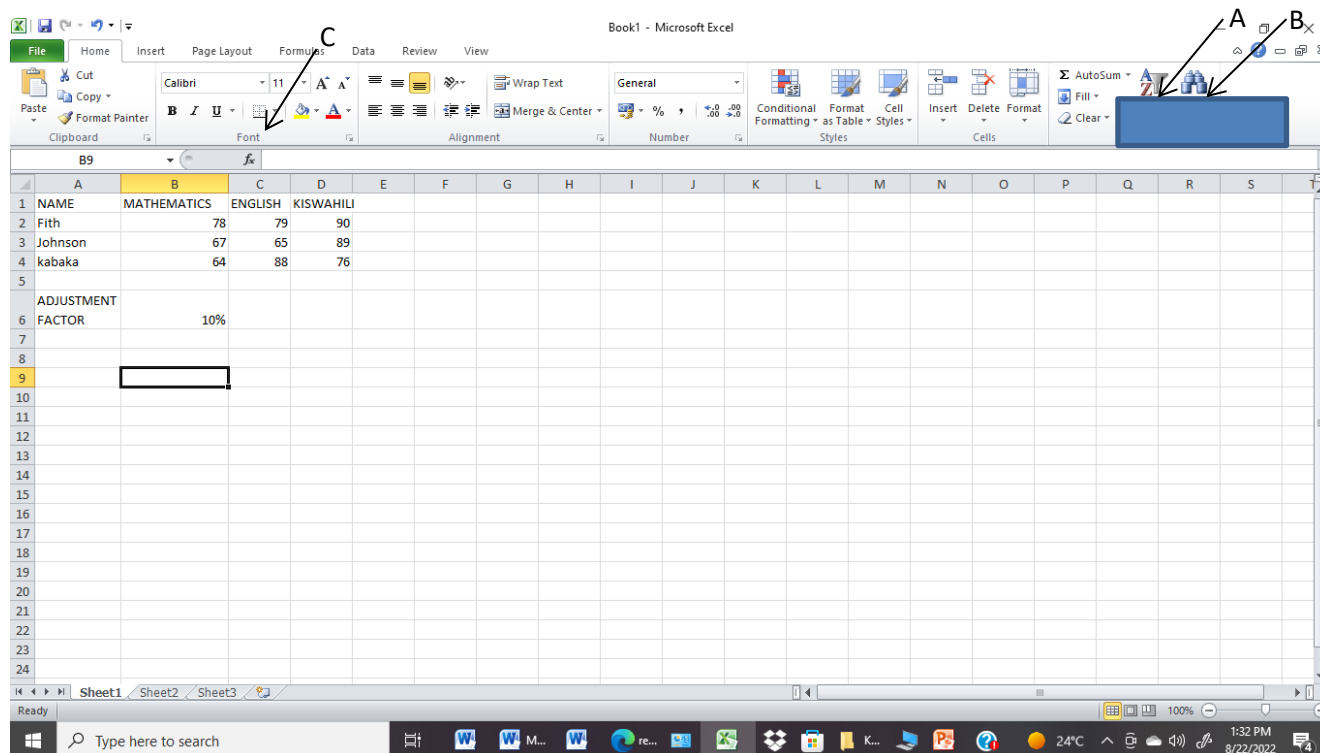
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8. Identify the following symbols as used in **spreadsheet**

(3mks)



- i. A
- ii. B
- iii. C

(a) The formula D10*E12 was initially stored in in cell F10 of a spreadsheet. Write the formula as it would appear when copied to cell M20 of the same **spreadsheet** (1mk)

.....

.....

(b) Write a formula in cell E2 that can be copied to the other cells to display the positive adjusted marks for mathematics using the value in cell B6 (2 mks)

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9. The operating system is known to be very critical in the operation of a computer.

a. State how the operating system handles errors in a computer (2 Marks)

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.....

.....

b. State the importance of the feedback mechanism in a system (1 mk)

.....

.....

c. State one disadvantage of the feedback mechanism (1 mk)

.....

.....

10. Differentiate between *universal resource locator* and *hyperlink* as used when connecting to the internet. (2 mks)

.....

.....

.....

11. A database is the best application to manage and manipulate organization data;

a. Distinguish between a candidate key and a primary key in a database (2 mks)

.....

.....

.....

b. State any two functions of a query (2 mks)

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12. Give the function of cache memory

(1mk)

.....

.....

13. With aid of a flowchart, show a selection control structure.

(2 mks)

14. An employee in a business company is charged with the responsibility of putting the company advertisement on the internet. State the profession title of the employee **entitled with the task of uploading the advertisement on the internet**

(1mk)

.....

(b) State **any** two roles of a system analyst.

(2mk)

.....

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.....

15(a) Describe how the operating system manages the computer Memory.

(2mks)

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(b)Elaborate the application of Artificial intelligence in Artificial neural **network**

(2mks)

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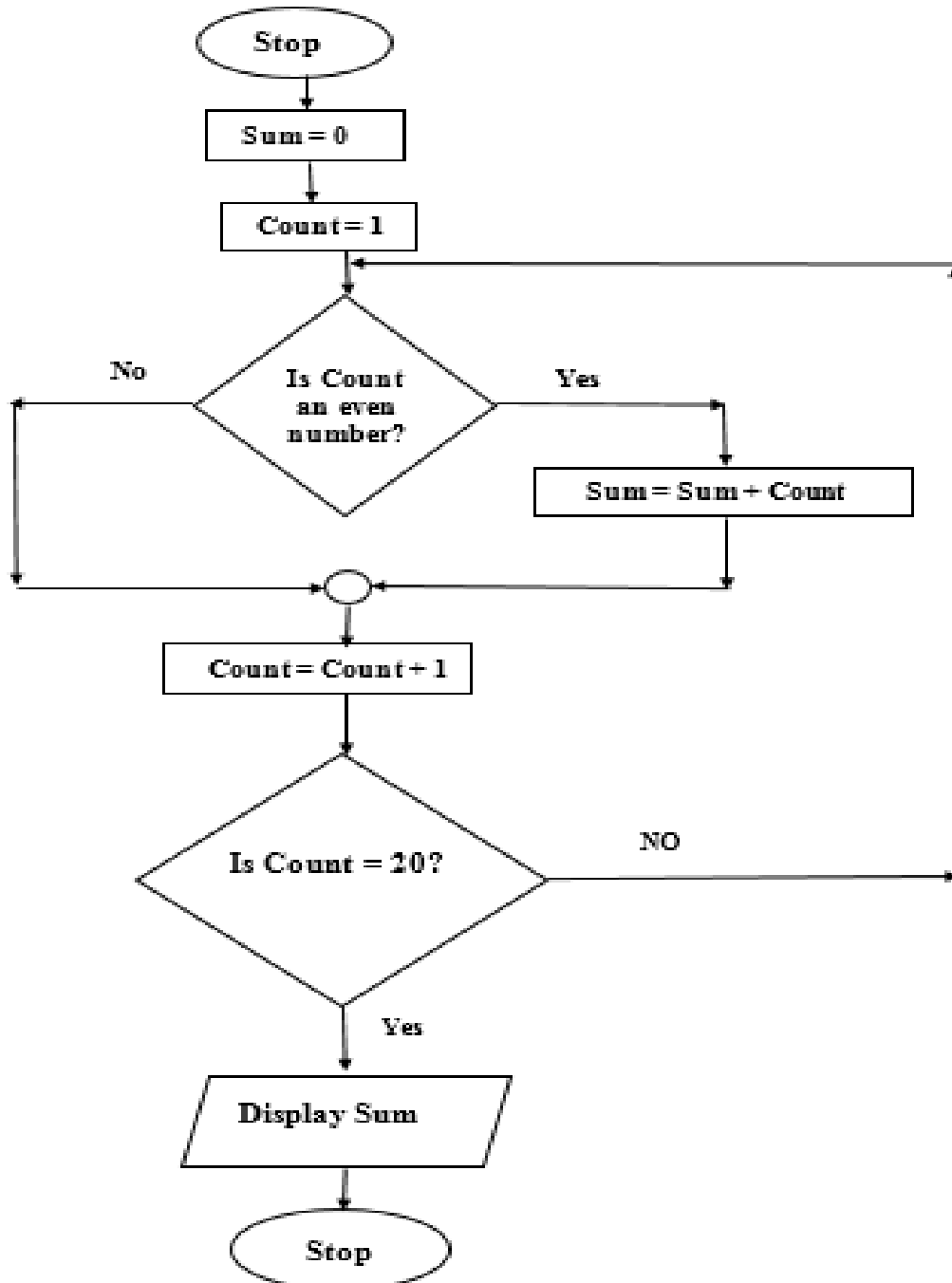
SECTION B (60mks)

