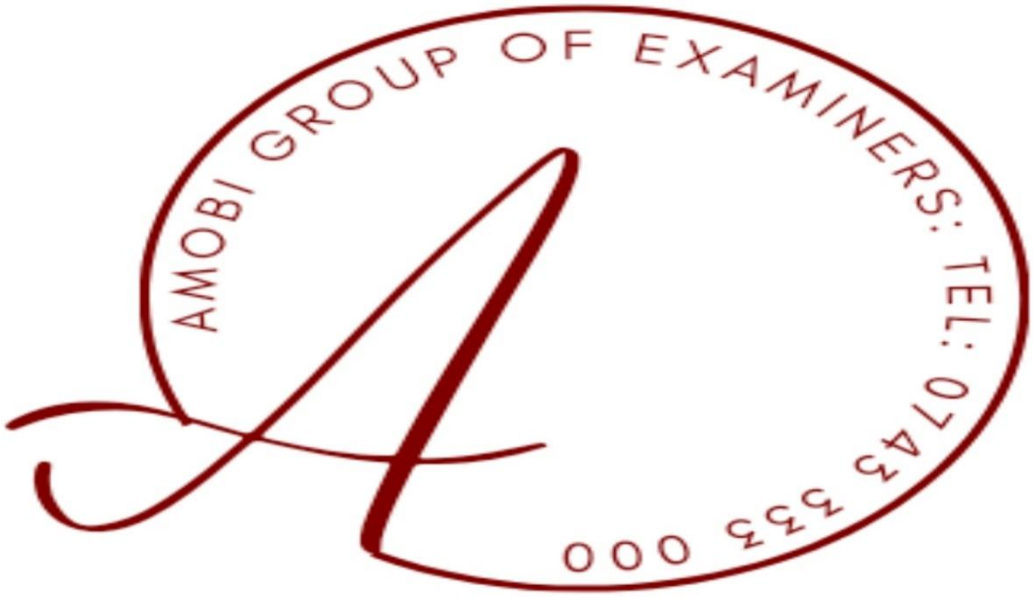
DILIGENT STUDENTS FORM FOUR PRE-MOCK 1 EXAMS *(ALL SUBJECTS TESTED)*



DILIGENT STUDENTS FORM FOUR PRE-MOCK 1 EXAMS

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***N/B** In Response to the Huge Costs Associated in Coming Up with Such/Similar Resources Regularly, We inform us All, MARKING SCHEMES ARE NOT FREE OF CHARGE. However Similar QUESTIONS, Inform of soft Copies, are Absolutely FREE to Anybody/Everybody. Hence NOT FOR SALE*

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- Poetry & Ushairi Qsns.... e.t.c

ORDER OF THE 14 SUBJECTS TESTED *(ALPHABETICALLY ARRANGED)*

1. **AGRICULTURE**
2. **BIOLOGY**
3. **BUSINESS STUDIES**
4. **CHEMISTRY**
5. **COMPUTER**
6. **C.R.E**
7. **ENGLISH**
8. **GEOGRAPHY**
9. **HISTORY**
10. **HOMESCIENCE**
11. **I.R.E**
12. **KISWAHILI**
13. **MATHS**
14. **PHYSCIS**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

AGRICULTURE 443/1

FORM FOUR TERM ONE

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATE

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

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATE SCORE
A	**1-17**	**30**	
B	**18-21**	**20**	
C	**22-24**	**40**	
TOTAL		**90**	

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SECTION A: 30 MARKS

Answer all questions in this section in the spaces provided

1. Give **four** reasons why farmers are encouraged to practice organic farming **(2mks)**

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2. Distinguish between GDP and GNP **(2mks)**

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3. What is meant by the following terms **(2mks)**

(i) Seed inoculation

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(ii) Seed dressing

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4. Name **four** types of terraces **(2mks)**

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5. Name the routine field practice done by;

(a) Removal of extra suckers in a banana stool **(1mk)**

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(b) Removal of old stems down to level of top foliage in pyrethrum **(1mk)**

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(c) Removal of suckers from coffee bushes **(1mk)**

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6. State **three** characteristics of phosphatic fertilizers **(1.5mks)**

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7. Explain the relationship between scarcity and choice as used in agricultural economics **(1mk)**

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8. Outline **four** ways by which crop pests are classified **(2mks)**

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9. State **four** advantages of land consolidation **(2mks)**

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10. Outline **three** benefits derived from trees used in agroforestry **(1½mks)**

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11. State **four** practices which improve light intensity in crop production **(2mks)**

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12. Give **four** factors that influence the quality of hay **(2mks)**

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13. Outline **two** other methods of conserving forage in the farm **(1mk)**

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14. State **four** factors that determine the demand of a commodity in a free market **(2mks)**

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15. Give **four** varieties of tomatoes grown for processing **(2mks)**

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16. State two advantages of mixed farming **(1mk)**

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17. Name any **two** land tenure systems practiced in Kenya **(1mk)**

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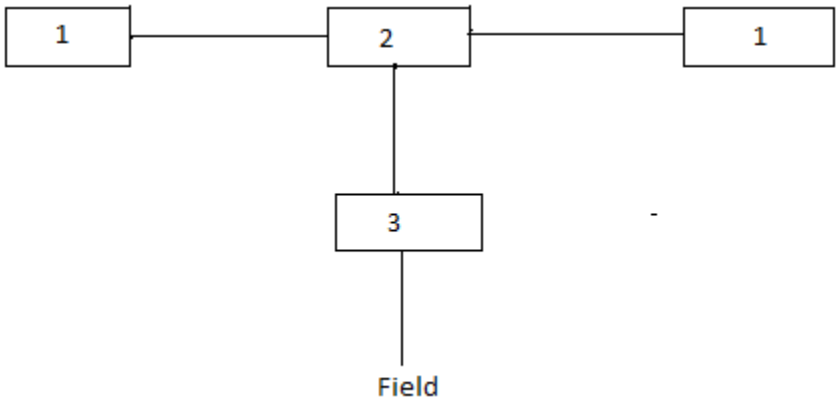
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SECTION B: 20 MARKS

Answer all questions in the spaces provided

18. Illustrated below is a method of turning compost. Study the method and answer the questions that follow.



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

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(b) Using arrows in the diagram, show how the turning is done before the manure can be taken to the field **(2mks)**

(c) After how long should the compost be ready for use **(1mk)**

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(d) Apart from the above named type of organic manure, name any other **two** types of organic manure **(1mk)**

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19. Below is a diagram of a tertiary operation. Study it and answer the questions that follow.



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(i) Name the operation **(1mk)**

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(ii) Explain the process of performing the operation **(1mk)**

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(iii) Name the implement that can be used to achieve the operation **(1mk)**

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(iv) State the importance of carrying out the operation **(2mks)**

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20. Below is the diagram of a planting material. Study it and answer the questions that follow.



(a) Label the parts labelled **i, ii** and **iii** **(3mks)**

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(b) State **two** factors that determine seed rate **(2mks)**

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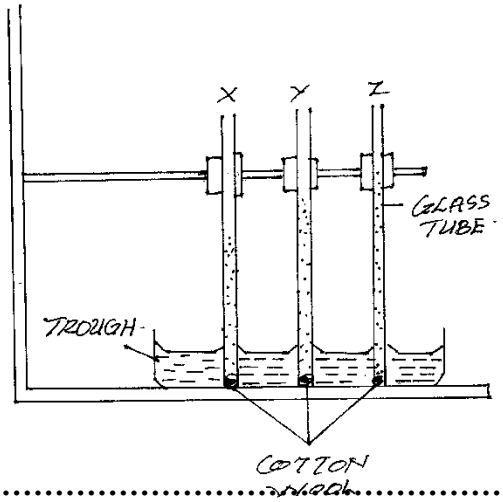
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21. Below is the set up of three different types of soil.



(a) State the aim of the experiment **(1mk)**

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(b) State **two** ways of improving the soil structure labelled **Z** **(1mk)**

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(c) Name **three** processes of rock weathering **(3mks)**

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SECTION C: 40 MARKS

Answer any two questions from this section.

22. Study the following information which was extracted from Mr Kibui's farm records on 30th November 2022 and answer the questions that follow.

