



THE BOOSTER NATIONAL SCHOOLS MOCK

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THE BOOSTER NATIONAL SCHOOLS MOCK

SCHOOL NAME.....

NAME.....ADM.....

DATE.....SIGN.....TARGE.....

KCPE MARKS.....PREV EXAM MKS.....INDEX.....

443/1

AGRICULTURE PAPER 1

TIME: 2 HOURS

Kenya certificate of secondary education (k.c.s.e)

INSTRUCTIONS TO CANDIDATES

- Write your name, school and index number, in the spaces provided above.
- Sign and write the date of the examination in the spaces provided above.
- This paper consists of three sections: A, B and C.
- Answer **all** the questions in section **A** and **B** and **any two** questions from section **C**.
- All answers must be written in the spaces provided in this booklet

For Examiner's Use Only

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A	1–15	30	
B	16–19	20	
C		20	
		20	
	Total score	90	

SECTION A (30 MRKS)

1.Differentiate between olericulture and pomoculture as used in crop production .(1mrk)

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2.Give four method of farming (2mrks)

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3.Give two examples for each of the following types of cost incurred in broiler production .

a) Variable cost (2 marks)

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b) fixed cost (2 marks)

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4.Give **four** advantages of crop rotation .(2mrk)

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5.State **four** factors that that should be considered when classifying crop pest (2mrks)

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6. a) Name **four** pieces of information contained in a land title deed (2mks)

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b) Name **two** forms of collective land tenure system. (1mk)

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7. List **four** post – harvest practices that are carried out in maize production (2mks)

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8. What is opportunity cost? (1/2 mk)

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9. Outline **four** ways of improving lab our productivity (2mks)

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10. State **four** factors that can affect the efficiency of pesticides (2mks)

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11 List **four** sites on which agro forestry trees can be established on a farm. (2mks)

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12.Give **four** advantages of using seeds over vegetative materials. (2 mks)

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13.State **four** features that should be considered when choosing water pipes for use on the farm. (2 mks)

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14.Give **three** reasons why primary cultivation should be done early before the onset of the rains(1 ½)

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15. Give **four** suitable characteristics of plants used as green manure. (2mks)

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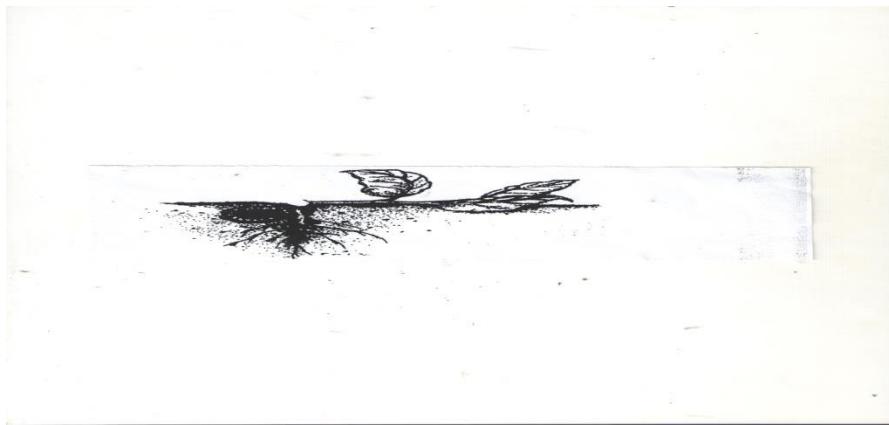
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SECTION B: (20 marks)

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

16. The diagram below shows a pest and the damaged crop study it and answer the questions that follow.



a) Identify the pest illustrated above (1mk)

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b) Explain **two** ways of controlling the pest (2mks)

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c) State **two** ways in which the pest economically important. (2mks)

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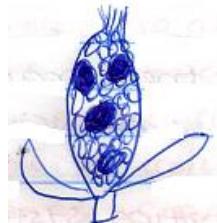
17. a) Distinguish between straight and compound fertilizers. (1mk)

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b) A farmer applied 200kg of C A N (20%N) per hectare maize crop. Calculate the amount of Nitrogen applied on his 5 hectare crop. Show your working (4mks)

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18The diagram below shows a maize cob attacked by a certain disease. Study it and then answer the following questions.



- a) Identify the disease (1 Mk)

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- b) Name **two** causal organism of the disease. (1 Mk)

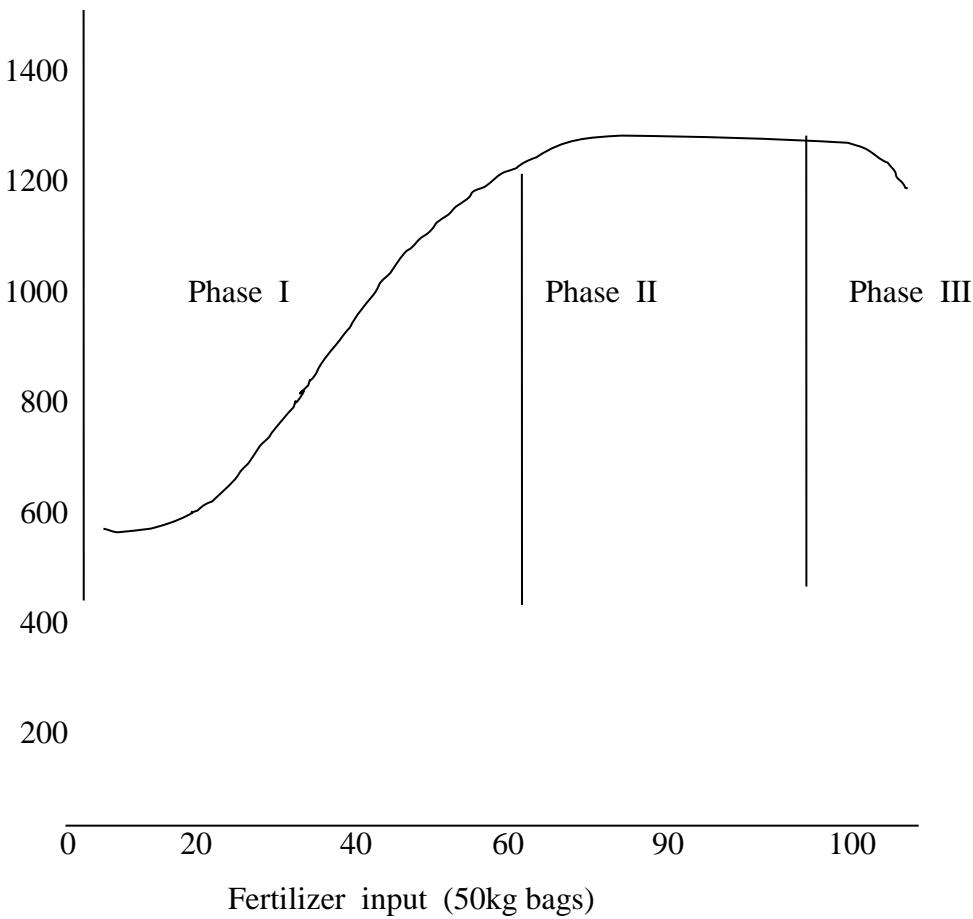
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- c) State **three** cultural methods of controlling the disease. (3 Mks)

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19. Below is a graphical representation of a law in agricultural economics. Study the graph carefully

and answer the questions that follow.



a) State the law illustrated by the graph (2mk)

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b) Explain how each additional unit of fertilizer input relates to the total output of maize in **phases II and III** .(2 mks)

Phase II

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Phase III

(1mk)

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c) State the importance of the law identified in (I) above to the maize farmer (1mk)

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SECTION C (40MARKS)

Answer any two questions in this section in the spaces provided

20a) Explain **five** factors that should be considered in farm planning. (10 Mks)

b) Describe transplanting of tomatoes seedling. (10 Mks)

21) Describe paddy rice production under the following sub-headings.

- i) Land preparation (2 Mks)
- ii) Water control (2 Mks)
- iii) Fertilizer application (2 Mks)
- iv) Weed control (2 Mks)

b) Explain how each of the properties of rainfall and light influence crop production.

i) Rainfall (8 Mks)

ii) Light

c) Explain **four** factors that should be considered when siting a vegetable nursery. (4mks)

22a) Describe **six** advantages of rotational grazing (6mrks)

b) Explain **eight** ways in which soil fertility can be maintained (8mrks)

c) Explain **six** reasons for pruning coffee.(6mrks)

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443/2

AGRICULTURE PAPER 2

TIME: 2 HOURS

Kenya certificate of secondary education (k.c.s.e)

INSTRUCTIONS TO CANDIDATES

- Write your name, school and index number, in the spaces provided above.
- Sign and write the date of the examination in the spaces provided above.
- This paper consists of three sections: A, B and C.
- Answer **all** the questions in section **A** and **B** and **any two** questions from section **C**.
- All answers must be written in the spaces provided in this booklet

For Examiner's Use Only

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A	1–18	30	
B	18–22	20	
C		20	
		20	
	Total score	90	

SECTION A

ANSWER ALL THE QUESTIONS IN THIS SECTION IN THE SPACES PROVIDED

1. Name **two** dairy goat breeds found in Kenya. (1 Mk)

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2. Outline **four** reasons for maintaining farm tools and equipment in good condition. (2 Mks)

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3. Outline **two** predisposing factors of foot rot. (1 Mk)

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4. Name **two** rules that should be observed when milking. (1 Mks)

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5. Outline **two** duties of a worker bee in a colony of bees. (1 Mks)

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6. Study the table below fill in the blanks to show the term used to refer to parturition and young ones of the following animals. (2 Mks)

Type of animal	Act of parturition	Term to refer to the young one
Cattle	Calving	Calf
Goats
pig

7. State **four** harmful effects of ticks. (2 Mks)

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8. State **four** desirable factors to consider when siting a fish pond. (2 Mks)

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9. Name the most appropriate tools used in the following operations

- a) Removing metal chippings in file (1mrk)

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- b) Cutting wood along grains (1mrk)

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- c) Branding (1mrks)

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10. State **four** characteristic of Boran cattle (2mrks)

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11. Name **three** methods of out breeding in livestock production ((1 ½ marks)

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12 .What do you understand by the following terms as used I animal production .

a) Caponisation (1mrk)

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b) Bullock (1mrk)

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c. Epistasis(1mrk)

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13State **four** control measures of a liver fluke in livestock. (2 marks)

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14What is “dry cow therapy” in dairy cattle management?

(1/2 mark)

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15State **four** causes of stress in poultry (2 marks)

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16.Distinguish between mothering ability and prolificacy as used in livestock breeding.(1mks)

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17 Name **two** sources of protein for livestock nutrition (2 marks)

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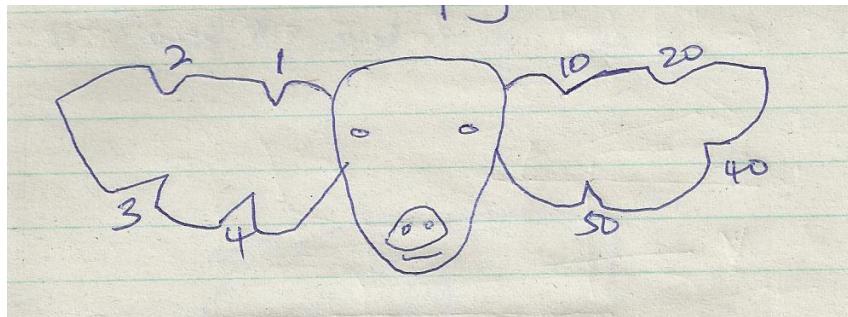
18State **four** signs of parturition shown by a in calf cow. (2 marks)

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SECTION B (20 mks)

ANSWER ALL THE QUESTIONS IN THIS SECTION

19The diagram below shows a certain practice carried out on pig



- a) Identify the practice illustrated above (1mrk)

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- b) Draw another illustration depicting pig number 37(1mrk)

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- c) Name the tool used to carry out the practice illustrated above (1mrk)

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- d) State two other method of identifying piglet (2mrks)

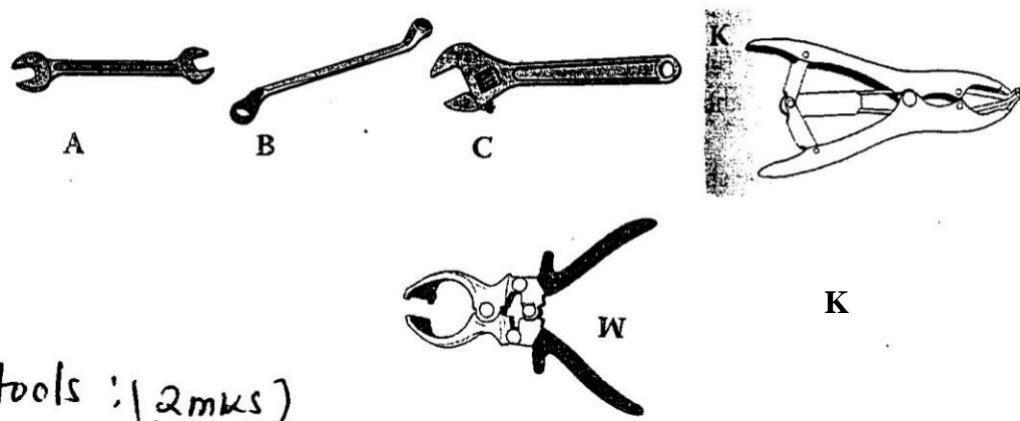
i)

.....
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ii)

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20. The diagrams below show some farm tools. study them and answer the question that follow.



tools : (2mks)

a) Name the tools. (2 marks)

A

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B

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C

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W

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b) State the functional differences between tools K and W (1 mark)

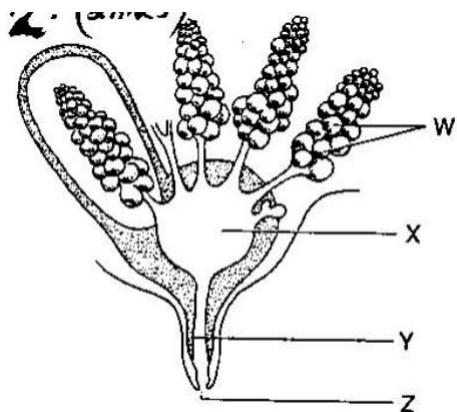
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c) What advantage does C have over A and B? (1 mark)

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d) State **one** common maintenance practice carried out in tool C and W. (1 mark)

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21a) The diagram below shows a structure of the udder of a cow. Name the part labeled W, X, Y and Z. (2 marks)



W

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X

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Y

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Z

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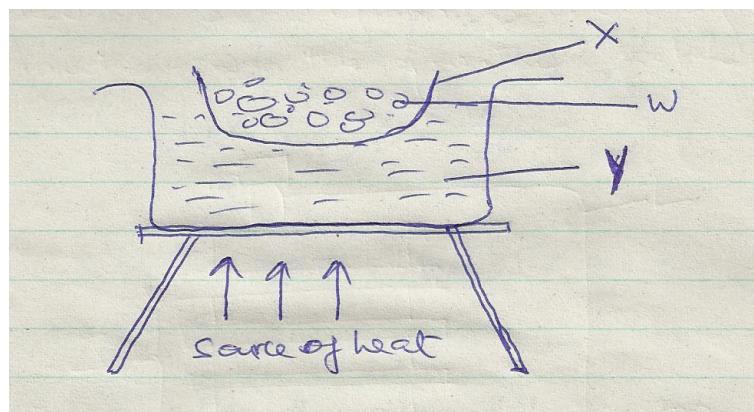
b) What is milk let down (1 mrk)

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c) Name **two** hormones that control milk let down in dairy cow. (2 mrk)

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22. Below is an illustration of a method of extracting honey from combs .Study the diagram and answer the question that follow .



a) Identify the above method of extracting honey (1mrk)

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.....

b) Give a reason why container x should not be heated directly (1mrk)

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.....

c) Name the parts labeled w and y(2mrks)

W

.....
.....

Y

.....
.....

d) Besides the above method ,State one other method of extracting honey (1mrk)

.....
.....

SECTION C (40 MKS)
ANSWER ANY TWO QUESTIONS IN THIS SECTION

- 23(a) State **five** reasons why bees swarm. (5 marks)
- b) Describe **five** maintenance practices carried out on a tractor battery. (5 marks)
- c) Explain **five** factors considered when culling livestock. (5 Mks)
- d. Explain **five** mechanical methods of controlling ticks.(5 mks)
- 24a) Describe the process of egg formation in chicken up to the point of laying. (10 Mks)
- b) State the differences between four stroke cycle and two stroke cycle engine. (5 Mks)
- c) Describe the process of digestion in rumen. (5 Mks)
25. a) Describe trypanosomiasis disease under the following sub-headings.
- i) Causal organism (1 Mk)
- ii) Animal attacked (1 Mk)
- iii) **Five** symptoms of attacked animals (5 Mks)
- iv) **Three** control measures (3 Mks)
- b) Control **five** control measures for cannibalism (5 Mks)
- (c) Explain **five** parts of a piggery unit (10mrks)
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KCPE MARKS.....PREV EXAM MKS.....INDEX.....

231/1

BIOLOGY

Paper 1

Time: 2 Hours.

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

Instructions

1. Write your name, Index Number and School in the spaces provided above.
2. Sign and write the date of the examination in the spaces provided above.
3. Answer all the questions in the spaces provided.
4. Additional pages must not be inserted.
5. Check the question paper to ascertain that all the pages are printed and that no questions are missing.

FOR EXAMINER'S USE ONLY

Question	Maximum Score	Candidate's Score
1-25	80	

1. (a). State the meaning of the following terms. (1 mark)

(i). Science -

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(ii). Biology- (1 mark)

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(b) Explain the following branches of biology. (3 mark)

(i). Zoology -

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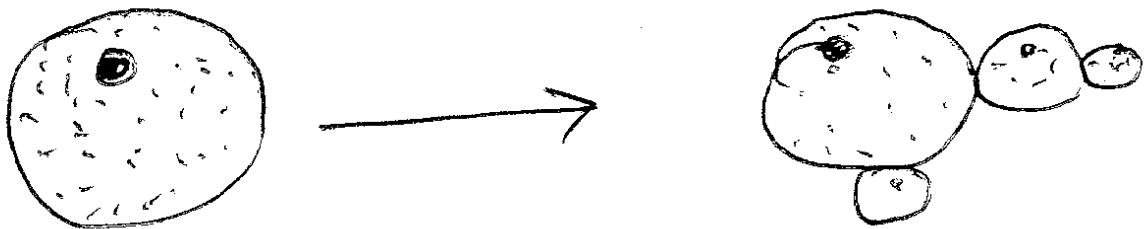
(ii). Entomology -

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(iii). Morphology –

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.....

2. The diagram below illustrates a process in an organism of a given species



a.) Identify the process taking place in the organism above. (1 mark)

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.....

State two economic importance of the organism above. (2 mark)

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3. HIV/AIDS is a major killer disease with no known treatment. Anti-Retroviral drugs are used to manage it.

(a). What is the role of anti-Retroviral drugs in HIV/AIDS management. (1 mark)

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(b). Suggest two ways of controlling the spread of HIV/AIDS. (2 marks)

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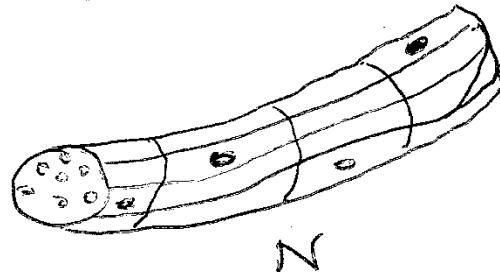
4. Name two bones that articulate to form a ball and socket joint at the hip. (2 marks)

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.....

5. The figures below illustrates specialized cells in an animal's body.



M



N

(i). Identify the cells M and N. (2 marks)

M –

N –

(ii). State the structural differences between M and N. (2 marks)

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.....

(iii). Which of the above specialized cells is found in the gut. (1 mark)

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6. Explain why tracheids are not efficient in transporting water up the plant. (2 marks)

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6. Insect's blood is noted to lack a respiratory pigment. Explain. (2 marks)

7.

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8. Give two destinations of food translocated from the leaves of plants. (2 marks)

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9. Name the organelle that is likely to be found in abundance in

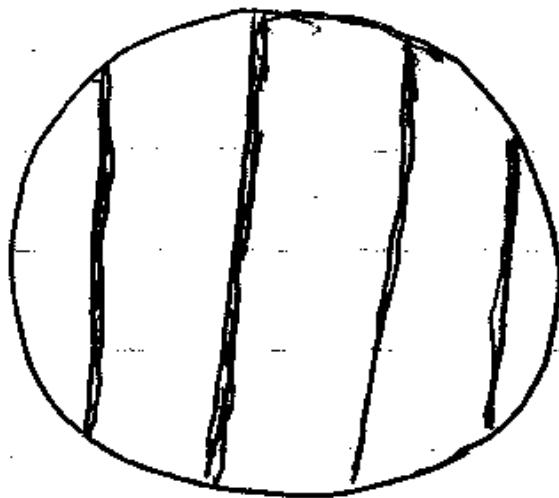
a.) An enzyme secreting cell. (1 mark)

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.....

b). Cell producing lipid related secretions (1 mark)

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.....

10. A form one student trying to estimate the size of onion cells observed the following on the microscope field of view. (2 marks)



If the student counted 20 cells across the field of view. Calculate the size of one cell in micrometers. (3 marks)

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11.a). Name the cells that secrete mucus in the human alimentary canal (1 mark)

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(b). Explain the role of hydrochloric acid in protein digestion in the stomach of mammals.

(2 marks)

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12. Assume you are a nutritionist, name the kind of vitamins you would recommend to patients with the following conditions

(a). Poor night vision. (1 mark)

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(b). Bleeding gums (1 mark)

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.....

(c). Excessive bleeding after an injury. (1 mark)

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.....

13. State the characteristics that distinguish the following organisms into their respective classes, millipedes, spider and Tsetsefly (3 marks)

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.....

14. Name two classes of phylum Arthropoda with cephalothorax (2 marks)

.....

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15. (a). Name the main group of organisms which comprises the kingdom monera.

(1 mark)

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(b). State any three ways in which the organism; named in (a) above affect human lives.

(3 marks)

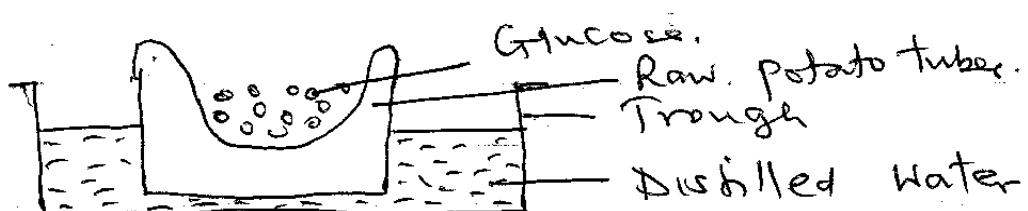
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16. (a). The experiment illustrated below was set up to investigate a certain physiological process using a raw Irish potato tuber.



(i). Suggest a possible physiological process that was being investigated. (1 mark)

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(ii). Explain the results obtained in the above experiment after a few hours. (2 marks)

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(iii). State the observations that would have been made if the experiment was repeated using boiled potato. (2marks)

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(b). Explain why growing grass die a few days when salt is sprinkled on it. (3 marks)

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17. Give an example o a sec-linked trait in human one

(i). Y- chromosome- (1 mark)

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.....

(ii). X-Chromosome- (1 mark)

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.....

18. The diagram below represents a portion of a certain nucleic acid

G A C C A U U C G A
| | | | | | | | | |

With reason identify the type of nucleic whose portion is shown above

Identify- (1 mark)

.....
.....

Reason- (1 mark)

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19. The diagram below show a pair of homologous chromosomes. Study them and answer the questions that follow.



(i). State the genetic significance of the phenomenon. (2 marks)

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20. The table below shows the percentage composition of carbon (IV) oxide and Oxygen in inhaled and exhaled air. Inhaled air contain oxygen 20% and carbon (IV) oxide 0.04%.

Gas	Inhaled air	Exhaled air
Oxygen	20%	17%
Carbon (IV) Oxide	0.04%	40%

Explain the differences in the percentage of the two gases in inhaled and exhaled air

(a). Oxygen. (2 marks)

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.....

(b). Carbon (IV) oxide. (2 marks)

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21. Give the forms in which the following gases are transported in blood. (3 marks)

(a). Oxygen

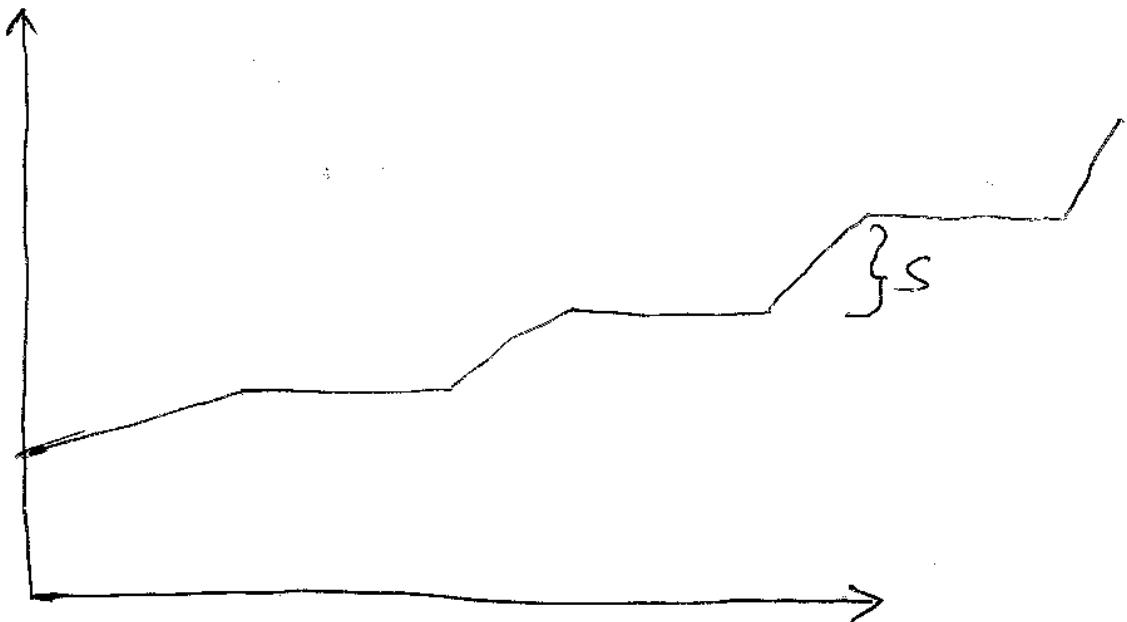
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(b). Carbon (IV) Oxide

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(c). Carbon (II) Oxide

22. The following graph represents a growth pattern observed in a group of animals.



(a). Name the type of growth shown above. (1 mark)

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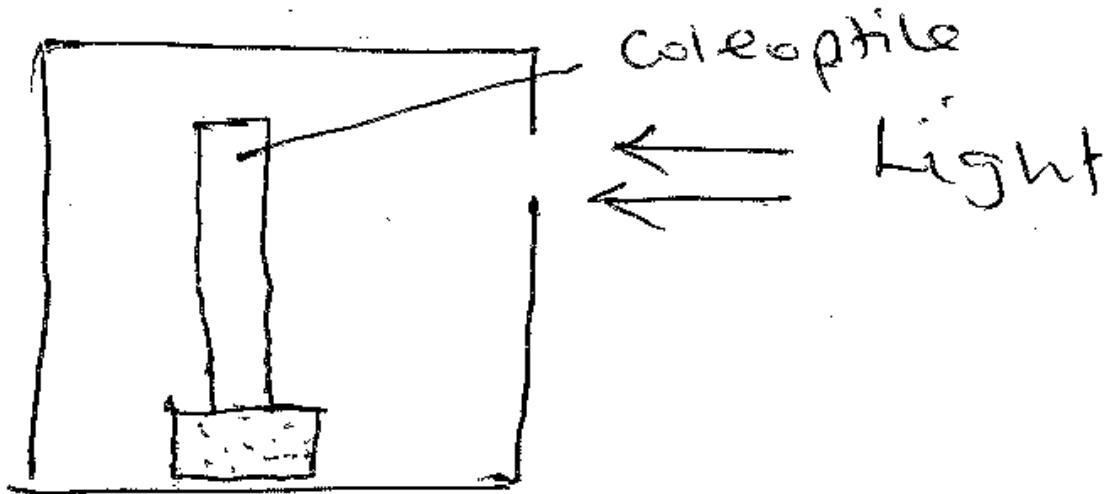
(b). Name the phylum of animals whose members display the growth pattern named in (a) above. (1 mark)

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(c). Identify the process which lead to increase in body size at part marked S. (1 mark)

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23. The diagram below show a tip of a plant coleoptile with light coming towards it from one direction.



(a). How would the plant respond to light. (1 mark)

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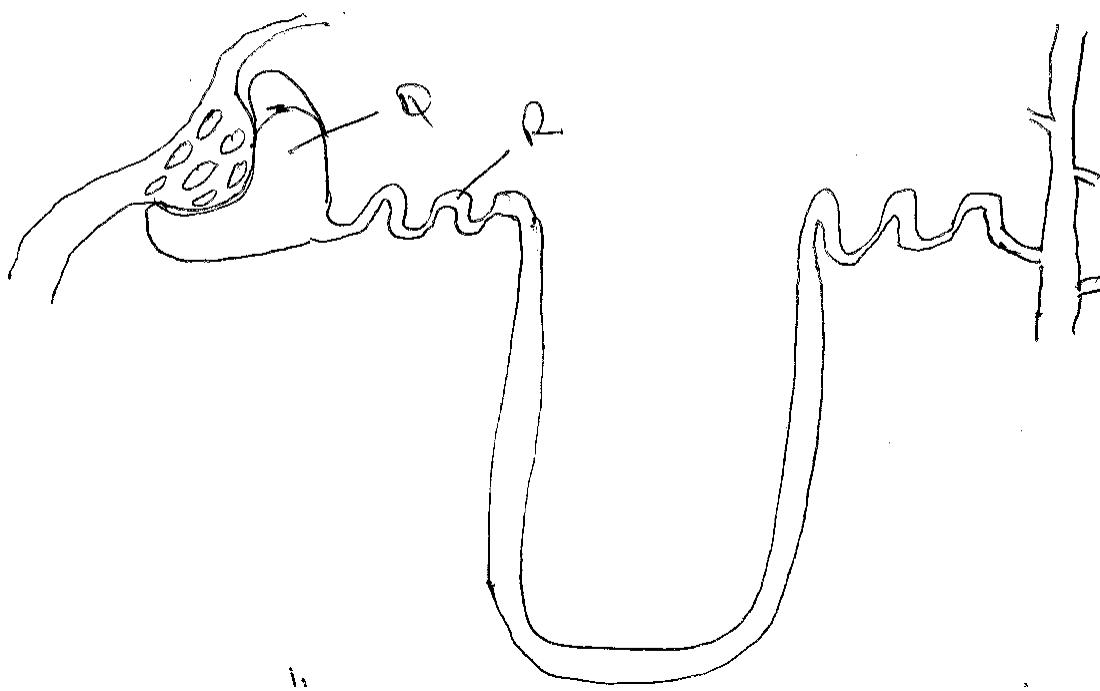
(b). Give the name of such a response. (1 mark)

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.....

(c). What is the advantage of plant responding in this way? (2 marks)

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24. The diagram below illustrates parts of a nephron from a mammalian kidney.



(a). Name the fluid found in part labelled Q. (1 mark)

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(b). Identify the process that lead to the formation of fluid named in (a) above. (1 mark)

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(c). Which two hormones exert their effect in the nephron? (2 marks)

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25. Name the habitat of the following plants. (2 marks)

(i). Xerophytes –

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(ii). Halophytes –

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KCPE MARKS.....PREV EXAM MKS.....INDEX.....

231/2

BIOLOGY

Paper 2

Time: hours.

Kenya Certificate of Secondary Education (KCSE)

Instructions to the Candidates

- a) Write your name and index number in the spaces provided above.
- b) Sign and write the date of examination in the spaces provided above..
- c) This paper consists of **TWO** sections A and B
- d) Answer **ALL** questions in section A in the spaces provided.
- e) In section B answer question **6 (compulsory)** and either question 7 or 8 in the spaces provided after question 8.
- f) This paper consists of 11 printed pages.
- g) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
- h) Candidates should answer the questions in English.

For Examiner's Use Only

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

SECTION A – (40 MARKS)

Answer All Questions In This Section In The Spaces Provided.

1. (a) What is meant by the term sex linkage? (1 mark)

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.....