Answer question 16 and any other three questions

16. (a) Study the flowchart below and use it to answer questions that follow.

(i) Write a pseudocode for the flowchart below.

(7 marks)



(ii) Explain the purpose of the above flowchart.

(2 mks)

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.....

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(iii) Determine the output from the flowchart if count is:

I. 4 (2 mks)

.....

.....

.....

II. 12 (2 mks)

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.....

.....

(b) Differentiate between object orientated programming and web scripting language. (2mks)

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17. Find the value of X in the question below (2mks)

(a) $16_8 + 1010_2 = X_2$

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(b) Perform the following binary operation (2mks)

$1010.11 + 111.10 - 101.11$

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(c) In a certain coding scheme, each character occupies 7 bits. Letters of the alphabet are assigned consecutive codes. If letter N is represented by 1010010. What is the representation of letter A in this coding scheme? (2mks)

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(d) Using 8 bit notation and the 2's complement perform the following operation leaving your answer in decimal number (4mks)

$4_{10} + (-7_{10})$

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(e) Differentiate between pure binary and BCD code as used in data representation (2mks)

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f) Brian a supermarket owner complains that management of daily sales is becoming overwhelming

(i) Advise Brian on a retail system that he needs to acquire (1mk)

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.....

(ii) State two input devices that are used in the above stated retail system (2mks)

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18. (a) State and explain **any two** data transmission impairments (4mks)

.....

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(b) State the roles of the following devices/equipment used in networking (3mks)

(i) Router

.....

.....

(ii) Data terminal equipment

.....

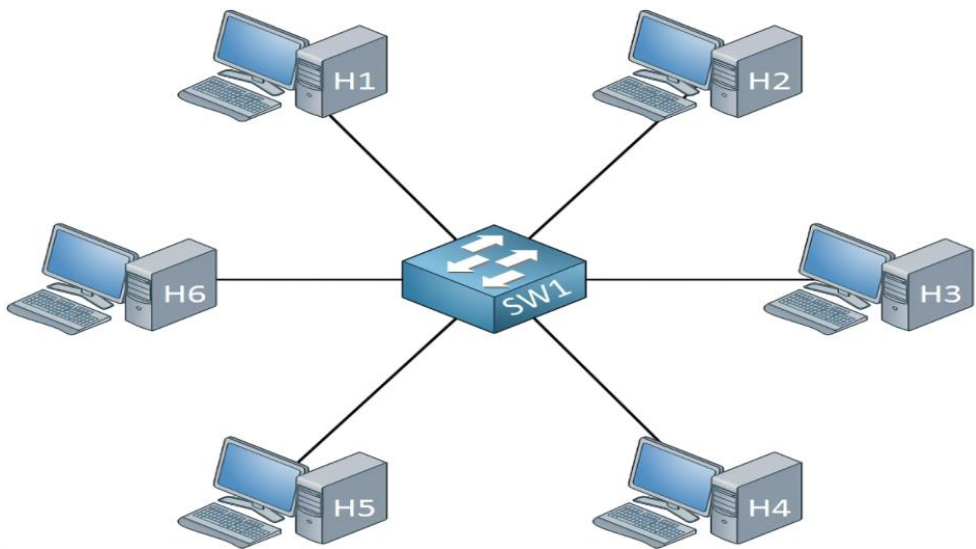
.....

(iii) Repeater

.....

.....

18. The diagram below shows a layout of a computer network as used in an industrial firm. A work station and a printer are located in every consultation room



(a) Identify the type of network topology depicted above **(1mk)**

.....

(b)List **any** three disadvantages associated with the network topology identified in (a) above**3mk**

.....

.....

.....

(c) An employee sneaked into the accounts office, gained access to the payroll and adjusted his salary for his personal gain.

(i)Identify two types of crimes the employee committed **(2mks)**

.....

.....

(ii) Give two **recommendations** to the company to prevent such future occurrences **(2mks)**

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19. (a) The management of Mawingu county government opt to employ a Database administrator. State two roles of this employee. **(2 mks)**

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(b)(i) Explain **four** circumstances that may necessitate an organization to develop a new information system. **(8 marks)**

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(ii) A school opted to use a change-over strategy where the new system and old system are run concurrently as the performances of the two systems are compared.

I. Name the type of change-over approach above. (1 mark)

.....

II. Explain **two** benefits that the school may get as a result of this approach. (4 marks)

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20. A school evaluation system relies heavily data processing to rank students

(a) Identify and describe the file organization applied by the evaluation system (2 Mks)

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.....

.....

(b) State the data processing method applied by the evaluation system (1 Mk)

.....

.....

(c) State any two reasons for your data processing method choice in (20. b) above (2 mks)

.....

.....

.....

(d) During data collection stage of data processing, data is verified and coded. Define the terms

i. Verification (1 mk)

.....

.....

ii. Coding (1 mk)

.....
.....

(e) Jane is a copy typist at Majengo Holdings, she frequently confuses characters in hand written documents thus replacing them with different characters.

i. State the type of data processing error Jane makes (1mk)

.....

ii. State how she can overcome the error (1mk)

.....
.....

(f) Peter the technician connected and installed a scanner to the office computer but when testing he realized it was not responding to the scanning commands, state any two possible causes of the failure **(2mk)**

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.....

(g) Distinguish between disk compression and file compression (2 mks)

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.....

(h) The operating organizes data in a hierarchy. Give any two reasons for the hierarchical organization of data in a computer (2mks)

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.....

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

COMPUTER STUDIES

451/2

PAPER 2

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education

INSTRUCTIONS TO CANDIDATES

- a)** *Indicate your name and index number at the right hand corner of each printout*
- b)** *Write your name and index number on the CD/removable storage medium provided*
- c)** *Write the name and version of the software used for each question attempted in the answer sheet provided*
- d)** *Answer all the questions, All questions carry equal marks*
- e)** *Passwords should not be used while saving in the CD/removable storage Medium*
- f)** *Marked printout of the answers on the sheet*
- g)** *Hand in all the printouts and the CD/removable storage medium used*

1. (a)(i) The extract below shows a spreadsheet used to compute the toll charges for a highway based on the type of vehicle, tonnage and charge per kilometer for usage.