Loans payable to bank	Ksh.300,000
Five milking cows	Ksh.250,000
400 layers	Ksh.80,000
20 goats	Ksh.30,000
Debts payable to cooperative	Ksh.20,000
Buildings and structures	Ksh.600,000
Bonus payable to workers	Ksh.19,000
Cattle feed in store	Ksh.10,000
Animals drugs in store	Ksh.4,000
Breakages to repair	Ksh.30,000
Cash at hand	Ksh.20,000
Cash in bank	Ksh.30,000
Spray equipment	Ksh.12,000
Debts receivable	Ksh.18,000

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(a) Prepare a balance sheet for Mr Kibui's farm using the information above **(8mks)**
(b) Was Mr Kibui's business concern solvent or insolvent **(1mk)**
(c) Name any other financial statement that can be found in Mr Kibui's farm **(1mk)**
(d) Describe **five** factors to consider in siting farm structures **(10mks)**

23.(a) Describe the procedure of silage making **(5mks)**
(b) State **five** effects of wind on crop production **(5mks)**
(c) State **five** precautions that should be observed when harvesting cotton **(5mks)**
(d) Why should it be advisable to use a nursery in crop production **(5mks)**

24. (a) State **five** ways through which a farmer can adjust to risks and uncertainties in farming **(5mks)**
(b) Describe the marketing functions in agricultural economics **(5mks)**
(c) Describe the safety precautions a farmer should take when using herbicides **(5mks)**
(d) Explain **five** physical methods of pest control **(5mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

AGRICULTURE PAPER 2
FORM FOUR
TIME:2 Hours

INSTRUCTIONS

(a) Write your name, admission number and class in the space provided above.
(b) This paper consists of three sections: A, B and C.
(c) Answer all questions in section A and B.
(d) Answer any two questions in section C

FOR EXAMINER'S USE ONLY

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
A	1-20	30	
B	21-24	20	
C		40	
TOTAL		90	

SECTION A (30 MKS)

Answer ALL questions in this section in the spaces provided.

1. State **FOUR** categories of produce stores found in a farm **(2mks)**
2. Give **TWO** reasons for tooth clipping in piglets **(1mk)**
3. State **TWO** uses of a rake **(1mk)**
4. State **TWO** diseases that may affect bees in a colony **(1mk)**
5. Differentiate between a heifer and a cow **(1mk)**
6. Name **TWO** species of tapeworms that affected livestock **(2mks)**
7. Name **FOUR** viral diseases that affect poultry **(2mks)**
8. State **FOUR** disadvantages of natural incubation in poultry production **(2mks)**
9. Name **TWO** causes of bad flavors in milk production **(1mk)**
10. Give **TWO** causes of death in cows during or after parturition **(1mk)**
11. Differentiate between roughages and concentrates as used in livestock nutrition **(1mk)**
12. List **THREE** zoonotic diseases that can occur on the farm **(1½mks)**
13. State **FOUR** uses of harrows on the farm **(2mks)**
14. State **FOUR** signs of heat in pigs **(2mks)**
15. Name **FOUR** plant species that can be used to establish live fences **(2mks)**
16. Give **TWO** benefits of scattering grains in a deep litter poultry house **(1mk)**
17. List **THREE** types of lubrication systems in farm machines **(1½mks)**
18. List **THREE** sheep breeds reared for meat production in Kenya **(1½mks)**
19. List **THREE** farm tools used during castration of farm animals **(1½mks)**
20. Give **FOUR** disorders associated with calcium deficiency in livestock **(2mks)**

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SECTION B: (20 MARKS)

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

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



E



F



G

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

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

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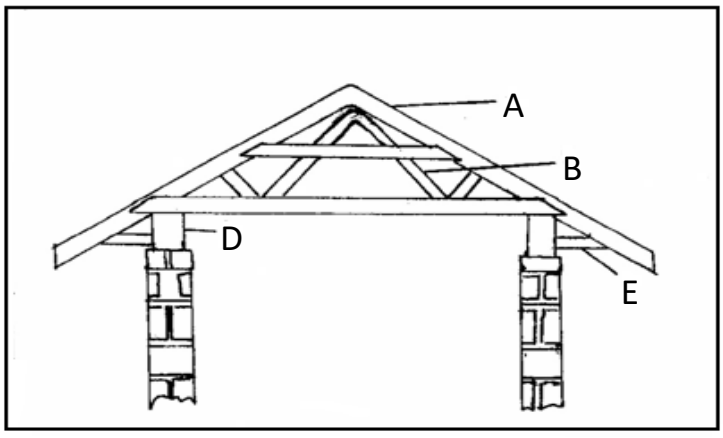
(c) Give the correct measures taken for each tyre mentioned in **(b) above**. **(2mks)**

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



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

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

A .....

B .....

E .....

D .....

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



W **X** **Y**

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

W .....

X .....

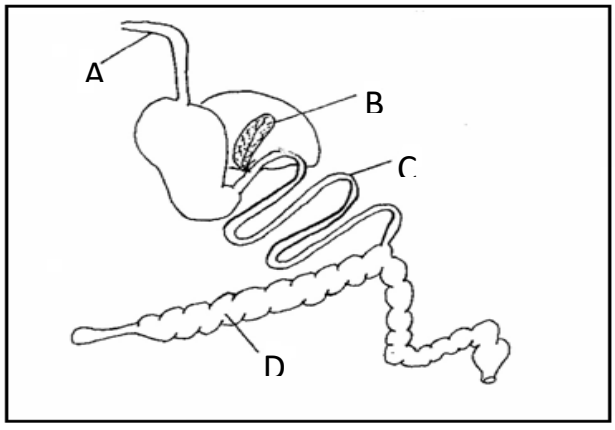
Z .....

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

Z .....

X .....

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



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

……...

.....

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

A .....

B .....

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

C .....

D .....

SECTION C

Answer any TWO questions in this section in the spaces provided

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

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

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

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

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

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

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

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

FORM FOUR EXAMIATIONS
BIOLOGY THEORY
231/1
TIME: 2HRS

INSTRUCTIONS

1.All Questions are Compulsory
2.Write your Answers in the Spaces Provided
3.Wrong Spelling of Technical Terms shall be Penalized

Max Score	Student's Score
80	

1. a) Define the term Diffusion **(1mk)**

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b) Give **TWO** conditions required for osmosis to take place between two solutions **(2mks)**

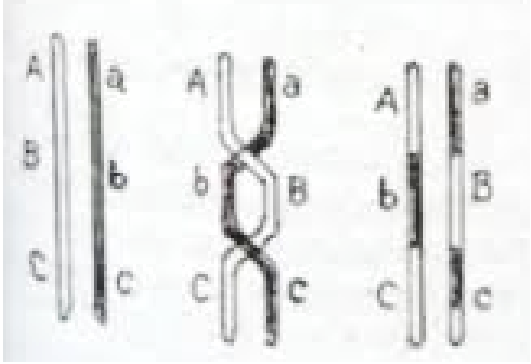
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2. The following diagram represents a process that takes place in some cells



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a) i) Which type of reproduction is represented by the diagram above **(1mk)**

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……..

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

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b) Explain the importance of the process represented above to evolution **(2mks**

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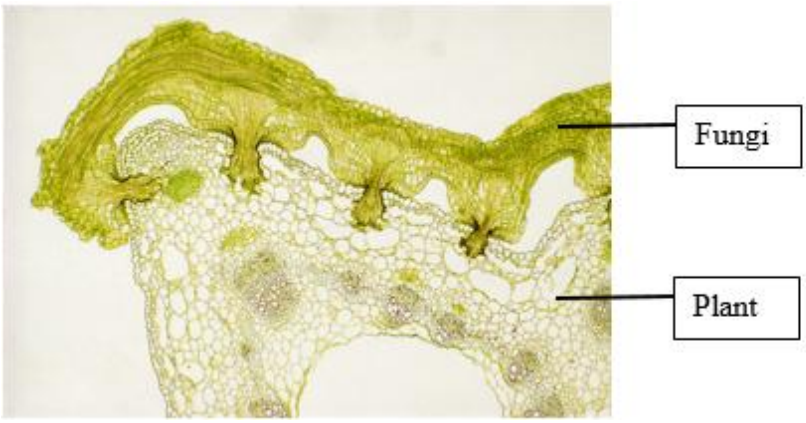
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3. Name the following organisms important in occurrence of Bilharzia disease: **(2mks)**

a) Pathogen …….

b) Vector …….



4. The following photomicrograph represents interaction between two organisms

a) i) Name the feeding relationship shown above **(1mk)**

……..

……..

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

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b) Give a reason why the plant represented in the photomicrograph is a dicot **(1mk)**

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5. a) Name the hormones involved in the following human disorders **(2mks)**

i) Diabetes insipidus ……

ii) Low Sodium ions concentration in the blood ……..

b) State ways in which the following organs reduce severity of Diabetes mellitus **(2mks)**

i) Kidney

……...

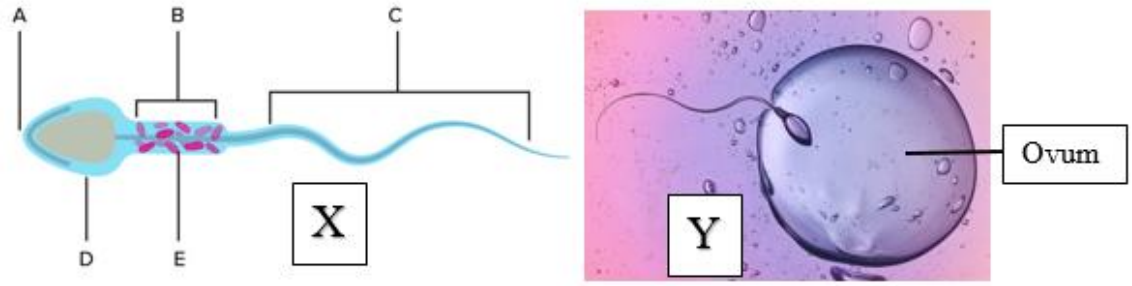
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ii) Liver

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6. Use the diagrams **X** and **Y** shown below to answer questions that follow



a) State how the parts labelled **B** and **D** adapt the cell in diagram **X** to swimming

i) **B**

…… **(1mk)**

ii) **D**

…… **(1mk)**

b) i) Name the part of the female reproductive system where the process shown in **Y** takes place **(1mk)**

……...