- (b) Name two sex-linked traits in humans (2 marks)

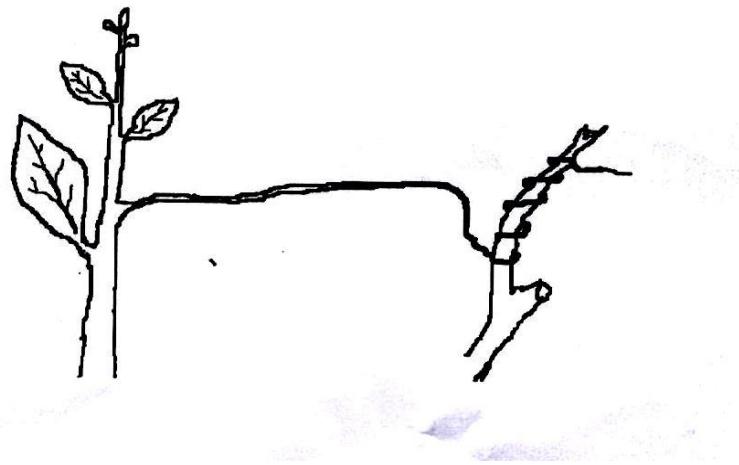
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- (c) In Drosophilamelanogaster, the inheritance of eye colour is sex-linked. The gene for the red eye is dominant. A cross was made between a homozygous red-eyed female and a white eyed male. Work out the phenotypic ratio of F1 generation. (Use R to represent the gene for the red eyes) (5 marks)

2. A response exhibited by a certain plant tendril is illustrated below.



a) (i) Name the type of response. (1 mark)

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(ii) Explain how the response named in a) (i) above occurs. (3 marks)

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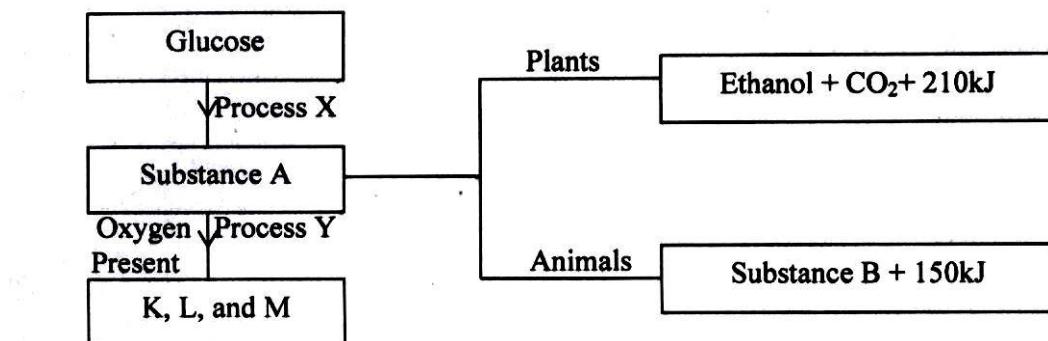
a) What is the importance of tactic response to microscopic plants? (1 mark)

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b) State **three** applications of plant hormones in Agriculture. (3 marks)

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3. The diagram below represents a simple respiratory pathway in cells



- a) Name the process marked **X** and **Y**. (2 marks)

X

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.....

Y

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.....

- b) State **two** differences between process X and Y. (2 marks)

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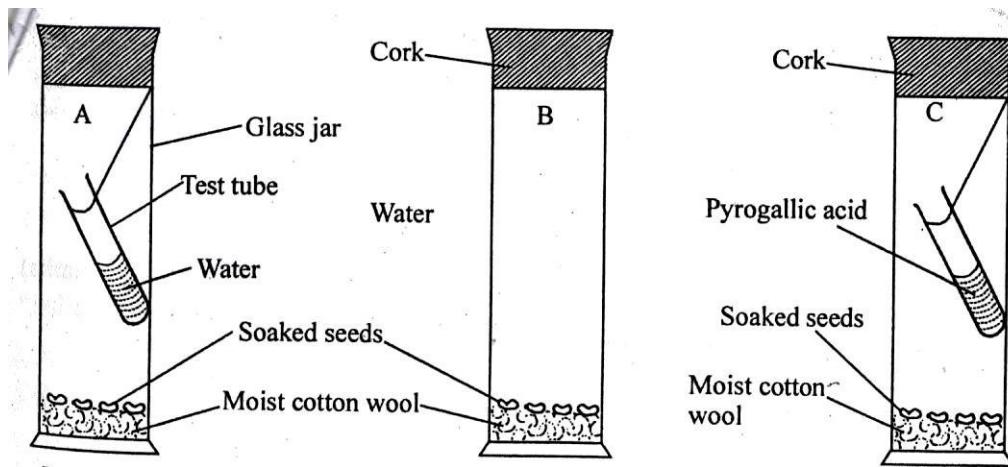
- c) State the name of substance B and condition under which it is formed. (2 marks)

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- d) Explain how body size affects the rate of respiration in animals. (2 marks)

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4. The diagram below represents a setup to investigate the conditions necessary for seed germination. The setup was left for 5 days.



- a) What conditions were being investigated in the experiment? (2 marks)

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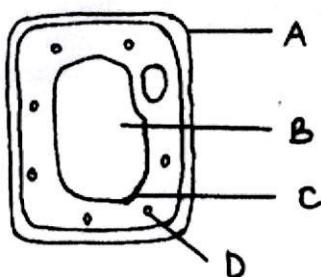
- b) Explain the role of water during seed germination. (3 marks)

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- c) Account for the expected results in each setup after 5 days. (3 marks)

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5. Examine the diagram below and use it to answer the questions that follow.



- a) Name the parts labeled. (3 marks)

B

.....
.....
C

.....
.....
D

b) What is the substance that makes up part labeled A? (1 mark)

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.....

c) Name the process by which mineral salts move into structure B. (1 mark)

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d) Explain what happens when a red blood cell is put in distilled water. (3 marks)

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SECTION B – 40 MARKS

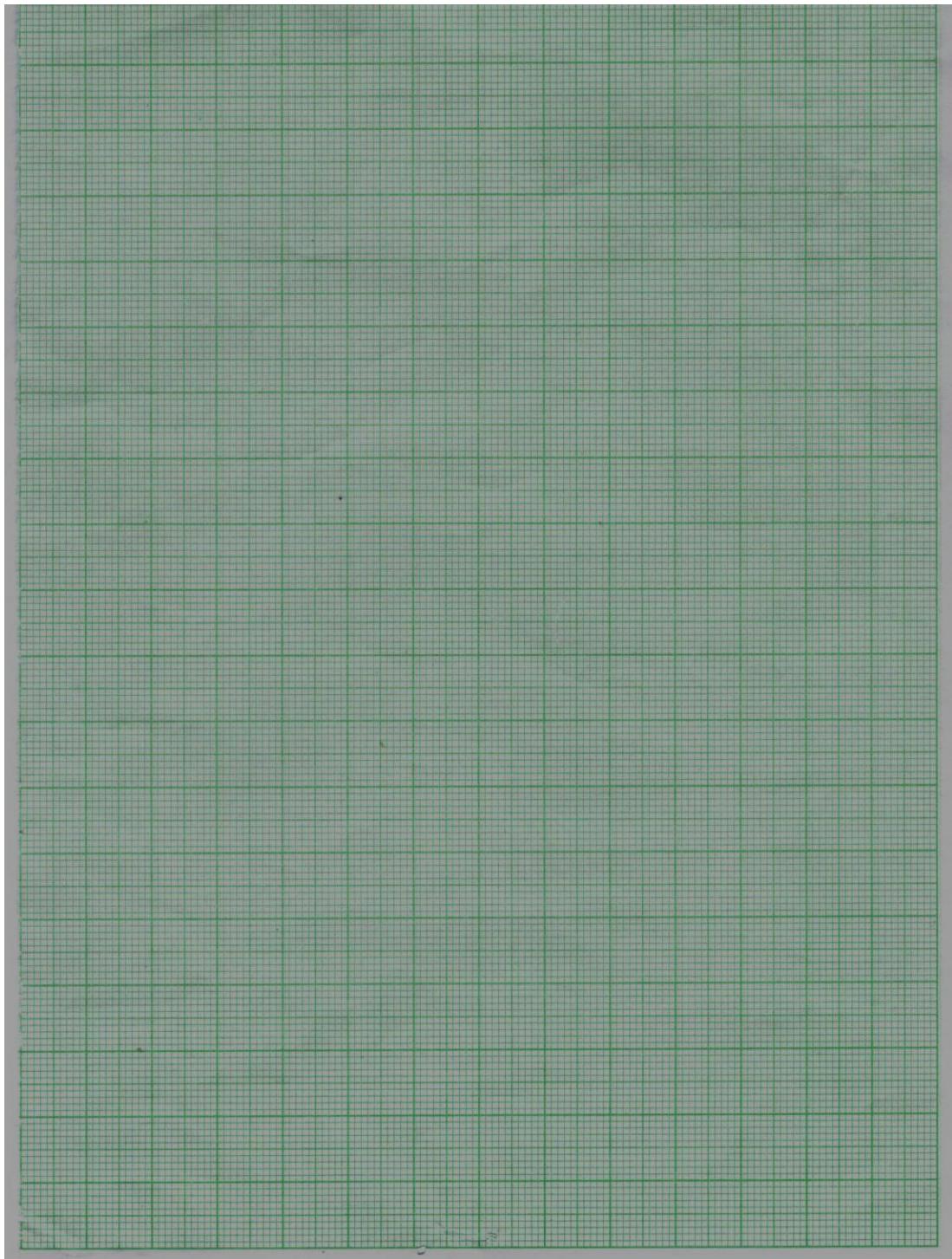
Answer question 6(compulsory) and either question 7 or 8 in the spaces provided.

6. The data below shows the rate of photosynthesis at different temperature in attached leaves of three East African plants. (Crotolarie, Gynandropsis and Amaranthus species) respectively which were grown outside with the same condition while water and carbon (iv) oxide are not limiting factors in this experiment.

Rate of photosynthesis was expressed in terms of carbon (IV) oxide uptake in mg/mm²/hr at various temperatures as tabulated below.

Temperature °C	Rate of Photosynthesis (mg/mm ² /hr)		
	Gynadropsis sp	Crotolasis sp	Amaranthus sp
5	-	20	-
10	22	40	10
15	50	49	27
20	60	64	42
25	80	48	55
30	85	45	54
35	80	42	50
40	73	31	45
45	66	15	40
50	2	-	11

- a) Represent the results graphically (rate of photosynthesis against temperature)



- b) Using the graph in (a) above indicate optimum temperature for the Gynandropsis and Amaranthus species
(2 marks)
- Gynandropsis

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.....
● Amaranthus

- c) Give a reason why Gynandropsis and Aaranthus could not function photosynthetically at 5°C. (1 mark)

- d) What are the possible ecological habitats for the following plants (2 marks)
(i) Amaranthus

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.....
(ii) Crotalaria

- e) At what temperature was the amount of carbon (IV) oxide around the leaf of Gynandropsis highest? (1 mark)

- f) What raw material required in the light stage of photosynthesis.(1 mark)

- g) Name the parts of chloroplasts in which the following stages of photosynthesis take place. (2 marks)

(i) Light stage

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

(ii) Dark stage

h) State one structural similarity and difference between chloroplast and mitochondria.

(2 marks)

Similarity
.....
.....

Difference
.....
.....

i) What is the compensation of photosynthesis? (1 mark)

7. (a) Explain the role of mammalian skin in thermoregulation. (10 marks)

(b) Describe how the alveolus is adapted to perform its functions. (10 marks)

8. (a) Discuss the evidence of organic evolution. (10 marks)

(b) Describe how the xerophytes are adapted to their habitat. (10 marks)

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THE BOOSTER NATIONAL SCHOOLS MOCK

SCHOOL NAME.....

NAME.....ADM.....

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231/3

BIOLOGY

PRACTICAL CONFIDENTIAL

The information contained in this paper is to enable the head of the school and the teacher in charge to Biology to make adequate preparations.

NO ONE ELSE should have access to this paper or acquired knowledge of its contents.

Great care MUST be taken to ensure that the information herein does not reach the candidates either directly or indirectly.

Each candidate require the following;

- One table spoonful of millet soaked for about 50 minute labeled M.
- Measuring cylinder
- 6 Labels
- Thermometer
- Means of timing (Stopwatch)
- 0.1M HCl labeled solution L
- Four clean test tubes
- Pestle and mortar
- Scalpel/razor blade
- Iodine solution
- Benedict's solution
- Water bath
- Source of heat

- White tile
- Solution of amylase/diastase enzyme labelled solution K
- Source of distilled water
- A piece of liver organs labelled C
- 2 boiling tubs
- Hydrogen peroxide (about 20m/s per candidate)



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BIOLOGY

PRACTICAL

Paper 3

Time: 1 ¾ hours.

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

INSTRUCTIONS TO THE CANDIDATES

- Sign and write your Name and index Number in the spaces provided above.
- Answer all the questions in the spaces provided.
- You are required to spend the first 15 minutes off the 1 ¾ hours allowed for this paper reading the whole paper carefully before commencing your work.
- Additional pages must NOT be inserted.
- Candidates may be penalized for recording irrelevant and incorrect spelling especially of technical terms.
- Candidates should answer all the questions in English.

For Examiner's Use Only

Question	Maximum Score	Candidate's Score
1	13	
2	14	
3	13	
Total Score	40	

1. You are provided with the specimen labeled M-soaked millet. Grind them using pestle and mortar, add some water to get fine solution label four clean test tubes; A, B, C and D. Put about 4ml of the solution into each of the four test tubes.
- (a). To solution in test tube A, add some few drops of iodine. Shake the solution to mix well. Pour some little solution onto a white tile.
- (i). Record your observation. (1 mark)
-
.....
- (ii). Account for your observations in a) (i) above. (1 mark)
-
.....
- (b). Into solution in test tube B, add about 2ml of Benedict's solution. Place it in a boiling water bath.
- (i). After about 3 minutes, record your observation. (1 mark)
-
.....
- (ii). What is your conclusion from observation in (b) i) above?
-
.....
- a) For the remaining test tubes;-
- (c). To each of test tube C, add about 3ml of solution labeled K. To test tube D and about 3ml of solution K and about 2ml of solution labeled L. Place both test tubes C and D in a water bath. Maintain the water bath at 37°C. Allow it to stand in the water bath for 30 minutes. After 30 minutes, remove the test tubes. Add about 2ml of Benedict's solution to each test tube and shake well. Place the two test tubes in a boiling water bath. After about 5 minutes record your observations in the table below. (4 marks)
- | Test tube | Observation | Conclusion |
|-----------|-------------|------------|
| C | | |
| D | | |

d). Account for your observations in the test tubes C and D. (2 marks)

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e). i). Why was set up placed at 37°C? (1 mark)

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.....

(ii). Suggest identify of solutions K and L. (2 marks)

K

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.....

L

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2. You are provided with a piece of animal organ labelled C

(a). Identify the organ. (1 mark)

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(b). Explain why malfunctioning of this organ causes;

(i). Impairment of blood sugar regulation. (2 marks)

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.....

(ii). Impairment of food digestion. (2 marks)

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.....

(c). Cut specimen C into two equal pieces, immerse one of the pieces in water inside a boiling tube and boil it for five minutes.

Put 10ml of hydrogen peroxide in one boiling tube and label it D1, then put another 10ml of hydrogen peroxide into the other boiling tube and label it D2.

Drop the fresh piece of organ C into D1 and the boiled piece into D2.

(i). Record your observation:

D1 (1 mark)

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D2 (1 mark)

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(ii). Which homeostatic function of the organ C is being investigated. (1 mark)

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(iii). Account for the observation made in

D1 (2 marks)

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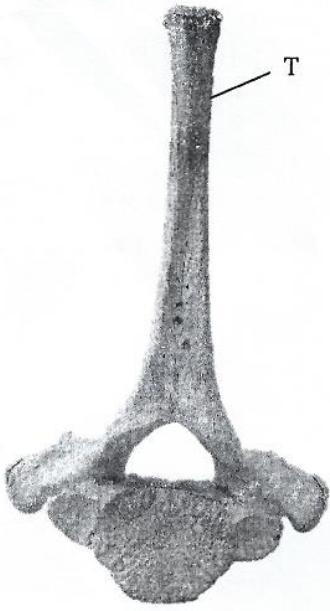
D2 (2 marks)

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.....

(d). Name two diseases that affects organ C. (2 marks)

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.....
.....

3. The photographs below shows bones obtained from different regions of a mammalian body. The photographs are in different views.



Anterior view of bone A



Dorsal lateral view of Bone B



Anterior view of bone C

(a). Identify the bones. (3 marks)

A

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.....

B

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C

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(b). Name the regions from which bone B was obtained from. (1 mark)

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(c). State two distinguishing features of the bone in photograph labeled B. (2 marks)

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(d). Name the part labelled T in the photograph of bone A and state its significance.

(2 marks)

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(e). With reason state the type of joint formed at the distal and proximal and of specimen C.

(4 marks)

(i) Distal end

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Reason

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(ii). Proximal end

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Reason

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(f). Name the bone that articulates with the proximal end of the bone in photograph labelled C.

(1 mark)

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THE BOOSTER NATIONAL SCHOOLS MOCK

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Kenya Certificate of Secondary Education

565/1 BUSINESS STUDIES

PAPER ONE

TIME: 2HRS

INSTRUCTIONS

1. Answer all the questions in the spaces provided

SECTION A

1. State **four** external factors that may positively influence the operations of a business (4mks)

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2. Outline **four** circumstances under which producers may prefer to sell goods directly to the consumers. (4mks)

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3. Name four ways through which consumers can be cheated in their dealings with traders (4mks)

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4. The following information relates to Tamu Traders for the year ended 31st Dec. 2011

	Sh
Fixed Assets	5,000,000
Current Assets	650,000
Net profit	300,000
Current liabilities	650,000
Sales	2,000,000
Closing stock	100,000
Opening stock	200,000
Gross profit margin	20%

Calculate; (4mks)

- a) Current ratio

- b) Gross profit mark up
 - c) Rate of stock turn over
 - d) Capital employed.
5. Outline **four** circumstances under which a credit note may be issued. (4mks)
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6. The equation given below relate to quantity demanded and the quantity supplied at equilibrium price.
- $$Q_{de} = 4P + 50$$
- $$Q_{se} = 8P + 30$$
- Determine the equilibrium price and quantity (4mks)
7. Kendi started a shop dealing in ladies clothing but failed after two years. Outline four factors that many have caused this failure (4mks)
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.....

8. Name the type of warehouse described below

Statement	Type of warehouse
a) Goods can be stored before payment of custom duties	
b) Individuals can hire storage facilities	
c) Goods are stored from several manufacturers	
d) Specialised goods are stored	

9. State **four** ways in which the nature of goods would influence the choice of transport (4mks)

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10. Outline any **four** circumstances under which human wants may be fully satisfied (4mks)

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11. Highlight **four** ways in which business studies is useful to a community (4mks)

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12. State the books of original entry in which the following documents are used. (4mks)

a) Incoming invoice

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.....

b) Incoming receipt

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.....

c) Outgoing credit note

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.....
.....
d) Outgoing invoice

13. State the type of ledger into which the following accounts would be found.

(4mks)

Account	Relevant ledger
a) Capital
b) Mueni (debtor)
c) Kariuki (supplier)
d) Bank

14. Outline any **four** advantages of operating in an open office layout. (4mks)

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15. George operates a petrol station in Nakuru. He insured his stock worth Ksh 2.4 million for ksh 2 million. Later in the year stock worth ksh 600,000 was destroyed by fire. Calculate the amount he was compensated and give a reason. (4mks)

16. State **four** characteristics of money (4mks)

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17. Name the rewards for the following factors of production (4mks)

Factor of production	Reward
a) Employee	
b) Machine	
c) Minerals	
d) Farmer	

18. Outline **four** challenges that may be experienced by a country whose population is made up of a large proportion of young people (4mks)

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19. Highlight any **four** characteristics of perfect competition type of market structure (4mks)

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20. State the line of communication involved in each of the following. (4mks)

a) The manager of ABC company Ltd talking to the manager of XYZ company Ltd

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b) A secretary asking for time off from her boss

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.....

c) The production manager giving instructions to the secretary of the sales manager

d) The store keeper giving explanations to the chief accountant

21. State the effect of each of the following transactions on the balance sheet totals by writing increase or decrease or no effect in each case. (4mks)

Transaction	Effect
a) Bought machinery on credit	
b) Withdrew cash from the bus for personal use	
c) Purchased stock in cash	
d) Paid outstanding loan by cheque	

22. Outline the assumptions that the circular flow of income in a closed economy work under (4mks)

23. The following balances were extracted from the books of Wanji traders for the year ended 30th June 2005. (4mks)

	Sh
Debtor	120,000
Creditor	60,000
Machinery	450,000
Cash in hand	70,000
Cash at bank	180,000
5 years bank loan	270,000
Stock	60,000

Prepare a balance sheet of Wanji traders as at 30th June 2005.

24. Outline **four** reasons for maintaining a cash book in a business enterprise. (4mks)

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25. Highlight **four** factors that should be considered when choosing a method of promoting a product. (4mks)

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Kenya Certificate of Secondary Education

565/2 BUSINESS STUDIES

PAPER TWO

TIME: 2½HRS

INSTRUCTIONS

2. Answer any **FIVE** questions in the foolscaps provided

1a) Outline any five differences between private limited liability company and public limited liability company.

(10mks)

b) Describe five accounting documents used in home trade.

(10mks)

2a) The table below shows the demand and supply schedules for product A in a week.

Price(sh)	Quantity demanded (‘000’ tonnes)	Quantity supplied (‘000’ tonnes)
35	5	80
30	10	65
25	20	55
20	25	40
15	30	35
10	40	20
5	55	5

Use the information in the table above, draw the demand and supply curve showing the market equilibrium for the produce.

(10mk)

b) Explain five benefits that a firm may enjoy by preparing a business plan.

(10mks)

3a) Traders are required to observe ethical practices when carrying out product promotion. Explain five reasons for observing such ethical practices

(10mks)

b) Explain five benefits that may be realized by a country as a result of government policy to relocate Industries to rural areas.

(10mks)

4a) Outline any five factors to consider while locating a ware house.

(10mks)

b) On 1stSeptember 2015, Miriam had sh 55,000 in hand and sh. 250,000 in bank. During the month the following transactions took place.

Sep 2: Cash sales banked sh 35,260

Sep 3: Bought ribbons in cash sh 4,500

Sep 8: Paid Wangila, a creditor sh 94,000 by cheque in full settlement of his account after deduction 6% cash discount.

Sep 12: Received a cheque for sh 58,800 from Wetu after allowing her cash discount of sh 1,200

Sep 15: Paid salaries of sh 34,000 in cash

Sep 25: Withdraw sh 50,000 from bank for office use.

Sep 28: Anyango a debtor paid her account of sh 75,000 by cheque less 10% cash discount.

Sept 30: Deposited all the cash into the bank except sh 13,700

Prepare a three column cash book and balance it off.

(10mks)

5a) Explain any five uses of National Income Statistics

(10mks)

b) The following trial balance related to Tai Traders as at 31st December 2014

TAI TRADERS
TRIAL BALANCE

AS AT 31ST DECEMBER 2014

Details	Dr (Ksh)	Cr(Ksh)
Stock	10,000	
Bank	3,500	
Purchases	15,000	
Sales		28,000
Returns	800	1,100
Rent		580
Insurance	950	
Creditor		450
Carriage in	1,200	
Discounts	300	1,620
	31,750	31,750

Additional information

- Closing stock was valued at Ksh 2,500
- Carriage out was Ksh 1,200

Required: Prepare trading profit and loss account. (10mks)

6a) Explain any five reasons why one would prefer to transport goods on road than rail.

(10mks)

b) On 1st January 1993 Makena started a business with sh 120,000 cash and sh 300,000 in the bank.

The following transactions were done in the month of January 1993.

- January 3: Bought goods worth sh 60,000 by cheque
 January 10: Sold goods worth sh 35,000 cash
 January 14: Bought goods worth sh 90,000 cash from Odero
 January 18: Paid wages sh 18,000 by cash
 January 20: Withdrew sh 40,000 from bank for office use.

Required;

Record the above transactions in the relevant ledger account, balance them off and extract a trial balance. (10mks)



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233/3

CHEMISTRY PAPER 3

CONFIDENTIAL

FORM 4

KENYA CERTIFICATE OF SECONDARY EDUCATION (KCSE)

CONFIDENTIAL

Each candidate requires

1. Solution A, 60cm³ of 2mHCl.
2. Solution B, 100cm³ of 0.05MNaOH
3. Solid C, 10cm magnesium ribbon.
4. 10ml measuring cylinder
5. 25ml pipette
6. 50ml Burette
7. Complete stand
8. Stopwatch
9. 2 labels
10. Distilled water
11. 6 test tubes.
12. 0.5g sodium hydrogen carbonate.
13. 5cm³ ethanol.
14. 1 – 14 PH chart.
15. Solid R, 1g Oxalic acid.
16. Solid Q, Mixture of (NH₄)₂SO₄ and Al₂(SO₄)₃ (ration 1:1)
17. Pipette filler
18. Phenolphthalein indicator

19. 250ml conical flask (2)
20. 250ml volumetric flask
21. 1 boiling tube
22. 1 spatula

ACCESS TO:

23. Universal indicator solution
24. Acidified potassium manganite (VII) solution
25. Bromine water
26. Conc. Sulphuric (VII) acid with a dropper.
27. Means of heating.
28. 2M Lead (II) nitrate solution.
29. 2M dilute nitric (V) acid solution
30. 0.5m Barium nitrate solution
31. 2M sodium hydroxide solution.
32. 2M Aqueous ammonia.
33. 2M Hydrochloric acid.



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(*The Kenya Certificate of Secondary Education*)

233/1

CHEMISTRY

Paper 1

(Theory)

Time 2 Hours

Instructions to Candidates

1. Write your name and index number in the spaces provided above.
2. Answer all the questions in the spaces provided.
3. All working must be clearly shown.
4. Non-programmable silent electronic calculators and KNEC mathematical tables may be used.

For Examiner's Use only

Questions	Maximum score	Candidates score
1 - 25	80	

This paper consists of 12 printed pages. Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

ANSWER ALL QUESTIONS

1. The pH values of some solutions labeled E to I are given in the table **below**. Use the information to answer the questions that follow.

pH	14.0	1.0	9.0	6.5	5.0
Solution	E	F	G	H	I

- (a) Identify the solution with the highest concentration of hydroxide ions. Explain (1mk)

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- (b). Which solution can be used as a remedy for acid indigestion in the stomach? Explain (1mk)

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- (c) Which solution would react explosively with Potassium metal? (1mk)

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2. a) Distinguish between ionization energy and electron affinity (2mks)

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- b) The table below shows first ionization energies of metals represented by letters A, B, C and D. The metals are in the same group of the periodic table.

Metal	A	B	C	D
1st ionization energy (kJ/mole)	402	496	520	419

- Which of the metals has the largest atomic radius? Explain. (2mks)

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3. An element: $^{23}_{11}M$

- (a) To which chemical family does it belong? (1/2mk)

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(b) Write the electron arrangement of the atom. (1/2mk)

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(c) Draw the structure of its ion. (1mk)

4. (a) Define electrolysis. (1mk)

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.....

(b) During the electrolysis of molten aluminium oxide, write the equations at the;

Anode - (1mk)

.....
.....

Cathode - (1mk)

5. In an experiment to determine the percentage purity of Sodium carbonate produced in the Solvay process , 2.15g of the sample reacted with exactly 40.0cm^3 of 0.5M Sulphuric(VI)acid. Determine the percentage purity of sodium carbonate in the sample.

6. **Y** is a product of gaseous reaction which results in an equilibrium mixture being formed.



The percentage of **Y** in equilibrium at various temperatures and pressure is shown in the following table.

Temperature ($^{\circ}\text{C}$)	1 atm	100 atm	200 atm
550	0.77	6.70	11.9
650	0.032	3.02	5.71
750	0.016	1.54	2.99
850	0.09	0.87	1.68

Use this data to deduce, giving a reason for each case;

- a) Whether production of Y is exothermic or endothermic. (2mks)

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- b) Whether production of Y **involves** an increase or a decrease in number of moles of gas present. (2mks)

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7. State and explain what is observed when moist red flowers are dropped in a gas jar containing Sulphur (IV) oxide. (3mks)

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8. A sample of water collected from **River Nzoia** is suspected to contain chloride ions.

Describe an experiment that can be carried out to determine the presence of the chloride ions. (2mks)

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9. During distillation in a laboratory the distillate can be collected either by a beaker or a conical flask.

- (a) Define the term distillate. (1mk)

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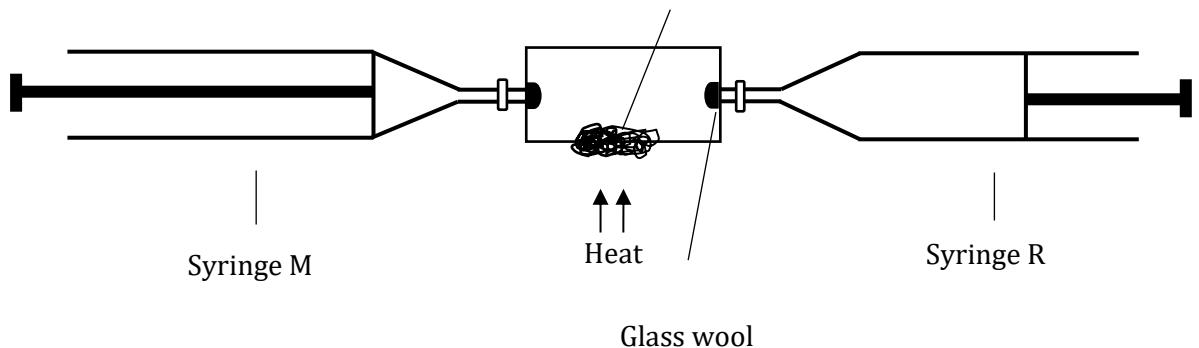
- (b) Explain why a conical flask is the most preferred apparatus for the collection of the distillate. (1mk)

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- (c) Draw the diagram of a graduated conical flask. (1mk)

10. In an experiment to determine the proportion of oxygen in air, copper turnings were packed in excess in a long combustion tube connected to two syringes of 110cm^3 each in volume. At the beginning of the experiment, syringe R contained 110cm^3 of air while syringe M was closed and empty as shown.

Copper turnings



Air was passed over the heated copper slowly and repeatedly until there was no further change in volume. 97.5cm^3 of air remained in syringe M.

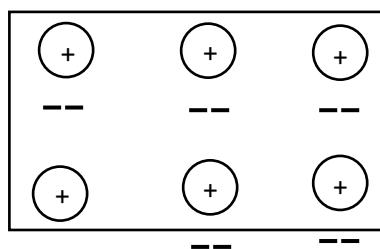
- (a) State and explain the observation made in the combustion tube. (2mks)

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- (b) If the volume of air in the **combustion tube** at the beginning of the experiment was 23.8cm^3 and at the end of the experiment reduced to 10cm^3 , calculate the percentage of the active part of air. (2mks)

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11. Below is a structure of an element X. Use it to answer the questions that follow.



- (a) Name the chemical family to which element X belongs. Give a reason. (2mks)

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- (b) (i) Define covalent bond. (1mk)

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- (ii) Using dots (\bullet) or cross (\times) diagram, show bonding in Carbon (II) Oxide. (1mk)

12. (a) (i) State **two** allotropes of Carbon. (1mk)

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- (ii) Explain the differences in their densities. (2mks)

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(b) (i) Name the process used for large scale production of Sodium Carbonate using brine as raw material. (1mk)

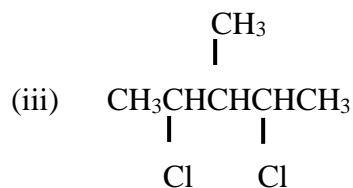
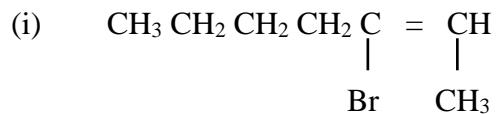
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(ii) Write the overall chemical equation for the reaction in the carbonator. (1mk)

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(c) Name two gases recycled in the above process (1mk)

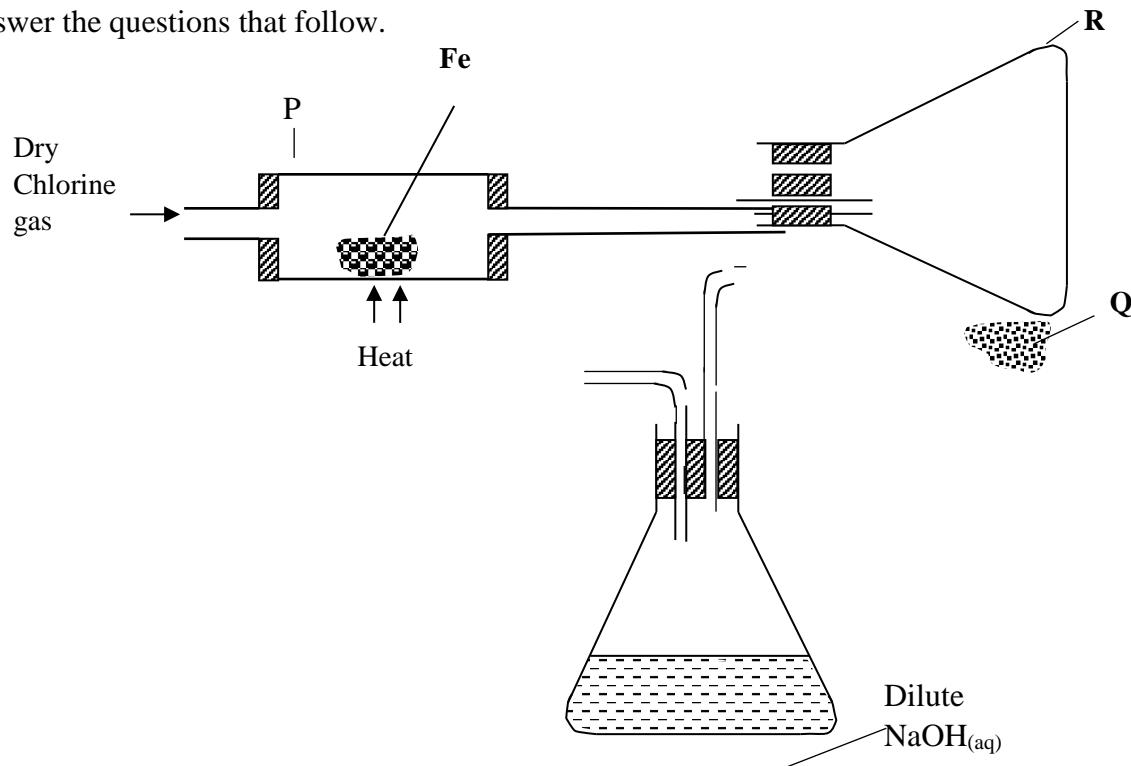
13. Name the following compounds using the IUPAC system. (3mks)



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14. Describe how to prepare Ethane gas starting with soda lime (3mks)

15. The diagram below shows how chlorine reacts with metals in the laboratory. Study it and answer the questions that follow.