<u>HIGHWAY TOLL CHARGES</u>						
Registration	Vehicle Type	Weight	Distance	NormalCharge	Penalty Charge	Total
KCY 789 M	PickUp	6	12			
KCR 769 L	Car	4	40			
KCF 724 C	PickUp	6	32			
KCM 737 N	Truck	12	25			
KCA 745 W	Lorry	20	28			
KCP 756 H	Truck	10	12			
KCU 778 J	Car	4	8			
KCZ 701 A	PickUp	8	25			
KCB 781 E	Car	6	4			
KCV 743 H	PickUp	4	20			
KCQ 735 X	Truck	8	32			
KCT 721 K	Lorry	10	25			
KCD 792 V	Truck	12	28			
KCZ 784 P	Car	6	12			
KCB 756 C	Truck	10	8			
KCE 734 D	Car	4	25			
KCF779 E	PickUp	6	32			
KCG 700 F	Lorry	12	25			
KCH 723 K	Truck	20	28			
KCJ 711 W	PickUp	10	12			
KCR 712 D	Car	4	8			
KCD 774 B	PickUp	8	25			
KCS 756 M	Truck	6	4			
KCA 745 W	Car	4	20			
<u>Total</u>						

- (ii) Create a workbook and save the workbook as toll. (2 Marks)
- (iii) Fill the data in the worksheet1 and rename the worksheet as tollOriginal. (14 Marks)

(b)(i) The NormalCharge column is calculated based on the table below.

Vehicle Type	Max AllowedWeight(Tns)
PickUp	6
Car	4
Truck	8
Lorry	10

- (ii) The PenaltyCharge column is calculated based on the table below. The penalty is based on any weight above Maximum allowed weight for a vehicle type for every kilometer of the the usage. (8 Marks)

Vehicle Type	Penalty Charge (Ksh)per Km
PickUp	10
Car	5
Truck	15
Lorry	20

- (iii) The TotalCharge is based on summation of NormalCharge and PenultyCharge . Create a column TotalCharge and use a function to Calculate the Total Charge (2 Marks)
- (iv) Create the Running Totals for Normal Charge, Penulty Charge And Totalcharge (4 Marks)
- (b)(i) Copy The data in the OriginalToll to another worksheet rename the workshhet as Sorted(1 Mark)
- (ii) Sort the Data is ascending order of Vehicle type Sorted worksheet. (4 Marks)
- (iii) Create subtotals based on the vehicle Type (4 Marks)
- (iv) Draw a column chart based on The Vehicle Type subtotals and Total Charge (8 Marks)

2. a) Create a database called **Aberdare bottles ltd** and create the following tables (15 marks)

Table 1: Employee

Employee_ID	EmployeeName	Department	YearOfEmployment
101	Kibet Arap Kamau	Human resource	1985
102	Janet Atieno	Procurement	1990
450	Kimani Koigu	Accounts	2000
891	Moraa Kerubo	Human resource	2010

Table 2: Sales

ProductName	Employee_ID	ProductID	SalesAmount	Salary
Tea leaves	101	Xc101	5000	
cocoa	102	Xp105	15500	
coffee	450	Xvb11	9500	
Chocolate	891	X56po	30000	

Table 3: Department

Employee_ID	Department_Name	HeadOfDepartment	NoOfEmployees
101	Human resource	B.N. Komu	52
102	Procurement	J.K. Wanjiru	12
450	Accounts	P.G. Otindo	20
891	Human resource	M.M. Jerotich	10

- i) Create **relationship** among the tables (2 marks)
- ii) Create **three** input screens (**forms**) and use them to enter the data into the tables above(6 marks)
- iii) Create a query called **Start_K** and use it to display **EmployeeName** that start with letter K (3 marks)
- iv) Display the **no of years** an employee has worked given that the current year is 2018. Save the report as **AGE**. (3 marks)
- v) Create a query called **Yote** to display the following fields (2 marks)
 - **Employee_ID**
 - **EmployeeName**
 - **Department_Name**
 - **ProductName**
 - **Salary**
 - **HeadOfDepartment**
- vi) Copy Yote query (in v above) and save the new query as **MPYA:-** (1 marks)
 Use **MPYA** query to
 - ✓ Calculate the salary given that: salary is 10% of the **SalesAmount** (2 marks)
 - ✓ Display salary in ascending order (2 marks)
 - ✓ Display employees from **human resource** department whose **SalesAmount** is **greater than 12000**. (2 marks)
- vii) Create a form called **AberdareForm** using **Yote query (in v above)** and use it to answer the questions below:-
 - ✓ Count no of employees (2 marks).
 - ✓ Add a title of the form as **“Aberdare bottles ltd-2018”** (2 marks)
 - ✓ Insert **date and time** on the form header use (=NOW()) (2 marks)
- viii) **Print** Age, Sales table, and AberdareForm (3 marks)

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

HOME-SCIENCE

441/1

PAPER 1 (THEORY)

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

441/1

HOME-SCIENCE

PAPER 1

THEORY

INSTRUCTIONS TO CANDIDATES

- (a) Write your name, school 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 **three** sections **A**, **B** and **C**.
- (d) **All** the questions in Section **A** and **B** are compulsory.
- (e) Answer any other **two** questions in section **C**.
- (f) 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 – 26	40	
B	27	20	
C		20	
		20	
TOTAL SCORE		100	

SECTION A (40 MARKS)

Answer all questions in the spaces provided

1. What is a dessert? Give one example (1mk)

.....

.....

2. Identify **two** types of vacuum cleaners. (1mk)

.....

.....

3. Mention **two** types of electronic money transfer used to pay for goods and services. (1mk)

.....

.....

4. State **two** symptoms of a person suffering from scurvy (2mks)

.....

.....

5. List **four** types of fabrics that are drip dried during laundry. (2mks)

.....

.....

.....

.....

6. Suggest **two** points to bear in mind when attaching buttons. (2mks)

.....

.....

7. State **two** advantages of owning a home. (2mks)

.....

.....

8. Mention **two** importance of melanin in the body. (2mks)

.....

.....

9. Give **two** reasons why lampshades are popular. (2mks)

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.....

.....

10. What is the meaning of haberdashery (1mk)

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.....

11. Outline **four** ways of preventing cholera outbreak (2mks)

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12. Identify **two** practices necessary for successful steaming in cookery (2mks)

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13. What is the role of a 'U/S' bend in concealed drainage system (1mk)

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14. Highlight **two** dangers of excess weight gain during pregnancy (2mks)

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.....

15. Identify **four** fabrics that should not be wrung. (2mks)

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16. List **four** fastenings suitable for a toddlers garment. (2mks)

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17. Highlight **two** benefits of studying home science to the community. (2mks)

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.....

18. State **two** reasons for blanching vegetables. (2mks)

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.....

.....

19. Give **two** example of builders added to detergents during manufacture. (1mk)

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.....

20. State **four** advantages of regular cleaning of household items. (2mks)

.....

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.....

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21. Distinguish between raglan and kimono sleeve. 1mk)

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.....

22. State **two** characteristics of incomplete or second class proteins. (1mk)

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.....

23. Identify **two** immunizable diseases caused by viruses. (1mk)

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24. Identify **two** situations when a lactating mother produces little or no milk at all. (1mk)

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.....

25. Name **two** areas in the house where light fixtures can be found. (1mk)

.....

.....

26. Define the following in relation to weaning. (1mk)

(a) Basic mix

.....

.....

(b) Multi mix

.....

.....