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ii) Explain how the organelle found in region **A** of the cell shown in **X** facilitates the interaction of cells represented in **X** and Ovum as seen in **Y** **(2mks)**

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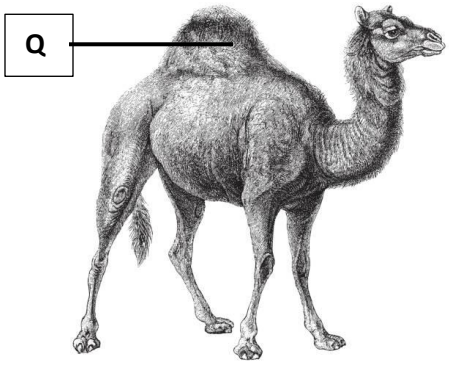
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7. James counted 12 cells under a light microscope with a field of view of radius 3mm. Determine the diameter of one cell in micrometers **(3mks**

8. The following photograph is of a common travelling animal



a) Explain how part labelled **Q** adapts the animal to its life in the desert? **(2mks)**

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b) Give a reason why the animal shown above belongs to class Mammalia **(1mk)**

……...

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c) State the expected feature in the kidneys of the animal shown above in terms of the following: **(2mks)**

i) Number of nephrons ……

ii) Length of Loop of Henle ……

9. A section of a chromosome was found to have 333 nucleotides. State the number of the following in relation to this section. **(3mks)**

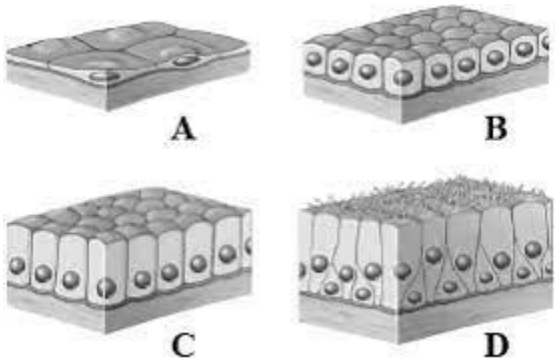
a) Number of Nitrogenous bases ……

b) Number of codons ……...

c) Number of Amino acids coded for ……..

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10. Use the illustration shown below to answer the questions that follow



a) Name the type of tissue illustrated above **(1mk)**

……...

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b) Why is **A** likely to be found in the mammalian lungs? **(1mk)**

……...

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c)How does tissue labelled **D** adapt the following parts of the human body to their functions

i) Oviduct **(1mk)**

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ii) Trachea **(1mk)**

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11. State **TWO** principles of the Theory of Special Creation in relation to origin of life. **(2mks)**

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12. James and Mary made a decision to get married but before that, they approached a qualified medical doctor for genetic counseling.

a) Give **TWO** reasons why this was important **(2mks)**

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b) State **TWO** ways the medical doctor did the genetic diagnosis **(2mks)**

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13. a) Name the respiratory surfaces in the following organisms **(2mks)**

i. Amoeba ……

ii. Nile perch fish ……

b) State the expected structural differences between roots of hydrophytes and those of mesophytes in terms of the following features **(3mks)**

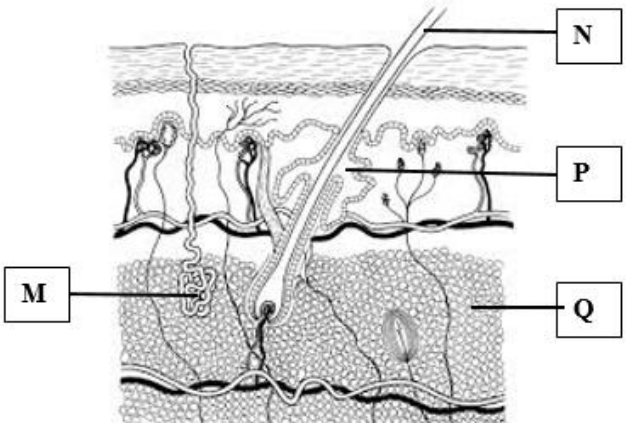
Feature	Hydrophyte	Mesophyte
Type of Roots		
Cuticle		
Root hairs		

14. Name the deficient nutrient in the following disorders **(2mks)**

a) Goitre ……

b) Scurvy ……

15. The following diagram is an illustration of the mammalian skin. Use it to answer the questions that follow.



a) Name the muscle important in the functioning of part labelled **N** **(1mk)**

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b) State the importance of **P** to the functioning of part **N** **(2mks)**

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c) Explain how part **M** helps lower body temperature on a hot day. **(2mks)**

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16. Differentiate between the terms community and population as used in ecology. **(2mks)**

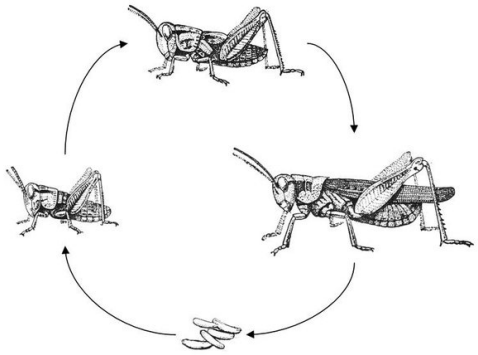
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17. Study the life cycle shown below and answer the questions that follow.



a) i) Identify the life cycle shown above **(1mk)**

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

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b) Explain how the prothoracic gland is important in the life cycle above **(2mks)**

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18. In a metabolic reaction 2 molecules of Oxygen were used to oxidise a food substance and in the process 18 molecules of Carbon (IV) Oxide was released.

a) Calculate the Respiratory Quotient for this reaction **(2mks)**

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b) Give a reason why this reaction represents anaerobic respiration **(1mk)**

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19. a) Give a reason why active immunity is advantageous. **(1mk)**

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b) Josephine had an accident leading to damaged tissue and the medical doctors advised for use of autografts but not xenograft for an operation to replace damaged tissue. Explain **(2mks)**

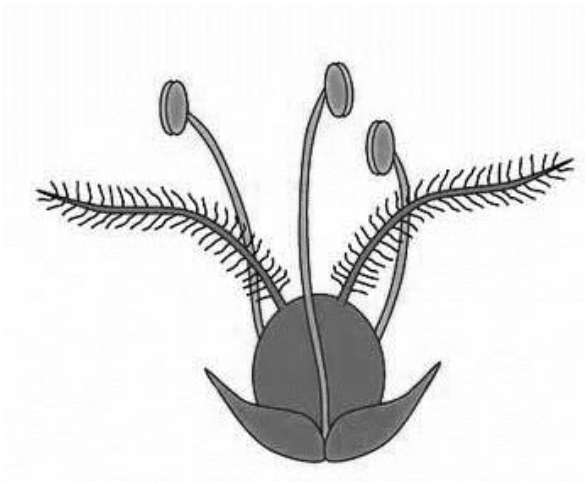
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20. Use the diagram shown below to answer questions that follow.



a) Give **TWO** reasons to show that the flower above is a wind pollinated flower **(2mks)**

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b) State **TWO** significance of seed dormancy **(2mks)**

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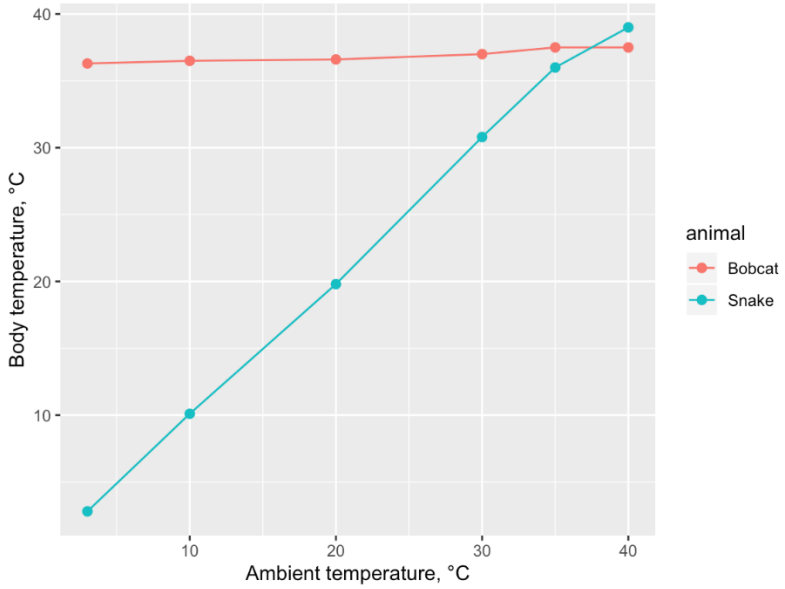
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21. The body temperature of a bobcat and a snake were studied over time against the ambient/surrounding temperature and plotted as shown in the graph below.