(a) Name substance Q. (1mk)

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.....

(b) Give a reason why substance Q is not collected in the combustion tube P. (1mk)

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.....
.....

(c) Write chemical equation for the reaction that occurs in the conical flask containing Sodium hydroxide. (1mk)

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16. (a) Water sample is found to contain Mg^{2+} , Cl^- , SO_4^{2-} , and Ca^{2+} . Identify the type of water hardness (1mk)

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.....

(b) Which type of detergent is more suitable with the water sample above. Give a reason (2mks)

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(c) Permanent water hardness cannot be removed by boiling. Explain (1mk)

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17. Starting with lead metal, write procedure on preparation of lead(II) nitrate crystals (3mks)

18. The following chemical equations show the effects of heat on nitrates.



- a. Arrange elements A, B and C from the most reactive to the least reactive. (1 $\frac{1}{2}$ mks)

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.....
.....

- Give one example of element A, B and C. (1 $\frac{1}{2}$ mks)

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19. Copper (II) sulphate crystals, a boiling tube, a test-tube, a beaker and other necessary requirements were used in an experiment to determine the type of change that occurred when the crystals were heated.

- (a) Draw a labelled diagram to represent the set-up at the end of the first part of the experiment. (3mks)

- (b) After the second part of the experiment was done, state the conclusion that was made about the type of change undergone by copper (II) sulphate crystals when heated. (1mk)

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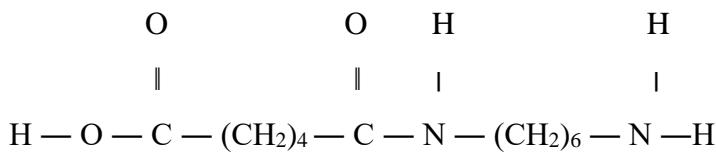
20. (a). Distinguish between chromatography and a chromatogram. (1mk)

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.....

(b) State the role of chromatography in the administration of international athletics competitions. (1mk)

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21. Study the polymer shown below.



a) Name the polymer.

(1mk)

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.....

b) Identify two monomers that make up the polymer. (2mks)

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c) Give one use of the polymer (1mark)

22. (a) State Charles law. (1mk)

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(b) A gas occupies 450cm^3 at 27°C . What volume would the gas occupy at 177°C if its pressure remains constant? (2mks)

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.....

23. A colourless liquid was suspected to be water. State two ways to confirm.

(i) Purity of the water. (1mks)

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.....
.....

(ii) That the liquid was water. (2mks)

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.....
.....

24. Use the following information to answer the questions that follow

$$\Delta H_{\text{lattice}} \text{ MgCl}_2 = +2489 \text{ kJ/mol}$$

$$\Delta H_{\text{hydration}} \text{ Mg}^{2+} = -1891 \text{ kJ/mol}$$

$$\Delta H_{\text{hydration}} \text{ Cl}^- = -384 \text{ kJ/mol}$$

a) Calculate the heat of solution of magnesium chloride. (2mks)

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

b) Draw an energy level diagram for the dissolving of magnesium chloride (2mks)

25. i) A solution of aqueous sodium hydroxide is added to a gas jar of nitrogen (IV) oxide and shaken. State and explain the observation made (2mks)

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

ii) Write the chemical equation for the reaction above

(1mk)

.....
.....



THE BOSTER NATIONAL SCHOOLS MOCK

SCHOOL NAME.....

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233/2

CHEMISTRY PAPER 2

TIME: 2 HOURS

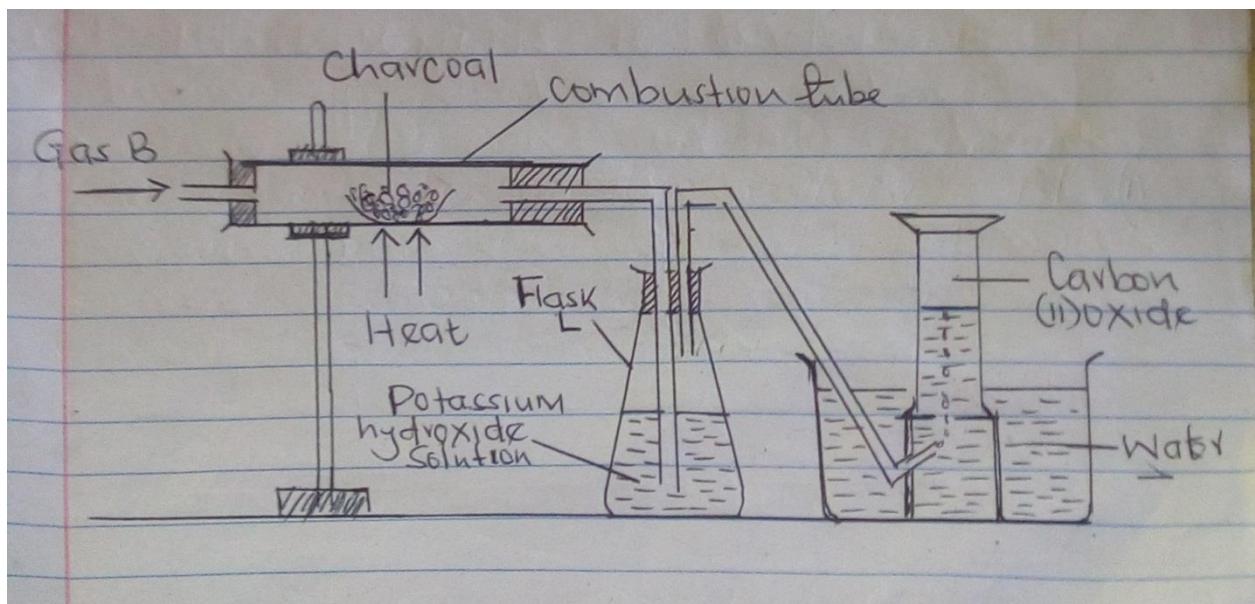
INSTRUCTIONS TO CANDIDATES

- a) Write your name and index number in the spaces provided above
- b) Answer all the questions in the spaces provided
- c) KNEC mathematical tables and silent electronic calculators may be used
- d) All workings must be clearly shown where necessary
- e) Candidates should answer all questions in ENGLISH

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1	12	
2	14	
3	12	
4	12	
5	10	
6	10	
7	10	
Total score	80 arks	

1. A student set-up the following apparatus to prepare carbon (II) oxide from charcoal in the laboratory.



i) State the purpose of potassium hydroxide solution (1mk)

.....

.....

ii) Identify gas B (1mk)

.....

.....

iii) Name two substances that react together to produce gas B (2mks)

.....

.....

iv) Write balanced equations for reactions in
e) Combustion tube (1mk)

.....

.....

f) Flask L (1mk)

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

v) Describe **two** simple test that you would use to distinguish between Carbon (IV) oxide and Carbon (II) oxide. (2mks)

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

vi) In another experiment, the student reacted charcoal with excess hot concentrated nitric (v) acid.

i) State one observation made (1mk)

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

ii) Write balanced equation for the reaction (1mk)

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.....
.....

vii) State two use of Carbon (II) oxide (1mk)

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.....
.....

2. Use the information in the table below to answer the questions that follow. The letters are not the actual symbols of the elements.

Element	Atomic Number	M.P ($^{\circ}\text{C}$)
A	11	97.8
B	13	660
C	14	1410
D	17	-95
E	20	839

a) Write the electronic arrangement for the ions formed by elements D and A (2mks)

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.....
.....

b) Select an element which is :

i) A poor conductor of electric current (1mk)

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

ii) The strongest reducing agent (1mk)

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.....
.....

iii) Has a giant covalent structure (1mk)

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

iv) In which state will element B exists at 661°C Explain. (1mk)

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.....
.....

c) Compare the electrical conductivity of element A and B. Give a reason (1mk)

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.....
.....

d) Using dots (.) and crosses (x) to represent the outermost electrons, show the bonding in the compound formed between elements C and D. (2mks)

e) Explain the difference in melting points in elements B and A (2mks)

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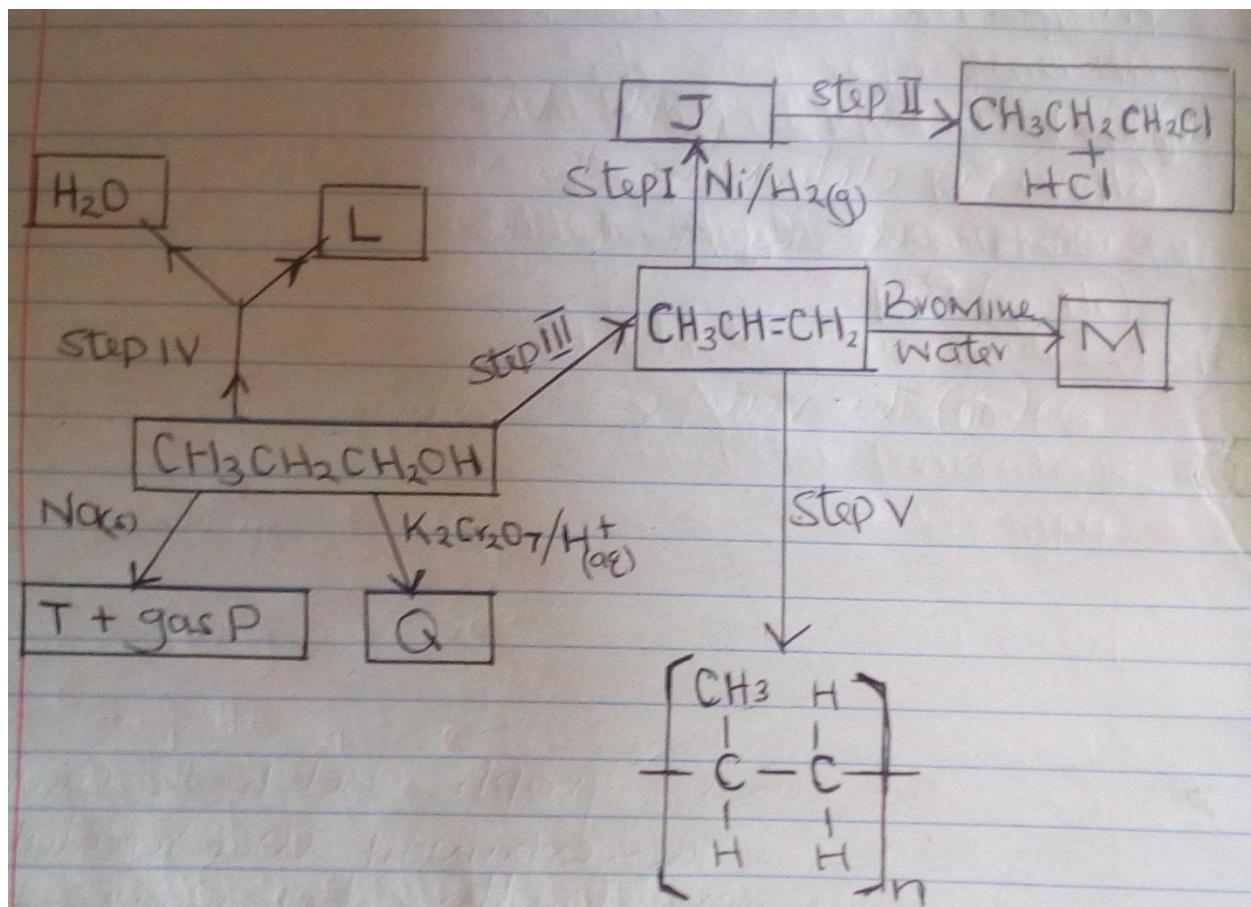
f) Write an equation for the reaction that takes place between element E and steam. (1mk)

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.....
.....

g) Describe how a solid mixture of the Chloride of E and lead (II) Sulphate can be separated into solid sample. (2mks)

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.....

3. Study the flow chart below and answer the questions that follow.



(a) Name substance J and draw its structural formula: (2mks)

Name

.....
.....

Structural formula

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

(b) What reagents and conditions are necessary for:

b) Step (III) : Reagent (1mk)

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

Condition

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.....

c) Step II: Reagent (1mk)

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Condition

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c) Name the following

i) L (1mk)

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ii) Gas P (1mk)

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.....

iii) Q (1mk)

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.....

iv) M (1mk)

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.....

d) Write the equation of the reaction that occur in step (IV) (1mk)

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.....
.....

e) Give the name of process in step (V) (1mk)

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.....
.....
f) If the relative Molecular Mass of R is 21,000, determine the value of n. (C = 12.0, H = 1.0) (2mks)

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.....

4. a) Define an electrolyte (1mk)

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.....

b) Explain why the following substances conduct an electric current (2mks)

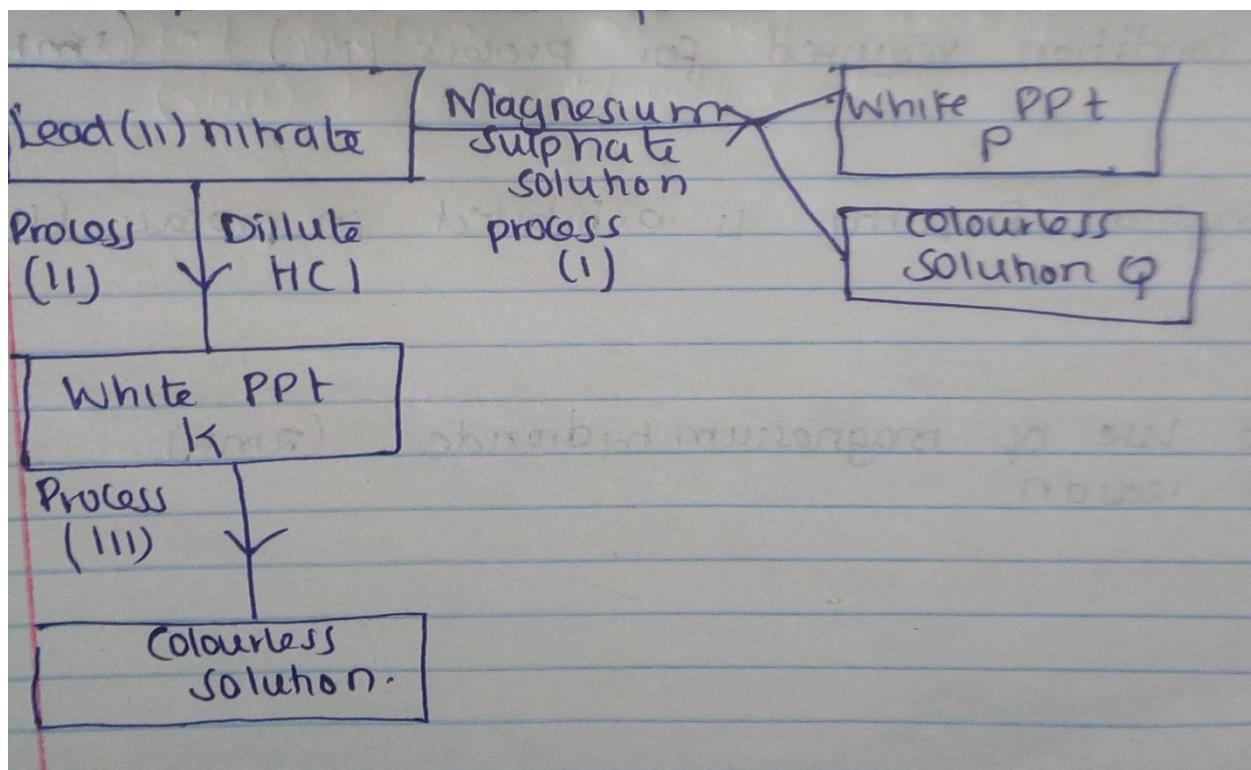
i) Magnesium metal

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.....
.....

ii) Molten magnesium Chloride

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.....

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



i) Write the formula of P and Q (2mks)

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.....

ii) Write an ionic equation for the formation of P (1mk)

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.....
.....

iii) Name process (i) (1mk)

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.....
.....

iv) Write a balanced equation for the formation of white precipitate K (1mk)

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.....

v) State the condition required for process (III) (1mk)

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.....
.....
vi) Which physical property is exhibited in process (III) (1mk)

vii) State one use of magnesium hydroxide (2mks)

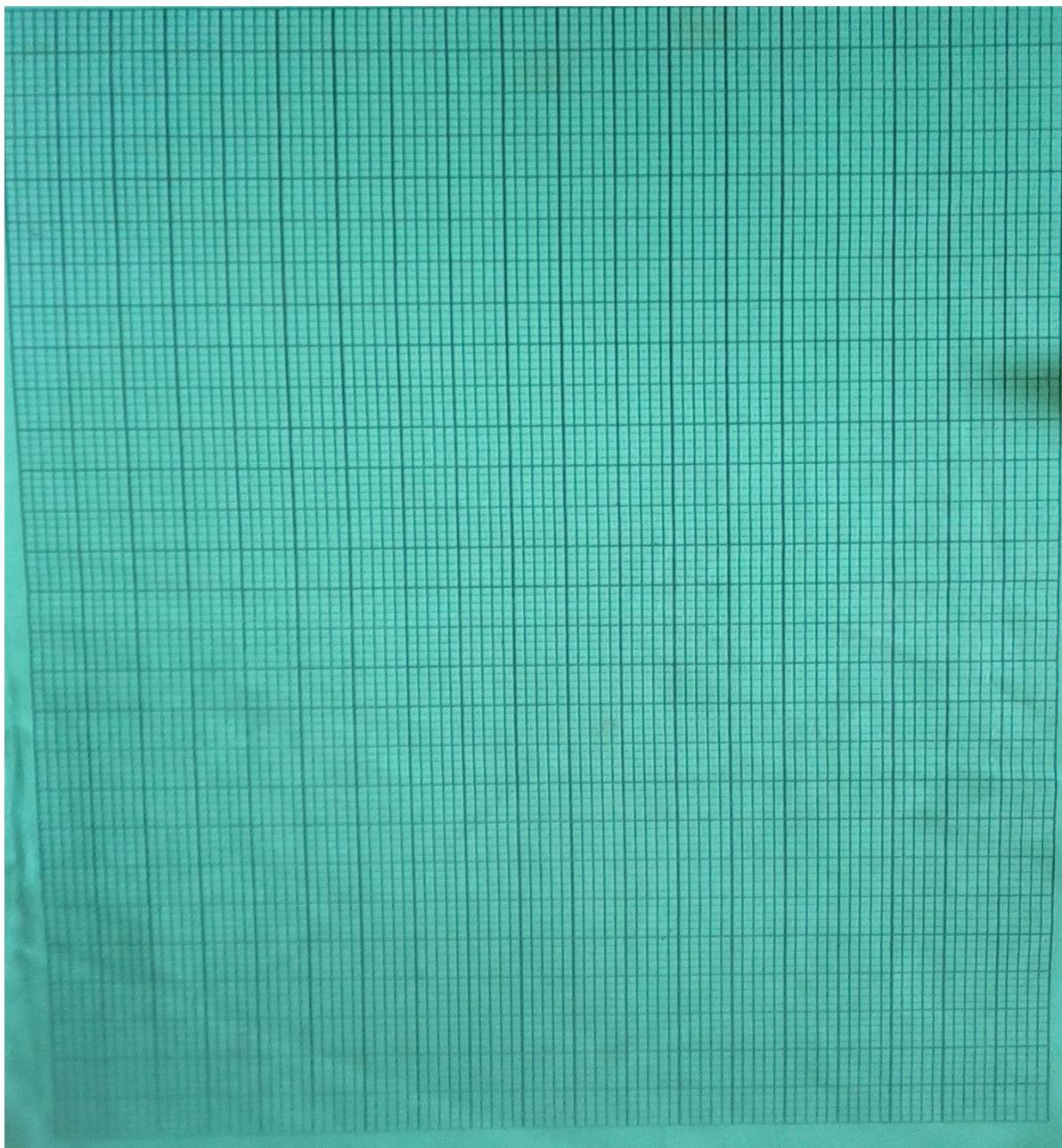
Give one reason

5 a) At 25°C , 50g of potassium nitrate were added to 100g of water to make a saturated solution. What is meant by a saturated solution? (1mk)

b) The table below gives the solubilities of potassium nitrate at different temperatures.

Temperature ($^{\circ}\text{C}$)	12	20	28	36	44	52
Solubility g/100g of water	22	31	42	55	70	90

i) Plot a graph of the solubility of potassium nitrate (vertical axis) against temperature(3mks)



iii) Using the graph

.....
.....
.....
i) Determine the solubility of potassium nitrate at 15°C . (1mk)

ii) Determine the mass of potassium nitrate that remained undissolved given that 80g of potassium nitrate were added to 100cm³ of water and water to 40°C. (2mks)

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c) Determine the molar Concentration of potassium nitrate at 15°C.

(Assume there is no change in density of water at this temperature)

(K = 39.0, N = 14.0, O = 16.0) (3mks)

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6 a) Aluminium oxide reacts with both acids and bases

i) Write an equation for the reaction between aluminium oxide and hydrochloric acid (1mk)

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ii) Using the equation in (a) above, calculate the number of moles of hydrochloric acid that would react completely with 153.0g of aluminium oxide (Al = 27.0, O = 16.0) (3mks)

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b) Sodium hydroxide pellet were accidentally mixed with sodium chloride, 8.8g of the mixture were dissolved in water to make one litre of solution. 50cm³ of the solution was neutralized by 20.0cm³ of 0.25M Sulphuric (vi) acid.

i) Write the equation for the reaction that took place. (1mk)

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.....

ii) Calculate the:

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i) Number of moles of the substance that reacted with Sulphuric (vi) acid (2mks)

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.....

ii) Number of moles of the substance that would react with Sulphuric (vi) acid in the one litre

solution. (1mk)

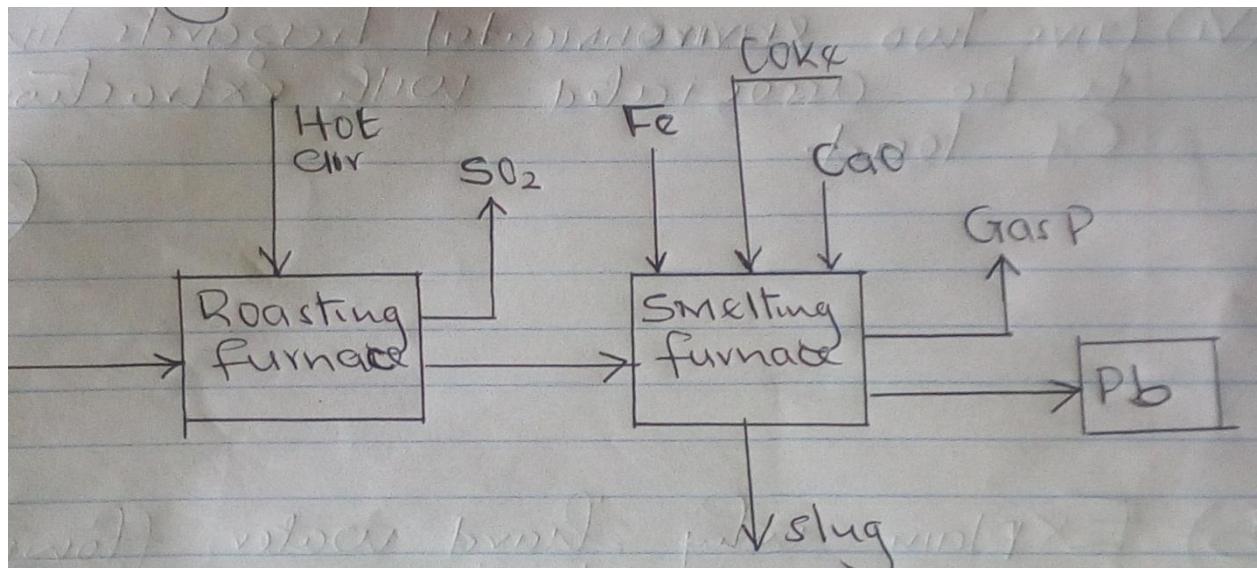
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iii) The percentage of sodium chloride in the mixture. (2mks)

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.....
.....

7. The flow chart below illustrates the industrial extraction of lead metal.

Study it and answer the questions that follow.



a) i) Name the ore that is commonly used in the process (1mk)

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.....

ii) Explain what takes place in the roasting furnace (1mk)

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.....

d) Identify gas P (1mk)

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.....

e) Write the equation for the main reaction that takes place in the smelting furnace. (1mk)

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f) What is the purpose of adding iron in the smelting furnace? (1mk)

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.....

g) Give two environmental hazards likely to be associated with extraction of lead. (2mks)

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.....

b) Explain why hard water flowing in lead pipes may be safer for drinking than soft water flowing in the same. (2mks)

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

c) State one use of lead other than the making of lead pipes (1mk)



THE BOOSTER NATIONAL SCHOOLS MOCK

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KCPE MARKS.....PREV EXAM MKS.....INDEX.....

233/3

CHEMISTRY PAPER 3

PRACTICAL

FORM 4

KENYA CERTIFICATE OF SECONDARY EDUCATION (KCSE)

Instructions to candidates

1. Write your name, index number and school in the spaces provided above.
2. Sign and write the date of examination in the spaces provided above.
3. Answer **ALL** the questions in section in the spaces provided.
4. **ALL** working **MUST** be clearly shown.

FOR EXAMINERS USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE SCORE
1	18	
2	12 ½	
3	9 ½	
TOTAL	40	

(c) You are provided with:

- h) Solution A, Dilute hydrochloric acid
- i) Solution B, made by dissolving 0.5g of sodium hydroxide in water and made to 250cm³ of solution
- j) Solid C, Magnesium ribbon
- k) Phenolphthalein in indicator

You are required to:

- d) Standardize solution A
- e) Determine the rate of reaction between solution A and magnesium

PROCEDURE

- g) Measure exactly 10cm³ of solution A using a burette and transfer into a 250ml volumetric flask. Top up to the mark using distilled water. Label this solution D.
- h) Drain the remaining solution A in the burette, rinse the burette thoroughly and fill the burette with solution D.
- i) Pipette 25cm³ of solution B into a conical flask. Add three drops of phenolphthalein indicator
- j) Titrate solution D with solution B. Record your results in the table below. Repeat procedure (i) to (iv) to complete the table. (3 marks)

	1	2	3
Final burette reading (cm ³)			
Initial burette reading (cm ³)			
Volume of solution D used (cm ³)			

- v) Calculate the average volume of solution D used (1 mark)

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.....
.....

- vi) Calculate:

5. Number of moles of solution B used (1½ marks)

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.....
.....

6. Number of moles of solution D in 250cm³ of solution (1½ marks)

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.....
.....

7. Morality of solution A (1 mark)

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PROCEDURE II

(i) Cut solid C into equal pieces, each 2cm long.

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.....

(ii) Using a burette, measure 12cm³ of solution A, into a clean boiling tube.

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.....
.....

(iii) Drop one piece of solid C into the boiling tube containing solution A and start stopwatch immediately. Stop the stopwatch when all solid C has just reacted. Record your results in the table below.

(iv) Repeat steps (ii) and (iii) above using 10cm³, 8cm³, 6cm³ and 4cm³ of solution A. Top up each with distilled water to make 12cm³ of solution and complete the table below.

(4 marks)

Volume of solution A (cm ³)	Volume of distilled water (cm ³)	Concentration of solution a (moles/l)	Time(s)	$\frac{I}{t}$ (s ⁻¹)
12	0			
10	2			
8	4			
6	6			
4	8			

iv) Plot a graph of $\frac{I}{t}$ (y – axis) against the concentration of solution A (3 marks)

v) From the graph, determine the time taken for the reaction to reach completion when 1.5 moles of solution A are used (2 marks)

.....

vi) Comment on the shape of the graph (1 mark)

.....

(d) You are provided with solid Q. Carry out the tests below and record your observations and inferences in the spaces provided.

h) Strongly heat a spatula-end full of solid Q in a dry test tube (1 mark)

Observation	Inference

- i) (i) Place the remaining solid Q in a boiling tube. Add 10cm³ of distilled water.
Divide the solution into five portions. (2 marks)

Observation	Inference

- (ii) To the first portion, add aqueous lead (II) nitrate solution (1 mark)

Observation	Inference

- f) To the second portion add dilute nitric (V) acid, followed by barium nitrate solution (2marks)

Observation	inference

- g) To the third portion add a few drops of sodium hydroxide until excess observation
(2marks)

Observation	Inference

- h) To the fourth portion, add a few drops of aqueous ammonia until is excess. (2 marks)

Observation	Inference

- i) To the fifth portion, add a few drops of hydrochloric acid (1½ marks)
Warm the contents.

Observation	Inference

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(e) You are provided with solid R. carry out the tests below and record your observations and inferences.

viii) Place a spatula-end full of solid R in a dry boiling tube and add about 10cm³ of distilled water. Shake thoroughly and heat to boil. Divide the solution into five portions.

(1½ marks)

Observation	inference

ix) (i) Test the first portion with the universal indicator solution provided. (1½ marks)

Observation	Inference

(ii) To the second portion, add a few drops of acidified potassium manganite (VII) solution	(2 marks)
Observation	Inference
(iii) To the third portion, add a few drops of bromine water	(2 marks)
Observation	Inference
(iv) To the fourth portion, add half spatula of sodium hydrogen carbonate	(1 mark)
Observation	Inference
(v) To the fifth portion in a boiling tube, add 5cm ³ of ethanol followed by a few drops of concentrated sulphuric (VI) acid. Warm the mixture.	(1 ½ Marks)
Observation	Inference



THE BOOSTER NATIONAL SCHOOLS MOCK

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

Instruction to candidates

- a) Write your name and index number in the space 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 section **A**.
- e) Answer question **16** and any other **three** questions from section **B**.
- f) All answers should be written in the space provided in the question paper.
- g) **This paper consists of 14 printed pages.**
- h) **Do not remove any pages from this booklet.**
- i) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
- j) **Candidates should answer the questions in English.**

For Examiner's Use Only

Section	Question Number	Candidate's Score
A	1-15	
B	16	
	17	
	18	
	19	
	20	
Total Score		

SECTION A (40 MARKS)

ANSWER ALL QUESTIONS IN THIS SECTION

1. a) Computer memory determines the processing power of a computer. State the memory capacities of the following computer generations. (1mark)

i. First Generation

.....
.....

ii. Third Generation (1 mark)

.....
.....

b) State the storage devices used by the generations named in (a) above. (1mark)

.....
.....

2. Differentiate between dedicated computers and special purpose computers. (2 marks)

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.....

3. (a) State the meaning of *computer output on Microform* (COM) as used in output devices. (1 marks)

.....
.....

(b) State **two** types of *computer output on Microform*. (2 marks)

.....
.....

4. (a) State **one** limitation of each of the following cables as used in computer interfacing.

(i) Parallel cables; (1 mark)

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.....

(ii) Serial port (1 mark)

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.....

(b). State **two** advantages of using firewire over USB cables. (2 marks)

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5. Apart from use of carpets, suggest **three** possible ways of reducing dust in a computer room.

(3 marks)

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.....

6. (a)Explain how a mouse can be used to perform the operations listed below.

i. Selecting objects and commands (1 mark)

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.....

ii. Opening files and folders (1 mark)

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

iii. Invoking context menus (1 mark)

7. A computer system is composed of several microchips, each having different functions in the operation of a computer.

a. Write the acronym *BIOS* in full as used in computing. (1 mark)

.....
.....

b. State the function of the *BIOS* during booting process. (1 mark)

.....
.....

- c. Explain the meaning of the term *cold booting process*. (2 marks)

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.....