SECTION B

COMPUSORY

27. Your sister has invited you to a stay with her over the holiday and she has an eight months old baby.

Write down the procedure of carrying out the following activities at her home.

- a) Prepare a cot for her baby (10mks)
- b) Clean her baby's plastic feeding bottle. (5mks)
- c) Thoroughly clean her calabash that she uses to serve porridge. (5mks)

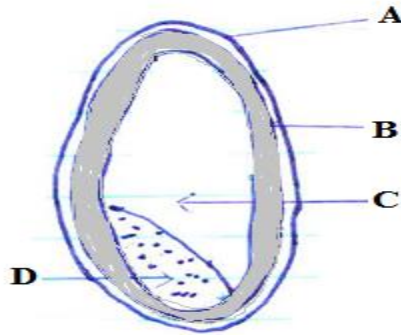
[illegible]

This image shows a full page of primary-ruled paper. It features 20 evenly spaced horizontal dotted lines across the entire page, providing a guide for handwriting practice. The lines are black dots on a white background, and there are no margins or other markings present.

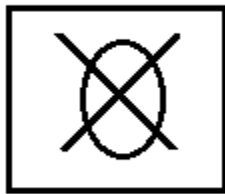
SECTION C(40 MARKS)

Answer any two questions from this section in the spaces provided

28. a) Explain 6 dangers of land pollution to mankind (6 marks)
b) The diagram below shows a longitudinal section of a wheat grain



- i) Label parts A,B,C,D (4 marks)
ii) Name two nutrients found in part A and two found in part D (4 marks)
c) Outline 6 advantages of proper ventilation in a house (6 marks)
29. (a) Name 4 agencies that protect consumers and their functions (4marks)
(b) Outline 4 preparations that one needs to carry out on a sewing machine in readiness for stitching (4marks)
(c) Explain 3 nutritional needs of the elderly (6marks)
(d) Describe 3 factors to consider when choosing a seam in garment construction (6marks)
30. (a) Explain three factors you would consider when choosing flowers for a flower arrangement (6marks)
(b) Outline four practices to safeguard against occurrence of food spoilage and poisoning in the home (4marks)
(c) Describe 4 qualities of well made gathers (4marks)
(d) (i) Interpret the following care label symbols (3marks)



- (ii) Explain three things to show the importance of advertisements to consumers (3marks)

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

HOME-SCIENCE

441/2

PAPER 2(PRACTICAL)

TIME: 2½ HOURS

SCHOOL..... SIGN.....

Kenya Certificate of Secondary Education (K.C.S.E)

441/2

HOME SCIENCE

(CLOTHING CONSTRUCTION)

PAPER 2

(PRACTICAL)

CONFIDENTIAL

INSTRUCTIONS TO SCHOOLS

The school is advised to provide the candidates with the following materials.

1. Plain light weight cotton fabric 50cm by 90 cm wide.
2. Sewing thread to match fabric.
3. Sewing machines at least 4 per 10 students.

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

HOME-SCIENCE

441/2

PAPER 2 PRACTICAL

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education

441/2

HOMESCIENCE (CLOTHING AND TEXTILES)

PAPER 2

PRACTICAL

TIME: 2½ HOURS

A pattern of a girl's skirt is provided. You are advised to study the sketches, the question paper and lay out carefully before you begin the test.

MATERIALS PROVIDED

1. Pattern pieces
 - A. Skirt front
 - B. Skirt back
 - C. Pockets
 - D. Front yoke
2. Light weight cotton fabric 50cm by 90cm wide.
3. Sewing thread to match the fabric

THE TEST

- a. Using the materials provided, cut and make the right half of the skirt to show the following processes.
- b. The preparation of the gathers on the skirt front piece.
- c. Attachment of yoke piece to the skirt front piece using a neatened overlaid seam. Use loop stitches.
- d. Attachment of front pocket piece to the skirt front and back pocket piece to the skirt back.
- e. The making of an unneaten open seam at the side above and below the pocket mouth.
- f. The joining of the pocket bag seam (do not neaten)
- g. Use preparation of the skirt hem and slip hemming it.

At the end of the examination, firmly sew onto your work on a single fabric a label bearing your **Name** and **admission Number**. Remove the needles and pins from your work then fold it neatly.

SKIRT VIEW

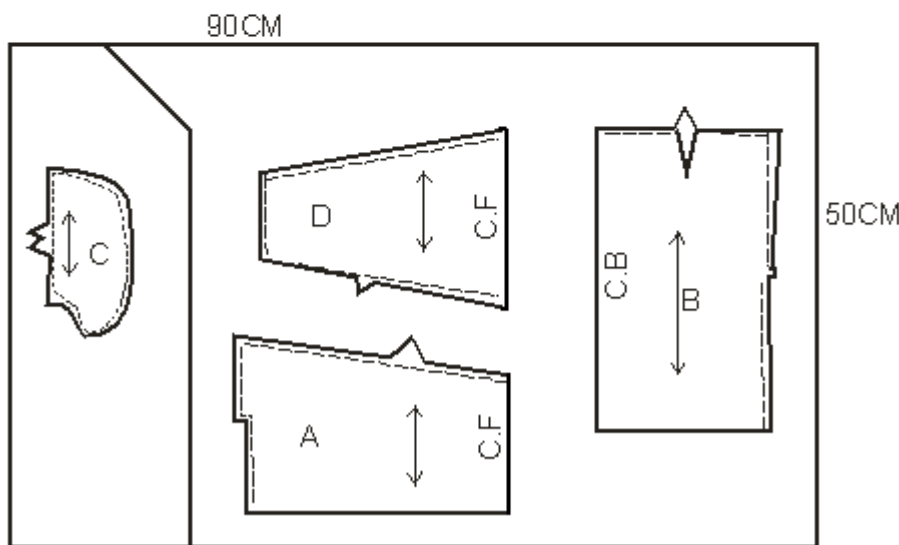


BACK



FRONT

THE LAYOUT (not drawn to scale)



KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

HOME-SCIENCE

441/3

PAPER 3(PRACTICAL)

TIME: 1¾ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

HOMESCIENCE

PAPER 3

FOODS AND NUTRITION

TIME:1 ¾ HOURS

INSTRUCTION TO THE CANDIDATES

PLANNING SESSION: 30 MIN

PRACTICAL TEST SESSION: 1 ¼ HOURS

- (a) Text books and recipe may be used during the planning session as reference materials.
- (b) You will be expected to keep to your order of work during the practical session.
- (c) You are only allowed to take away your reference materials at the end of the planning session.
- (d) You are not allowed to bring additional notes to the practical session.
- (e) Previously written plans are not allowed into the examination room.
- (f) Candidates should answer the question in English.

TEST

Using the ingredients listed below, prepare, cook and present a two course meal for you and your elder sister who is coming home from college over the weekend.

INGREDIENTS

- Fat/ oil
- minced meat/beef/chicken
- Salt
- Onion
- pineapple
- Wheat flour/ Irish potatoes/Rice
- Tomatoes
- Coriander
- lemon
- Spice of your choice
- Milk
- melon
- Capsicum
- Sugar
- Ripe bananas
- cabbage

PLANNING SESSION – 30 MINUTES

Use separate sheets of paper for each task below and carbon paper to produce 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 the food stuffs and equipment you will require.

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

MATHEMATICS

121/1

PAPER 1

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education

INSTRUCTIONS TO DANDIDATES

1. Write your name, index number and class.
2. The paper contains two sections: Section I and II
3. Answer ALL questions in section I and ONLY FIVE questions from section II.
4. All working and answers must be written on the question paper in the spaces provided below each question.
5. Marks may be awarded for correct working even if the answer is wrong.