a) Account for the observation shown in the graph **(2mks)**

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b) Give **TWO** disadvantages a snake experiences as a result of the temperature changes shown in the graph above **(2mks)**

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22. Describe the mechanism of stomata opening using the starch-sugar inter-conversion theory **(4mks)**

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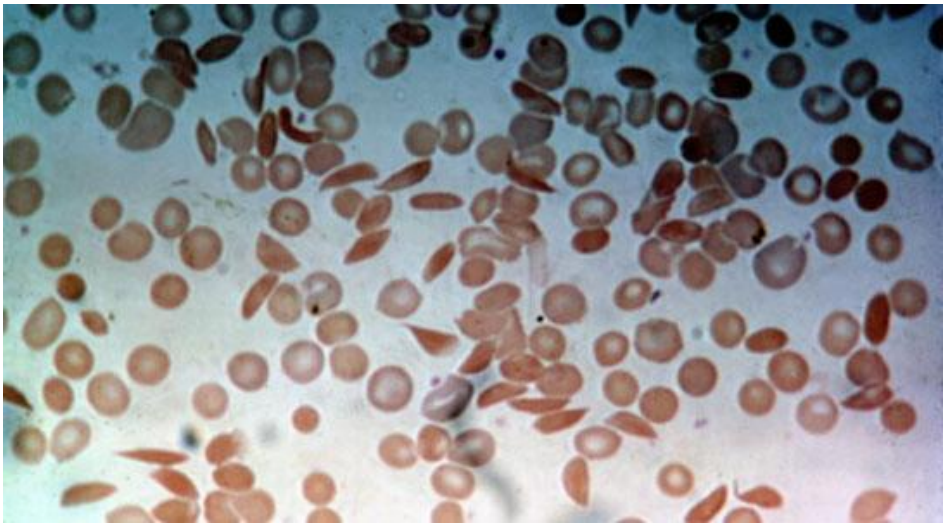
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23. A couple had the following as the appearance of their Red Blood Cells under a light microscope



a) Which survival advantage does the couple have over those with normal Red Blood Cell appearance? **(1mk)**

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b) The couple had children. Write down all the probable genotypes of their children. Use letters **A** and **B** to represent the alleles **(1mk)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

FORM FOUR EXAMIATIONS
BIOLOGY PAPER 2 - THEORY
2 HOURS.

Instructions to Candidate

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

For Examiner's Use Only

Section	Question	Maximum Score	Candidate's Score
A	1-5	40	
B	6-8	40	
		80	

Section A

1. Both bile and pancreatic juice are necessary secretions in animal nutrition.

a) Name the part of the digestive system where their influence is felt? **(1Mk)**

……..

……..

b) i) Identify which of the two secretions should be mixed with chyme first for efficient digestion to take place**.** **(1Mk)**

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……..

ii) Explain your answer in 1(b) i) above. **(2Mks)**

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c) Explain why:

i) It is not necessary to eat too much protein in the diet. **(2Mks)**

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ii) Liver is recommended in the diet of anaemic persons **(2Mks)**

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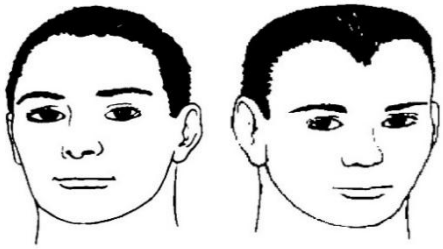
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2. The photographs below show a trait exhibited by man on the hairline.

a) The photograph show a type of variation for a trait in man. Give the type of variation shown by the



photograph. **(1Mk)**

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b) Identify the variations shown on the photograph for the trait. **(2Mks)**

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c) State the main cause of the type of variation stated in 2 (a) above. **(1Mk)**

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d) State two processes that occur during gamete formation that lead to variation**.** **(2Mks)**

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e) Name two phenotypic features that Mendel studied in the garden pea plant in order to derive the first law of heredity**.** **(2Mks)**

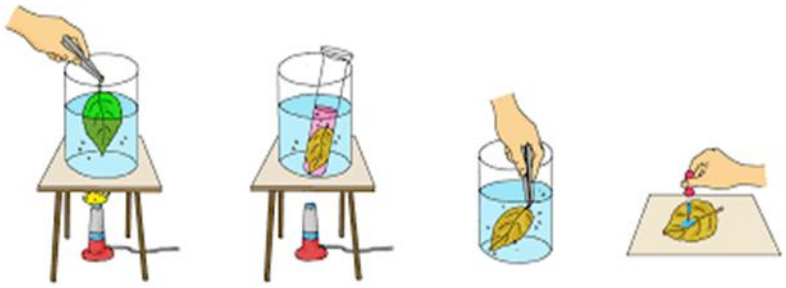
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3.The diagrams below show the procedure during test starch in a leaf. Study it and answer the questions that follow.



A. **B.** **C.** **D.**

a) Explain the following :

i) The plant from which the leaf was obtained was exposed to sunlight for sometime before the start of the experiment**.** **(1Mk)**

……...

……

ii) The leaf was boiled in water as shown in diagram **A.** **(1Mk)**

……...

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iii) The leaf was boiled in a test tube containing alcohol over a water bath **(2Mks)**

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b) A part from rinsing out alcohol traces on the leaf, give the other reason for washing the leaf in cold water as shown in diagram **C**. **(1Mk)**

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c) The leaf was removed in cold water and placed on a white tile as shown in diagram **D**.

i) State the observation after addition of iodine solution on the leaf. **(1Mk)**

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

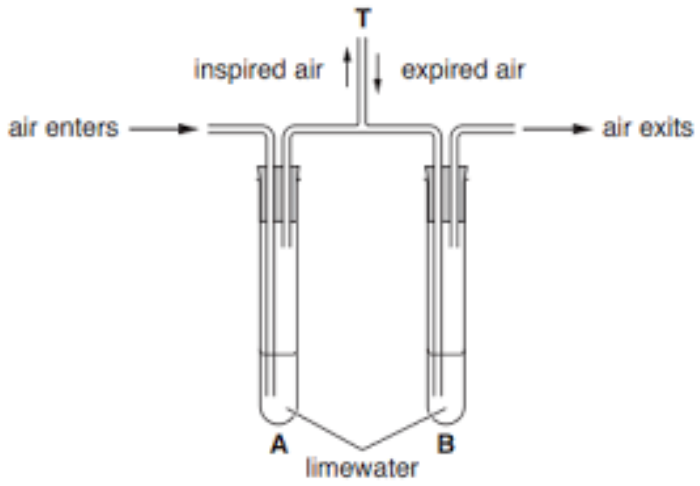
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4.The set below was used by a group of students to study gaseous exchange in man.



a) State the aim of the experiment**.** **(1Mk)**

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b) State the expected observations in the test tubes**.** **(2Mks)**

Test tube A……..

Test tube B……

c) Explain the observation in test tube **B** **(2Mks)**

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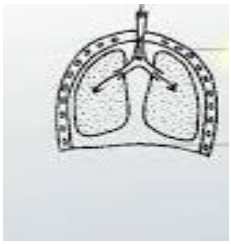
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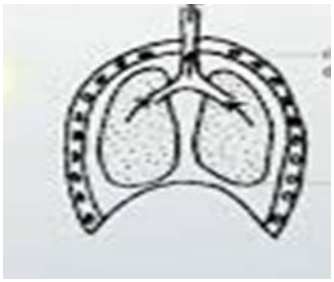
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d) The diagrams below show changes in the chest cavity of the students as they breathe in and out through part **T** in number 4. above.





i) State the change in the ribs during breathing in**.** **(1Mk)**

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ii) State the changes in the rib cage muscles during breathing out. **(2Mks)**

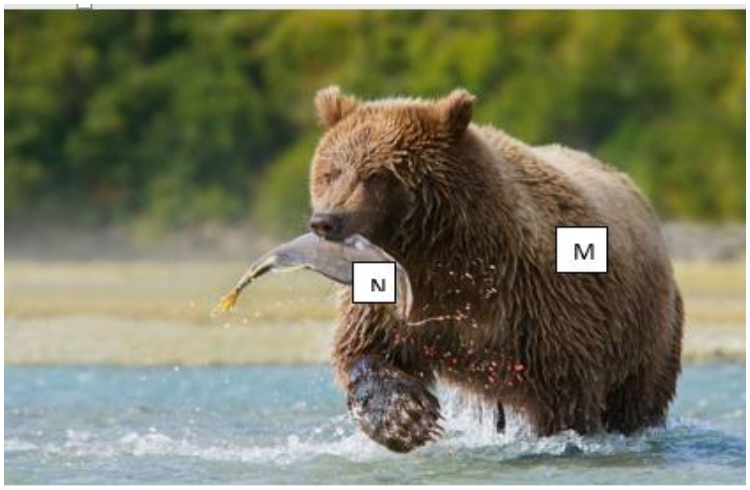
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5.Study the photograph below which represents ecological relationship in a habitat involving two organisms (**N** and **M),** and answer the questions that follow.



a) i) Identify the biotic relationship represented above **(1Mk)**

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ii) With a reason, identify which organism between N and M that has lower biomass.