8. Due to the risks involved in using the traditional classroom teaching method during this covid-19 period, many schools have embraced online teaching methods. State the meaning of the following teaching methods:

- a. Distance learning (1 mark)

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.....
.....

- b. Interactive learning (1 mark)

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.....

9. In a calculation, the actual result obtained was 0.7649326 but the computer presented it as 0.764.

- a. With reference to data processing, identify the type of error above and state how it can be minimized (1 mark)

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.....
.....

- b. Distinguish between Sequential file organization and indexed Sequential file organization (2 marks)

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10. State **two** circumstance which may prompt a teacher to use computer simulations when teaching in a school. (2 marks)

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11. State the meaning of the term *multi-user* operating system as used in computing.

(2 marks)

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12. State **two** ways in which operating system manages memory in a computer system.

(2 marks)

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13. State **three** reasons why system maintenance is necessary in system development life cycle (SDLC).

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14. Table 1 and Table 2 are related tables in a database. Use them to answer the questions that follow.

DeptID	Dept Name
001	Computer
002	Aviation
003	Engineering

Table 2

DeptID	Std Registration No.	Student's Name
001	St01	Alex Too
003	St02	Naomi Komi
002	St03	Peter Kengo

(a) State the names of the fields shown in table 2 above;

- (i) DeptID (1 mark)
(ii) Std Registration No. (1 mark)

(b) State **two** reasons for adding **DeptID** field in Table 2 above. (2 marks)

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.....
15. Explain the term *bookmark* feature as used in when accessing the internet. (2 marks)

SECTION B (60 marks)

Answer question 16 (compulsory) and any other three questions from this section.

16. (a) Explain the meaning of the term *pseudocode* as used in program development.

(2 marks)

.....
.....
.....
(b) State the function of the following language translators during program development.

(i) Interpreter (1 mark)

.....
.....
(ii) Compiler (1 mark)

(c) State the stage of program development in which:

(i) a flowchart would be drawn (1 mark)

.....
.....
(ii) the program runs as intended and performs as required. (1 mark)

.....
.....
(iii) the user guide would be written (1 mark)

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.....

(iv) a programmer seeks to better understand the problem. (1 mark)
.....
.....

(d) A bookshop owner contracted a programmer to design a program that can be used to manage N number of books in his business as follows;

- Enter the book name, publisher and marked price of each book.
- Calculate the discount and new price of each book.

The book shop gives a discount of 13% for purchase of books worth Ksh.5,000, 8% for purchase of books worth Ksh.1000 and none for purchase worth Ksh.1,000 and below.

Draw a flowchart to represent the information above, count number of books and output book name, publisher, marked price, discount and new price. (7 marks)

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17. (a) XYZ company is facing challenges with their current information system, hence the need for a new application software that could solve their problems. The management has assigned the ICT department to develop its own in-house programs.

- i. Define the term in-house developed programs (1 mark)

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.....

- ii. State any two advantages and one disadvantage of in-house developed programs (3 marks)

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(b) Data communication is known to have greatly changed the way people exchange and access information around the world.

- (i) Define the term topology as used in data communication (1 mark)

.....
.....

- (ii) Distinguish between the terms listed below

- (I) Message switching and packet switching (2 marks)

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.....
.....

- (II) Half duplex and full duplex mode of data transmission (2 marks)

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.....

(c) Identify the ICT personnel responsible for each of the following duties in an organisation:

- (i) Ensuring up-to-date maintenance of ICT records (1 mark)

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.....

(ii) Identify and fixing security loopholes (1 mark)
.....
.....

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.....

(iii) Testing and debugging program (1 mark)
.....
.....

(d) State the function of each of the following keyboard keys in a keyboard.

(i) tab key (1 mark)
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.....

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.....

(ii) Space bar (1 mark)
.....
.....

.....
.....

(iii) Delete key (1 mark)
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.....

18. (a) (i)Distinguish between real time and online data processing. (2 marks)

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(ii) State the significance of the following types of files to a business

I. Backup (1 mark)

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.....

II. Master (1 mark)

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.....

III. Archive (1 mark)

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.....

(b) Explain **two** benefits of displaying information in a computer system using a monitor compared to printer. (4 marks)

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(c)Explain the purpose of each of the following in system implementation stage.

(i) file conversion (2 marks)

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.....
.....

(ii)Staff training (2 marks)

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.....
(d) State how data in a computer system is secured using;

(i) Antivirus (1 mark)

.....
.....

(ii) Password (1 mark)

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.....

19. (a) Explain any **three** types of human computer interfaces as used in computing. (3 marks)

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(b) State **four** ways in which computers are used in the lands department in a county government.

(4 marks)

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(c)(i) Explain the following types of errors as found in Microsoft excel.

I. #NUM! (1 mark)

.....
.....

II. #VALUE! (1 mark)

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(ii) Outline **three** cell referencing methods giving examples. (3 marks)

(d) State a situation when each of the following Desktop Publishing program features may be used when creating a publication.

(a) Layout guides ; (1 mark)

.....
.....

(b) Layering; (1 mark)

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(c) Bring Forward; (1 mark)

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20. (a) Bob was advised to format a hard disk for a computer. Explain **two** circumstances which may prompt a technician to format a hard disk in the computer room.(4 marks)

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(b) Explain a situation when each of the following Word Processing program may be used when creating a document.

(i) Wrap text (2 marks)

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(ii) Watermark (2 marks)

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(c) Perform the binary arithmetic:

$1101_2 + 101_2 - 1001_2$ and convert the answer to decimal notation (3 marks)

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(d) Using 6-bit ones complement perform the arithmetic operation; (4 marks)

$$11011_2 - 23_{10}$$

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THE BOOSTER NATIONAL SCHOOLS MOCK

SCHOOL NAME.....

NAME.....ADM.....

DATE.....SIGN.....TARGE.....

KCPE MARKS.....PREV EXAM MKS.....INDEX.....

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

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number at the top right hand corner of each print out.
2. Write your name and index number on the diskette.
3. Write the name and the version of the software used for each question attempted in the answer sheet.
4. Answer **ALL** the questions.
5. All questions carry equal marks.
6. Passwords **should NOT be used** while saving in the diskette.
7. All answers **MUST BE** saved in your diskette.
8. Make a print out of the answers on the answer sheets provided.
9. Arrange your printouts and tie/staple them together and use the best fit i.e. landscape or portrait for your printouts.
10. Hand in a folder with your name.

1. (a) Using a Word Processing package, type the congratulatory note below as it appears and save it as CONGRATS. (15mks)

MAGS Software Co.

Ltd

P.O. Box 5678

Kericho

(Insert today's date)

<<First Name>><<Last Name>>

<<Address>>

Dear<<First Name>>

RE: CONGRATULATIONS

Due to your hard work and sacrifices you made this year, the company wishes to congratulate you for emerging the best in our internal interview that you applied for. Your new position will be <<Position>> and your new salary scale will be<<Amount>>.

Yours faithfully,

Gregory Bruce

PERSONNEL

- (b) Create a data source with the following details and use it with the note you have just typed to generate personal notes to the company's named personnel. Save it as Details. (15mks)

George Kinoti

P. O. BOX 5678

Wilberforce Kenya

P. O. BOX 5678

Henry Odongo

P. O. BOX 5678

Kericho	Kisumu	Kilgoris
Software Developer	ICT Officer	Database Admin
Ksh.125000	Ksh.125000	Ksh.125000

Grace Akinyi	Beth Mugo	Sharon Wangoi
P.O. BOX 5678	P. O. BOX 5678	P. O. BOX 5678
Nakuru	Migori	Nandi-Hills
System Admin	Secretary	Accountant
Ksh.120000	Shs.30000	Shs.45000

- (c) Insert data fields in main document and generate the notes for the employees.(14mks)
- (d) Print the notes. (6mks)

2. (a) Create a database called **SCHOOL**.
(2 Marks)
- (b) Create three tables **EXAMINATION**, **DOS** and **BOARDING**with the fields as shown below.
(10Marks)
- (c). Create a relationship between the three tables and enforce integrity.
(6Marks)
- (d). Enter the data items in the given tables three tables. (15Marks)

EXAMINATIONS

Admission Number	Mathematics	English	Kiswahili	Biology
1	45	67	90	23
10	45	89	90	20
2	45	70	80	45
3	89	90	90	20
4	78	9	90	50
5	67	89	60	90
6	67	90	7	80
7	34	78	70	90
8	23	50	38	90
9	23	15	67	20

DOS

Admission Number	SName	Other Names	KCPEMark	Year of KCPE
1	PETER	BARASA	327	2007
10	JOHNSON	SUK	250	2001
2	ALEX	OJWANG'	340	1998
3	BELINDA	ESTHER	250	2008
4	BRAMWEL	RAYMOND	450	2007
5	ALEX	WAMWANA	410	2003
6	JANET	KILONZO	400	2000
7	MATHEW	KARIUKI	450	1999
8	NASIMIYU	CATHEEN	290	2003
9	KIMATHI	JOHN	3000	2001

BOARDING

Admission Number	UNIFORM	TOOL	TOOL NAME
1	No	12	JEMBE
10	Yes	20	JEMBE
2	No	11	PANGA
3	Yes	1	SLASHER
4	Yes	111	JEMBE
5	No	15	RAKE
6	Yes	22	BASIN
7	Yes	11	BROOMS
8	Yes	90	RAKE
9	Yes	23	BUCKET

(e) Design a query that would display the following fields as shown below and write down the formulae for getting the total score and criteria for extracting the records below
 (10 Marks)

ADMIN

Admission Number	UNIFORM	SName	KCPEMark	Mathematics	English	Kiswahili	TOTAL SCORE
1	Yes	BELINDA	250	89	90	90	269
10	Yes	BRAMWEL	450	78	9	90	177
2	Yes	JANET	400	67	90	7	164

(f) Design a report that would sort the following in ascending order in the order of the following fields, Total score, KCPE Score, SName the Admission Number and the report should display all the fields. Save thereport as administration
 (5Marks)

(g) Print, administration and admin (2Marks)



THE BOOSTER NATIONAL SCHOOLS MOCK

SCHOOL NAME.....

NAME.....ADM.....

DATE.....SIGN.....TARGE.....

KCPE MARKS.....PREV EXAM MKS.....INDEX.....

CRE PAPER 1

1. a). STATE **Six Similarities** in the Biblical stories of creation in Genesis chapter 1 and 2. **(6 marks)**
b). Give **REASONS** why human beings are considered special to the rest of the creation. **(7marks)**
c) State **SEVEN** ways in which Christians continue with the work of creation today. **(7 marks)**
2. a) **DESCRIBE** ways in which the covenant between God and the Israelites was sealed at Mount Sinai. **(7marks)**
b). Write **SIX** conditions that the Israelites were given during the renewal of the covenant **(7marks)**
c). State **SIX** ways in which the church worship is abused today. **(6marks)**
- 3.a) Give seven reasons why Samuel was against kingship in Israel. **(7mks)**
b) Outline the activities of King Jeroboam which made the Israelites in the Northern Kingdom turn away from God. **(7mks)**
c) List down **six** life skills Christians need to fight corruption in Kenya today. **(6mks)**
- 4 .a). **IDENTIFY** the importance of Old Testament prophets in Israel **(6 marks)**
b). State **SEVEN** forms of punishment that would befall the Israelites according to prophet Amos **(7 marks)**
c). Give **SEVEN** reasons why Christian find it difficult to help the needy in the Society today **(7 marks)**
- 5.a) Outline **seven** occasions when Nehemiah prayed. **(7marks)**

- b) Outline **seven** reforms carried out by Nehemiah after the Babylonian exile. **(7mks)**
- c) What lessons do Christian leaders learn from the leadership of Nehemiah? **(6mks)**
6. a) Identify **SEVEN** moral values taught to youth during initiation period in Traditional African communities **(7marks)**
- b). STATE** the traditional African practices which demonstrated their belief in life after death **(7marks)**
- c) Give** **SIX** changes which have taken place in Land ownership today **(6 marks)**



THE BOOSTER NATIONAL SCHOOLS MOCK

SCHOOL NAME.....

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KCPE MARKS.....PREV EXAM MKS.....INDEX.....

CRE PAPER 2

- 1 (a) **OUTLINE** Nathan prophecy concerning the Messiah (2samuel 7:3-17) (6mks)
- (b) STATE the events that took place on the night Jesus was born (Luke 2:6-22) (7mks)
- c) Give **SEVEN** ways through which church leaders prepare for the second coming of Christ (7mks)
2. a) Giving examples, state the methods used by Jesus to spread the gospel. (7mks)
- b) Describe the raising of widow's son at Nain Luke 7:11-17 (7mks)
- c) Identify ways through which the church continues with the healing ministry of Jesus (6mks)
- 3.a) Outline the preparations that Jesus made for the last supper. (Luke 22:7-14) (7mks)
- b) Give six actions of Pilate that showed that he had found Jesus innocent. (6mks)
- c) Why should Christians be discouraged from taking part in mob justice? (7mks)
- 4 (a) DESCRIBE how Peters' life was transformed on the day of Pentecost (7mks)
- b) EXPLAIN how the unity of believers is expressed in the church as the body of Christ (6mks)
- c) How can Christians promote unity in the work place? (7mks)
- 5 a) Explain six sources of Christian ethics. (6mks)
- b) Show ways in which life skills are important to Christians today. (8mks)

- c) List the Christian values that enhance the creation of a just society. (6mks)
- 6 (a) Outline seven Christian teaching on marriage (7mks)
- b) State **SEVEN** reasons why some young people remain unmarried in Kenya (7mks)
- c) State six ways in which the church is helping to solve the problems of domestic violence today. (6mks)



THE BOOSTER NATIONAL SCHOOLS MOCK

SCHOOL NAME.....

NAME.....ADM.....

DATE.....SIGN.....TARGE.....

KCPE MARKS.....PREV EXAM MKS.....INDEX.....

101/1

ENGLISH PAPER 1

TIME: 2 HRS

FORM 4 TERM II

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

INSTRUCTIONS

- j) Write your name, index number and school in the space provided.
- k) ALL Questions are compulsory.
- l) All the answers must be written in the spaces provided.

FOR EXAMINER'S USE ONLY

Question	Maximum score	Student's score
Functional Writing	20	
Cloze Test	10	
Oral Skills	30	
Total Score	60	

You are the secretary of the Young Farmers Club in your school. In consultation with the chair you called a meeting for 22nd August 2022 at 3.00pm. Out of the total membership of the fifteen, ten attended, four absent with apology.

The following are the agenda:

- 1. Preliminaries**
- 2. Confirmation of the previous meeting**
- 3. Matters arising**
- 4. Negotiation with the bursar for the purchase of vegetables**
- 5. Formula for sharing the income**
- 6. A.O.B**

Record the minutes and give details of discussions and resolution.

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CLOZE TEST (10MKS)

Read the passage below and fill in each black space with appropriate word

When people hurt you , should you lash out at them-----(1) give them a piece of your-----(2) ?there are those that argue that----- (3) your emotions is much better than suppressing them. Perhaps the----- (4) Lies in between.

What most people would readily agree----- (5) is the fact that it is----- ----- (6) to run away from the cause of your hurt because _____ (7) to breed resentment. Imagine that your cube mate in the dormitory has ----- (8) damaged your reputation by telling blatant lies about you instead of----- (9) him or her to settle the matter you move to ----- (10) cubicle. You may feel better for some time but what if the teacher puts the two of you in a discussion group?

3. ORAL SKILL

Read the following narrative below and answer the question that follow

Once upon a time a woman who was pregnant and about to give birth went to the bush to collect firewood. On reaching the bush , she suddenly gave birth to a baby boy who was so deformed and ugly that she decided to exchange it for other baby . A normal looking one she found abandoned and crying in a nearby thicket. She didn't know that this baby was a spirit called Ekipie by the Trukana.The woman returned home with the baby and since it was evening time, she had to milk the cow they owned she put the milk containers in her where her eldest daughter was minding the new baby. Then she went out again to complete some other chores.

Later when she returned to the hurt where she had left the baby, she found to her dismay that there was no milk at all. All the three guards were empty. Surprised, and shocked, she questioned her daughter about the milk and what happened to it. The girls replied

The baby has drank it all

I can't believe such a tale it's ridiculous for you to say such a thing she scolded her daughter
Don't tell lies .Admit you are just imagining things .Who drank the milk

The woman persisted in questioning her daughter who shore it was the baby
Strange as it may sound to you the same thing happened again the same day and several consecutive days .The woman grow puzzled and confused .Her husband too began to

complain about non-availability of milk in the house hold. Now, the woman had no alternative but to tell him the truth.

QUESTIONS

1. a) What would you do to prepare your audience to listen to the above story? [2mks]

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2. What two things would indicate that the audience is following the story. [2mks]

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3. What two oral devices would use in narrating this story? [2mks]

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4. How would you perform the reply of the girl the baby has drunk it all. [2mks]

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b) Kot took kot's coat, Kot went to court and the court told kot return Kot's coat to Kot.

- i. Identify the genre [1mk]

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- ii. What's lost when the above genre is translated to other language. [1mk]

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- iii. Which sound patterns appear in the above genre. [1mk]

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c) The underlining indicates the stressed word in the sentence below. Briefly explain what each sentence means. [4mks]

i. I wrote the love poem for you.

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ii. I wrote the love poem for you

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iii. I wrote the love poem for you.

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iv. I wrote the love poem for you

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d) Supply a suitable word with the same pronunciation as the one given below. (5mks)

i. Cell

ii. Eye.

iii. Blew.

iv. Knew

iv. Guest.

e) You have been invited to give a vote of thanks by your teacher of English, during a facilitation of English Paper One. Mention three elements you will include in your speech. [2mks]

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f) Mrs Jabali of Upendo High school asked her to decide which of the set books in their syllabus they should perform for the rest of the school. Read the form four champions discussion below and then answer the questions that follow:-

Mrs Jabali :Rose,would lead the discussion?

Rose:Aha ,ok the question is ,what play should you pick for your class play?.Does anyone has suggestions ?Mercy ?

Mercy:I suggest we do "I nheritance"

Sharon: How about' A Doll's House'

Rose:No, I dislike "Inheritance" passionately.

Kaunda:I love "Blossoms of Savanna"

Mercy: No way ! That would make a stupid play:Less do “Inheritance”

Rose: Sasha!

Sasha: I have never watched “A Dolls House” but

Joy: It is a superb play.

Rose. Joy, please let Sasha finish then it is your turn.

Joy:Sorry.

Sasha: Anyway I have never seen a play on “Inheritance “ I have watched a movie on “ADolls House” and loved it.

Rose: Lilian

Lilian: I just wanted to say that I like to think “Inheritance” Is a really good play.

Rose: Naomi

Naomi: I saw the movie “A Dolls House”too. Especially the part where Norah dances the tarantella

Rose: Excuse me Naomi but we should talk about that after the discussion is over. Does anyone have any other suggestions?.NO? Okay Mercy proposed “Inheritance Sharon proposed “A Dolls House” and Kaunda wants “Blossoms of the Savanna”. Has anybody seen or read any of the three? No? Okey.I suggests that we read them and then continue the discussion in a couple of days. Is that okay with everyone? OK.The discussion is over.

- a) In terms of effective communication identify five things some members of form four champions in the discussion. [5mks]

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b) Mention three aspects of Etiquette displayed by some members during the discussion [3mks]

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THE BOOSTER NATIONAL SCHOOLS MOCK

SCHOOL NAME.....

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ENGLISH

Paper 101/2

(Comprehension based on an unseen text, Comprehension based on the compulsory set text, Literary appreciation and Grammar)

Time 2½ hours

FORM FOUR

Kenya Certificate of Secondary Education

INSTRUCTIONS TO CANDIDATES:

- a) Write your name, index number, date and sign in the spaces provided.
- b) Answer ALL the questions in this paper in the spaces provided.
- c) Answer all the questions in English.

FOR EXAMINERS USE ONLY

Question	Maximum score	Candidate's score
1	20	
2	25	
3	20	
4	15	
Total	80	

This paper consists of 8 printed pages.

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

Q1. Comprehension based on an unseen text

Read the following passage and answer the questions that follow. (20mks)

To alleviate poverty in Africa and other developing regions, the rural poor must be made partners in the growth process, asserts the International Fund for Agricultural Development (IFAD). In processing for urgent action, the UN Body maintains that standard poverty – reduction strategies, which regard the poor as passive beneficiaries of eventual economic success, have been a striking failure. Only by mobilizing the productive potential of the nearly 1 billion small farmers, pastoralists and fisher folk who are living in dire poverty – a fifty of the world's population- can the sharp deterioration in living standards be reversed, says IFAD.

The solution lies “first and foremost” among rural people themselves. Unless governments and international agencies rely upon and bolster local knowledge and resources, the number of rural poor world. Wide – which rose by 40 percent over the past 20 years- may reach 1.5 billion by the end of this decade. Africa, with 11 of the 15 poorest nations documented by IFAD, is the region experiencing the most rapid rise in rural poverty.

Standard approaches, such as structural adjustment and what the report terms “trickledown economics have proved unable to stem the growth of rural poverty. This is because they have generally channeled resources to urban areas and large producers, viewing aid to small farmers as a costly act of charity. But IFAD maintains that investments aimed at raising small-scale rural production can in fact “trickle up” to stimulate economic growth, citing Burundi and Cameroon as African examples. And projects in poor rural communities often bring returns that compare favorably with other economic activities, the fund adds.

To reinforce its call for “drastic action” the IFAD report paints a slark picture of chronic hunger and increasing deprivation. The number of rural people living below the poverty line in Kenya by 150 per cent from 1965 to 1988; in Tanzania the figure rose by 71 per cent; Egypt, 133 per cent; and Ghana, 67 per cent. Food security at the house hold level was judged “low” in sub Saharan countries, and “high” in only two of the 66 developing countries with the most severe level of poverty, 36 are in Africa.

Without concerted action to counter this trend;large part of the burden will spill over to the urban areas and abroad, where the cost of providing, livelihood is much higher.

African governments say developed countries must make rapid economic shifts to allay the crisis. At an IFAD Governing Council meeting in Rome last year. Nigerian vice president Augustus was blunt; the “critical bottleneck” to African development is protectionism within Northern markets “ridiculous prices” for primary commodities and suffocating debt. It is time, he said, for the west to adopt a policy of “debt forgiveness,” since previous efforts have reduced the continent’s debt by “a mere 2 per cent.”

- a.) Why, according to the passage, have the efforts to alleviate poverty? (2mks)

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- b.) What percentage of the world’s population lives in dire poverty (2mks)

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- c.) Why according to the writer of this passage have structural adjustment and other standard approaches failed to alleviate poverty? (3mks)

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- d.) What evidence does IFAD advance to prove that poverty in Africa is on the rise?

(2mks)

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- e.) “Passive beneficiaries of eventual economic success, have a striking failure”

..... Add a question tag. (1mk)

- f.) In about 40 words, summaries what the writer says must be done so as to stem the tide of poverty in the world. (5mks)

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g.) Explain the meaning of the following words as used in the passage. (4mks)

i. Maintains

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ii. Stem

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iii. Reinforce

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iv. Blunt

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h.) In your own words, state the argument put forward by the Nigerian vice-president.

(2mks)

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Question 2. (25mks)

Read the excerpt below and answer the questions that follow. (25 marks)

"That's a bad idea, Mr Longway. I'm a Gambian, Sir."

"All right, so you are a Gambian. Well, I am a South African. Now how has that helped advance world peace?"

"Sir, are you really a South African?"

"Yes, I am."

"This is the Gambia, Sir. Since the article you dropped looks valuable, you might never see it again, Sir. As a Gambian, I ought to know. Still, if you insist, I'll give it to the woman at the front desk."

"No, no, no. I've changed my mind. I'm coming down for it right away."

"That's a good idea, Mr Longway. You'll find me standing near the phone booths. 11m wearing white shoes and a red dress with white polka dots. You will not miss me, Sir. But if you do, I won't." ()

"I'll be there in five minutes." He was there in three.

She spotted him first. "Sir, it's me you are looking for," she said. Mr Longway, I am Fiona McKenzie, the stranger who phoned you."

"Are you? You see, the picture I had formed Of you in my mind was not black at all. Wait. That did not come out right, did it? I meant on the phone you sounded Scottish, white anyway. Goodness, what am I saying? Forget it. I am Tad. Tad Longway."

"I'm pleased to meet you, Sir. I am Fiona. Fiona McKenzie "She handed him something." That's the article I was telling you about, Sir. "It was a key card to her office at the VOA. He looked at it. Then he gave it back to her. "Not mine," he said. "The tag says VOA, and I have no ties with the VOA."

"Then I interrupted your shower for nothing. Yet I can swear I saw you drop this very key card, Mr Longway."

"Now, now, Ms McKenzie. Don't go burn yourself at the stake just for this, okay? In fact, since you've gone to all this trouble for my sake, why don't you let me buy you a drink? It's time for my evening Martini anyway. So what's your poison?"

She consulted her watch then shook her head. "It's late," she said. "Late? That must be a new drink."

"All right, Mr Longway. Maybe a Coke, but I must be off soon."

i. Place the excerpt in its immediate context. (5 marks)

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ii. "That's a bad idea, Mr. Longway. "What was Fiona referring to as a bad idea? (2 marks)

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iii. Identify and illustrate three styles used in this excerpt. (6 marks)

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iv. Explain one instance of irony in this excerpt. (2 marks)

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v. Using information from elsewhere in the text, explain why Ms. Mckenzie sounded Scottish. (2 marks)

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vi. How has Ms. Mckenzie been brought out in this excerpt?

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vi. Join the following sentences into one. (begin: After...). (1 mark)

He looked at it. Then he gave it back to her.

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vii. Who is Mr. Longway and why was Fiona so interested in meeting him? (3 marks)

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Question 3. Literary Appreciation (20mks)

Poetry.

“The face of hunger.”

I counted ribs on his concertina chest

Bones protruding as if chiseled

By sculptor’s hand of famine.

He looked with glazed pupils

Seeing only a bun on some sky-high shelf.

The skin was pale and taut

Like a glove on a doctor’s hand

His tongue darted in and out

Like a chameleon’s

Snatching a confetti of lies

Oh! Child

Your stomach is a den of lions

Roaring day and night

By Mbuyiseni Mstshali

Questions

A.) Identify the persona in the above poem. (2mks)

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B.) What is the poem about? (4mks)

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C.) Identify and illustrate instances of imagery in the poem. (4mks)

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D.) Using illustration identify the dominant theme in the above poem. (2mks)

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E.) What tone do you get in the above poem. (3mks)

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F.) Your stomach is a den of lion.(negate the statement.) (1mk)

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G.) Give the contextual meaning of the following words and phrase (4mks)

i. Protruding

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ii. Pale

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- iii. Darted
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- iv. A den of lions
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4. GRAMMAR (15mks)

a) Replace the underlined word in each of the sentences with the most suitable phrasal verbs (3mks)

- i) The doctor remarked that the girl(Resembles) the father.
- ii.) The looters (Stole) goods of unknown value during the city riots.
- iii.) When he (Regained consciousness), he was amazed to realize that he was in hospital.

b.) Complete the following sentences by adding the correct relative clause.

- i.) The picture you were talking about has been sold.
- ii.) Get it back from the person You sold it to
- iii.) I should like to see the trees You picked these oranges from

c.) Use the correct form of the words in brackets to fill in the blank spaces in each of the sentences below. (3mks)

- i. The accident (Occur) near the hospital yesterday.
- ii. The (Argue) made them to quarrel at last.
- iii. The vehicle broke down due to poor(maintain)

d) Rewrite the following sentences as instructed. (3mks)

- i) Nyambura never came late to school this term. (Begin: not)

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- ii) If I had known that they would bring the book with them, I would not have brought this copy. (Rewrite the sentences using need not instead of (would not))

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iii) No one likes to be sick. (Change the infinitive into a gerund)

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e.) Write the following sentences according to the instructions given.

i.) Someone is following us. (Rewrite in passive)

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ii) He was absent from work for three days without permission. He wrote a rude letter to the manager. (Rewrite as one sentence beginning, not only)

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iii) Let me have a taste. (Add a question tag).

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This is the last printed page.



THE BOOSTER NATIONAL SCHOOLS MOCK

SCHOOL NAME.....

NAME.....ADM.....

DATE.....SIGN.....TARGET.....

KCPE MARKS.....PREV EXAM MKS.....INDEX.....

ENGLISH

TERM 1 – 2024

FORM 4

ENGLISH

PAPER 3

TIME: 2 ½ HOURS

INSTRUCTIONS TO THE CANDIDATES

Answer three questions only

- *Questions one and two are compulsory.*
- In question three choose only one of the optional texts, for which you have been prepared.
- Where a candidate presents work on more than one optional text, only the first to appear will be marked
- Each of your essay must not exceed 450 words
- This paper consists of 2 printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.

Imaginative Composition (COMPULSORY)**(20 marks)*****Either***

- a) Write a composition that has the following words: *friends, police, court, jail.*

Or

- b) Write a composition on the following statement: "Technological advancement has impacted negatively on the society, especially the youth."

1. Compulsory text ‘The Samaritan’ by John Lara (20 marks)

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

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

War is a social evil that should be avoided at all costs owing to its adverse consequences. Validate the statement referring to Kazuo Ishuguro's novel *An Artist of the Floating World*.

or**(b) The Short Stories Godwin Shiundu, ‘A silent Song and other stories’ (20marks)**

In a society today, some people who have power end up abusing it " Drawing illustration's from Naquib Mahfouz *A man of Awesome Powers*, justify the above statement.

or**c) Parliament of owls by Adipo Sidang' (20 marks)**

Discuss how Adipo Sidang' has addressed oppression in the play ‘Parliament of Owls’.