FOR EXAMINER'S USE ONLY

SECTION 1

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

SECTION II

17	18	19	20	21	22	23	24	25	TOTAL

GRAND TOTAL

--

SECTION I(50 MARKS)

Answer ALL questions in the section in the space provided.

1. Evaluate $\frac{-12 \div (-3) \times 4 - (-20)}{-6 \times 6 \div +(-6)}$

(2 Marks)

2. Mr. Owino spends $\frac{1}{4}$ of his salary on school fees. He spends $\frac{2}{3}$ of the remainder on food and a fifth of what is left on transport. He saves the balance. In certain month he saved Sh. 3400. What was his salary?

(3 marks)

3. Simplify:

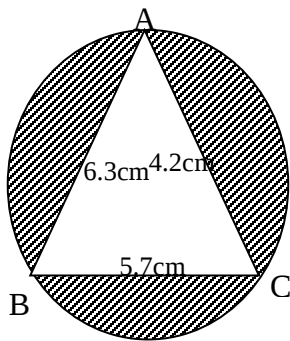
$$\frac{2y^2 - 3xy - 2x^2}{4y^2 - x^2}$$

(3 Marks)

4. Find x if $3^{2x+3} + 1 = 28$

(2 Marks)

5. The circle below whose area is 18.05cm^2 circumscribes triangle ABC where $AB = 6.3\text{cm}$, $BC = 5.7\text{cm}$ and $AC = 4.2\text{cm}$. Find the area of the shaded part. **(4 Marks)**



6. A salesman gets a commission of 2.4% on sales up to Sh. 100,000. He gets additional commission of 1.5% on sales above this. Calculate the commission he gets for sales worth Sh. 280,000. **(3 Marks)**

7. A rectangle whose area is 96m^2 is such that its length is 4metres longer than its width.

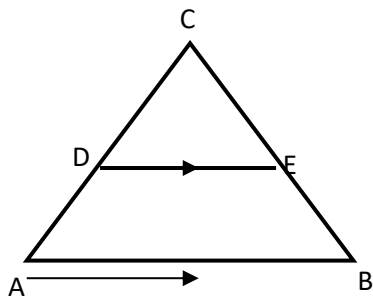
Find

(a) Its dimensions (2 Marks)

(b) Its perimeter (1 Mark)

8. Give $\sin(90 - a) = \frac{1}{2}$ find without using trigonometric tables the value of $\cos a$. (2 Marks)

9. In triangle ABC below, $AC = BC$, AB is parallel to DE, $AB = 15\text{cm}$, $DE = 7.5\text{cm}$ and $BE = 6\text{cm}$.



Calculate

(a) Length CE (2 Marks)

(b) Area of quadrilateral ABED.

(2 Marks)

10. A measuring cylinder of base radius 5cm contains water whose level reads 6cm high. A spherical object is immersed in the water and the new level reads 10cm. Calculate the radius of the spherical object

(3 Marks)

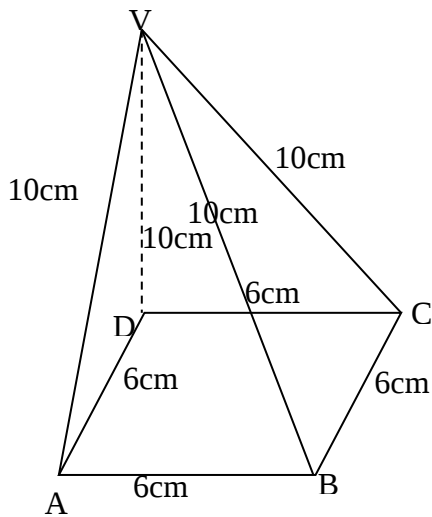
11. Using a ruler and pair of compasses only, construct triangle ABC in which $AB = 6\text{cm}$, $BC = 8\text{cm}$ and $\angle ABC = 45^\circ$. Drop a perpendicular from A to BC to meet line BC at M. Measure AM and AC.

(4 Marks)

12. In a book store, books packed in cartons are arranged in rows such that there are 50 cartons in the first row, 48 cartons in the next row, 46 in the next and so on.
- (a) How many cartons will there be in the 8th row? **(2 Marks)**

- (b) If there are 20 rows in total, find the total number of cartons in the book store. **(2 Marks)**

13. Draw the net of the solid below and calculate the total surface area of its faces. **(3 Marks)**



14. Town X is 20km in a bearing of 060° from Y, and Z is 30km in the direction 150° from Y.

Using the scale 1cm represents 5km, find by scale drawing:

- (a) the bearing of Y from Z. **(2 Marks)**
(b) the distance of X from Z. **(2 Marks)**

15. Solve for x in $2^{2x} - 18 \times 2^x = 40$ **(3 Marks)**

16. Oketch sells his car to Jane and makes a profit of 20%. Jane sells the same to Issa at Sh.180,000, making a loss of 10%. Determine the price at which Oketch bought the car. **(3 Marks)**

SECTION II (50 MARKS):

Answer ANY five questions in this section in the spaces provided.

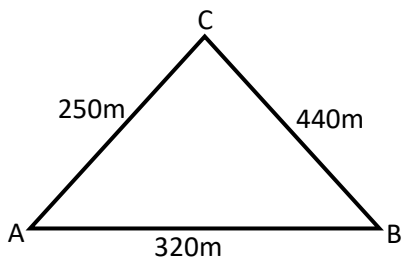
17. The distance between towns A and B is 360km. A minibus left town A at 8.15 a.m. and traveled towards town B at an average speed of 90km/hr. A matatu left town B two and a third hours later on the same day and travelled towards A at average speed of 110km/hr.

(a) (i) At what time did the two vehicles meet? **(4 Marks)**

(ii) How far from A did the two vehicles meet? **(2 Marks)**

(b) A motorist started from his home at 10.30 a.m. on the same day as the matatu and travelled at an average speed of 100km/h. He arrive at B at the same time as the minibus. Calculate the distance from A to his house. **(4 Marks)**

- 18.** Karis owns a farm that is triangular in shape as shown below.



- (a)** Calculate the size of angle BAC **(2 Marks)**
- (b)** Find the area of the farm in hectares **(3 Marks)**
- (c)** Karis wishes to irrigate his farm using a sprinkler machine situated in the farm such that it is equidistant from points A, B and C.
- (i)** Calculate the distance of the sprinkler from point C. **(2 Marks)**
- (ii)** The sprinkler rotates in a circular motion so that the maximum point reached by the water jets is the vertices A, B and C. Calculate the area outside his farm that will be irrigated. **(3 Marks)**

19. A ship leaves port M and sails on a bearing of 050° heading towards island L. Two Navy destroyers sail from a naval base N to intercept the ship. Destroyer A sails such that it covers the shortest distance possible. Destroyer B sails on a bearing of 20° to L. The bearing of N from M is 100° and distance $NM = 300\text{KM}$. Using a scale of 1cm to represent 50km, determine:-

(i) the positions of M, N and L. **(3 Marks)**

(ii) the distance travelled by destroyer A **(3 Marks)**

(iii) the distance travelled by destroyer B. **(2 Marks)**

(iv) the bearing of N from L. **(2 Marks)**

20. A number of people agreed to contribute equally to buy books worth KSh. 1200 for a school library. Five people pulled out and so the others agreed to contribute an extra Shs. 10 each. Their contributions enabled them to buy books worth Shs. 200 more than they originally expected.