Identity…… **(1Mk)**

Reason **(1Mk)**

……...

……...

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b) Draw a possible food chain that has three trophic levels involving the organisms in the photograph. **(1Mk)**

c) State how the energy from the sun is incorporated in the food chain you have drawn in 5b) above. **(1Mk)**

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d) Using observable features of organism N, name the class to which it belongs. **(2Mks)**

Class……

Reason

……...

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e) Give **one** observable feature that makes organism M successful in the ecological relationship represented. **(1Mk)**

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SECTION B:

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

6. Some students carried out an experiment to determine the percentage change in weight of two tender stems of two different plants when placed in two different sucrose solutions of different concentrations.

Sucrose concentration (mg/ml)	0	5	10	15	20	25	30	35
Percentage change in weight for plant N	7.0	6.6	5.0	3,6	1.6	-0.8	-2.3	-2.8
Percentage change in weight for plant D	3.2	2.2	0.8	-0.6	-1.4	-2.2	-2.8	-3.4

a) On the same axes, in the graph provided below, plot a graph of percentage weight change of the plant stem tissues against sucrose concentrations. **(8mks)**

b) Account for the results obtained for the plant tissues at 15 mg/ml sucrose concentration. **(2Mks)**

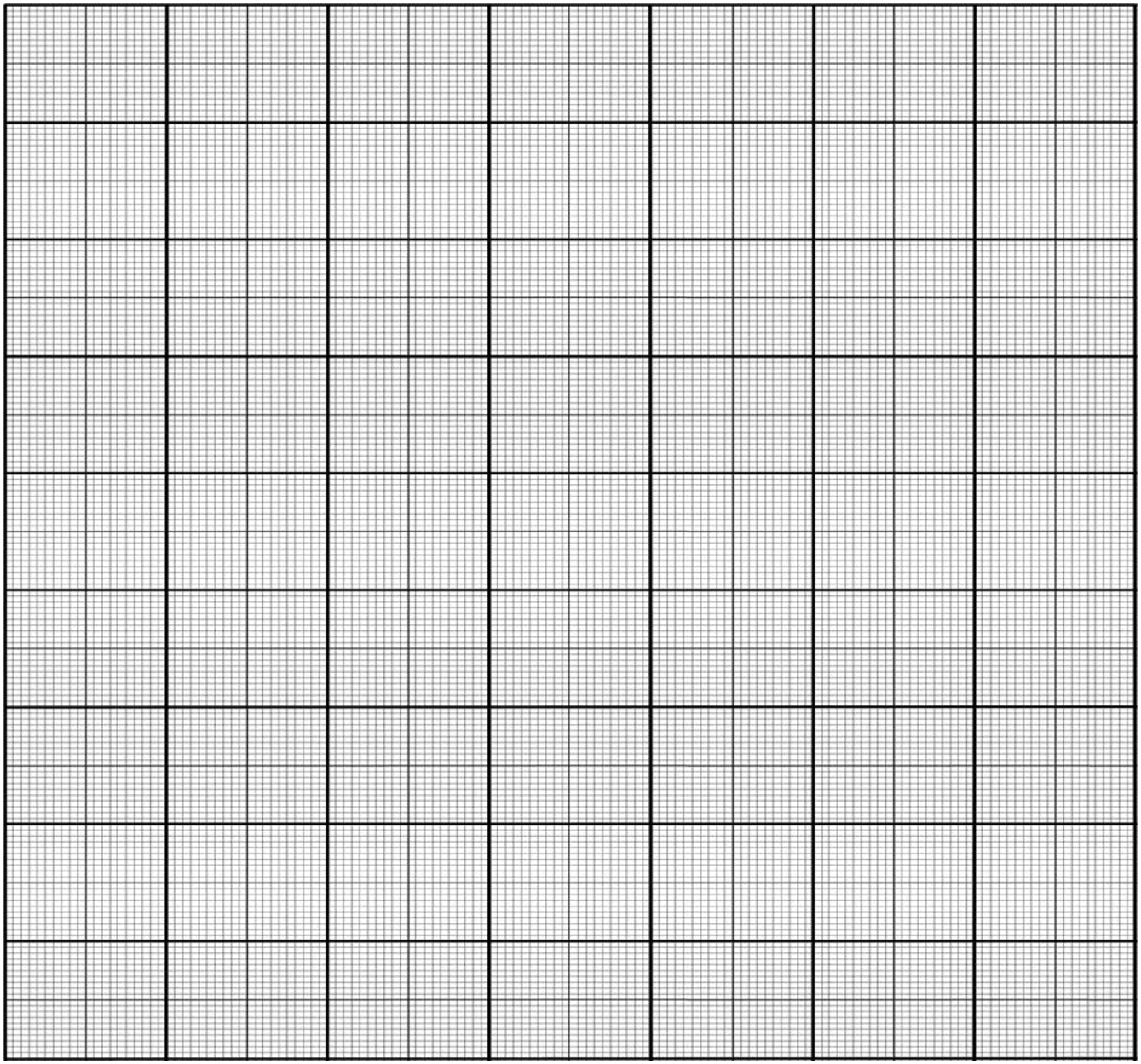
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c) From the graph, determine the concentrations of the cell saps of the two plants.

Plant N. **(1Mk)**

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Plant D. **(1Mk)**

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d) i) Identify the plant that was most likely obtained from a more saline environment. **(1Mk)**

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ii) Explain your answer above. **(2Mks)**

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e) Suggest the likely modification in the roots of N to enhance gaseous exchange**.** **(2Mks)**

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f) State two roles of osmosis in plants**.** **(4Mks)**

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7. a) Give the practical applications of Auxins and Gibberellins in Agriculture. **(10Mks)**

b) Describe the role of the following factors in the process of seed germination. **(10Mks)**

i) Water

ii) Oxygen

iii) Temperature

iv) Viability

8. Describe the various evidences for organic evolution. **(10Mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

FORM FOUR EXAMIATIONS

PAPER 3 BIOLOGY (PRACTICAL)

TIME - 1¾ HOURS

INSTRUCTIONS TO CANDIDATES:

(a) Write your name, index number and school in the spaces provided above.
(b) Sign and write the date of examination in the spaces provided above.
(c) Answer all the questions in the spaces provided.
(d) You are required to spend the first 15 minutes of the 1¾ hours allowed for
(e) This paper reading the whole paper carefully before commencing your work.
(f) This paper has three questions.
(g) Students should check the question paper to ascertain that all the papers are printed as indicated and that no questions are missing.
(h) Candidates should answer the questions in English

FOR EXAMINER'S USE ONLY

Question	Maximum Score	Candidate's Score
1	16	
2	14	
3	10	
Total Score	40	

1. You are provided with a specimen labelled **W** obtained from a live organism in its natural habitat. Study and use it to answer the questions below.

a) Make a well labelled drawing of **W** to show the external features of the specimen. **(4mks)**

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State the magnification of your drawing (show your working**)** **(2mks)**

b) i) Identify one observable feature that can be used in construction of a dichotomous key. **(1mk)**

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ii) Make two possible contrasting statements using the feature given in 1b i) above that would be used in one of the steps of the dichotomous key. **(2mks)**

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c) i) Suggest the trophic level occupied by the organism from which it was obtained in the habitat. **(1mk)**

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ii) Give a reason from your answer in 1 c i) above**.** **(1mk)**

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d) State two observable adaptations of the specimen **W** for its function**.** **(2mks)**

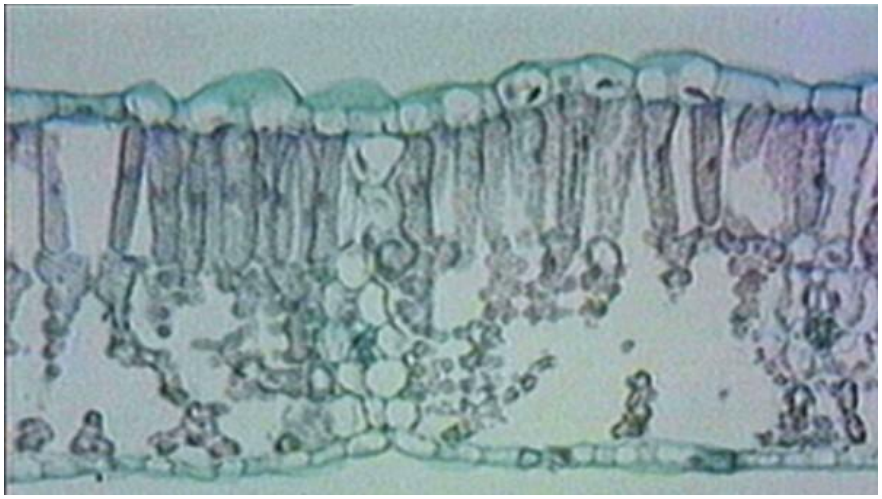
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e) i) A photomicrograph of the transverse section of part of specimen **W,** showing its internal structure