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FORM 4

GEOGRAPHY

CONFIDENTIAL

MAP OF TAITA HILLS 1:50,000/189/4 (7731)



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Kenya Certificate of Secondary Education

312/1 GEOGRAPHY

PAPER ONE

TIME: 2 $\frac{3}{4}$ HRS

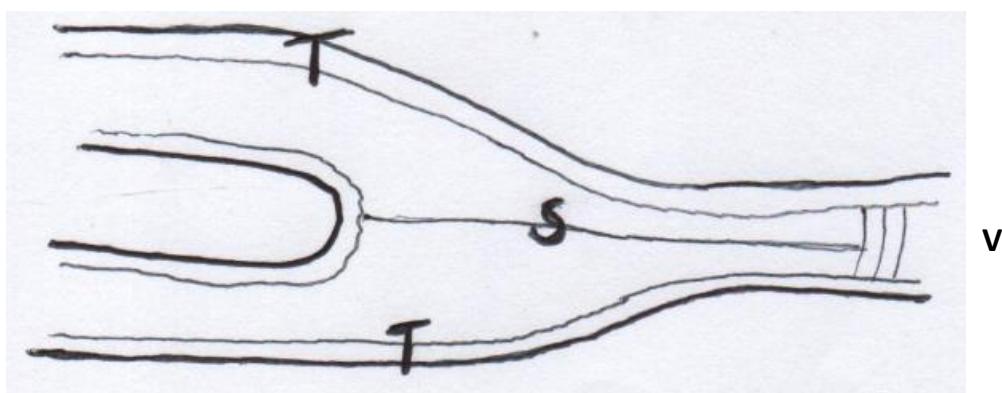
INSTRUCTIONS

3. This paper consist of two section A and B
4. Answer ALL the questions in section A
5. Answer question 6 and any other two questions from section B
6. Candidates should answer the questions in English

SECTION A (25MKS)

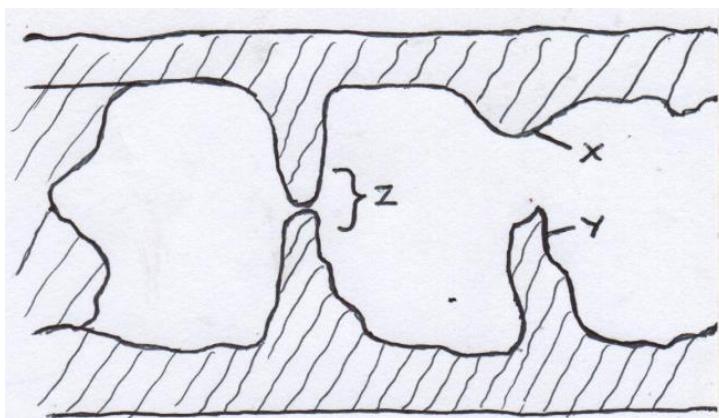
Answer all the questions in this section

1. a) Define the term solar system (2mks)
- b) Give any three theories explaining the origin of the solar system (3mks)
2. i) What is faulting (2mks)
- ii) Mention any three types of faults (3mks)
3. i) Define a glacier (2mks)
- ii) The diagram below shows types of moraines in a valley glacier (3mks)



Name parts V, T & S

4. State five conditions necessary for the formation of a beach (5mks)
5. a) Study the diagram and answer the following questions. (3mks)



Name parts X, Y & Z

- b) State any two conditions necessary for development of Karst scenery (2mks)

SECTION B

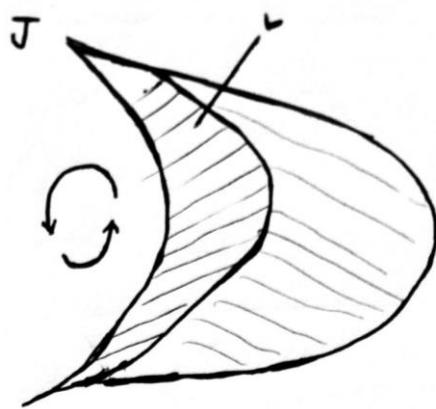
Answer question 6 and any other two questions from this section

6. Study the map of Taita Hills 1:50,000 (Sheet 198/4) provided and answer the following questions.
- a) i) Give the four figure grid reference of L.R 3880/s (2mks)
ii) What is the general direction of R. Ruhiaa tributary of R. vol (Goshi) (2mks)
- b) i) Give the adjoining sheet of Taita Hills on the North Coast part of the map. (2mks)
ii) Measure the length of the Bound surface Road A23 from Mwatake to LC (Level Crossing) (2mks)
iii) Calculate the area of the forest covering Shellemba and Majengo Zones (3mks)
iv) Citing evidence from the map, identify three economic activities carried in the area (6mks)
- c) Citing evidence from the map, explain any four factors that may have influenced Agricultural activities in the Area (8mks)
7. a) Define the term Vulcanicity? (2mks)
b) Distinguish Extrusive and intrusive vulcanicity (4mks)
c) Give any three resultant features due to intrusive vulcanicity (3mks)
d) Describe the continental drift theory (3mks)
e) i) State two artificial causes of earth movements (2mks)
ii) Explain any three significance of vulcanicity to human activities. (8mks)
8. a) What is climate? (2mks)
b) Explain the factors influencing climate under the following sub-headings:
i. Latitude (5mks)
ii. Altitude (4mks)
iii. Ocean currents (4mks)
c) i) Distinguish Aridity and desertification. (2mks)
ii) State any four causes of aridity and desertification together with their possible solutions (8mks)
9. a) Name two ways of water movement in Oceans (2mks)
b) List any four types of tides (4mks)

- c) State four factors that influence wave transportation (4mks)
- d) Yururugirl's school, form 4 Geography class carried out a field study at a wave deposition site at the coast of Mombasa.
- List any four wave depositional features they might have observed. (4mks)
 - Explain any two factors influencing the type of coast they might have studied. (4mks)
 - Give any three benefits they might have enjoyed due to conducting reconnaissance to their place of study (3mks)
 - List two ways the learners might have used in collecting the data (2mks)
 - Mention any two types of coral reef they might have studied during the period of their study (2mks)

10. a) Name three major deserts found in:

- Africa (3mks)
 - Give two processes in which wind erodes the earth's surface (2mks)
 - Explain three ways in which wind transports its load (6mks)
- b) Using well labeled diagrams, explain how the following desert features are formed.
- Yardangs (5mks)
 - Mushroom block (6mks)
- c) The diagram below represents features resulting from wind deposition in a desert



Use it to answer questions that follow

- Name the above feature (1mk)
 - Name the parts marked; (2mks)
- J & L



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312/2 GEOGRAPHY

PAPER TWO

TIME: 2 $\frac{3}{4}$ HRS

INSTRUCTIONS

7. This paper consist of two section A and B
8. Answer ALL the questions in section A
9. Answer question 6 and any other two questions from section

SECTION A (25MKS)

Answer ALL the questions from this section

11. i) Mention **two** irrigation schemes established in Kisumu County with the aim of land rehabilitation (2mks)
- ii) What is a polder? (1mk)
- iii) Name **three** crops grown in the polder (3mks)
12. i) Distinguish Horticulture and market gardening (2mks)
- ii) State **three** problem facing horticultural farming in Kenya (3mks)
13. i) Define the term mining? (2mks)
- ii) State any **three** negative effects of mining to the environment (3mks)
14. i) Give **two** indigenous soft wood trees grown in Kenya (2mks)
- ii) State **three** problems facing forestry in Canada (3mks)
15. a) Name **three** types of fish (2mks)
- b) State **three** problems facing fishing in JAPAN (2mks)

SECTION B

Answer question 6 and any other two questions

16. a) Study the information provided. Later answer the questions that follows

Crop production in Kenya between 1998 and 2002 in million bags.

Use a scale of 1cm represents 5 million bags

CROP/YEAR	1998	CT	1999	CT	2000	CT	2001	CT	2002	CT
Maize	27.30		25.00		25.00		30.00		26.00	
Beans	3.00		4.00		3.70		4.10		4.00	
Sorghum	0.90		1.20		0.90		1.20		0.80	
Millet	0.37		0.66		0.40		0.50		0.60	

- CT refers to the cumulative totals
 - i. Using a suitable scale, draw a cumulative bar graph based on data provided above. (10mks)
 - ii. Calculate the maize percentage decline in production between years 2001 and 2002. (2mks)
 - iii. What general conclusion can be made based on crop production between years 2000 and 2001 (2mks)

b) i) Apart from tsetse fly control mention five other methods used to reclaim land in Kenya

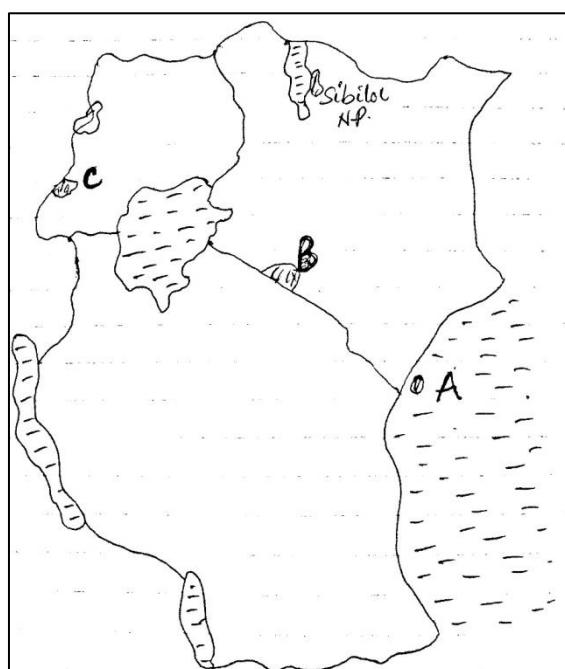
(5mks)

ii) Explain any three control measures applied to eliminate tsetse flies in Kenya. (6mks)

17. a) i) Define wildlife (2mks)

ii) Distinguish between a game sanctuary and a game ranch (4mks)

iii) Study the following map of East Africa and answer the questions below.



Name National parks marked A, B & c (3mks)

b) i) Explain four factors showing the future of tourism Industry in Kenya (8mks)

ii) Explain how the following factors influence wildlife

i. Vegetation (4mks)

ii. Altitude (4mks)

18. a) i) What is fishing (2mks)

ii) Name the two major fishing ground in the Pacific Ocean

(2mks)

iii) Name four fresh water fisheries in Kenya

(4mks)

b) i) Explain four reasons why Fresh water fishing is more popular than marine fishing in East Africa.

(8mks)

ii) Describe trawling as a method of fishing

(7mks)

iii) Distinguish phytoplankton and 200 planktons

(2mks)

19. a) i) Name two main types of coffee grown in Kenya

(2mks)

ii) Identify two counties in Kenya where coffee is grown in large scale (2mks)

b) i) State four factors favoring growing of coffee in Kenya

(4mks)

ii) Describe the stages of coffee processing once it's delivered to the factory (9mks)

c) i) Explain two benefits of coffee farming in Kenya

(4mks)

ii) State four problems facing coffee farmers in Brazil (4mks)

20. a) i) Give three by-products of crude oil (3mks)

ii) List four ways through which occurrence of minerals is influenced. (4mks)

b) Explain four contribution of mining Industry to economy (8mks)

c) Name the minerals found in the following areas in East Africa

(4mks)

i. Kariandusi

ii. Kerio Valley

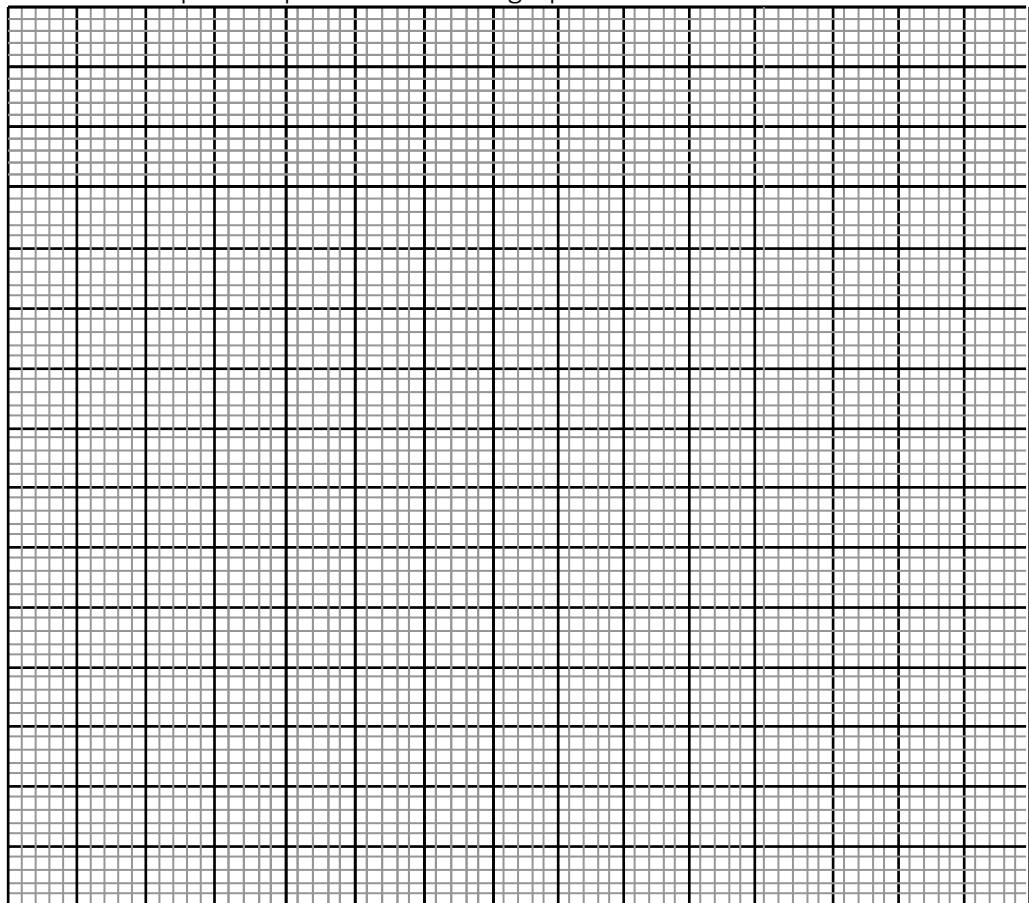
iii. Kwale County

iv. Lake Magadi

d)i) State four factors influencing mineral exploitation (4mks)

ii) Give two uses of Gold (2mks)

Answer part of question 6 on the graph sheet below





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PAPER 1 (311/1)

INSTRUCTIONS TO CANDIDATES

- a) Write your name and index number in the spaces provided above.
- b) This paper consists of three sections: A, B and C
- c) Answer all questions in sections A, three questions from section B and two questions from section (d). All the questions to be answered in the space to be provided.

Section A (25mks)

Answer all the questions in this section.

1. Identify the main source of information used to gather information about Kenyan communities. (1mk)
2. Give **one** example of the Maa speakers in Kenya. (1mk)
3. State **two** ways in which the Mijikenda intensified their security in the pre-colonial colonial period. (1mk)
4. Identify **two** natural factors that enabled the early visitors to come to the East African coast by 1500 A.D . (2mks)
5. Give **one** economic duty of a Kenya citizen. (1mk)
6. State **one** level of conflict. (1mk)
7. State **two** problems facing Nairobi as a modern urban centre. (2mks)
8. Outline **two** factors that determine the type of a constitution in a country (2mks)
9. Highlight **two** characteristics of human rights. (2mks)
10. Name **two** groups of people whose rights and fundamental freedoms are protected by the constitution. (2mks)
11. Identify **two** rights of workers in Kenya according to the new constitution(2010). (2mks)
12. Give **two** reasons for the construction of Kenya Uganda Railways during colonialism. (2mks)
13. What is the main contribution of Tom Joseph Mboya in the development in Kenya. (1mk)
14. State **one** roles of Mekatilili wa meza during the Agirama resistance. (1mk)
15. Name **one** method used to elect leaders in Kenya. (1mk)
16. What is the symbol of authority of parliament in Kenya. (1mk)
17. Identify the last stage in the law making process in Kenya. (1mk)

SECTION B (45 MARKS)

Answer any three questions in this section

18(a) Outline **five** reasons for the migration of the Luo from their original homeland. (5mks)

(b) Describe the Political Organization of the Borana in the Pre – colonial Period.

19(a) Name **three** Missionaries at work in East Africa during the 18th and 19th Centuries.

(3mks)

(b) Describe the challenges encountered by Missionaries in East Africa during the Pre-colonial period. (12mks)

20(a) Identify **three** Communities in Kenya who offered mixed reaction against the British during colonization. (3mks)

(b) Explain **six** causes of Maasai collaboration. (12mks)

21(a) Give reasons why Africans were not allowed to grow Cash crops during colonialism. (3mks)

(b) What were the results of the Mau Mau uprising (12mks)

SECTION C (30 MARKS)

Answer any two questions in this section

22(a) State **five** circumstances under which freedom of movement may be limited (5mks)

(b) Discuss **five** functions of Kenya National Human rights and Equality commission (10mks)

23(a) How can one lose citizenship acquired by birth in Kenya? (3mks)

(b) Explain **six** challenges encountered by the Kenyans while coming up with a new constitution. (12mks)

24.(a) Identify **three** factors that may necessitate the holding of a by-election in Kenya . (3mks)

(b) Discuss **six** functions of the Kenya Defence forces(K.D.F). (12mks)



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HISTORY AND GOVERNMENT PAPER 2

3 1/2.

2HOURS 30MINUTES.

INSTRUCTIONS TO CANDIDATES

- a) This paper consists of **three sections: A, B and C**.
- b) Answer **all the questions in section A, three questions from section B and two questions from section C**.
- c) Answers to all the questions must be written in the answer booklet provided
- d) This paper consists of **three printed pages**.
- e) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
- f) Candidates should all the questions in **English**.

SECTION A (25MARKS)

Answer All questions from this section.

1. What is political history as an area of study in History and Government? (1mark)
2. Give two chemical dating methods used by Archaeologists to reconstruct History. (2marks)
3. Give the main reason why early agriculture developed in Egypt. (1mark)
4. Identify two scientific discoveries during the nineteenth century which contributed to food preservation. (2marks)
5. State two ways in which Africans participated in the Trans-Atlantic Trade. (2marks)
6. Give two results of the development of the steamship in Europe. (2marks)
7. Give one reason why coal was used as the main source of industrial power in Britain during the Industrial Revolution. (1mark)
8. Identify two social functions of the Ancient city of Athens in Greece. (2marks)
9. State the main function of the Golden stool in the Asante Empire during the pre-colonial period. (1mark)
10. Give one contribution of religion in the Maji Maji rebellion. (1mark)
11. Why was Ethiopia not colonized by the Europeans in the nineteenth century? (1mark)
12. Identify two ways in which Samori Toure acquired fire arms during the Mandinka Resistance. (2marks)
13. Identify one political reform introduced by President de Klerk that led to the achievement of black majority rule in South Africa. (1mark)
14. Give the main reason why the League of Nations was formed in 1919. (1mark)
15. Name two agencies of the United Nations Organisation which deal with the problem of health. (2marks)
16. Identify one military alliance formed during the cold war. (1mark)
17. Give two non-British colonies who are members of the Commonwealth. (2marks)

SECTION B (45 MARKS)

Answer only three questions from this section

18. a) Give three species of Australopithecus. (3marks)
b) Explain six ways in which Homo erectus attempted to improve his way of life. (12marks)
19. a) Identify three major Trans-Continental railways in the modern world. (3marks)
b) Explain six ways through which the invention of the railway speeded up industrialization in Europe. (12marks)

- 20 a) Give three methods used by European powers to establish colonial rule in Africa. (3marks)
- b) Explain six effects of the partition of Africa on the African communities. (12marks)
21. a) State three methods used by the nationalists in Ghana to fight for their independence. (3marks)
- b) Explain six factors that led to the development of African Nationalism in Ghana. (12marks)

SECTION C (30MARKS)

Answer only two questions from this section.

22. a) Identify five main organs of the United Nations Organization. (5marks)
- b) Discuss five ways through which the United Nations Organization promotes peace in the world. (10marks)
23. a) Give five reasons why the First World War was referred to as the greatest war ever fought in the world by 1914. (5marks)
- b) Explain five effects of the cold war that emerged after the Second World War. (10marks)
24. a) Give five factors for the growth of Pan-Africanism. (5marks)
- b) Discuss five reasons why the Pan-African Movement had not established itself in the African continent before 1945. (10marks)



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HOMESCIENCE PAPER 2

PRACTICAL CONFIDENTIAL

INSTRUCTIONS TO SCHOOLS

1. Plain light weight cotton fabric 65cm long by 90cm wide.
2. A button 1cm in diameter.
3. Sewing thread to match the fabric colour.
4. One large envelope



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441/1

HOME SCIENCE

PAPER 1

TIME: 2HRS 30MINS

Kenya Certificate of secondary education.

441/1

Home science

INSTRUCTIONS TO CANDIDATES:

- Answer all questions in section A and B.
- Answer any two questions in section C.

SECTION	QUESTION	MAX. SCORE	CANDIDATE SCORE
A	1-19	40	
B	20	20	
C	21-23	40	
TOTAL		100	

SECTION A (40MKS)

Answer all questions in this section.

1. State how studying home science benefits the nation. (1mk)

2. Give **four conditions** favourable for thriving of micro-organisms in food contamination. (2mks)

3. Identify the categories in which each of the following small kitchen equipment belongs. (2mks)

a) Grater

b) Meat tenderizer

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

Fish slice

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

Colander

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

4. Give **two ways** of preventing skin infections. (2mks)

5. State **two classes** of textile fibres. (2mks)

6. Give **two disadvantages** of living in a maisonette. 2mks)

7. List **four factors** that influence the frequency of cleaning a house. (2mks)

8. Mention **two properties** that limit the use of nylon in making lingeries. (2mks)

9. State **two factors** to consider when choosing cutting out shears. (2mks)

10. Name **two types** of vacuum cleaners. (2mks)

11. Identify **four methods** of steaming food. (2mks)

12. Define the following terms: (2mks)

- i. Environmental hygiene

- ii. Drainage

13. Identify **two laundry** processes that are carried out before washing clothes. (2mks)

14. State the use of the following in drainage:

- a) U bend

- b) Water seal.

15. Give **two qualities** of a good clothes line. (2mks)

16. State **one function** of each of the following parts of a sewing machine: (3mks)

- i. Tension disc

- ii. Thread-take up lever

iii. Stitch length regulator

17. Give reasons for using each of the following laundry agents: (3mks)

a) Starch

b) Fabric conditioner

c) Salt

18. Categorize the following stitches into their respective groups: (3mks)

i. Loop stitch

ii. Oversewing stitch

iii. Faggotting

19. Give the names of the following vitamins: (2mks)

a) Vitamin A _____

b) Vitamin B1 _____

c) Vitamin B2 _____

d) Vitamin C _____

SECTION B (20MKS)

(Compulsory)

20. Your brother is celebrating his birthday and has requested you to assist in cleaning.

- a) Outline the procedure you will use to launder his loose coloured cotton t-shirt .(8mks)

- b) Give the procedure of cleaning am oil painted wall (8mks)

- c) Explain how to clean a plain wooden chopping board. (4mks)

SECTION C (40MKS)

Answer any two questions in this section

21.

- a) Highlight **five physiological** changes in the elderly which affect their diet. (5mks)

- a. Discuss **five reasons** for using soft furnishing in the home. (5mks)

b) Explain the first aid you will give to a patient who is nose bleeding at home. (5mks)

a. Highlight the importance of budgeting for family income. (5mks)

22.

(i) Explain **four causes** of malnutrition in the community. (8mks)

(ii) Discuss **three problems** related to breastfeeding. (6mks)

(iii) State and **explain three types** of advertisement. (6mks)

23.

- a. Outline **four reasons** for sufficient ventilation in a room. (4mks)

- b. Explain **four principles** of food preservation. (8mks)

c. Arrange the following steps in the correct order as used in making yeast mixtures: (4mks)

Second kneading, Fermentation, proving, shaping, raising, first kneading, mixing, baking

d. Highlight **four ways** of meeting nutritional needs of the sick at home. (4mks)



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441/2

HOMESCIENCE

CLOTHING CONSTRUCTION

TIME: 2 ½ HOURS

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441/2

HOMESCIENCE

PAPER 2

CLOTHING AND CONSTRUCTION

TIME:2 ½ HOURS

A pattern of a child's skirt is provided. You are advised to study the sketches, the question paper and layout before you begin the test

Materials provided

5. A skirt Front
- B skirt Back
- C frill
- D Pocket
- E Back waistband
- F Front Waistband

N/B: Interfacing for front and back waistbands are cut with pieces E and F from the same fabric.

6. Plain light weight cotton fabric 65cm long by 90cm wide.
7. A button 1cm in diameter.
8. Sewing thread to match the fabric colour.
9. One large envelope.

THE TEST

Using the materials provided, cut out and make the LEFT HALF OF the child's skirt to show the following.

- i) Making the back and front darts.
- ii) The preparation and attachment of the patch pocket
- iii) The making of a neatened side open seam
- iv) The preparation of the interfaced front and back waistbands.
- v) The attachment of the waistband to the skirt. Finishing the front waistband by hemming and the back one by tacking.
- vi) The topstitching of the waistbands.
- vii) The preparation of the frill and attaching it using overlaid/lapped seam.
- viii) The beating of only half of the frill seam using loop stitches.
- ix) The making of the buttonhole and attaching the button.

OMIT the hem management

At the end of the examination, firmly sew on your work, on a single fabric a label bearing your name and index number. Remove the needle and pins from your work, then fold your work neatly and place it in the envelope provided. Do not put scraps of fabric in the envelope.



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102/1

KISWAHILI KARATASI YA 1

MUDA: SAA 1 $\frac{3}{4}$

MTIHANI WA KIDATO CHA NNE MUHULA WA PILI

102/1

KISWAHILI KARATASI YA 1

MUDA: SAA 1 $\frac{3}{4}$

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) Andika insha **mbili**. Insha ya **kwanza** ni ya **lazima**.
- d) Kisha chagua insha nyingine **moja** kati ya hizo tatu zilizobakia.
- e) Kila insha isipungue maneno **400**.
- f) Kila insha ina alama **20**.
- g) Kila insha lazima iandikwe kwa lugha ya Kiswahili.

Kwa matumizi ya mtihini pekee

Swali	Upeo	Alama
1	20	
	20	
Jumla	40	

Maswali

1. Wewe kama mwanahabari umetembelea afisi ya gavana wa gatuzi lako. Andika dayolojia iliyojiri baina yako na gavana kuhusu namna ugatuzi umechangia maendeleo katika jamii.
2. Suala la ubaguzi wa jinsia limekithiri sana katika jamii. Jadili.
3. Tunga kisa kitakachoafiki maana ya methali:
Mwenda tezi na omo marejeo ni ngamano.
4. Andika kisa kitakachomalizika kwa maneno yafuatayo:
...sasa ninaelewa maneno yake kuhusu kufanya maamuzi ya busara. Sasa nimepata baraka za wazazi na ridhaa ya kuishi pamoja.



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KISWA HILI

KARATASI YA 2

KIDATO CHA NNE

EXAMINATION

MUDA: SAA 2 ½

Maagizo

- a) Andika jina lako na nambari yako katika nafasi ulizoachiwa katika kijitabu hiki cha maswali.
- b) Jibu maswali yote.
- c) Majibu yote yaandikwe katika nafasi ulizoachiwa katika kijitabu cha maswali.
- d) Majibu yote lazima yaandikwe kwa lugha ya Kiswahili

Kwa matumizi ya mtihani pekee

SWALI	UPEO	ALAMA
1. UFAHAMU	15	
2. UFUPISHO	15	
3. SARUFI	40	
4. ISIMU JAMII	10	
JUMLA	80	

1: UFAHAMU: (Alama 15)

Soma kifungu kifuatacho kisha ujibu maswali.

“Asante baba, asante mama,” akasema Bahati jioni moja baada ya chajio, “Sijui ilitokeaje kukawa na watu wanaothamini binadamu wenyewe mahitaji maalumu katika jamii hii. Sitawauliza mlichofanya kunikinga na hukumu ya ukoo ya kuniangamiza; hayo mtakuja kunihadithia siku moja. Ila nataka mjue kwamba kuishi na ulemavu wa aina yoyote ile kuna dhiki kuu. Niliyokabiliana nayo baada ya uamuzi wenu wa kunipeleka shuleniyayawezi kutoshea hata chapisho la kurasa elfu. Si kudhihakiwa na miale ya jua; ngozi yangu inashindwa kuuhimili ukali wake, si kutengwa na marika, si kulazimika kusoma hati za kawaida hadi pale serikali ilipoanzisha sera ya kuhakikisha kwamba matini zote za kiusomi zimeandikwa pia kwa hati ambazo zinaweza kusomwa na wenyewe changamoto kama yangu, si kubaguliwa kazini....” Bahati alitua, akawatazama wazazi wake kama anayetaka kuona taathira ya maneno yake kisha akaendalea.

“Msinione kama aliyekosa hisani, ila’ nataka niwaambie kwamba hata uamuzi wenu wa kunitafutia mlinzi kuandamana nami hadi shuleniyayawezi ngome zaidi. Nilijihisi kama niliyedhulumiwa zaidi katika kule kulindwa! Najua mlikuwa mnachelea kwamba ningekuwa windo rahisi kwa walangazi wa binadamu ambao wanaamini kwamba viungo vyetu sisi ni dawa ya kutibia ndwele mbalimbali. Hata hivyo, katika kipindi chote hicho nilitamani kwamba mng'enifunza mbinu za kujilinda mimi binafsi. Amini usiamini hata nilitamani kwamba ningetekwa nyara, nijadiliane na watesi wangu kuliko kupokwa nafasi ya kubuni mikakati ya kujihakikishia usalama”.

“Mwanangu Bahati,” alisema mume wangu, “binadamu hawi jagina kwa kuzifuata tamaduni za jamii yake bila kuzichunguza. :haidhuru kwamba ilichukua muda kuyangamua haya’. La muhimu ni kwamba umeweza kuishi kama ndugu zako”.

Nilimtzama mume wangu kwa macho yaliyokuwa yamepofushwa na dimbwi la machozi. Moyo uliituma akili yangu kurudi nyuma kule -e-e-e- kwenye miereka ya baada ya kuzaliwa kwa Bahati. Asubuhi hiyo ya kipupwe nilishika ujia ulioelekea kwenye msitu uliokuwa karibu na boma la Mzee Kedi, baba mkwe wangu; mgongoni nimeifungia mbeleko ambayo ilikisitiri kitoto changu. Nitazama nyuma, nikaiona nyumba ambayo mimi na mume wangu tulikuwa tumechangia bia kuijenga.

“Haya yote nayaacha,” nilijiambia, “nayaacha na mengine mengi. Nawaacha mabinti wangu wawili, namwacha mume wangu, naiacha kazi yangu, nayaacha maisha yangu wala sijuti kwa kuyaacha haya yote. Sina cha kujutia kwani imebidi kuondoka. Jamii yangu imenitema; mimi na mwanangu. Haina nafasi ya mwanangu, kwa hivyo nami nimeamua kwamba haina nafasi yangu kwa vile imesema huu ni mzigo wangu. Ikiwa ukoo umeamua kuwa hatima ya mwanangu huyu ni kuwa kitoweo cha fisi, basi na tuwe sote karamu ya fisi” nilitamatisha kauli yangu kisha nikayarudisha nyuma tena mawazo yangu.

Nilikumbuka sauti ya muuguzi hospitalini siku ambayo nilijikopoa, “Pongezi Tamasha, Mungu amekutunukia kipusa”. Nilikifunua kitoto changu kilichokuwa kimefunikwa gubigubi, nikakitazama viguu, vikono, uso...kisha, ‘Mungu wangu!’ ikanitoka. “Dadangu, unastahili kumshukuru Mungu,” akasema muuguzi, “wapo wanawake, mimi mwenyewe nikiwemo, ambao hawajawahi kuambulia ujauzito, sikwambii hata kupoteza mimba. Huyu wako ni kiumbe kamili, kasoro yake i kwenye ngozi tu, na hii ni hali ambayo unaweza kukabiliana nayo. Hapa unionapo nimelazimika kumpa mume wangu talaka, mwenyewe alienda kortini akaiomba. Anadai kwamba hatusikilizani. Ila najua kiini cha haya yote ni kutoshika kizazi”.

Nilimtazama huyo muuguzi kana kwamba hajasema lolote. Nilimwona kama anayeuna mzigo wangu kuwa kanda la usufi. Huenda huyu muuguzi hakujua kwamba katika jamii yangu watoto wa aina hii ni kama pacha, huaminiwa kuwa nuksi kwa ukoo mzima, kwa hivyo hutupwa. Muuguzi huyu hakujua pia kwamba tayari nilikuwa na watoto wawili wa kike na huo tayari ulikuwa mzigo mkubwa kwangu kwani ilibidi kumhakikishia mavyaa kila mara kwamba hawa pia walikuwa watoto.

Moyo ulinipa kukumbuka jitimai iliyojiandika usoni mwa mume wangu asubuhi hiyo alipokuja hospitalini. Alikitazama kitoto chetu kana kwamba anaona mzuka. Alinyamaza kwa muda, akashusha pumzi, kisha akanishika kwenye bega na kuondoka kwenye wodi. Machozi yalivunja kingo zake huko yanakohifadhiwa, nikalia kama mfiwa, Mume wangu alirudi tena baada ya siku mbili; anakuja kunipeleka nyumbani.

“Mke wangu, naomba msamaha kwa kutokuja kuwatazama kwa siku mbili. Ilibidi nishauriane na ukoo kuhusu tanzia hii. Inavyoonekana ni kwamba msimamo wa baba na wazee wengine ni ule ule. Wanasema ukoo wa Baulanga haujawahi kupata mtoto wa aina hii, kwamba kumhifadhi mwana huyu kutakuwa kuupaka masizi ukoo. Wahenga hawatakubali tendo hili. Sijui nitakutetea vipi. Nimo kwenye njia panda,” mume wangu alikamilisha

uzungumzi wake na kuelekea kwenye afisi ya mhasibu kukamilisha viviga vya katuondoa hospitalini.

“Huna haja ya kuniitetea. Sijafanya kosa lolote. Nililofanya ni kujaliwa kiumbe ambaye anaonekana kuwa punguani kwa misingi ya jamii yako. Nitakilinda kitoto hiki hata kifoni,” nilimwambia mume wangu mawazoni.

(a) “Kufanikiwa kwa watu wenye mahitaji maalumu kunategemea jamii.” Thibitisha kwa kutoa hoja sita kutoka aya tatu za kwanza. (alama 6)

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(b) Kwa kurejelea aya ya nne hadi ya saba, onyesha jinsi unyanyasaji wa kijinsia unavyoendelezwa katika jamii hii. (alama 3)

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(c) “Msimulizi anahimiza. uwajibikaji.” Thibitisha kwa kutoa hoja nne kutoka aya tatu za ‘mwisho. (alama 4)

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(d) (i) Andika kisawe cha, ‘hisani’ kwa mujibu wa taarifa. (alama 1)

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(ii) Eleza maana ya, ‘kuupaka masizi’ kulingana na taarifa. (alama 1)

2: UFUPISHO: (Alama 15)

Soma kifungu kifuatacho kisha ujibu maswali.

Wakenya walipoipitisha katiba mpya waliidhinisha mfumo wa ugatuvi. Katika mfumo huu, mamlaka ya serikali kuu katika uongozi, usimamizi na utumiaji wa rasilimali za nchi hupunguzwa. Kiasi fulani cha mamlaka hutwaliwa na maeneo ya ugatuvi. Suala hili halikuzingatiwa katika katiba ya awali ambapo mamlaka yote yalikuwa mikononi mwa serikali kuu. Kutohana na upana na wingi wa maeneo nchini, iliiwia vigumu serikali kuu kuhakikisha kwamba kulikuwa na usawa wa kimaendeleo katika sehemu zote nchini.

Kwa mujibu wa katiba mpya, serikali kuu haina budi kuyasaidia maeneo yote ya ugatuvi ili yaweze kujinyanya kiuchumi na kuboresha hali za maisha za wakazi wake. Vilevile ni jukumu la kila eneo la ugatuvi kuweka mikakati madhubuti ili kuchunguza na kubainisha rasilimali zote katika maeneo husika. Hili litasaidia kuvumbua rasilimali ambazo zinaweza kuchangia katika ustawishaji wa maeneo haya. Maeneo haya pia yanatakiwa kutafuta mbinu zitakazofanikisha uzalishaji na utumiaji wa rasilimali hizi kwa njia endelevu. Mojawapo ya mbinu hizi ni uongezaji thamani katika rasilimali yoyote inayozalishwa kwenye eneo mahususi.