(a) If the original numbers of people was x , write an expression of how much each was originally to contribute. **(1 Mark)**

(b) Write down two expressions of how much each contributed after the five people pulled out. **(2 Marks)**

(c) Calculate the number of people who made the contribution. **(5 Marks)**

(d) Calculate how much each contributed. **(2 Marks)**

- 21.** Using a ruler and a pair of compasses only, draw a parallelogram ABCD, such that angle $DAB = 75^\circ$. Length $AB = 6.0\text{cm}$ and $BC = 4.0\text{cm}$. From point D, drop a perpendicular to meet line AB at N. **(7 Marks)**

(i) Measure length DN

(1 Mark)

(ii) Find the area of the parallelogram.

(2 Marks)

22. The following measurements were recorded in a field book of a farm in metres ($x_y = 400\text{m}$)

	Y	
	400	
C60	340	
	300	120D
	240	100E
	220	160F
B100	140	
A120	80	
	x	

- (a) Using a scale of 1cm representing 4000cm, draw an accurate map of the farm.(3 Marks)

- (b) If the farm is on sale at Kshs. 80,000.00 per hectare, find how much it costs.(7 Marks)

23. The table shows marks obtained by 100 candidates at Goseta Secondary School in Biology examination.

Marks	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85-94
Frequency	6	14	24	14	x	10	6	4

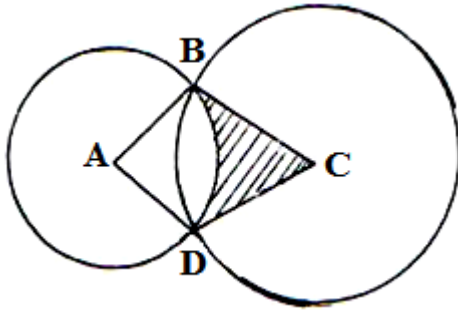
(a) Determine the value of x (2 Marks)

(b) State the modal class (1 Mark)

(c) Calculate the median mark (2 Marks)

(d) Calculate the mean mark (5 Marks)

24. In the diagram below, two circles, centres A and C and radii 7cm and 24cm respectively intersect at B and D. $AC = 25\text{cm}$.



- (a) Show that angle $ABC = 90^\circ$. (3 Marks)

- (b) Calculate
(i) the size of obtuse angle BAD (3 Marks)

- (ii) the area of the shaded part (4 Marks)

KCSE BRIGHT-MIND MOCK

KCSE 2023 SERIES 1 EXAM

MATHEMATICS

121/2

PAPER 2

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

INDEX NO..... ADM NO.....

Kenya Certificate of Secondary Education

INSTRUCTIONS TO DANDIDATES

1. Write your name, index number and class.
2. The paper contains two sections: Section I and II
3. Answer ALL questions in section I and ONLY FIVE questions from section II.
4. All working and answers must be written on the question paper in the spaces provided below each question.
5. Marks may be awarded for correct working even if the answer is wrong.

FOR EXAMINER'S USE ONLY

SECTION 1

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

SECTION II

17	18	19	20	21	22	23	24	25	TOTAL

GRAND TOTAL

--

SECTION A (50 MARKS)

*(Answer **all** questions in this section in the spaces provided)*

1. Use logarithm table to evaluate.

(4mks)

$$\sqrt[4]{\frac{(27 \times 0.0293)^2}{(825 - 94) \div 0.2861}}$$

2. Three sisters, Ann, Beatrice and Caroline together invested Ksh. 48,000 as capital and started a small business. If the share of profit is Ksh. 2,300, Ksh. 1,700 and Ksh. 800 respectively, shared proportionally. Find the capital invested by each of them.

(3mks)

3. Make t the subject of formula in $x = \left(\frac{p+t}{t}\right)^{\frac{1}{3}}$

(3mks)

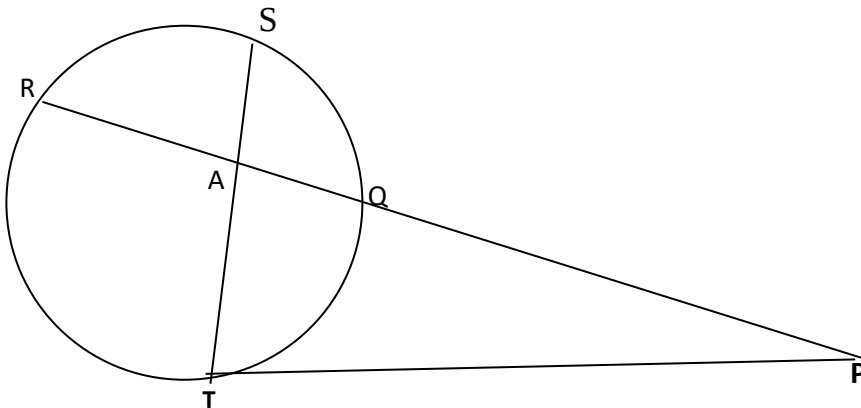
4. Without using a calculator or mathematical tables, express $\frac{\sqrt{3}}{1 - \cos 30^\circ}$ in surd form and simplify. **(3mks)**
5. Expand and simplify $(3x - y)^4$ hence use the first three terms of the expansion to approximate the value of $(6 - 0.2)^4$. **(4mks)**
6. Find x without using tables if $3 + \log_2 3 + \log_2 x = \log_2 5 + 2$ **(3mks)**

7. Find the value of m for which the matrix transforms an object into a straight line.

(3mks)

$$\begin{pmatrix} m^2 & 1 \\ 2m - 1 & 1 \end{pmatrix}$$

8. In the figure below PT is a tangent to the circle at T , $PQ = 9\text{cm}$, $SA = 6\text{cm}$, $AT = 8\text{cm}$ and $AR = 3\text{cm}$. Calculate the length of;



(a) AQ

(2mks)

(b) PT

(1mk)

9. A right angled triangle has a base of 15.3 cm and height 7.2 cm, each measured to the nearest 3 mm. Determine the percentage error in finding the area of the triangle, giving your answer to 2 decimal places. **(3mks)**

10. Given that $\sin x = 0.8$, without using a mathematical table and calculator find $\tan(90-x)$ **(3mks)**

11. The point $B(3,2)$ maps onto $B^1(7,1)$ under a translation T_1 . Find T_1 **(2mks)**

12. Using a ruler and a pair of compasses only, construct triangle ABC in which $BC=6\text{cm}$, $AB= 8.8\text{cm}$ and angle $ABC= 22.5^\circ$. **(3mks)**
13. Two grades of tea A and B, costing sh 100 and 150 per kg respectively are mixed in the ratio 3:5 by mass. The mixture is then sold at sh 160 per kg. Find the percentage profit on the cost price. **(3mks)**
14. The first, the third and the ninth term of an increasing AP, makes, the first three terms of a G.P. If the first term of the AP is 3, find the difference of the AP and common ratio of GP. **(4mks)**

15. The matrix $M = \begin{pmatrix} 3 & -2 \\ -5 & y \end{pmatrix}$ maps a triangular object of area 7 square units onto one with area of 35 square units. Find the value of y . **(4mks)**

16. The equation of a circle is given by $x^2 + 4x + y^2 - 2y - 4 = 0$. Determine the centre and radius of the circle **(3mks)**

SECTION B (50 MARKS)

*(Answer any **five** questions in this section)*

17. A bag contains 3 black balls and 6 white balls. If two balls are drawn from the bag one at a time, find the:

a) Probability of drawing two white balls:

i) With replacement (2mks)