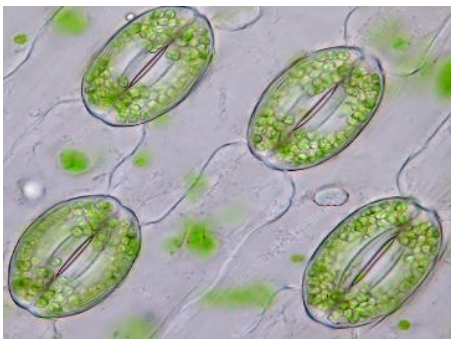


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ii) Draw a large diagram to show the layers present in the leaf section shown in 1. e i) above (Do not draw any cells). Label the layers drawn clearly**.** **(2mks)**

f) The photomicrograph below shows cells from one type of tissue found in specimen **W**. Label the layer on your drawing in 1 e ii) above, with letter **X**, to show where **more** of this type of tissue would be found in an organism growing in a dry habitat. **(1mk)**



2. You are provided with specimens labelled **M** and **N** which represent the developmental stages of an organism.

a) State three observable features on specimen **N** used to classify it into its correct class. **(3mks)**

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b) Name the stage of development of specimen **M** in the lifecycle of specimen **N.** **(1mk)**

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Give reasons for your answer in 2 b) above. **(2mks)**

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c) i) Examine the two specimens **M** and **N** carefully using the handlens provided. Record your observations on the mouthparts and the likely method of feeding in the table below**.** **(4mks)**

SPECIMEN	OBSERVATION	METHOD OF FEEDING
M		
N		

ii) State two feeding advantages of the **M** in the lifecycle of specimen **N.** **(2mks)**

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d) State **two** advantages of metamorphosis in the lifecycle of **N.** **(2mks)**

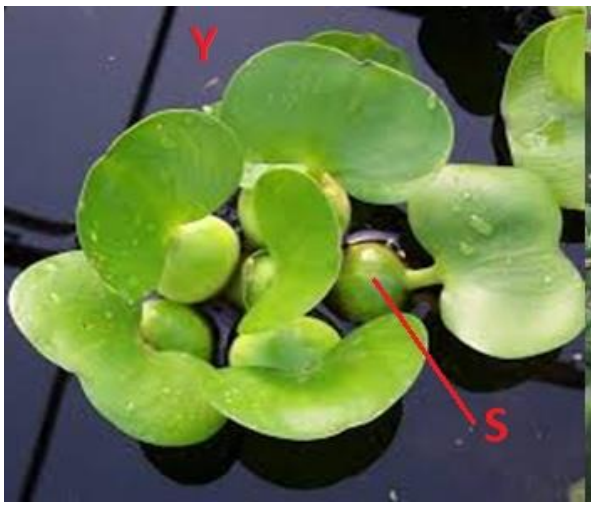
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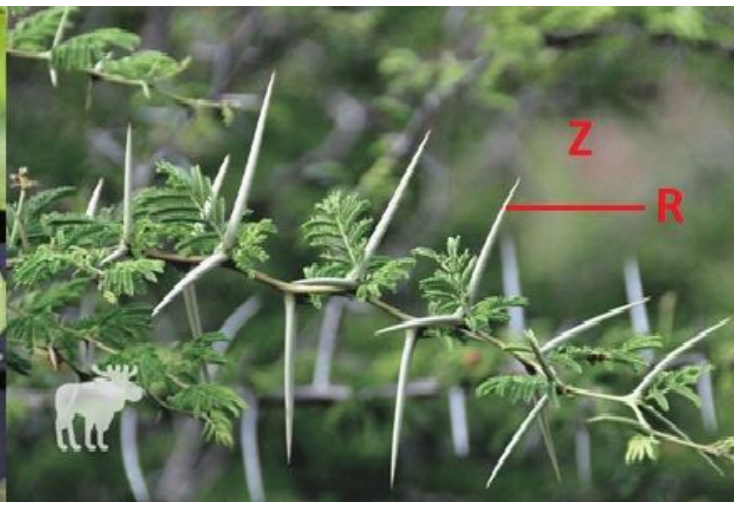
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3.Study the photographs below depicting plants growing in different habitats. Use them to answer the questions that follow.







T

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a) Identify the habitats in which they are found. **(3mks)**

Y……..

Z ……

T……

b) State the significance of the following structures found in the specimens shown above. **(2mks)**

R ……

S ……

c) State two structural adaptations expected in the leaf of specimen Z. **(2mks)**

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d) State one observable adaptation in specimen for the habitat in which it is found**.** **(1mk)**

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e) Explain the effect of releasing too much waste containing fertilizer nutrients**.** **(2mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

FORM 4 BUSINESS STUDIES PAPER 1
TIME: 2 HOURS

ANSWER ALL QUESTIONS

1.State the meaning of the following terms as used in business studies **(4Mks)**

a) Free goods

……...

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b) Producer goods

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c) Public goods

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d) Non-material goods

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2.State four elements that constitute the external business environment. **(4Mks)**

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3.Outline four reasons that may make a company prepare a business plan **(4Mks)**

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4. Outline four limitations of direct trade **(4Mks)**

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5. Outline four differences between primary wants and secondary wants **(4Mks)**

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6.Outline four reasons that may lead to privatization of government owned firms **(4Mks)**

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7. Identify the type large scale retailers described by each of the following statements **(4Mks)**

i) Huge shopping complexes with many shops under one roof, each under a different management

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ii) Many shops under one roof and one management each selling a particular line of products

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iii) Businesses where customers make their orders through the post

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iv) Shops operated by one company and located in different areas where they sell specialized products

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8.Highlight four circumstances under which a company may be dissolved **(4Mks)**

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9.Outline four channels of distribution that may be used to distributed imported manufactured products **(4mks)**

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10. Highlight four barriers to effective communication **(4Mks)**

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11. Outline four features that enable a warehouse to function effectively **(4Mks)**

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12. State four circumstances under which an insurance policy may be terminated **(4Mks)**

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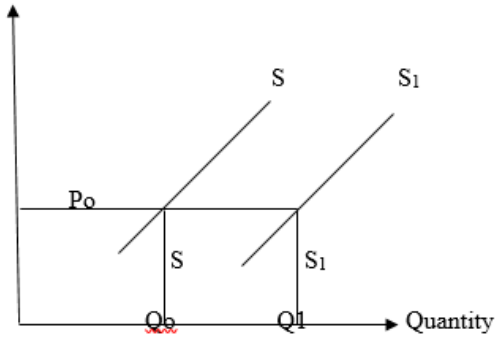
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13. The figure below shows an increase in supply for a commodity from SS to S_1S_1.



State four possible causes that have led to this situation. **(4mks)**

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14. State four measures that Kenya government may take to attract firms to an area**.** **(4mks)**

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15. Highlight four problems associated with the output approach of measuring the national income **(4Mks)**

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16. For each of the following transactions, state the account to be credited and the account to be debited

Transaction	A/C Debited	A/C Credited
The owner brought in cash from private sources		
Bought goods and paid by cheque		
Withdrew cash from the business bank account for office use		
Used part of the stock to prepare the son's birthday party		

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17. State four office equipment used in the finance department of an organization **(4Mks)**

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18. Highlight four sources of monopoly power **(4Mks)**

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19. State the relevant book of original entry in each case **(4Mks)**

Transaction	Book of original entry
Bought goods on credit from Kamau Wholesalers	
Kubasu a debtor, returned goods	
Cash sales	
Sold an old tractor on credit	

20. Outline four roles of transport in the facilitation of trade **(4Mks)**

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21. The following balances were extracted from the books of Amua Traders on 31st December, 2023.

	Shs
Fixed assets	700,000
Current assets	173,200
Creditors	85,400
5 year loan	152,000

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Determine the net worth of the business as at 31st December 2023 **(4Mks)**

22. Unemployment solving has been an agenda to Kenya. Identify the type of unemployment being solved below. **(4mks)**

(i) Government initiating irrigation projects to ensure continuous production of food

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(ii) Retraining teachers to embrace use of technology in teaching and learning

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(iii) Government and private sectors inventing job advertisement sites for easy access by job seekers

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(iv) Parliament passing legislation that accommodate the disabled people to acquire jobs

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23. The following information relates to Tajiri Traders for the year ending 31st December 2022.

Margin	15%
Sales	640,000
Purchases	480,000
Stock on 1/1/2015	130,000
Closing stock	?

Required Trading Account of Tajiri Traders for the year ending 31st December 2022. **(5Mks)**

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24. State any four types of advertising that a trader may adopt (4 Marks)

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25. Ajabu enterprises had the following assets and liabilities on 5th October 2023.

Item	Kshs
Equipment	800,000
Capital	1,200,000
Creditors	100,000
Debtors	200,000
Stock	250,000
Cash at bank	50,000

The following transactions took place on 7th October 2023.

i) Bought goods for resale Ksh. 150,000 on credit

ii) A debtor paid Ksh. 50,000 by cheque

iii) Sold the equipment for Ksh. 700,000 cash

Required: Prepare a balance as at 7th October 2023

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

BUSINESS
PAPER TWO

Answer any FIVE questions from this paper.