Maeneo mengi ya ugatuzi nchini humu yanategemea kilimo cha ufugaji kama mhimili wa uchumi. Licha ya kuwa nguzo, kilimo hiki hakijawahi kupigiwa darubini vizuri kwa lengo la kukiimarisha ili kiwanufaishe wenyiji kikamilifu. Aghalabu wafugaji wengi huandama mbinu za jadi za ufugaji ambazo haziwahakikishii ongezeko la mapato. Isitoshe, wafugaji hawa wanakabiliwa na tatizo katika soko la mifugo ambapo wengi hupunjwa na matapeli. Pamoja na haya, baadhi ya wakazi huuza mifugo nje ya nchi wakiwa wazimawazima bila kuwazia matokeo ya kitendo hiki. Si ajabu kuwaona ng'ombe, ngamia, mbuzi na kondoo wakipakiwa kwenye malori na kusafirishwa nje ya nchi. Ukweli ni kwamba jambo hili ni hatari sana, si kwa uchumi wa maeneo husika tu, bali pia kwa Kenya kwa jumla. Hii ni kwa kuwa walionunua mifugo wazimawazima wanaweza kuhiari kutowachinja na badala yake kuwatumia kama mbegu za kuzalisha mifugo wao. Hapa pana hatari ya maeneo haya kupoteza wateja kwani baada ya muda huenda wanaonunua mifugo wakajitosheleza na kukosa kuja kununua mifugo wengine. Hali ikiwa hivyo, maeneo yaliyotegemea soko hili huenda yakalipoteza taratibu, na bila shaka kupoteza natija inayotokana na soko lenyewe.

Ili kudhibiti hali hii, itakuwa bora ikiwa viwanda vya kuchinjia mifugo na kupakia nyama vitajengwa katika maeneo haya ya ugatuzi. Hili litawawezesha wakazi kuuza nyama badala ya kuuza mifugo wazimawazima. Fauka ya haya, maeneo haya yatajikinga dhidi ya kupoteza bidhaa zinazotokana na mifugo. Hizi ni kama vile ngozi, kwato na pembe ambazo bila shaka zina natija kuu. Ngozi kwa mfano, ni bidhaa muhimu sana katika sekta ya utengenezaji wa mavazi na mifuko. Viwanda vinavyotumia ngozi kama malighafi vikijengwa katika maeneo haya, wakazi wake watanufaika si haba. Mathalani, viwanda vya kutengenezea viatu, mishipi, mifuko na nguo vikianzishwa, wawekezaji watalazimika kuanzisha viwanda vingine vitegemezi. Kadhalika, ni dhahiri kwamba bidhaa zinazotokana na ngozi huhitaji kutiwa nakshi. Kuanzishwa kwa viwanda hivi basi kutazua haja ya kuanzishwa kwa viwanda vya kutengenezea rangi, pamoja na maduka ya kuuza bidhaa yenyewe. Isitoshe, gundi ya kugandisha bidhaa hizi itahitajika, hivyo kusababisha haja ya kuanzishwa kwa kiwanda cha gundi. Matokeo ya shughuli hizi zote ni kuzalishwa kwa nafasi anuwai za kazi kwa wakazi. Hili litakuwa na matokeo zaidi chanya, hususan kwa vijana. Badala ya kushiriki ulevi na burudani zinazowahatarisha, wataweza kujitafutia riziki katika viwanda hivi.

Juu ya hayo, mfumo wa ugatuzi utayawezesha maeneo husika kuongezea thamani utoaji wa huduma za kijamii na kiutawala kulingana na mahitaji ya maeneo haya.Ni muhimu hata hivyo kuzingatia kwamba kila eneo la ugatuzi una upekee wake,navyo vipaumbele hutofautiana kulingana na maeneo.Kuna yale ambayo yatasisitiza usalama, mengine ujenzi na uimarishaji wa miundomsingi kama vile barabara, vituo vya afya na hata taasisi za elimu.La muhimu ni wakazi wa maeneo husika kubainisha ni lipi litatekelezwa kwanza.

Kinga na kinga ndipo moto uwakapo.Kufanikiwa kwa mfumo wa ugatuzi kutategemea juhudui za kila mkazi wa eneo husika.Ni muhimu kila mkazi kujiona kuwa mmiliki wa eneo zima la ugatuzi na kuwajibika katika kuliendeleza kwa hali na mali.Uwajibikaji huu unajumuisha uteuzi wa viongozi wenyewe muono mzuri na ambao watawawezesha kuyafikia malengo yao ya kimaendeleo.aHakika, mustakabali na uwepo wa eneo la ugatuzi utakuwa zao la maamuzi ya wanaeneo.Vilevile ufanisi wa maeneo ya ugatuzi utakuwa msingi wa ufanisi wa taifa kwa jumla.

(a) Fupisha ujumbe wa aya tatu za mwanzo kwa maneno 85-90.(alama 8, 1 ya mtiririko

Matayarisho:

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(b) Kwa kutumia maneno 75-80, bainisha masuala ambayo mwandishi anaibua katika aya tatu za mwisho. (alama 7, 1 ya mtirin'ko)

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3: SARUFI

(a) Tunga neno lenye muundo ufuatao wa sauti

- i. Kipasuo ghuna cha mdomo
 - ii. Irabu ya chini kati
 - iii. Kipasuo ghuna cha ufizi
 - iv. Irabu ya juu mbele
- (al .1)
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(ii) Andika neno lenye muundo ufuatao wa silabi.

K + KI + KKI

(al. 1)

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(b) Geuza kitenzi kilicho kwenye mabano kiwe katika hali ya kufanyana.

(i) Yohana na Jaheria (pokea) vijiti katika mazoezi ya mbio za mita mia moja. (al. 1)

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(ii) Nguruwe (tafunu) walipohisi njaa. (al. 1)

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(c) Andika sentensi zifuatazo katika hali ya mazoea.
(i) Wanadrama wanaigiza mchezo wao. (Al. 1)

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(ii) Wadudu wanapaa hewani. (Al. 1)

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(i)Ritifaa (Al. 1)

(f) Andika na kueleza kila aina za nomino zilizotumika katika sentensi ifuatayo.

Majura aliiwa kufika katika ofisi ya mwalimu mkuu kwa sababu ya ukora wake. (Al. 2)

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(g) Tunga sentensi moja moja kueleza vielezi vifuatavyo.

(i)Vya wakati (Al. 1)

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(ii) Vya namna vikariri (Al. 1)

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(h) Andika na kubainisha viwakilishi mbalimbali katika sentensi hii.

Mimi nilimpa yuyu huyu kitabu changu . (Al. 2)

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(i) Eleza tofauti ya maana kati ya sentensi zifuatazo.

(i) Mtoto amelia. (Al. 1)

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(ii) Mtoto amelialia. (Al. 1)

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(j) Andika sentensi ifuatayo katika ukubwa wingi. (Al. 2)

Kiguo kilichoaliwa kilikibana kijiuno.

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(k) Viambishi ngeli PA- KU - MU hutumiwa kuonyesha mahali patatu tofauti . Thibitisha. (Al. 3)

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(l) Andika sentensi ifuatayo katika kinyume.

Mfalme alipanda mlimani polepole. (Al. 2)

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(m) Tunga sentensi zozote mbili kuonyesha maana tofauti za neno karibu. (Al. 2)

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(n)Tambulisha virai katika sentensi hii. (Al. 2)

Waliosomba changarawe wamelipwa.

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(o) Tunga sentensi yenye muundo ufuatao.

KN (N + V + V) + KT (T + E)

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(p) Changanua sentensi ifuatayo kwa njia ya jedwali .

Ajabu! Nyumba zile nzuri zimebomolewa zote. (Al. 4)
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(q) Andika methali tatu tofauti zinazoafiki maneno haya.

Usidharau mtu ambaye amekusaidia katika jambo huenda ukamhitaji baadaye. (Al. 3)
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Bwana spika, ningependa wizara ya usafiri na miundo mbinu ieleze kwa nini ajali za barabarani zinazohusisha usafiri was imma zimeongezeka, na ni hatua gani zimechukuliwa kusitisha ajali huku ikijulikana kuwa kampuni fulani za usafiri zinavunja sheria maksuudi? Juma lililopita watu hamsini (50) walifariki katika ajali la basi lililokuwa limepata aboria 80 badala ya idadi rasmi ya 62. Ajabu ni kuwa gari hili liliwuwa limepita vizuizi kadhaa via polisi.

(a)Bainisha muktadha wa dondo hili.

(Al. 2)

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(b)Fafanua sifa nane zinazotambulisha sajili hii.

(Al. 8)

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SHULE YA UPILI

2024

KIDATO CHA NNE

KARATASI YA TATU 102/3

MUDA: $2\frac{1}{2}$ -masaa

Maagizo-

- Swali la kwanza ni la lazima.
- Chagua maswali mengine matatu kutoka kwa sehemu zililosalia.
- Usijibu maswali mawili kutoka sehemu moja.
- Majibu yote yaandikwe kwa lugha ya Kiswahili.
- Kila swali ni alama ishirini.

SEHEMU YA A ;**SWALI LA LAZIMA-FASIHI SIMULIZI**

1.

- a) Fafanua maana ya lakabu (alama 2)
- b) Sifa za lakabu ni zifi (alama 5)
- c) Kwa nini lakabu ni muhimu katika jamii? (alama 3)
- d) Jadili manufaa ya utafiti katika fasihi simulizi. (alama 10)

Hadithi fupi**Mapambazuko ya machweo na Hadithi nyingine**

2. Eleza nafasi ya vijana na wazee katika hadithi ya Mapambazuko ya machweo. (alama 20)

Nafasi ya vijana

AU

3. ‘Sasa ni saa ngapi? Si wajua mtoto angali anakusubiri? Mtoto analala!’

- a) Eleza muktadha wa dondo hili (alama 4)
- b) Bainisha mtindo katika dondo hili (alama 3)
- c) Eleza umuhimu wa msemaji katika kuendeleza maudhui katika hadithi ya Harubu ya maisha.
(alama 10)
- d) Kwa hoja tatu, eleza umuhimu wa msimulizi katika kuendeleza hadithi ya mzimu wa kipwerere
(alama 3)

TAMTHILIA YA BEMBEA YA MAISHA NA TIMOTHY AREGE

4. “...haikuwa mara moja mnavyofikiria. Ilianza pale chuoni. Wenzangu walinipa mvinyo kunirai kuonjia ulevi.”

- a) Eleza maudhui manne yanayo jidokeza katika dondo hili. (alama 4)
- b) Eleza athari za mhusika anayerejelewa kujitosa katika suala linalooredheshwa kwenye dondo. (alama 6)
- c) Kwa kurejelewa mifano tano katika tamthilia ya Bembea ya maisha, eleza tofauti iliopo katika maisha ya ndoa ya zamani na sasa (alama 10)

AU

5. Jadili sababu kumi zilizompeleka mwandishi T. Arege kuandika Tamthilia hii. (alama 20)

RIWAYA YA NGUU ZA JADI NA PROFESA CLARA MOMANYI

6. “Samahani... Nina shida kidogo. Ninaomba usaidizi. Sikuwa nikilipa ushuru katika biashara zangu. Sasa wanataka kuzifunga na kunipeleka kotini.”
- a) Eleza muktadha wa dondo (alama 4)
 - b) Bainisha toni katika dondo hili (alama 2)
 - c) Msemaji wa maneno haya na wengine ni adui ya wananchi wa Matuo. Eleza ukweli wa kauli hili. (alama 14)

AU

7. Matumizi mabaya ya mamlaka ni tatizo sugu sana katika mataifa mengi ya Afrika yanayoendelea kiuchumi. Kwa kutolea hoja mwafaka, tetea ukweli wa kauli kwa mujibu wa riwaya ya nguu za jadi. (alama 20)

8. Soma shairi lifuatalo kisha ujibu maswali.

Jiulize ni kwa nini, uanzapo kuongea
Sana sana makundini, watu hukuondokea
Ndugu ujitathmini, hakika umepotea
Sisi twakuombea, mwenye damu ya kunguni!

Mwenye damu ya kunguni, nayo lugha ya ajuza
Wengi hawamtamani, maneno yake yaliza
Yeye ana walakini, dosari kuliko pweza
Kama wewe umefunza, sote hutuona duni!

Sote hutuona duni, na hilo tumezowea
Kazi zetu zote guni, yeye tu amebobea
Umewachokoza mbuni, mateke anapokea
Sisi twakuombea, upae hadi hewani!

Upae hadi hewani, ujione kama bingwa
Mewashinda gazetini, wandishi kwako wapingwa
Yeye kwetu mpinzani, metia mipaka tingwa
Twakuombea mtafiti, hesabu hadi mizani!

Hesabu hadi mizani, utunge kwa kukosoa
U hodari hesabuni, nasi tushakuzoea
We nduli kwa majirani, na waja mekutegea
Kurekebisha hujui, ywatanika peupeni!

Ywatanika peupeni, ywajisifu mjuaji
Amezidi zetu mboni, na amevijunja mji
Twamwachia waamuzi, kesi wasome majaji
Sisi twakuombea, sirekebike kidogo!

- a) Eleza ujumbe unaojitokeza katika shairi hili (alama 6)
- b) Tambua miundo wa shairi hili (alama 4)
- c) Tambua bahari ya shairi hili kwa kuzingatia mpangilio wa maneno. (alama 2)
- d) Andika ubeti wa tatu kwa lugha nathani (alama 4)
- e) Tambua aina tatu za takriri zinazojitokeza (alama 3)
- f) Onyesha toni ya shairi hili (alama 1)



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MATHEMATICS PAPER 1

TIME: 2 $\frac{1}{2}$ HOURS

INSTRUCTION

- a) Write your name and index number in the spaces provided above.
- b) Sign and write the date of the examination in the spaces provided above.
- c) This paper consists of **TWO** sections: **section I** and **Section II**.
- d) Answer **ALL** the questions in **Section I** and only **five** questions from **section II**.
- e) **Show all the steps in your calculations, giving your answers at each stage in the stage in the spaces below each question.**
- f) Marks may be given for correct working even if the answer is wrong.
- g) **Non-programmable** silent electronic calculators **and** KNEC mathematical tables may be used, except where stated otherwise.

FOR EXAMINER'S USE ONLY

Section I

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

Section II

17	18	19	20	21	22	23	24	Total

Grand Total

SECTION 1: (50 MARKS) ANSWER ALL THE QUESTIONS

1. Simplify completely (4 mks)

$$\begin{array}{r} 2x^2 - 98 \\ \hline 3x^2 - 16x - 35 \end{array} \quad \div \quad \underline{x+7}$$

$$3x + 5$$

2. Given that $x:y=1:2$ and $y:z=3:2$ find the value of $\frac{x+y}{2z+5x}$ (3mks)

3. Solve the simultaneous inequalities given below and list all the integral values

of x . (3mks)

$$\frac{3-x}{2} \geq \frac{x+1}{3} \geq \frac{2x+1}{-3}$$

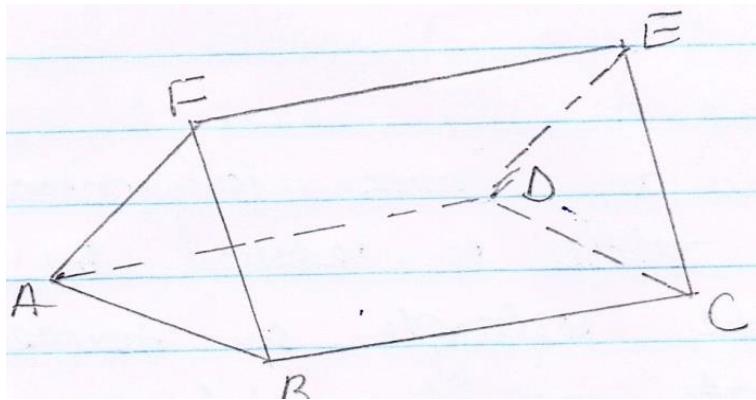
4. The sum of K terms of sequence **3,9,15,21.....is 7500.**

Determine the value of K . (3mks)

5. The length of a rectangle is **($3x + 1$) cm**, its width is **3 cm** shorter than its length. Given that the area of the rectangle is **28cm^2** , find its length. (3 mks)

6. The curved surface area of a cylindrical container is 1980cm^2 . If the radius of the container is 21cm , calculate to one decimal place the capacity of the container in litres. (Take $\pi = \frac{22}{7}$). (4 mks)

7. The figure below is a triangular prism ABCDEF with sides $AB = BF = AF = 3\text{cm}$ and $BC = AD = EF = 5\text{cm}$.



a. Draw the net of the solid. **(2mks)**

b. Calculate the surface area of the solid. **(2mks)**

8 .Two similar containers hold 2000cm^3 and 6.75litres respectively. If the smaller container has a diameter of 15.50cm , what is the radius of the larger container correct to one decimal place. **(3mks)**

9 . A tourist on holiday in Kenya had Us£7500. She changed all the amount into Kenya Shillings at the rate of Us\$ 1 = kshs. 80.04, While in Kenya she spent two thirds of the money and changed the remainder back to Us \$ at Us \$1 = kshs. 80.50. How much to the nearest Us dollars did she get? **(3mks)**

10. Determine the **quartile deviation** of the following data. **(2mks)**

4,9,5,4,7,6,2,1,6,7,8,3

11. A farmer has a piece of land measuring 840m by 396m. He divides it into square plots of equal size. Find the maximum area of one plot. **(3 mks)**

12. A seven sided polygon has two of its interior angles as 140° and 160° and the remaining angles are equal. Find the size of one of the equal angles. **(3mks)**

13. If $P = \begin{pmatrix} 1 \\ 1-y \end{pmatrix}$, $Q = \begin{pmatrix} 3 \\ y+2 \end{pmatrix}$ and $|P| = |Q|$. Find the value of y . (3 mks)

14. Find the value of x if. (3 mks)

$$\left(\frac{27}{8}\right)^{x+7} = \left(\frac{4}{9}\right)^{-3x}$$

15 .Use reciprocal and square tables to evaluate, to 4 significant figures, the expression. (3 mks)

$$\frac{1}{0.03654} - 4 \cdot 151^2$$

16. The following were recorded on a field note book by a surveyor.

Taking the base line as **550M** find the area in **M²**.

(3 mks)

	B			
	550	120	TO	A
C 150	450			
	250	90	TO	D
E 60	40			
	F			

SECTION II (50 MARKS)

Answer ONLY FIVE questions in this section

17. A tank has two water taps P and Q and another tap R. When empty the tank be filled by tap P alone in 5 hours or by tap Q in 3 hours .When full the tank can be emptied in 8 hours by tap R

a)The tank is initially empty . Find how long it would take to fill up the tank

i) If tap R is closed and taps P and Q are opened at the same time

(2mks)

ii) If all the three taps are opened at the same time .Giving your answer to the nearest minute **(2mks)**

b) Assume the tank initially empty and the three taps are opened as follows

P at 8:00 am

Q at 9:00 am

R at 9:00 am

i) Find the fraction of the time that would be filled by 10:00 am. **(3mks)**

ii) Find the time the tank would be fully filled up. Give your answer to the nearest minute. **(3mks)**

18. A straight line L_1 has a gradient $-\frac{1}{2}$ and passes through point **P (-1, 3)**. Another line L_2 passes through the points **Q (1, -3)** and **R (3, 5)**. Find.

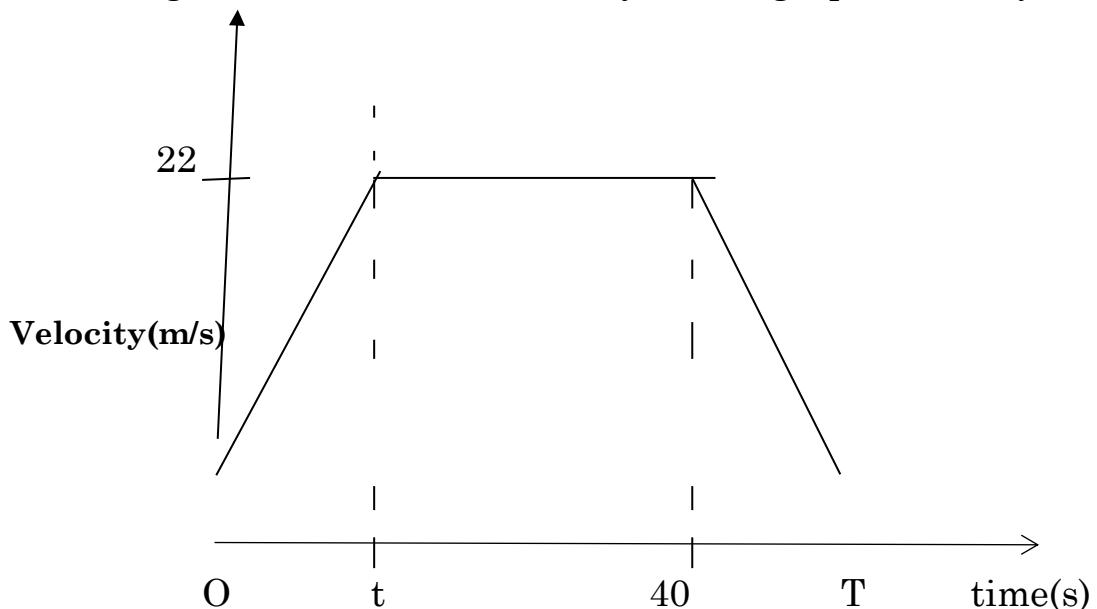
(a) The equation of L_1 . **(2mks)**

(b) The equation of L_2 in the from $ax+by+c = 0$. (2mks)

(c) The equation of a line passing through a point $S(0, 1.5)$ and is perpendicular to L_2 . (3mks)

d) The point of intersection of a line passing through S and L_2 . (3mks)

19. The figure below shows a velocity – time graph of a car journey.



The car starts from rest and accelerates at 2.75m/s^2 for t seconds until its speed is 22m/s . It then travels at this velocity until 40

seconds after starting. Its breaks bring it uniformly to rest. The total journey is 847m long and takes T seconds.

Calculate the

l) Value of t **(3mks)**

m) Distance travelled during the first t seconds. **(2mks)**

n) Value of T **(3mks)**

o) Final deceleration **(2mks)**

20. Four towns P, R, T and S are such that R is 80km directly to the north of P and T is on a bearing of 290° from P at a distance of 65km. S is on a bearing of 330° from T and a distance of 30 km. Using a scale of 1cm to represent 10km, make an accurate scale drawing to show the relative position of the towns.

(4mks)

Find:

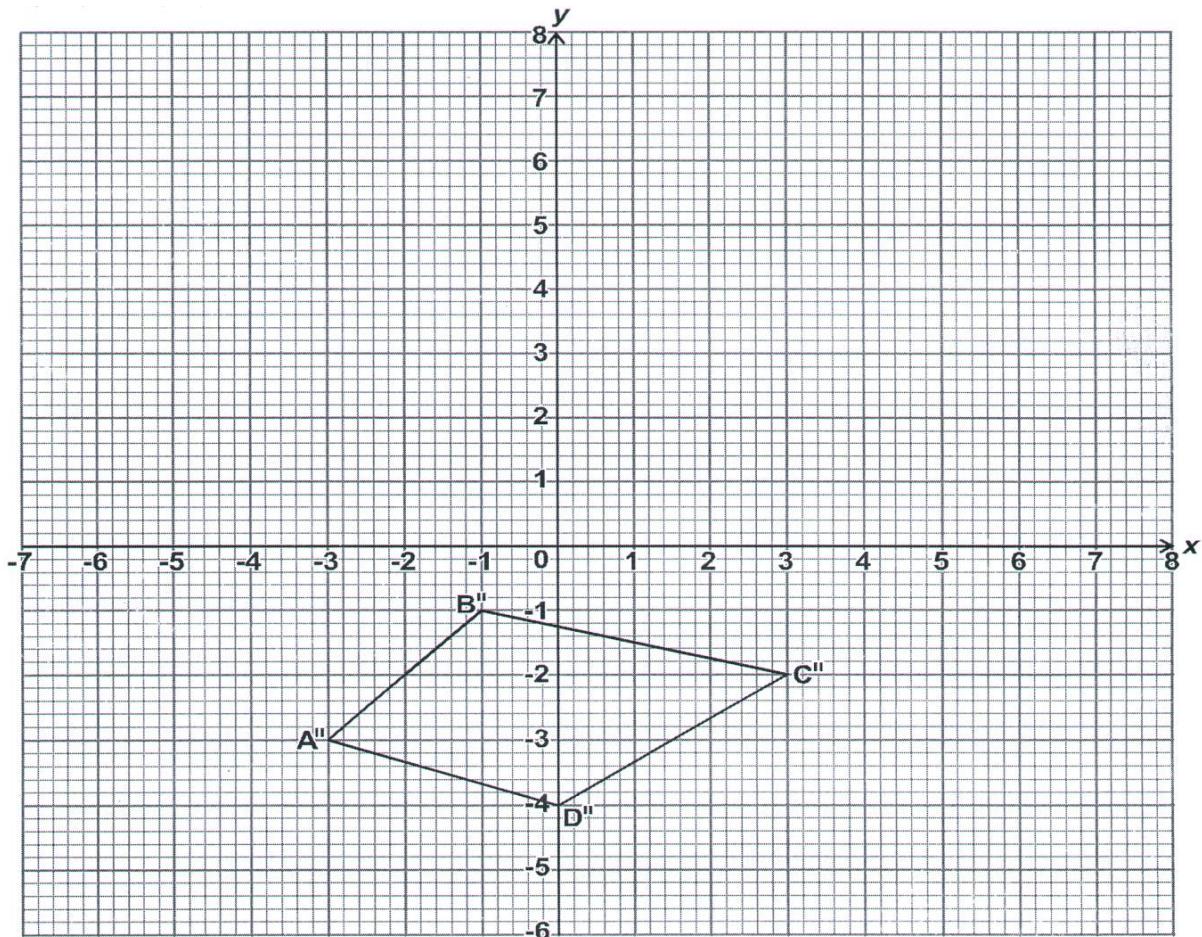
(a) The distance and the bearing of R from T. **(3mks)**

(b) The distance and the bearing of S from R. **(2mks)**

(c) The bearing of P from S **(1 mk)**

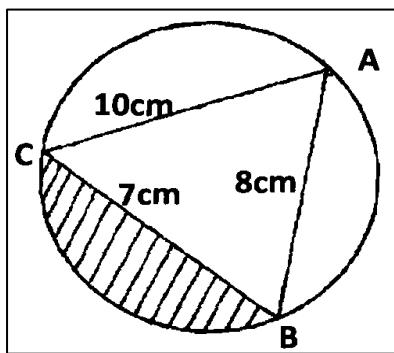
21. On the Cartesian plane given below, draw the quadrilateral ABCD with

vertices A(6,6)B(2,2)C(4,-6) and D(8,0). **(1mk)**



- a) Draw the image $A^1B^1C^1D^1$ of ABCD under enlargement scale factor $\frac{1}{2}$, centre origin. State the coordinate of $A^1B^1C^1D^1$ (3mks)
- b) Describe the transformation that maps $A^1B^1C^1D^1$ onto the given image $A^{11}B^{11}C^{11}D^{11}$ (2mks)
- c) Rotate $A^{11}B^{11}C^{11}D^{11}$ with center (-2, -1) through a positive quarter turn to get $A^{111}B^{111}C^{111}D^{111}$. state the coordinate of $A^{111}B^{111}C^{111}D^{111}$.(3mks)
- d) State a pair of quadrilaterals that are oppositely congruent. (1mk)

22. The figure below shows a triangle ABC inscribed in a circle. $AC = 10\text{cm}$, $BC = 7\text{cm}$ and $AB = 8\text{cm}$.

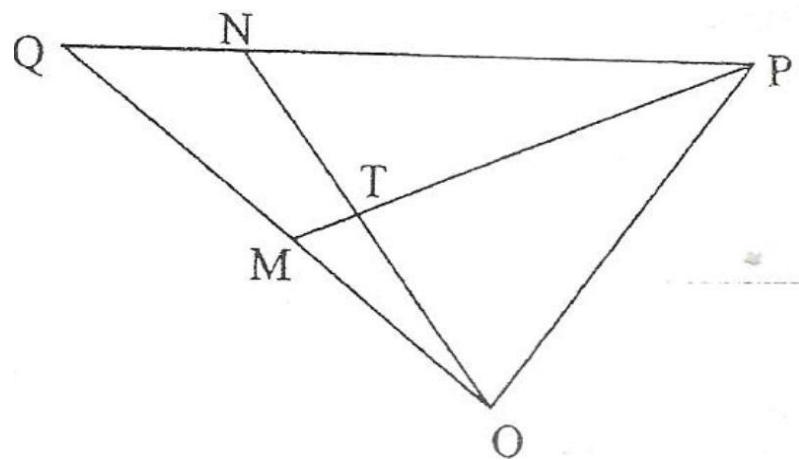


(a) Find the size of angle BAC . (3 mks)

(b) Find the radius of the circle. (2 mks)

(c) Hence calculate the area of the shaded region. (5 mks)

23. The diagram below shows a triangle OPQ in which $QN:NP = 1:2$, $OT:TN = 3:2$ and M is the midpoint of OQ.



- a) Given that $\mathbf{OP} = \mathbf{p}$ and $\mathbf{OQ} = \mathbf{q}$, Express the following vectors in terms of \mathbf{p} and \mathbf{q}
- \mathbf{PQ} (1 mks)
 - \mathbf{ON} (2 mks)

iii) PT (2 mks)

iv) PM (1 mk)

b) (i) Show that point P, T and M are collinear. (3 mks)

(ii) Determine the ratio MT: TP. (1 mk)

24. A school in Murang'a East decided to buy x calculators for its students for a total cost of ksh.16,200. The supplier agreed to offer a discount of ksh.60 per calculator. The school was then able to get three extra calculators for the same amount of money.

(a) Write an expression in terms of x , for the

(i) Original price of each calculator. (1mk)

(ii) Price of each calculator after the discount. (1mk)

b) Form an equation in x and hence determine the number of
Calculators the school bought. **(5mks)**

c) Calculate the discount offered to the school as a percentage.
(3mks)



THE BOOSTER NATIONAL SCHOOLS MOCK

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NAME.....ADM.....

DATE.....SIGN.....TARGE.....

KCPE MARKS.....PREV EXAM MKS.....INDEX.....

121/2

MATHEMATICS

TIME: 2 $\frac{1}{2}$ HOURS

INSTRUCTIONS TO CANDIDATES:

- (a) Write your name and index number in the spaces provided above
- (b) Sign and write the date of examination in the spaces provided above.
- (c) This paper consists of **TWO** sections: **Section I** and **Section II**.
- (d) Answer **ALL** the questions in **section I** and only five from **Section II**
- (e) All answers and working must be written on the question paper in the spaces provided below each question.
- (f) **Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.**
- (g) Marks may be given for correct working even if the answer is wrong.
- (h) **Non-programmable** silent electronic calculators and KNEC Mathematical tables may be used except where stated otherwise.

FOR EXAMINER'S USE ONLY

Section I

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

Section II

17	18	19	20	21	22	23	24	Total

Grand Total

SECTION 1:(50 MARKS.) ANSWER ALL THE QUESTIONS

(f) Use logarithms to evaluate. (4mks)

$$\frac{4.497 \times \sqrt{0.3673}}{1 - \cos 81.53^\circ}$$

2. Calculate the percentage error in the volume of a cone whose radius is 9.0cm and slant length 15.0cm. (3mks)

3. Make y the subject of the formula. (3mks)

$$v = \left(\frac{ax^2y}{w-y} \right)^{\frac{1}{2}}$$

4. Solve for x : $\tan^2 x - 2 \tan x = 3$ for the interval $0^\circ \leq x \leq 180^\circ$
(3 mks)

5. Solve the equations **(4mks)**

$$\begin{aligned}x + 3y &= 13 \\x^2 + 3y^2 &= 43\end{aligned}$$

6. Simplify $\frac{3 + \sqrt{5}}{\sqrt{5} - 2}$ give the answer in the form $a + b\sqrt{c}$ where a, b and c are integers. **(3mks)**

7. Kiprono buys tea costing sh 112 per kilogram and sh.132 per kilogram and mixes them, then sells the mixture at sh.150 per kilogram .If he is making a profit of 25% in each kilogram of the mixture, determine the ratio in which he mixes the tea. **(4mks)**

8. Find the value of x given that. (3mks)

$$\log_2(x^2 - 2) - \log_2\left(\frac{1}{2}x + 5\right) - 1 = 0$$

9. The tangent to the curve $y = ax^2 + bx + c$ is parallel to the line $y - 4x=0$ at the point where $x = 2$. If the curve has a minimum value of -3 where $x = 1$, find the values of a, b and c. (3 mks)

10. The points **A**, **B** and **C** lie on a straight line. The position vectors of **A** and **C** are $2\mathbf{i} + 3\mathbf{j} + 9\mathbf{k}$ and $5\mathbf{i} - 3\mathbf{j} + 4\mathbf{k}$ respectively; **B** divides **AC** internally in the ratio 2:1. Find the

(a) Position vector of **B**. (2 mks)

(b) Distance of **B** from the origin. (1 mk)

11.(a) Find the inverse of the matrix $\begin{pmatrix} 4 & 3 \\ 3 & 5 \end{pmatrix}$ (1 mks)

(b) Hence solve the simultaneous equation using the matrix method. (2 mks)

$$4x + 3y = 6$$

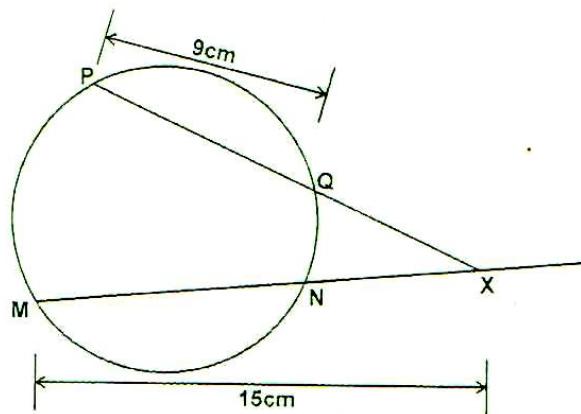
$$3x + 5y = 5$$

12. Find the radius and the centre of a circle whose equation is. (3mks)

$$3x^2 + 3y^2 + 18y - 12x - 9 = 0$$

13. A model of the globe representing the earth has a radius of 0.2m. Point A and B are located at (60° N, 140° E) and (60° N, 120° W),respectively. If O is the centre of the latitude 60 N, find the area of the minor sector OBA, in square metres. (3 mks).