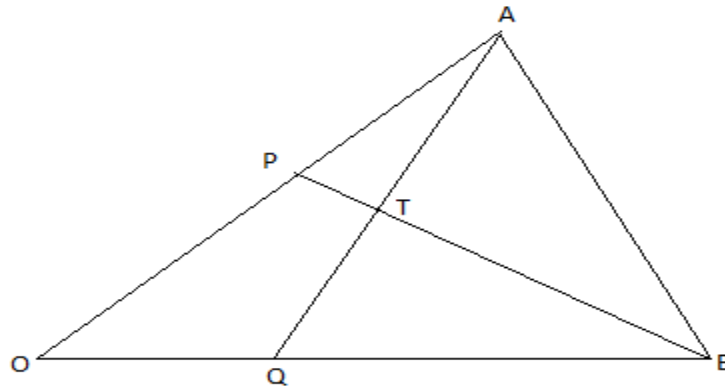
ii) Without replacement (2mks)

b) Probability of drawing a black ball and white ball:

i) With replacement (3mks)

ii) Without replacement. (3mks)

- 18.** In the triangle below P and Q are points on OA and OB respectively such that $OP:PA = 3 : 2$ and $OQ : QB = 1 : 2$. AQ and PQ intersect at T. Given that $\mathbf{OA} = \mathbf{a}$ and $\mathbf{OB} = \mathbf{b}$.



- (a)** Express AQ and PQ in terms of $\mathbf{a}$ and $\mathbf{b}$. **(2mks)**

- (b)** Taking $BT = kBP$ and $AT = hAQ$ where h and k are real numbers.

- (i) Find two expressions for OT in terms of $\mathbf{a}$ and $\mathbf{b}$. **(2mks)**

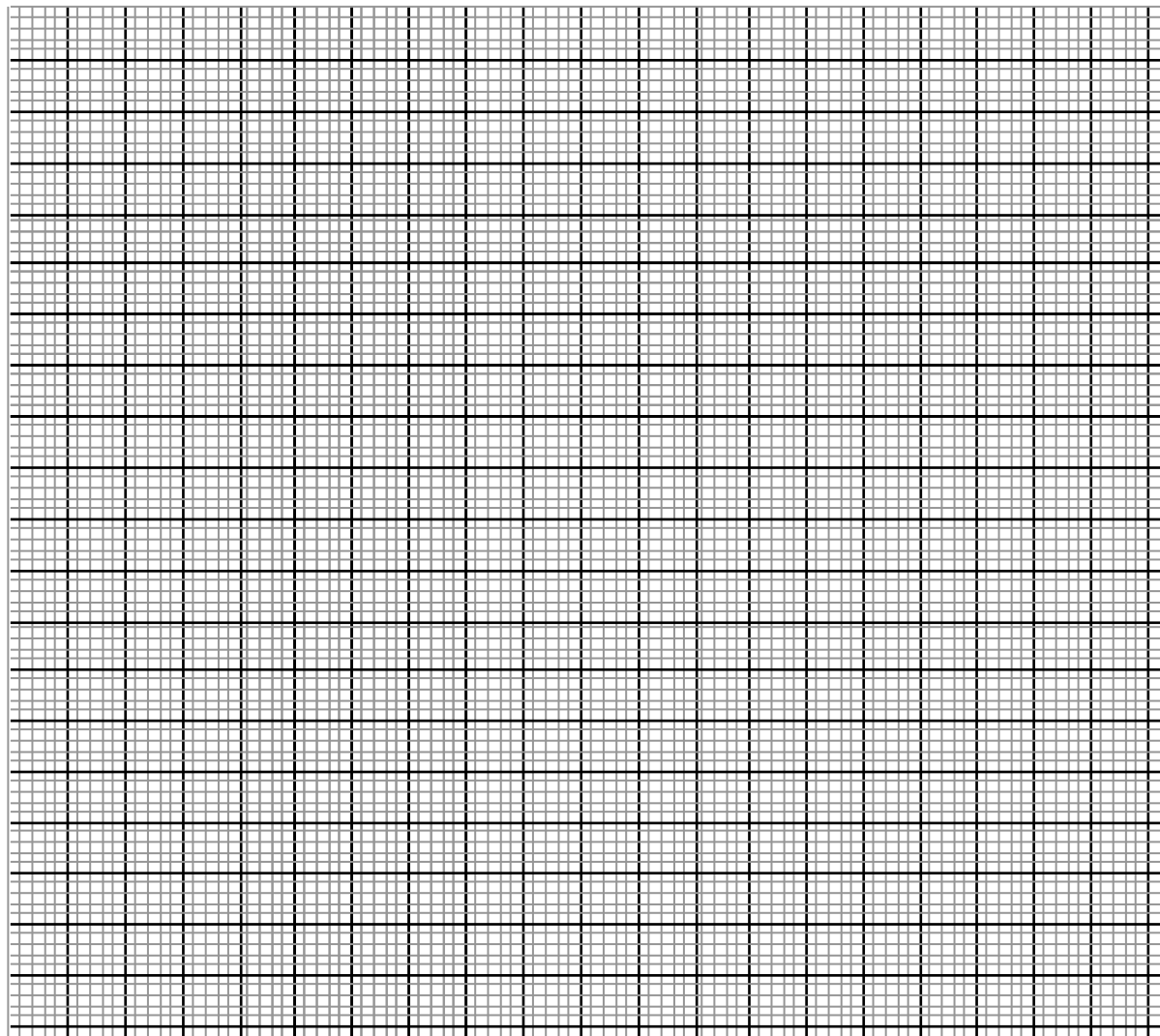
- (ii)** Use the expression in b(i) above to find the values of h and k . **(4mks)**

- (c)** Give the ratio $BT:TP$. **(2mks)**

19. Complete the table below for the functions $y=3\cos x-2$ for $0^\circ \leq x \leq 360^\circ$ (2mks)

x	0	30	60	90	120	150	180	210	240	270	300	330	360
$y=3\cos x-2$													

a) Plot the graph of $y=3\cos x-2$ in the graph provided below. (3mks)



b) From the graph

i. Find the amplitude of the wave. (2mks)

ii. The period of the wave. (1mk)

iii. Find the solution to $3\cos x=2$ (2mks)

20. A plane leaves an airport A (41.5°N , 36.4°W) at 9:00am and flies due north to airport B on latitude 53.2°N . Taking π as $\frac{22}{7}$ and the radius of the earth as 6370Km,

a) Calculate the distance covered by the plane in km **(4mks)**

b) The plane stopped for 30minutes to refuel at B and flew due east to C, 2500km from B.
Calculate:

i) position of C **(3mks)**

ii) The time the plane lands at C if its speed is 500km/h **(3mks)**

21. The curve given by the equation $y = x^2 + 1$ is defined by the values in the table below.

(a) Complete the table by filling in the missing values. (2mks)

X	0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
Y	1.0		2.0		5.0		10.0		17.0		26.0		37.0

(b) Sketch the curve for $y = x^2 + 1$ for $0 \leq x \leq 6$ (2mks)