1.a) Highlight five ways in which a business can interact with external environment to improve its operations. **(10Mks)**

b) Explain five elements of effective communication. **(10Mks)**

2 a) Explain five demerits that a business may suffer from using a public warehouse. **(10mks)**

b) With the aid of a diagram, show the effect of an increase in demand that is accompanied by a corresponding increase in supply. **(10mks)**

3 a) Explain four ways in which computers may be used in an office. **(8Mks)**

b) Prepare a three-column cash book from the following information for the month of May 2018. **(12mks)**

May 1.Balance b/d cash sh 50,000, bank sh 180,000

1.Cash sales sh 3,000

2.Cleared the following creditors accounts by cheques after deducting 10% cash discount in each case: Sally, sh 1, 500; Vera sh 16, 000; Kibe sh 1,200.

3.Received cheques from the following debtors after deducting 5% discount in each case: Erick sh 22,800; Tonny sh 8,550; Mato sh 1,330.

5 Paid for repairs in cash 16,000.

10.Paid Peter in cash sh 9,500.

15 Banked sh 6,000 from cash till.

16 Received cash from Monica sh 13,500 in full settlement of her account of sh 15,000.

17. Cash sales duly banked sh 26,400. 20 Cash purchases sh 8,920.

4 a) Explain five reasons that make entrepreneurship important to an economy. **(10Mks)**

b) Explain five ways in which the Central Bank of Kenya may control the supply of money in the country. **(10Mks)**

5 a) Outline five circumstances in which the government may be involved in a business. **(10Mks)**

b) Journalize the following transactions that took place in Chuma's Hardware in the month of May 2018. **(10mks)**

May 1 Purchased equipment on credit for sh 50,000 from Steel Structures Ltd.

May 5 Bought a new motor vehicle for sh 1,600,000 from Mwalimu Motors Ltd paying sh 600,000 in cash and the balance was to be settled in equal monthly installments.

May 12 Sold some old furniture for sh 30,000 to Mwangaza school on credit.

May 25 Chuma the owner brought in her personal computer valued at sh 35,000 to be used by the business.

6 a) Outline five reasons that would make an insurance company fail to compensate the insured in an event of a loss. **(10mks)**

b) Highlight five measures Kenyan government may put in places to reduce unemployment. **(10Mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

CHEMISTRY233/1

Form 4- Paper 1

Time: 2 Hours

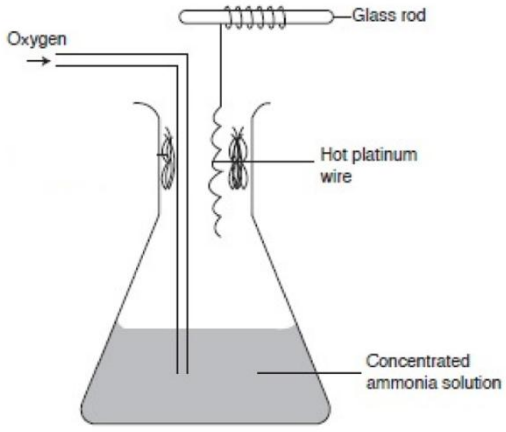
INSTRUCTIONS TO CANDIDATES

- Write your **Name**, **Index Number** and **School** in the spaces provided above.
- Answer **all** the questions in the spaces provided after each question.
- **KNEC** Mathematical tables and **silent non-programmable** electronic calculators may be used.
- **ALL** working **must** be clearly shown where necessary.
- Candidate should **check** the question paper to ascertain that **all** the pages are printed and that no questions are missing.
- Candidates should answer the questions in **English**.

FOR EXAMINER'S USE ONLY

QUESTIONS	MAX SCORE	CANDIDATE'S SCORE
1 – 27	**80**	

1. The set-up below shows the catalytic oxidation of ammonia in the laboratory.



(a) State and explain the observation made. **(2mks)**

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(b) Write a chemical equation for the first reaction taking place in the conical flask. **(1mk)**

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2. When sulphur is heated in a boiling tube in the absence of air, the yellow crystals melts into a golden yellow mobile liquid at 113°C. The liquid changes at 180°C into a dark brown liquid that is very viscous. Heating at 400°C produces a brown less viscous liquid.)

(a) Draw the molecular structure of sulphur in the yellow liquid. **(1mk)**

(b) Name two allotropes of sulphur. **(2mks)**

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3. Iron (III) oxide was found to be contaminated with copper (II) sulphate. Describe how a pure sample of iron (III) oxide can be obtained. **(3mks)**

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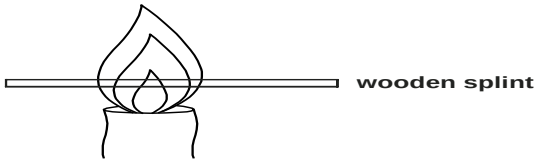
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4. Study the diagram below then use it to answer the questions that follow.



a) Draw the wooden splint at the end of the experiment. If it was slipped, then removed quickly. **(1mk)**

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b) Explain the appearance of the wooden splint in (a) above. **(2mks)**

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5. Identify the acid in the following reaction. Give a reason. **(2mks)**

$NH_4^+ (aq) + OH^- (aq) \rightarrow NH_3 (aq) + H_2O (l)$

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6. State **two** methods that can be used to remove water hardness. **(1mk)**

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7. (a) Define the term solubility. **(1mk)**

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(b) In an experiment to determine the solubility of solid Q in water at 50°C, the following data was obtained.
Mass of empty evaporating dish = 46.5 g
Mass of evaporating dish + saturated solution = 62.5 g
Mass of evaporating dish + dry solid Q = 50.4 g
Use the data to calculate the solubility of solid Q. **(2mks)**

8. What is meant by lattice energy? **(1mk)**

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(b) Use the information below to calculate the heat of solution of calcium chloride. **(2mks)**

Lattice energy of $CaCl_2$	-2195 kJ/mol
Hydration energy of Ca^{2+} (g)	-189 kJ/mol
Hydration energy of Cl^- (g)	-384 kJ/mol

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9. (a) State Boyle's law. **(1mk)**

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(b) A gas occupies 500 cm^3 at 37°C and 100,000 Pa. What will be its volume at 10°C and 101,325Pa? **(2mks)**

10. Describe how a solid sample of copper (II) carbonate can be prepared starting with copper metal. **(3mks)**

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11. (a) Give the name of the 3rd member of the alkene homologous series. **(1mk)**

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(b) Draw and name all isomers of butane. **(2mks)**

12. Draw a diagram to illustrate the electrolysis of molten aluminium oxide. **(3mks)**

13. (a) A molecule of a compound has a mass of 7.34×10^{-23} g. Calculate its RMM.
$L = 6.023 \times 10^{23}$ **(2mks).**

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(b) State Avogadro's law. **(1mk)**

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14. The diagram below represents a set of apparatus used to study the properties of chlorine water.

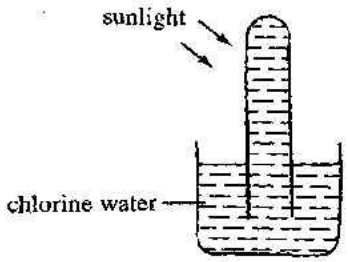


Diagram A

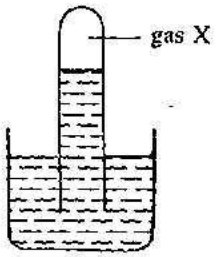


Diagram B

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

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(b) Write an equation for the reaction that produces gas X. **(1mk)**

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(c) Give **one** use of chlorine. **(1mk)**

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15. (a) What is the meaning of polymerization? **(1mk)**

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(b) Draw and **name** the structure of polymer formed from propene. **(2mks)**

16. A sample of 0.63g of lead powder were dissolved in excess nitric (V) acid to form lead (II) nitrate solution. All the lead (II) nitrate was then reacted with sodium sulphate solution.

(a) Write an ionic equation for the reaction between sodium sulphate solution and lead (II) nitrate solution**.** **(1mk)**

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(b) Determine the mass of the lead salt formed in the reaction in (a) above. **(2mks)**
(Pb = 207, S = 32, O = 16)

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17. For each of the following experiments, give the observations and the type of change that occurs (*temporary physical or temporary chemical*) **(3mks)**

Experiment	Observation	Type of change
A few drops of water are added to small amount of anhydrous copper (ii) sulphate		
A few crystals of iodine are heated gently in a test tube		

18. What is the role of the following parts during the fractional distillation of a mixture of water and ethanol?

(i) Fractionating column **(1mk)**

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(ii) Glass beads in the fractionating column **(1mk)**

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(iii) State any one application of fractional distillation process. **(1mk)**

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19. (a) Carbon (IV) oxide does not support combustion but burning magnesium continues to burn in carbon (IV) oxide. Explain. **(2mks)**

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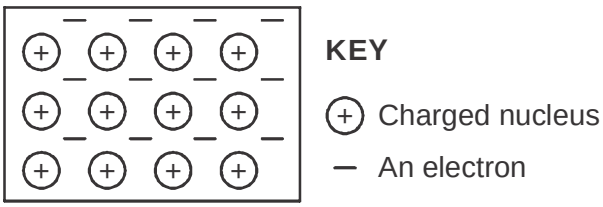
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(b) Write an equation for the reaction in (a) above. **(1mk)**

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



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

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

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21. Below are pH values of some solutions.