14. Find the length NX in the figure below that $PQ = 9\text{cm}$, $PX = 12\text{cm}$ and $MX = 15\text{cm}$. (2 mks)

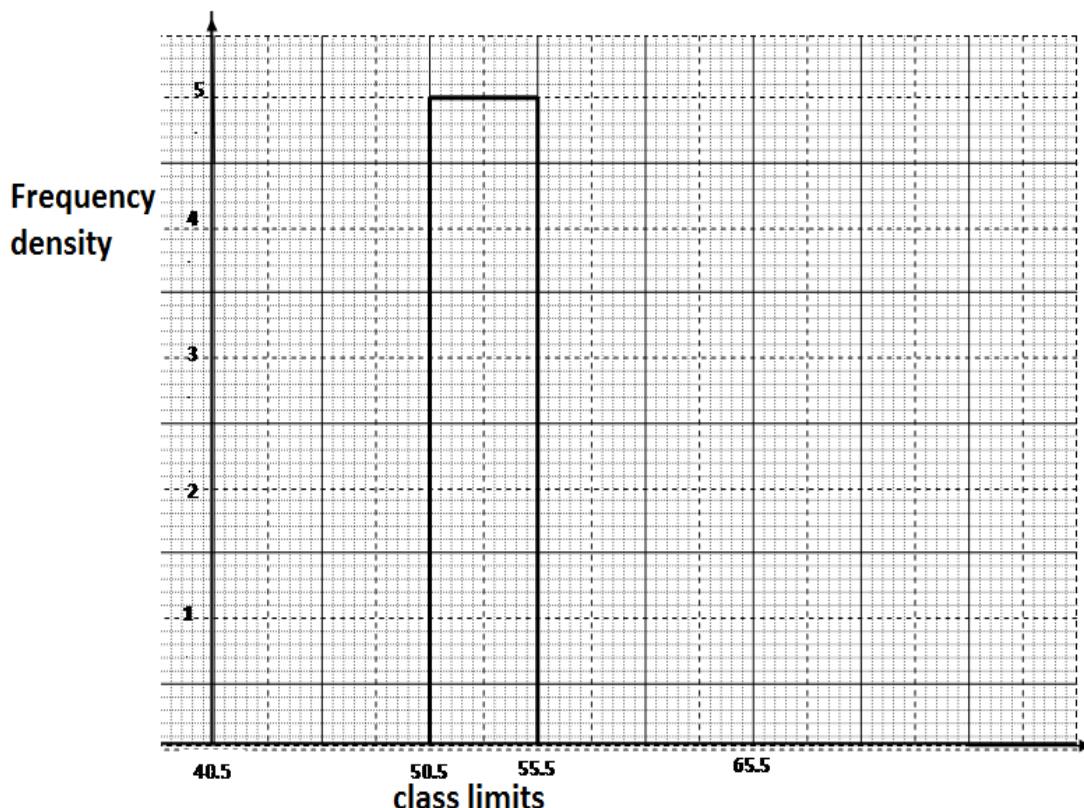


15. A colony of insects was found to have 250 insects at the beginning. Thereafter, the number of insects doubled every two days. Find the number of insects after 16 days. (3 mks)

16. The following data was obtained from the mass of a certain animal. Complete the table and the histogram below.

(3 mks)

Mass(kg)	frequency
41-50	20
51-55	
56-65	40



SECTION II (50 MARKS)

Answer ONLY FIVE questions in this section

17. The table below shows the rate at which income tax is charged for all income earned in a month in 2015.

Taxable Income p.m (Kenya pound) pound	Rate in % per Kenya
1 -236	10%
237 -472	15%
473 -708	20%
709 – 944	25%
945 and over	30%

Mrs. mumanyi earns a basic salary of 18000. She is entitled to a house allowance of Ksh. 6,000 a person relief of Ksh. 1064 month

. Every month she pays the following.

- a) Electricity bill shs.580
- b) Water bill shs. 360
- c) Co-operative shares shs. 800
- d) Loan repayment Ksh. 3000

(a) Calculate her taxable income in k£ p.m.

(2 mks)

(b) Calculate her P.A.Y.E (6 mks)

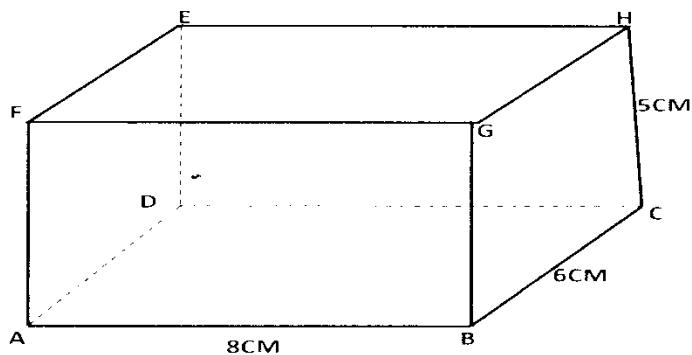
(c) Calculate her net salary. (2 mks)

18 (a) Use the trapezium rule with six trapezia to calculate the areas bounded by the curve $Y=2x^2+3x+1$, the axis and the ordinate $x=0$ and $x=3$. (5mks)

b) Calculate the exact area in (a) above by integration. (3mks)

c) Assuming they are calculated in (a) above is an estimate, calculate the percentage error made when the trapezium rule is used leaving your answer to 2 decimal places. **(2mks)**

19. The figure below shows a cuboid.



Calculate

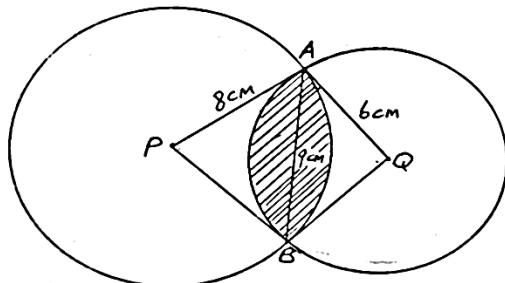
(a) The length **BE**. (2 mks)

b) The angle between BE and plane ABCD. (3 mks)

c) The angle between FH and BC. (2mks)

d) The angle between place AGHD and plane ABCD. (3 mks)

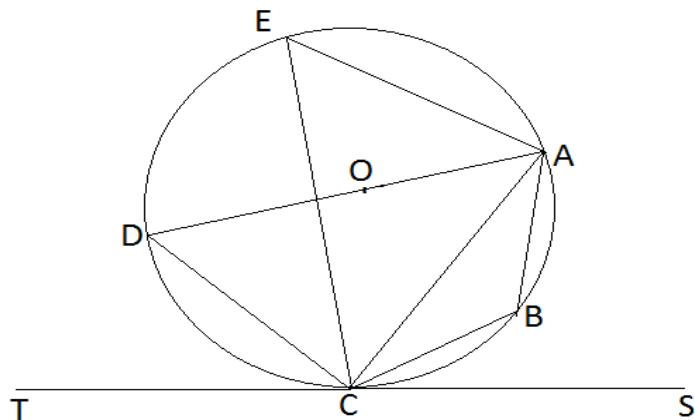
20. The figure below shows two intersecting circles radii 8cm and 6cm respectively. The common chord AB = 9cm and P and Q are the centres as shown.



- a. Calculate the size of angle
- i. $\angle APB$ (1mk)
- ii. $\angle AQB$ (1mk)
- b. Calculate the area of
- i. Minor segment of the circle centre P. (2mks)
- ii. Minor segment of the circle centre Q (2mks)
- iii. The quadrilateral APBQ (2mks)

iv. The shaded region (2mks)

21. In the figure below DA is a diameter of the circle ABCDE centre O. TCS is a tangent to the circle at C, AB = BC and angle DAC = 38°



Giving reasons, determine the following angles:

(a) $\angle DCT$ (2 mks)

(b) $\angle DEA$ (2 mks)

(c) $\angle ACB$ (2 mks)

(d) $\angle BDC$ (2 mks)

(e) $\angle BOA$

(2 mks)

22. A flower garden is in the shape of a triangle ABC such that AB = 9M, AC=7.5M and angle ACB=75°. Using a rule and a pair of compass only.

a) Construct $\triangle ABC$ **(3mks)**

b) Construct a locus of P such that AP = PC. **(2mks)**

c) Construct locus of Q such that it is equal distance from AB and BC

and locus of R which is 2m from AC. **(2mks)**

d) Flowers are to be planted such that they are nearer AC than AB
and

less than 5m from a shade the portion with flowers. **(3mks)**

23. Three variables p, q and r are such that p varies directly as q
and inversely as the square of **r**.

a. When **p = 9**, **q = 12** and **r = 2** find **p** when **q = 15**
and

$$\mathbf{r = 5} \quad \mathbf{(4mks)}$$

b. Express **q** in terms of **p** and **r** **(1mk)**

c. If p is increased by 20% and r is reduced by 10% find,

- A simplified expression for the change in q in terms of **q** and **r**. **(3mks)**

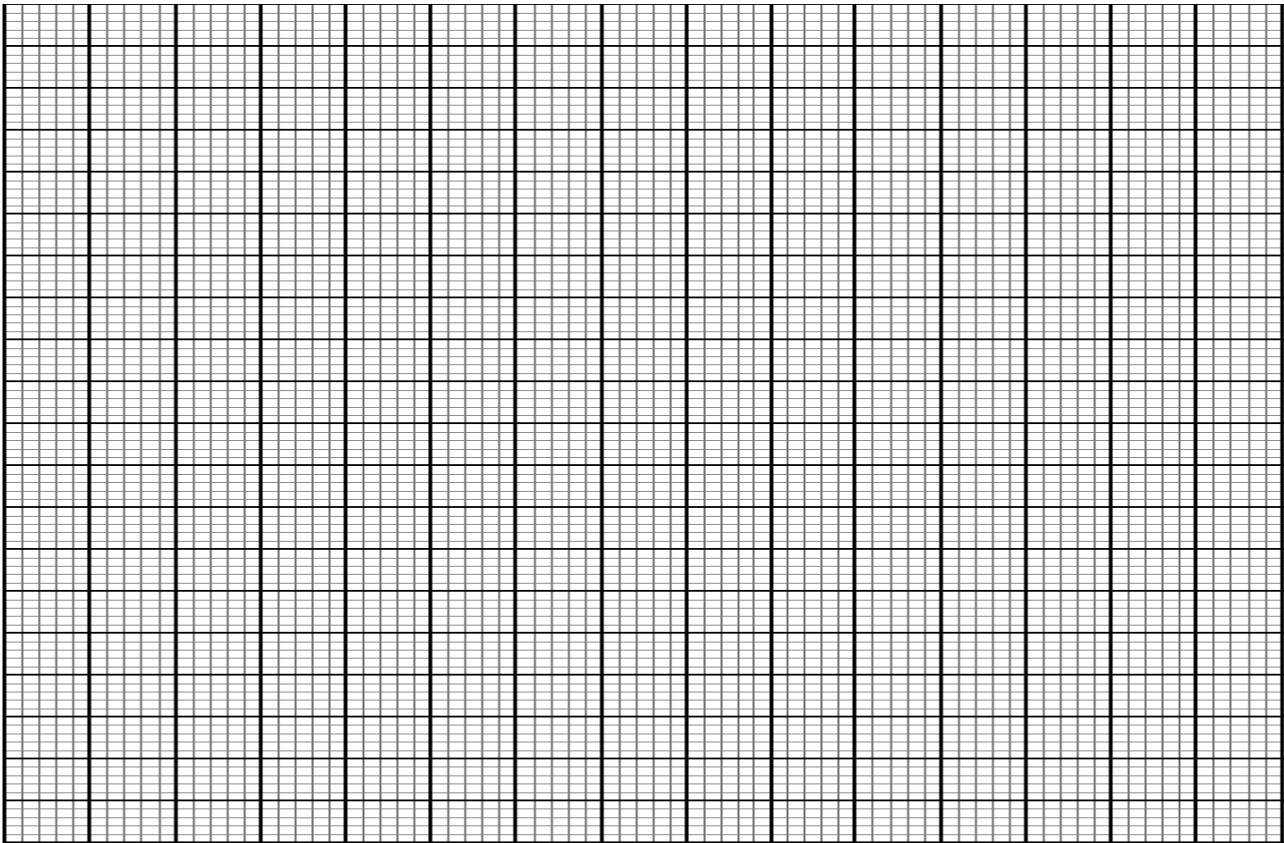
- The percentage change in **q**. **(2mks)**

24. The table below shows some values of the curve $y = 2\cos x$ and $y = 3 \sin x$.

- Complete the table for values $y=2\cos x$ and $y=3 \sin x$, correct to 1 decimal places. **(3mks)**

X	0	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°	360°
$y=2\cos x$	2		1	0			-1.7	-1.7	-1		1	1.7	2
$y=3\sin x$	0	1.5		3	2.6				-2.6			-1.5	0

On the grid provided draw the graphs of $y=2\cos x$ and $y=3\sin x$ for $0^\circ \leq x \leq 360^\circ$ on the same axis. (5mks)



360⁰ on the same axis. (5mks)

vii) Use the graph to find the values of x when $2\cos x - 3\sin x = 0$.
(2mks)

viii) Use the graph to find the values of y when $2 \cos x = 3 \sin x$.
(1mk)



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PHYSICS PAPER 3

CONFIDENTIAL

The following apparatus should be provided for the Physics practical paper;

Question one

You are provided with the following:

- 2 new dry cells size D
- A cell holder
- A switch
- A millimeter of range 0 to 1 mA
- A capacitor labeled C ($2200\mu F$)
- 8 connecting wires; at least four with crocodile clips on one end
- A stopwatch
- A carbon resistor labeled **R (4.7KΩ)**

Question Two

You are provided with the following;

- a rectangular glass block of dimensions; 9.6cm X 6.0cm X 2.4cm (Tolerance + or - 0.2cm)
- 4 optical pins
- 2 thumb pins
- a soft board
- a plain paper



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PHYSICS PAPER 1

2 Hours

Kenya Certificate of Secondary Education

INSTRUCTIONS

Write your name and admission number in the space provided

Sign and write the date of the examination in the space provided above

This paper consists of two sections A and B.

Answer all the questions in the spaces provided.

All workings must be clearly shown.

Mathematical tables and silent electronic calculators may be used.

For examiner's use only

SECTION	QUESTION	TOTAL MARKS	CANDIDATE'S SCORE
A	1-13	25	
B	14	14	
	15	10	
	16	11	
	17	10	
	18	10	
		GRAND TOTAL	80 MARKS

TOTAL CANDIDATE'S SCORE

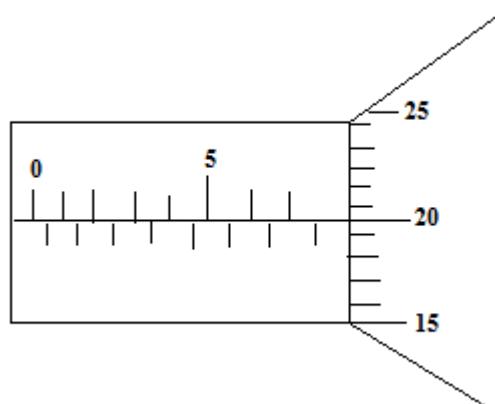
Section A

+ section B

This paper consists of 10printed pages

SECTION A (25 MARKS)

1. The figure below shows a micrometer screw gauge. What is the reading shown on the figure.
(2 marks)



2. State pressure law. (1 mark)

.....
.....

3. State two factors that affect stability of a body. (2 marks)

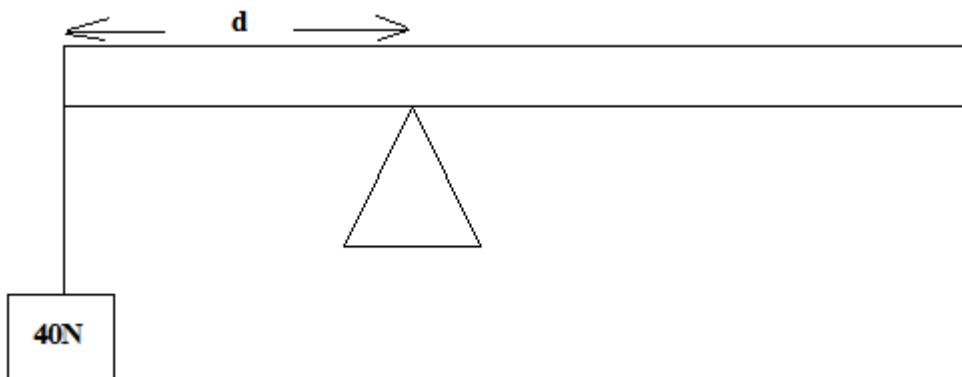
i)

.....
.....

ii)

.....
.....

4. The diagram below shows a uniform wooden plank of length 4m and weight 10N. The plank is held at equilibrium by a weight of 40N placed at one end as shown below.



Determine the distance d.

(3 marks)

-
.....
.....
.....
5. Figure below shows a non-viscous fluid that is not compressible moving through a pipe of varied cross-sectional area.



If the area of the narrow region is 0.05m^2 , calculate diameter of the wider region. (3 mark

-
.....
.....
.....
6. State one use of thermal expansion. (1 mark

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

7. State two factors that affect melting point of a substance. (2 marks)

i)

.....
.....

ii)

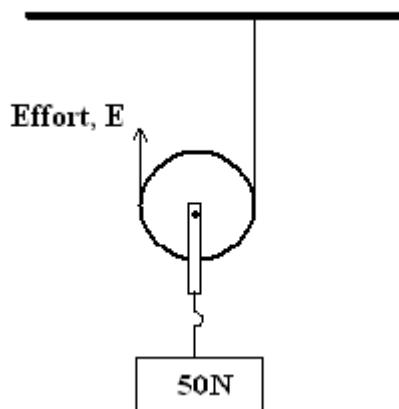
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8. A body is projected vertically upwards from the top of a building. If it lands on the base of the building. Sketch the velocity-time graph for motion. (2 marks)

9. State a reason why transfer by radiation is faster than by conduction. (1 mark)

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.....

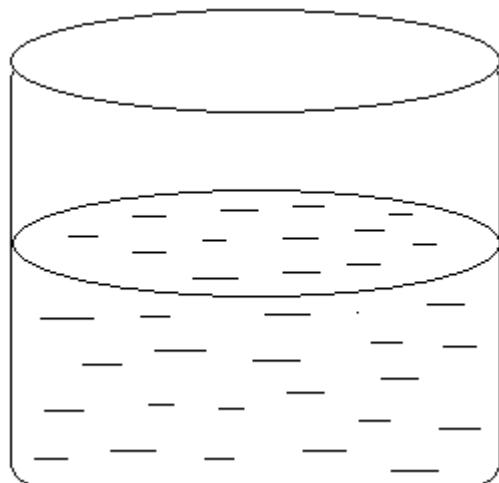
10. The pulley system in the figure below supports a load of 50N.



Given that the efficiency of the system is 80% calculate the effort, E. (3 marks)

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.....

11. The figure below shows a glass container with cross-section area of 50cm^2 .



When a wooden block of mass 120g is immersed into the water it floats while fully submerged and the water level rises by 4cm, determine the density of the water. (3 marks)

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12. Define the term momentum. (1 mark)

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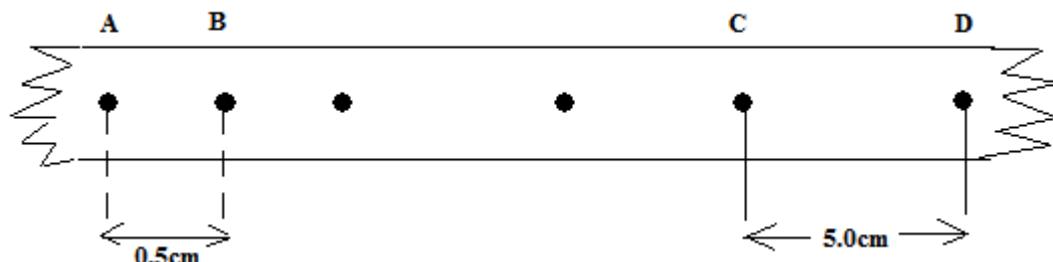
13. What is a pitch of a screw. (1 mark)

.....

.....

SECTION B

14. The figure below shows the motion of a trolley on ticker timer. The ticker has a frequency of 100Hz.



a) i) Calculate the initial velocity between A and B. (3 marks)

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.....

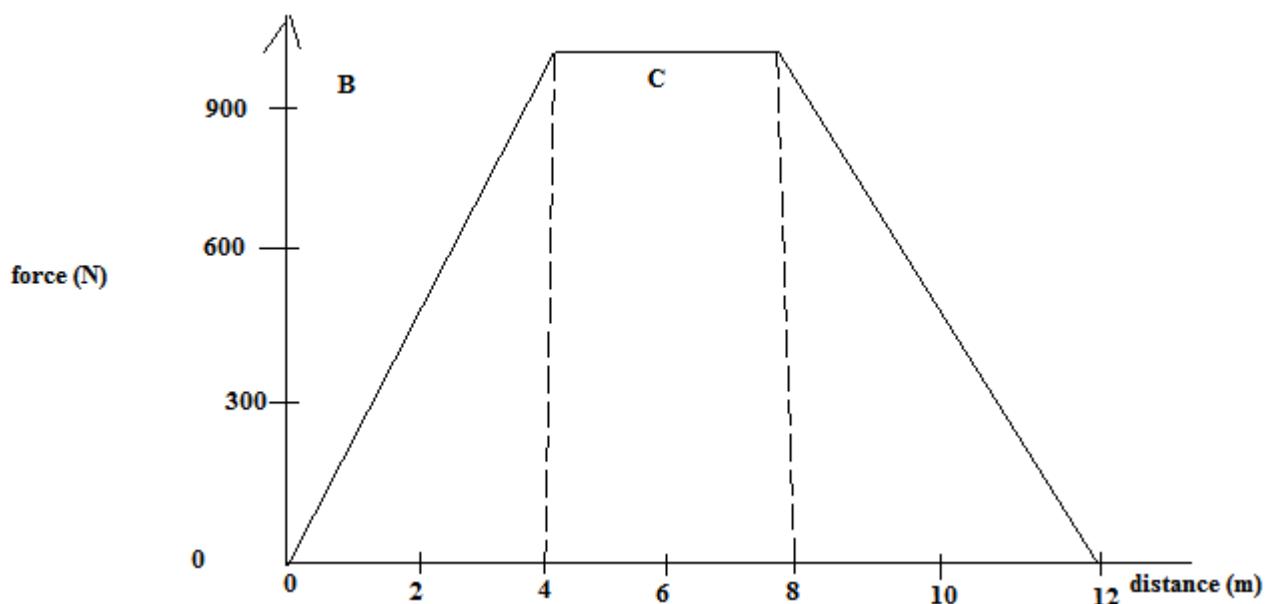
ii) Calculate the final velocity between C and D. (3 mks)

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.....

iii) Calculate the acceleration of the trolley during the motion. (3 marks)

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.....

b) Figure below shows a force-distance graph for a car being towed on a level ground.



i) Calculate the total work done. (3 marks)

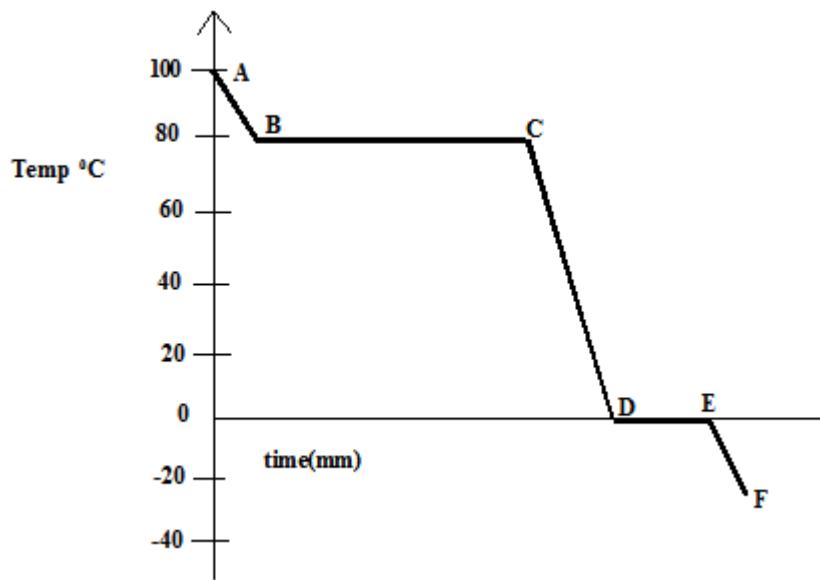
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.....
- ii) If the velocity just before reaching point C is 0.6m/s. Calculate the power developed by the engine
at this point.

(2 marks)

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.....
.....

15. a) A metal ball of mass 100g is dipped into boiling water at 100°C and then placed in a calorimeter containing 80g of water at 20°C . After stirring, the temperature of the mixture stabilizes at 23.4°C . Ignoring the heat gained by the calorimeter, determine the specific heat capacity of the metal. (Specific heat capacity of water = 4200J/Kg K). (4 marks)
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- b) The cooling curve below is for a pure substance.



i) What is the melting point of the substance. (1 mark)

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ii) State two factors that affect boiling point of a substance.

i)

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ii)

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iii) At what part of the curve is the substance.

Solid only?

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Liquid only?

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Solid and Liquid?

(3 marks)

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16. a) State Newton's second law of linear motion. (1 mark)

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- b) The legal speed limit on motorways is approximately 30m/s . In an incident on a motorway, a car of mass 900kg leaves a skid mark 75m long when stopping. The maximum deceleration of the car when skidding is approximately 10m/s^2 .
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- i) Show that before the incidence, the car must have been travelling above the legal speed limit.

(3 marks)

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- ii) Calculate for this skid, the maximum average braking force between each of the four tyres and the road.

(3 marks)

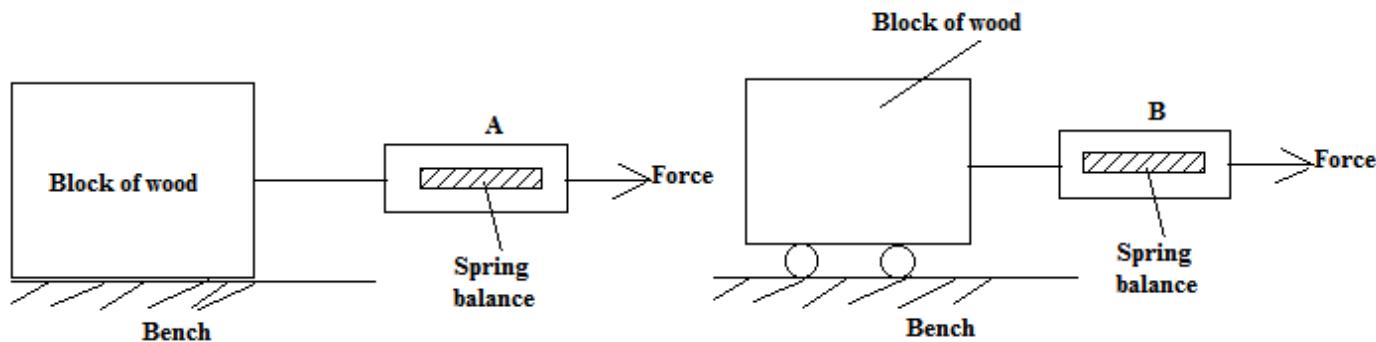
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- iii) When the motorway is wet, the braking force provided by each wheel is reduced to 50% of the calculated in (ii) above. What is the effect of this reduced breaking force on stopping distance, explain your answer. Assume that the speed of the car before breaking is the same in both cases.

(2 marks)

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- c) A student carried out an experiment to measure static friction using identical wooden blocks



arranged as shown in the figure.

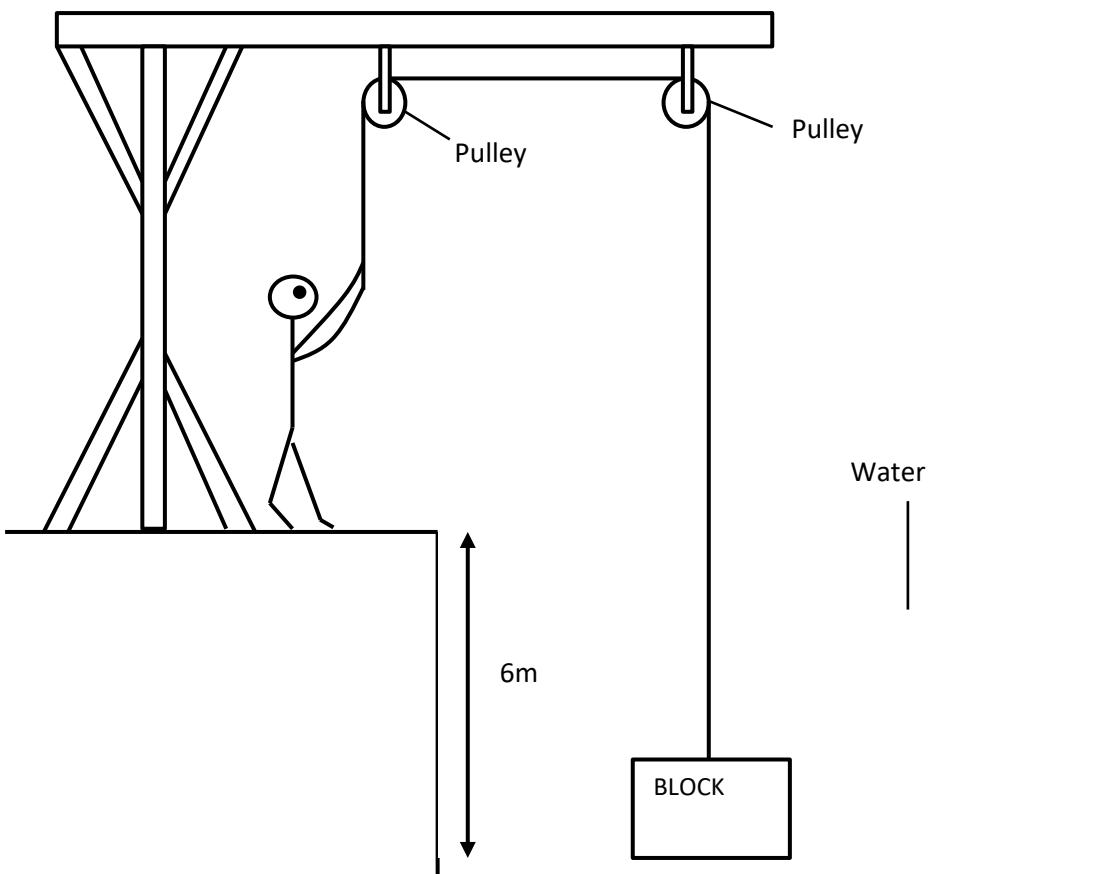
State and explain which spring balance will indicate a smaller reading when the block just starts to move. (2 marks)

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17. a) Give a reason why people experience nose bleeding when they climb tall mountains. (1 mark)

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- c) The diagram shows a person raising a concrete block from a river bed by using two pulleys.