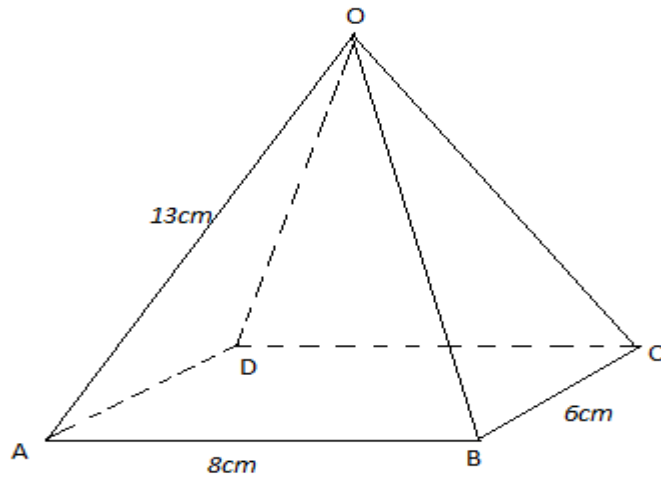
(c) Use the mid-ordinate rule with 5 ordinates to estimate the area of the region bounded by the curve $y = x^2 + 1$, the x-axis, the lines $x = 0$ and $x = 6$. (2mks)

(d) Use method of integration to find the exact value of the area of the region in (c) above. (2mks)

(e) Calculate the percentage error involved in using the mid-ordinate rule to find the area. (2mks)

22. (a) Using a ruler and pair of compasses only construct triangle PQR in which $PQ = 7.5cm$ $QR = 6.0cm$ and angle $PQR = 60^0$. Measure PR (3mks)
- (b) On same side of PQ as R
- (i) Determine the locus of a point T such that angle $PTQ = 60^0$ (3mks)
- (ii) Construct the locus of M such that $PM = 3.5cm$. (2mks)
- (iii) Identify the region W such that $PR \geq 3$ and angle $PTQ \geq 60^0$ by shading the unwanted part. (2mks)

23. OABCD is a right pyramid on a rectangular base with $AB = 8$ cm, $BC = 6$ cm, $OA = OB = OC = OD = 13$ cm. Calculate;
- (a) the height of the pyramid. (3mks)



- (b) the inclination of OBC to the horizontal. (2mks)

- (c) the angle between;
 (i) OB and DC (3mks)

- (ii) the planes OBC and OAD (2mks)

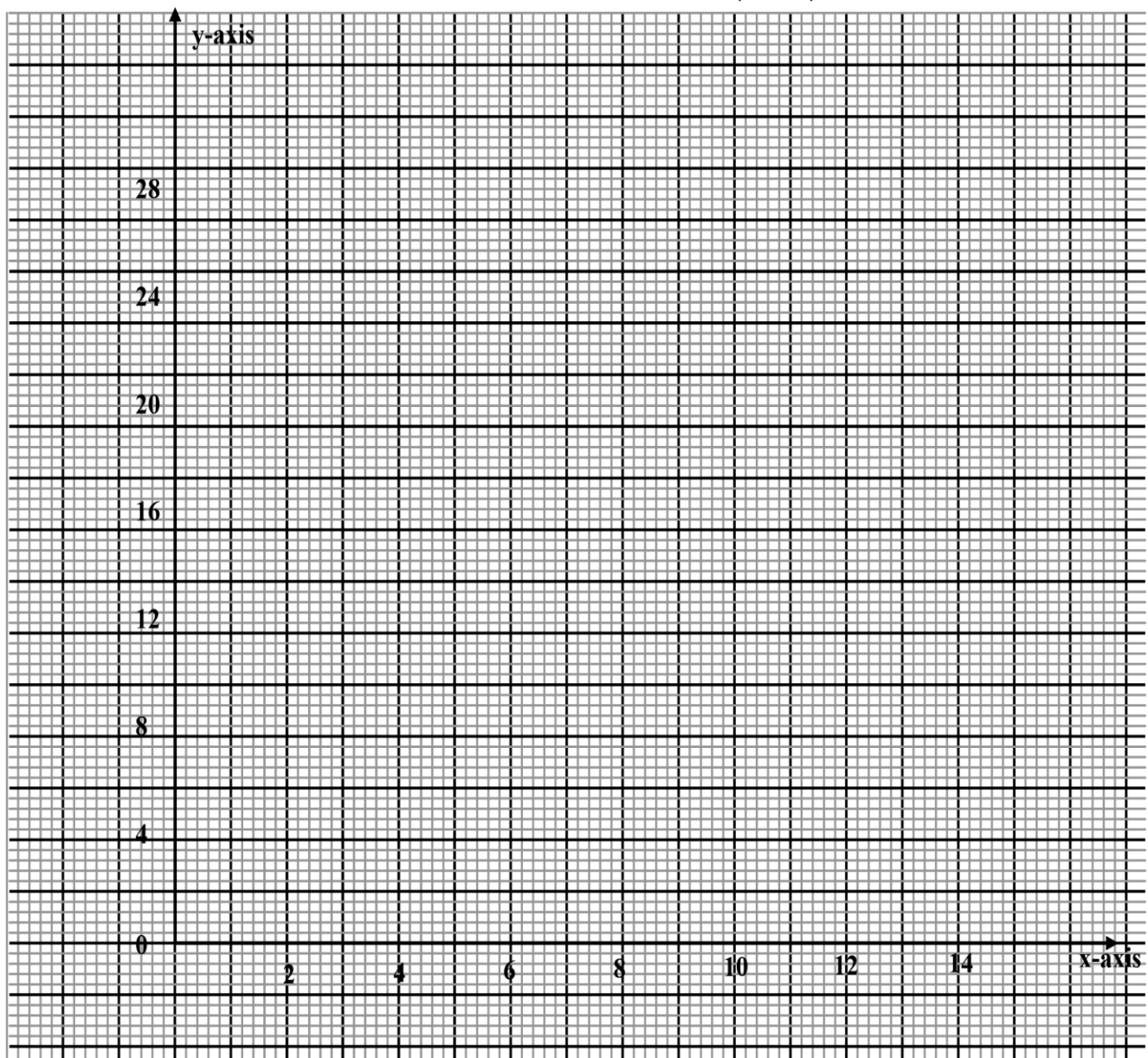
24. The games master wishes to hire two matatus for a trip. The operators have a Toyota which carries 10 passengers and a Kombi which carries 20 passengers. Altogether 120 people have to travel. The operators have only 20litres of fuel and the Toyota consumes 4 litres on each round trip and the Kombi 1 litre on each round trip. If the Toyota makes x round trips and the kombi y round trips;

(a) write down four inequalities in x and y which must be satisfied .

(2mks)

(b) Represent the inequalities graphically on the grid provided.

(3mks)



(c) The operators charge shs.100 for each round trip in the Toyota and shs.300 for each round trip in the kombi;

(i) determine the number of trips made by each vehicle so as to make the total cost a minimum. (4mks)

(ii) find the minimum cost. (1mk)

THE END

FOR THE FOLLOWING;

- ✓ **ONLINE TUITION**
- ✓ **REVISION NOTES**
- ✓ **SCHEMES OF WORK**
- ✓ **SETBOOKS VIDEOS**
- ✓ **TERMLY EXAMS**
- ✓ **QUICK REVISION KITS**
- ✓ **KCSE TOPICALS**
- ✓ **KCSE PREMOCKS**
- ✓ **TOP SCHOOLS PREMOCKS**
- ✓ **JOINT PREMOCKS**
- ✓ **KCSE MOCKS**
- ✓ **TOP SCHOOLS MOCKS**
- ✓ **JOINT MOCKS**
- ✓ **KCSE POSTMOCKS**
- ✓ **TOP SCHOOLS PREDICTIONS**
- ✓ **KCSE PREDICTIONS**
- ✓ **KCSE REVEALED SETS**

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