As shown in the diagram, the top of the block is 6.0m below the water surface. The density of water is 1000kg/m^3 and the acceleration of free fall is 10m/s^2 . Calculate the water pressure acting on the top of the block. (3 marks)

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- c) The block is raised through water. At one part, the water pressure acting on the top of the block $4.5 \times 10^4 \text{ Pa}$. The area of the top of the block is 0.015m^2 . Calculate the downward force exerted by the water on top of the block. (3 marks)

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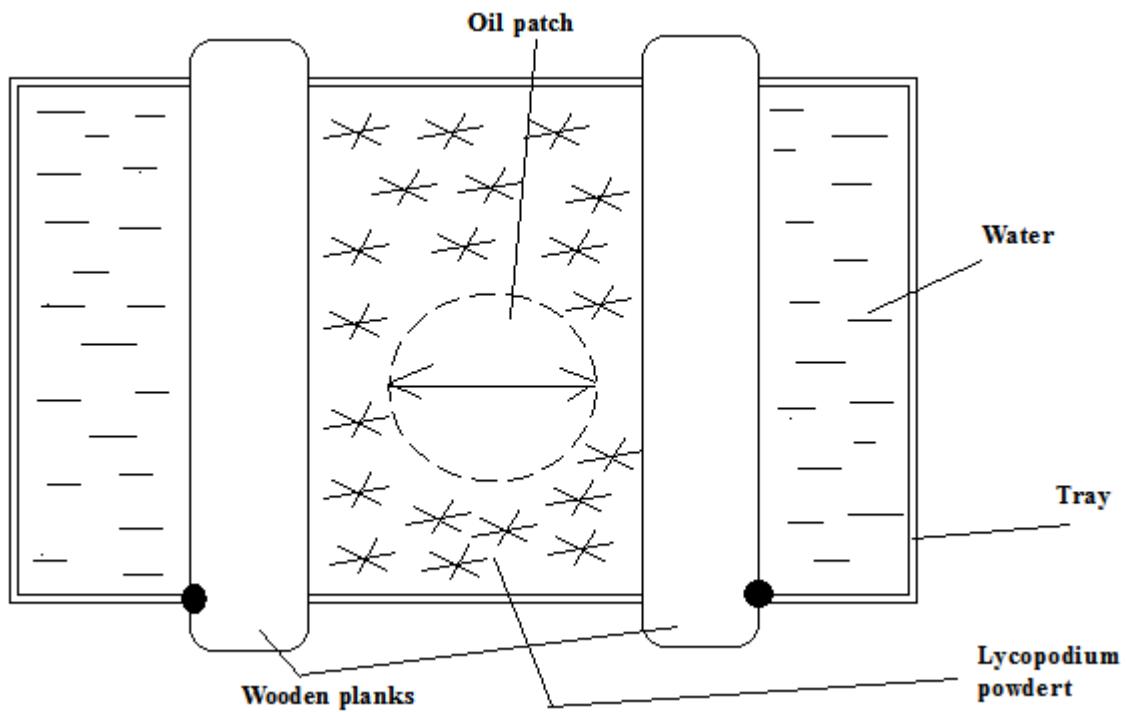
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- d) When the block is clear of the water, it is raised a further 4.0m. The weight of the block is 550N. Calculate the work on the block as it is raised the 4.0m through a (3 marks)

18. The figure below shows part of an experiment set up to estimate the diameter of an oil molecule.



- i) Describe how the oil patch is formed. (2 marks)

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- ii) What is the role of the Lycopodium powder. (1 mark)

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- b) An oil drop of average diameter 0.7mm spreads out into a roughly circular patch of diameter 73.5cm

on the surface of water in a trough.

- i) Calculate volume of the drop in mm³. Take ($\pi = \frac{22}{7}$) (3 marks)

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- ii) Calculate the area of the patch in mm³. (2 marks)

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- iii) Calculate the thickness of the oil molecule and express your answer in standard form. (2 marks)

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THE BOOSTER NATIONAL SCHOOLS MOCK

SCHOOL NAME.....

NAME.....ADM.....

DATE.....SIGN.....TARGE.....

KCPE MARKS.....PREV EXAM MKS.....INDEX.....

PHYSICS PAPER 2

2 Hours

(Kenya Certificate of Secondary Education)

INSTRUCTIONS

Write your name and admission number in the space provided

Sign and write the date of the examination in the space provided above

This paper consists of two sections A and B.

Answer all the questions in the spaces provided.

All working must be clearly shown.

Mathematical tables and electronic calculators may be used.

For examiner's use only

SECTION	QUESTION	TOTAL MARKS	CANDIDATE'S SCORE
A	1-13	25	
B	14	11	
	15	13	
	16	11	
	17	10	
	18	10	
		GRAND TOTAL	80 MARKS

TOTAL CANDIDATE'S SCORE

Section A

+ section B

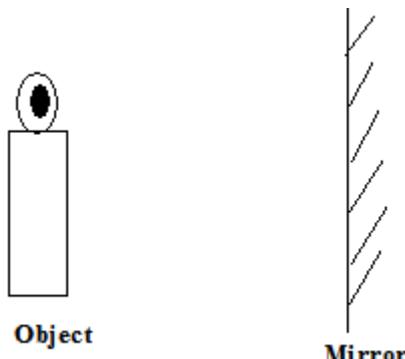
This paper consists of 9 printed pages

SECTION A (25 Marks)

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

1. Locate the position of the image of the object placed in front of a plane mirror shown below.

(2 mks)



2. Show the magnetic field pattern of the current carrying conductors shown below. (2 mks)



3. State two factors that determine the strength of an electromagnet. (2 mks)

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4. State two advantages of using a convex mirror as a driving mirror. (2 mks)

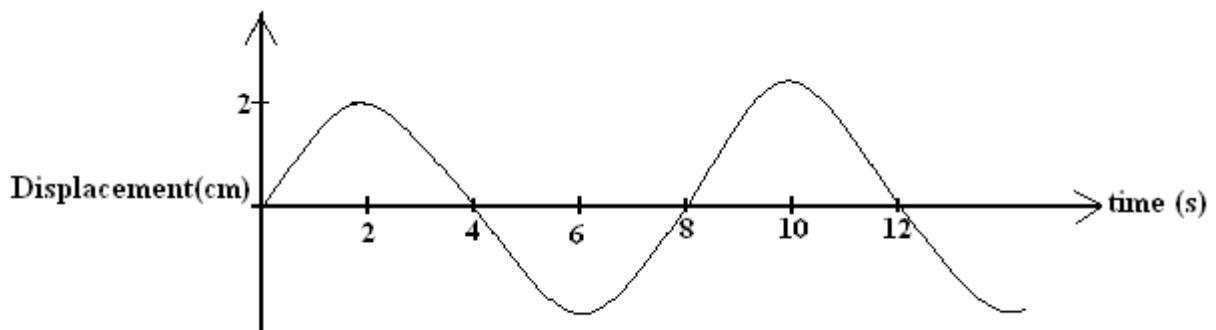
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5. State two factors that affects the resistivity of an electrical conductor. (2 mks)

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6. The figure below shows a wave in progress.



Determine the

a) Amplitude (1 mark)

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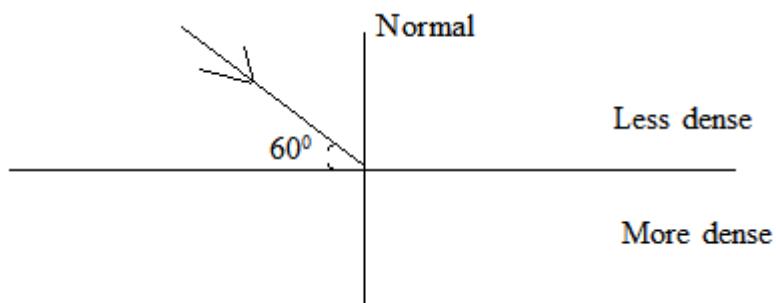
b) Frequency (2 marks)

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7. The figure below shows light travelling from less dense to more dense medium.



a) Show the direction of the refracted ray. (1 mark)

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b) If the refractive index of the more dense medium is 1.4, calculate the angle of refraction. (3 marks)

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8. A current ,I, flowing through a wire of resistance ,R, is increased by seven times. Determine the factor by which the rate of heat production was increased. (3 marks)

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9. The wavelength of a radio wave is 1km. Determine its frequency if the speed is $3 \times 10^8 \text{ ms}^{-1}$ (2 marks)

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10. State two uses of gold leaf electroscope. (2 marks)

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11. Give a reason why soft iron is used as a core of the coil of an electric bell. (1 mark)

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12. State two differences between pinhole camera and the human eye.

(2 marks)

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13. State two types of waves.

(2 marks)

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SECTION B (55 MARKS)

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

14. a) Define the following terms.

i) Capacitor (1 mark)

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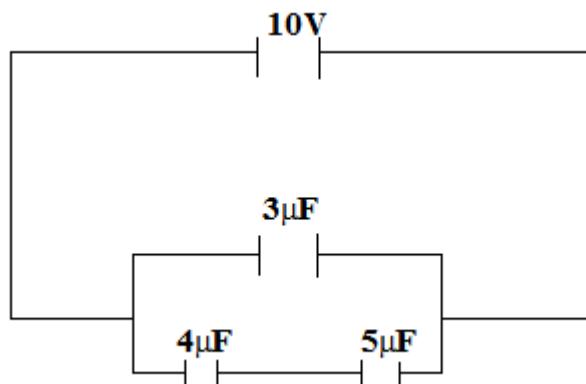
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ii) Capacitance (1 mark)

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b) Three capacitors are connected to a 10v battery.



Calculate

- i) the effective capacitance (3 marks)

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- ii) the total charge (3 marks)

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- c) State three factors that determine the capacitance of a capacitor. (3 marks)

i)

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ii)

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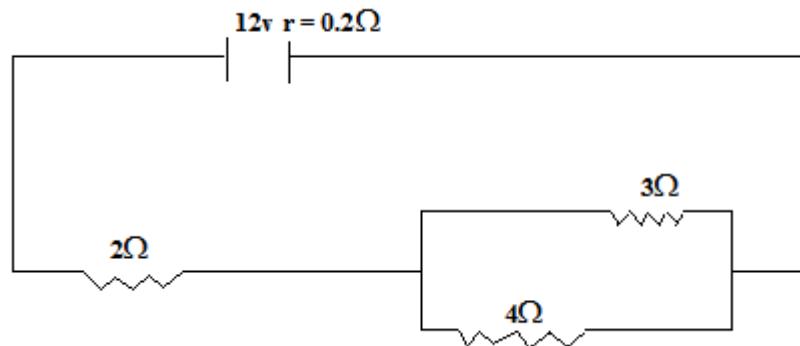
iii)

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15. a) Define a resistor. (1 mark)

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- b) The figure below shows three resistors connected to 12v supply of internal resistance of 0.2Ω .



Calculate

- i) the effective resistance. (3 marks)

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- ii) the total current in the circuit. (2 marks)

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- iii) the current through the 4Ω resistance. (3 marks)

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- c) If the current flows for 2 minutes calculate the total energy dissipated. (2 marks)

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d) State two applications of resistors in real life situation. (2 marks)

(i) .

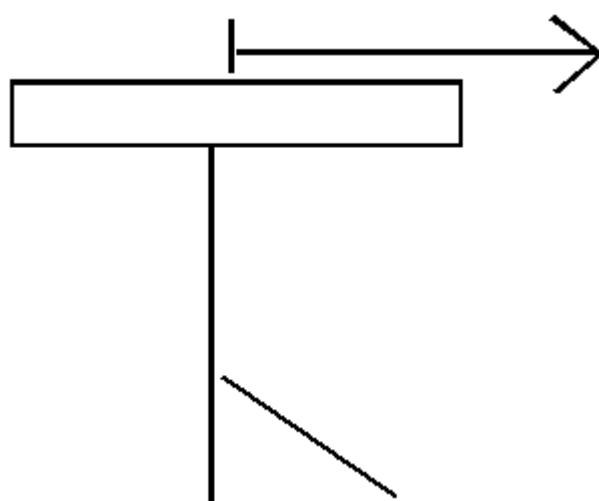
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(ii).
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16. a) Explain briefly how a material acquires a positive charge. (3 marks)

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b) A steel pin is placed on the cap of a highly charged electroscope.



State and explain the observation that will be made on the gold leaf. (2 marks)

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c) State a reason why a candle flame is blown away when a highly charged metal is brought close to it. (2 marks)

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d) Explain briefly why it is not advisable to take shelter on a tree when it is raining. (2 marks)

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e) State two dangers of electrostatic charges. (2 marks)

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17. a) State two methods of magnetisation. (2 marks)

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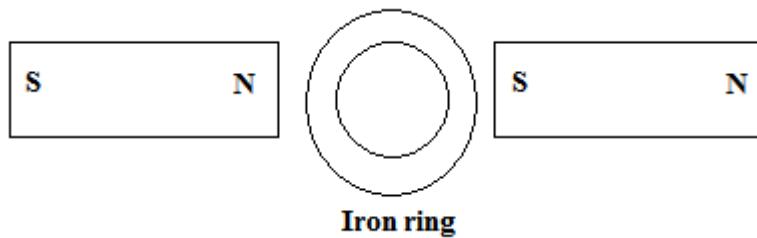
b) Why is repulsion the surest way of identifying a magnet. (2 marks)

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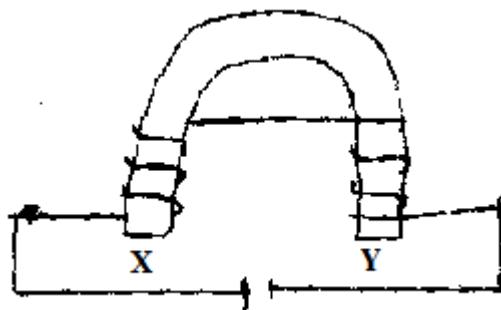
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c) Complete the diagram below to show the magnetic field patterns. (2 marks)



d) i) The figure below in a U-shaped iron core. Indicate the polarity at X and Y. (2 marks)



ii) State two applications of such an electromagnet. (2 marks)

18. a) A pin is placed at the bottom of a beaker containing a transparent liquid. When viewed from the top

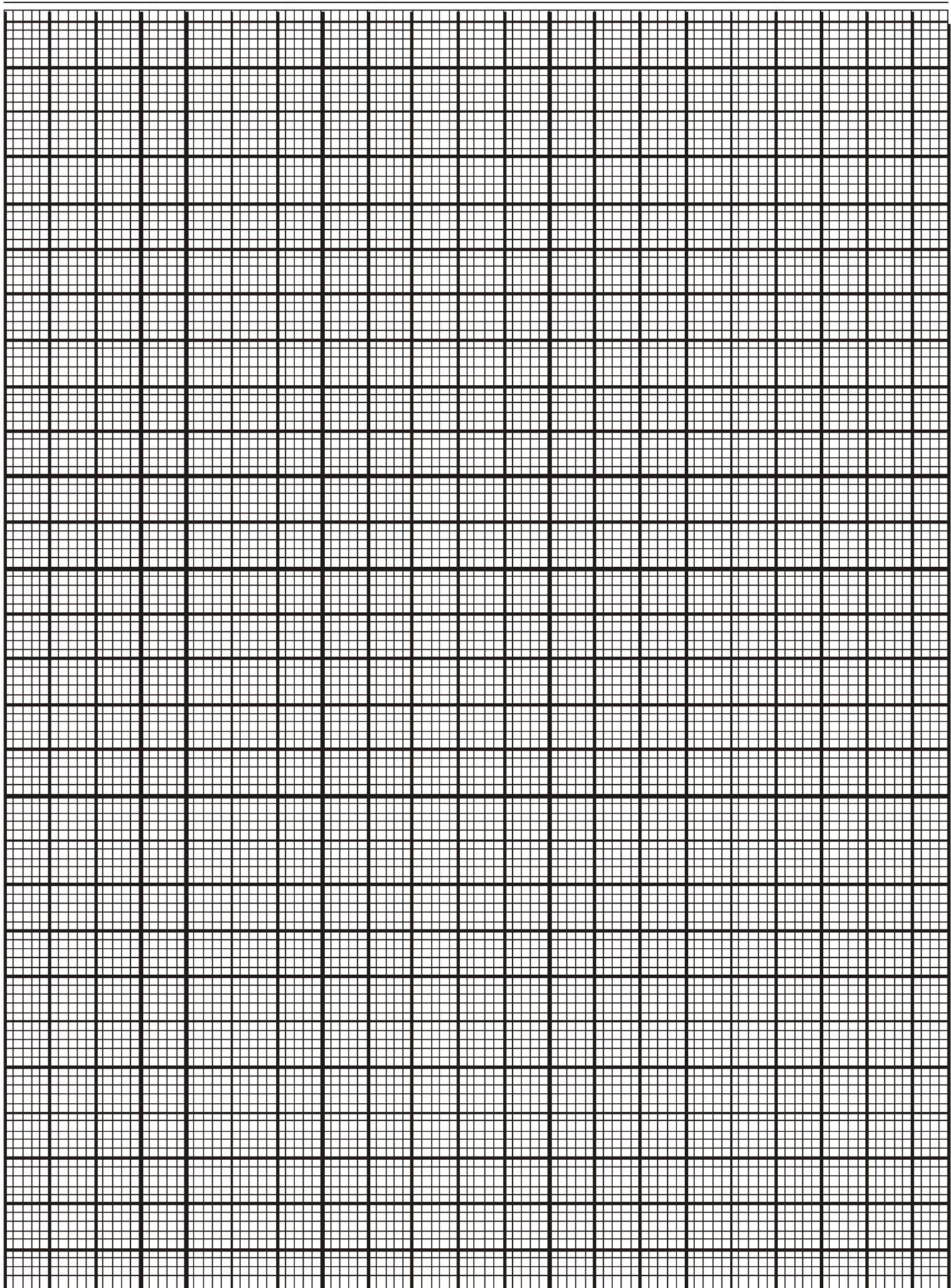
the pin appears nearer the surface than it actually is. Explain the observation. (2 marks)

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b) The table below shows the results obtained from such an experiment.

Apparent depth (cm)	2.21	3.68	5.15	6.62	8.09
Real depth cm	3.0	5.0	7.0	9.0	11.0

i) Plot a graph of real depth against apparent depth. (5marks)





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SCHOOL NAME.....

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KCPE MARKS.....PREV EXAM MKS.....INDEX.....

Kenya Certificate of Secondary Education

PHYSICS (PRACTICAL) Paper 3

TIME: 2 ½ HOURS

Instructions

- Write your name, index number and admission number in the spaces provided above.
- Sign and write the date of examination in the spaces provided above.
- Answer ALL questions in the spaces provided in the question paper.
- You are supposed to spend the first 15 minutes of the 2 ½ hrs allowed for this paper reading the whole paper carefully before commencing your work.
- Marks are given for a clear record of the observations actually made, their suitability, accuracy and the use made of them.
- Candidates are advised to record their observations as soon as they are made.
- Non-programmable silent electronic calculators and KNEC mathematical tables may be used except where stated otherwise.
- This paper consists of 8 printed pages.
- Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

For Examiner's Use Only

Question 1	c	d	g	h	i	(j)	(k)		TOTAL
Maximum Score	1	1	8	5	2	2	1		20
Candidate's Score									
Question 2	c	e	f	g	h	i	j	k	TOTAL
Maximum Score	1		6		5	3	3	2	20
Candidate's Score									40

Question one

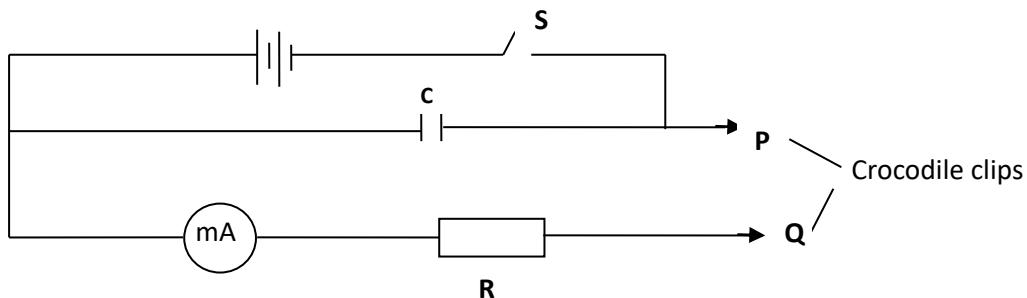
GRAND TOTAL

You are provided with the following:

- 2 new dry cells size D
- A cell holder
- A switch
- A milliammeter of range 0 to 1 mA
- A capacitor labeled C
- 8 connecting wires; at least four with crocodile clips on one end
- A stopwatch
- A carbon resistor labeled R

Proceed as follows

- a. Connect the circuit as shown in the **figure 1** below, where P and Q are crocodile clips.



- b. Close the switch S

- c. Name the process which takes place when the switch S is close (1 mark)

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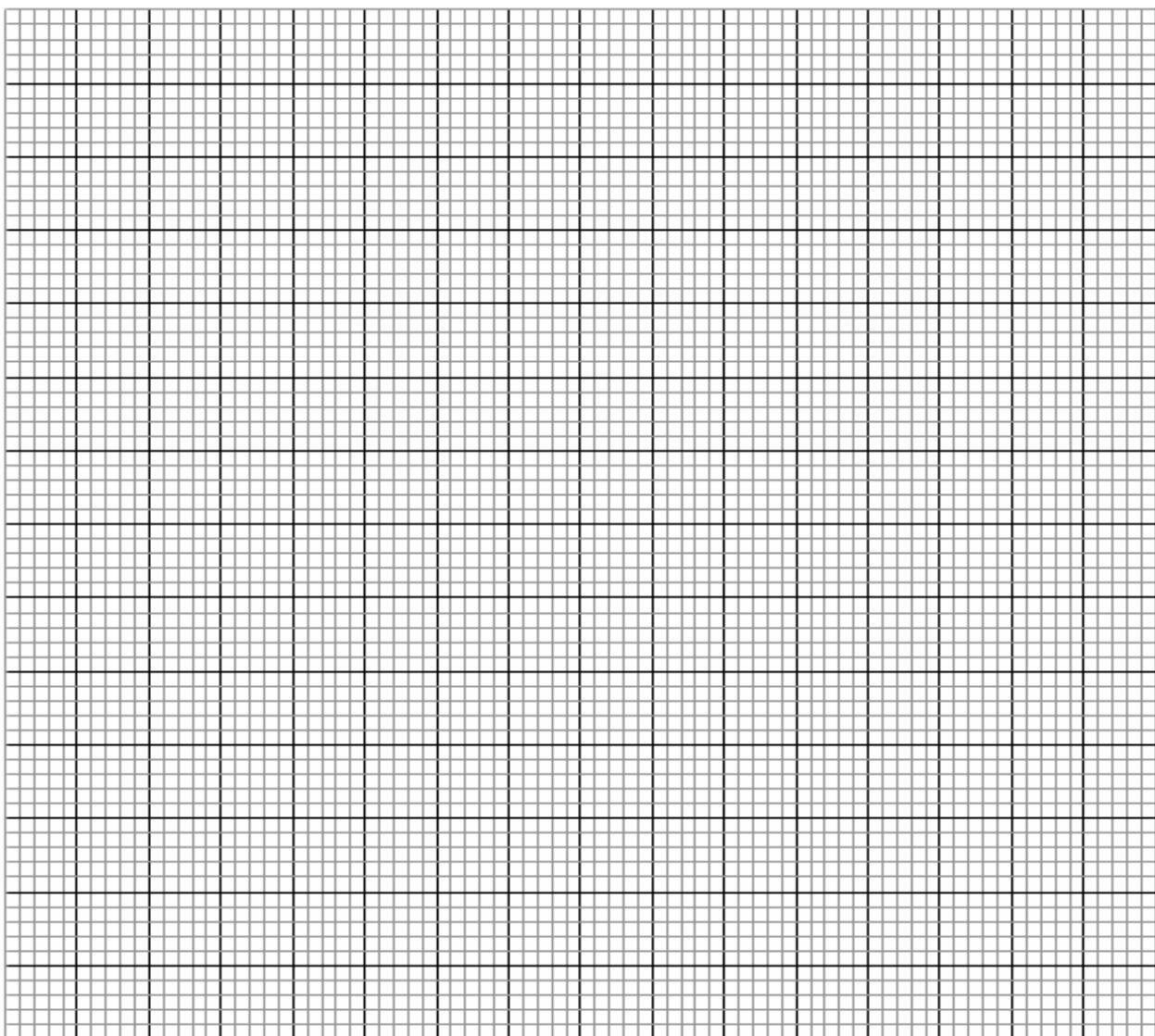
- d. Connect the crocodile clips P and Q. Observe and record the highest reading of the milliammeter I_o (This is the current at $t_0 = 0$)

$$I_o = \dots \text{ mA} \quad (1 \text{ mark})$$

- e. While the milliammeter show the maximum value of current I_o , open the switch S and start the stop watch simultaneously. Stop the stop watch when the current has dropped from I_o to 0.5 mA. Read and record in the table below the time taken
- f. Reset the stop watch and close the switch. Repeat the procedure in (e) to measure and record the time taken for the current to drop from I_o to each of the other values shown in the table below. (5 marks)

Current I (mA)	0.5	0.4	0.3	0.2	0.1
Time t (s)					

g. Plot a graph of Current \mathbf{I} (y – axis)(mA) against time \mathbf{t} (s) (5 marks)



h. From your graph, find \mathbf{W} the value of \mathbf{I} when $\mathbf{t} = \mathbf{10s}$. (3 marks)

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i. Given that $\mathbf{A} = \mathbf{10W}$, determine the value of \mathbf{A} . (3 marks)

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j. Determine the voltage across **R** at **t = 10s** given that $R = 4.7\text{k}\Omega$ (2 marks)

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Question Two

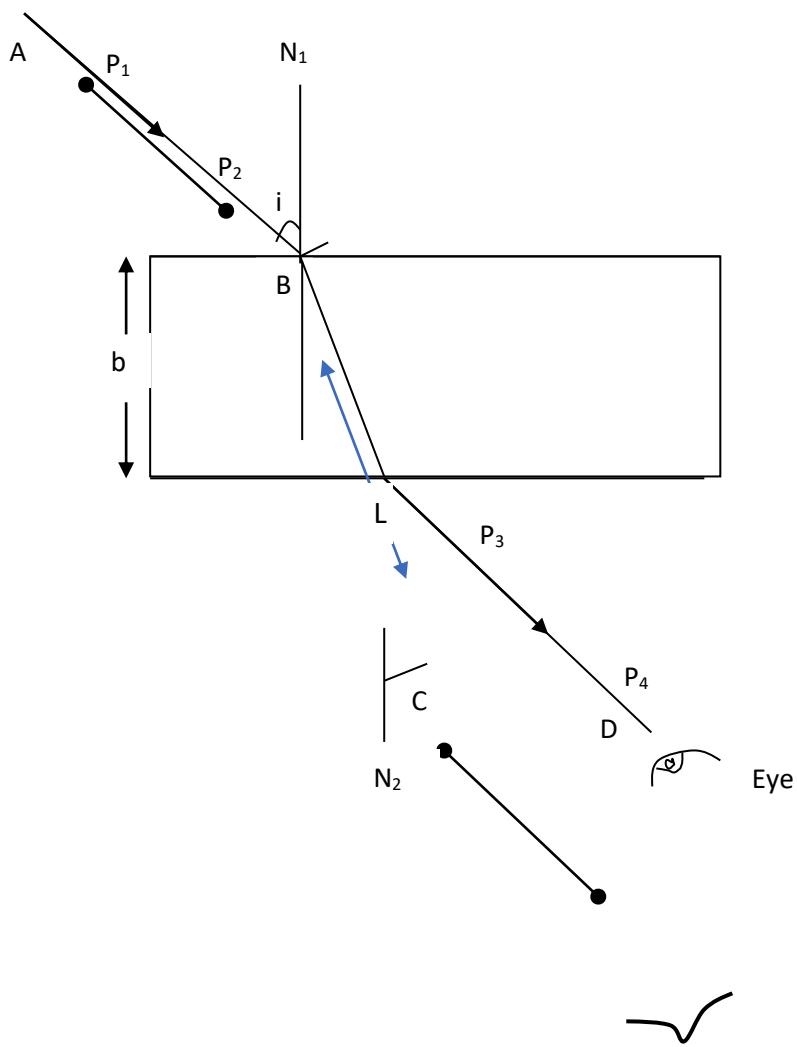
You are provided with the following;

- a rectangular glass block
- 4 optical pins
- 2 thumb pins
- a soft board
- a plain paper

Proceed as follows:

(a) Place the glass block on the plain paper with one of the largest face upper most.

Trace round the glass block using a pencil as shown below.



- (b) Remove the glass block and construct a normal at B. Construct an incident ray AB of angle of incidence, $i = 20^\circ$.

- (c) Measure the breadth **b** of the glass block

breadth **b** = (1 mark)

- (c) Replace the glass block and trace the ray ABCD using the optical pins.

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- (d) Remove the glass block and draw the path of the ray ABCD using a pencil.

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(e) Measure the length L and record it in the table below

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Angle i°	L (cm)	L^2 (cm) 2	$\frac{1}{L^2}$ (cm $^{-2}$)	Sin 2i
20				0.1170
30				0.25
40				0.4312
50				0.5868
60				0.75
70				0.8830

(6 marks)

(f) Repeat the procedure above for the angles of incidence given.

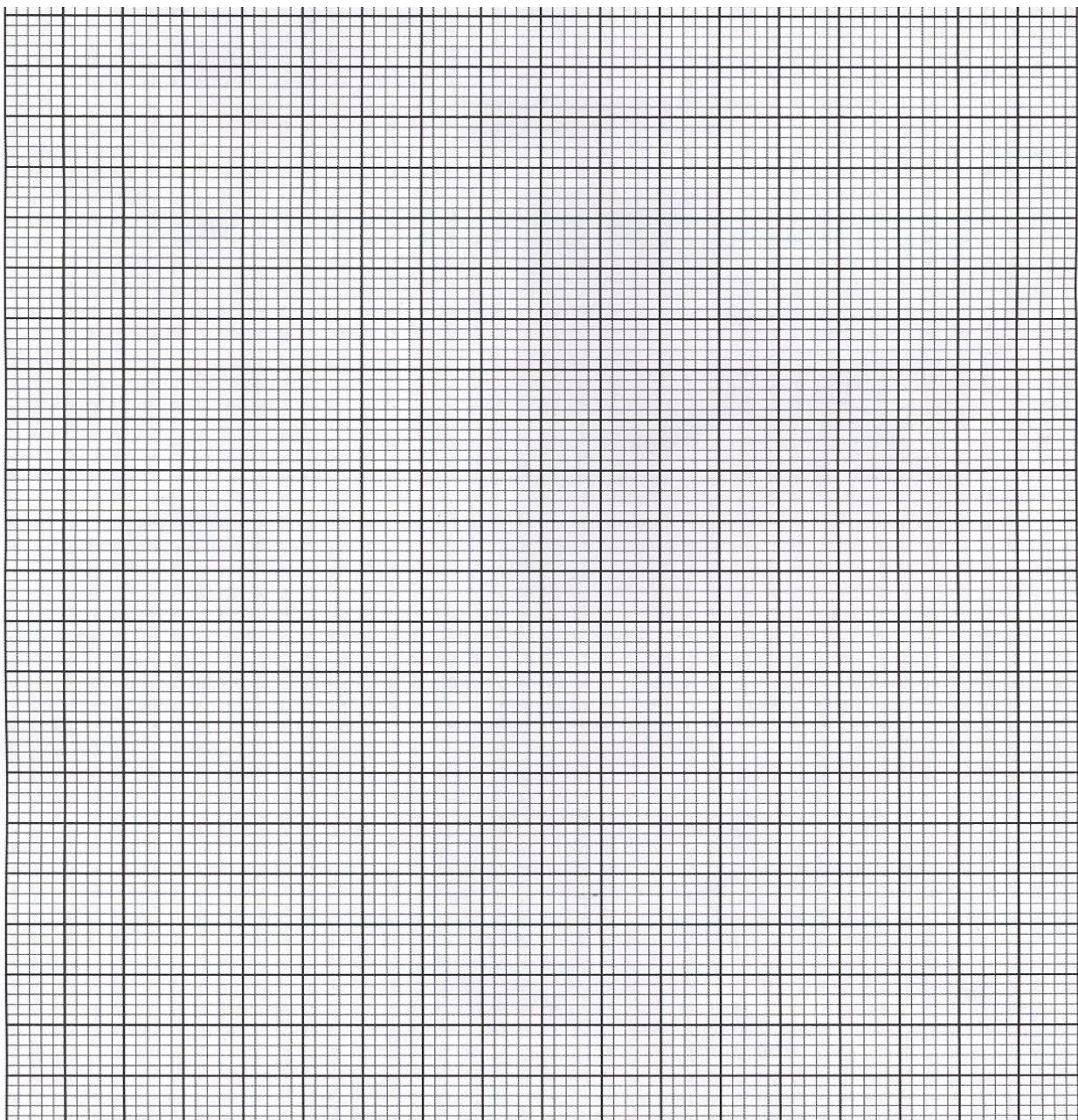
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(g) Calculate the values of $\frac{1}{L^2}$ and record in the table above.

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(h) Plot a graph of $\frac{1}{L^2}$ (y-axis) against $\sin^2 i$. **(5 marks)**



(i) Calculate the gradient **S** of the graph **(3 marks)**

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Given that the equation of that graph is; $\frac{1}{L^2} = - \left(\frac{1}{n^2 b^2} \right) \sin^2 i + \frac{1}{b^2}$

(j) Determine the value of ***n*** (3 marks)

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(k) Present your work sheet; attached to the exam paper (2 mark)

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