Solution	Z	Y	X	W
pH	6.5	13.5	2.2	7.2

i)Which solution is likely to be

I. acidic rain**…….....** **(1mk)**

II. Potassium hydroxide **……** (**1mk)**

ii) Substance V reacted with both solutions Y and X. What is the nature of V. (**1mk)**

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22. Draw a set up that can be used to prepare dry hydrogen gas in the laboratory. **(3mks)**

23. The grid below represents a part of the periodic table. Study it and answer the questions that follow. Letters are not actual symbols of elements.

F	I				M		O		
G	J		K	L		N	P		
H								Q	

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(a) How does the atomic radius of K compare to that of L? Explain. **(2mks)**

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(b) Element R forms an oxide of the formula RO_2 and belongs to period 2. Indicate in the grid the position of R. **(1mk)**

(c) Write down the formula of the compound formed between K and P. **(1mk)**

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24. When $Na_2CO_3.\mathbf{X}H_2O$ is heated strongly it loses 63.20% of its mass. Calculate the value of **X**. (Na=23.0, C=12.0,O=16.0,H=1.0) **(3mks)**

25. (a) Give the meaning of the term prescription. **(1mk)**

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(b) A patient was given tablets with prescription 2 x 3 on the envelope. Clearly outline how the patient should take the tablets. **(1mk)**

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(c) State two long-term effects of drug abuse. **(1mk)**

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26. Describe a chemical test that can be used to distinguish between aqueous solutions of sodium carbonate and sodium hydrogen carbonate. **(3mks)**

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27. To which homologous series do the following general formulae conform to? **(3mks)**

C_nH_{2n}…… .

C_nH2_{n-2}……

C_nH_{2n+2} ……

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

CHEMISTRY

Form 4- Paper 2

Time: 2 Hours

INSTRUCTIONS TO CANDIDATES:

- Answer **all** the questions in the spaces provided.
- Write **your Name** and admno in the spaces provided above.
- Mathematical tables and electronic calculators may be used for calculations.
- All working **must** be clearly shown where necessary

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QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	13	
2	11	
3	12	
4	12	
5	12	
6	10	
7	10	
Total score	**80**	

1.(a) The following table gives the standard electrode potential for a number of half-reactions.

Half-reaction		**Eº (V)**
$Zn^{2+}_{aq)} + 2e^-$	$\xrightarrow{Zn_{(s)}}$	-0.76
$Fe^{2+}_{(aq)} + 2e^-$	$\xrightarrow{Fe_{(s)}}$	-0.44
$Ag^{+}_{(aq)} + e^-$	$\xrightarrow{Ag_{(s)}}$	+ 0.80
$Cu^{2+}_{aq)} + 2e^-$	$\xrightarrow{Cu_{(s)}}$	+0.34

i) Draw an electrochemical cell for the reaction that would give the least e.m.f. **(3mks)**

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ii) Determine the e.m.f of the cell in (i) above **(2mks)**

iii) Select the strongest oxidizing agent. Give reason. **(2mks)**

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(b) In the production of aluminum from aluminum oxide, 100 A was passed for 6 hours and 40 minutes. Determine the mass of aluminum obtained. (1F = 96500C, Al = 27) **(3mks)**

(c) Define;

(i) Primary cell; **(1mk)**

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(ii) fuel cell. **(1mk)**

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(d) Give **one** reason for electroplating **(1mk)**

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2. (a)(i) What is fractional crystallization **(1mk)**

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(ii) The table below shows the solubility of two salts **A** and **B** at various Temperatures

Salt	Solubility at various temperatures(°C)	
	50	20
A	86 g	31 g
B	18 g	8 g

A mixture of the salts contains 29.5 g of salt **A** and 16.25 g of salt **B** at 50 °C. The mixture is cooled to 20 °C. Determine the mass of the salt that crystallizes **(3mks)**

(b) Explain how the use of ion exchange resin removes water hardness **(2mks)**

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(c) Name **two** disadvantages of hard water **(2mks)**

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(d) State and explain the observations made when aqueous ammonia is added dropwise until in excess to a solution of copper (II) nitrate. **(3mks)**

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3. (a)(i) State Gay Lussac's law of combining gas volumes. **(1mk)**

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(ii) 100 cm^3 of propane was ignited in 180 cm^3 of oxygen and the gaseous product allowed to cool. Determine the volume of the residual gas. **(3mks)**

(b) (i) What's is empirical formula? **(1mk)**

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(ii) Vitamin C (ascorbic acid) contains 40.92 % C, 4.58 % H, and 54.50 % O, by mass.
(C=12.0, H=1.0, O= 16.0)

(i) Determine it's empirical formula. **(2mks)**

(ii) Given that the experimentally determined molecular mass of ascorbic acid is 176 amu, determine its molecular formula. **(2mks)**

(c) A solution of calcium nitrate is made by dissolving 16.4 g in 2 litres of solution. Calculate the concentration of nitrate ions in moles per liter. (Ca = 40, N = 14, O = 16) **(3mks)**

4(a) Give the IUPAC name of the following organic compounds

(i) $C(CH_3)_4$ **(1mk)**

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(ii) $C(CH_3)_3Br$ **(1mk)**

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(iii) $HCCCH_2CH_3$ **(1mk)**

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(b) Describe how $C(CH_3)_3Br$ would be distinguished from $HCCCH_2CH_3$. (2mks)

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(c) Ethyne can be prepared by adding water to calcium carbide.

(i) Write the equation for the reaction which occurs. **(1mk)**

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(ii) Explain why ethyne may be collected over water **(1mk)**

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(iii). Give **two** uses of ethyne. **(2mks)**

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(d) Draw the structure of all organic compounds with the molecular formula C_5H_{12} **(3mks)**

5.(a) The diagram below shows part of the periodic table. The letters used in it do not represent the actual symbols of the elements. Study it and answer the questions that follow.

	A							G
	B		C		D		E	
H								

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(i) Compare the trend in atomic radius between element **D** and **E** . **(2mks)**

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(ii) What name is given to the elements in the same group as element H? **(1mk)**

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(iii) Write down the formula of the oxide of **E** **(1mk)**

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(iv) An element **F** is found just above element **D** in the periodic table. Write down the electronic configuration of element **F**. **(1mk)**

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(v) Select the most reactive non-metal **(1mk)**

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(vi) Give **two** uses of element **G** **(1mk)**

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(vii) A sample of the chloride of **C** was dissolved in distilled water. Both red and blue litmus papers were dipped into this solution. State and explain what was observed. **(2mks)**

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(b). The table below gives information on four elements by letters **E, F, G,** and **H**. study it answer the questions that follow. The letters do not represent the actual symbols of the elements.

Element	Electron arrangement	Atomic radius(nm)	Ionic radius(nm)
E	2.8.2	0.136	0.065
F	2.8.7	0.099	0.181
G	2.8.8.1	0.203	0.133
H	2.8.8.2	0.174	0.099

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(i) The ionic radius of H is smaller than its atomic radius. Explain. **(2mks)**

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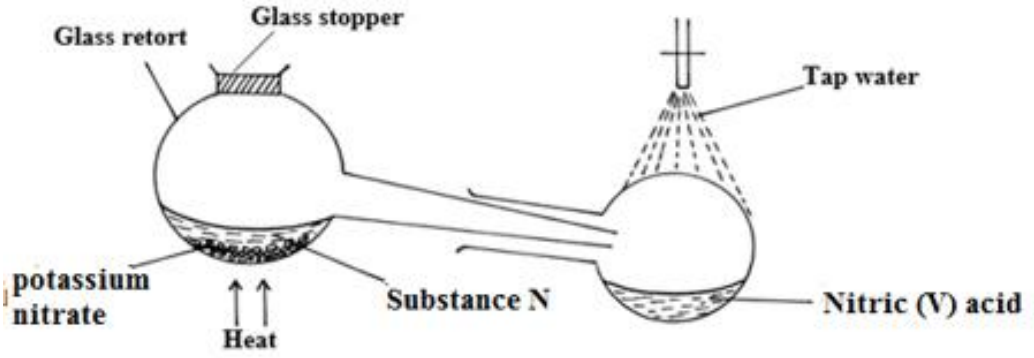
(ii) Write the equation for the reaction between **E** and chlorine **(1mk)**

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6 The set-up below was used to prepare Nitric (V) acid.



(i) Give the name of substance **N**. **(1mk)**

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(ii) Write an equation for the reaction which takes place in the retort flask. **(1mk)**

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(iii) Explain the following;

(I) nitric (V) acid is stored in dark bottles. **(1mk)**

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(II) No gas is evolved when 0.5 M nitric (V) acid is reacted with copper turnings **(2mks)**

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(iv) A factory uses nitric (V) acid and ammonia gas as the only reactants for the preparation of fertilizer. If the daily production of the fertilizer is 4,800kg, Determine the volume of ammonia used daily. (N=14.0, O=16.0, H=1.0, Molar gas volume =24 000cm^3) **(3mks)**

(v) Give **two** uses of nitric (V) acid **(2mks)**

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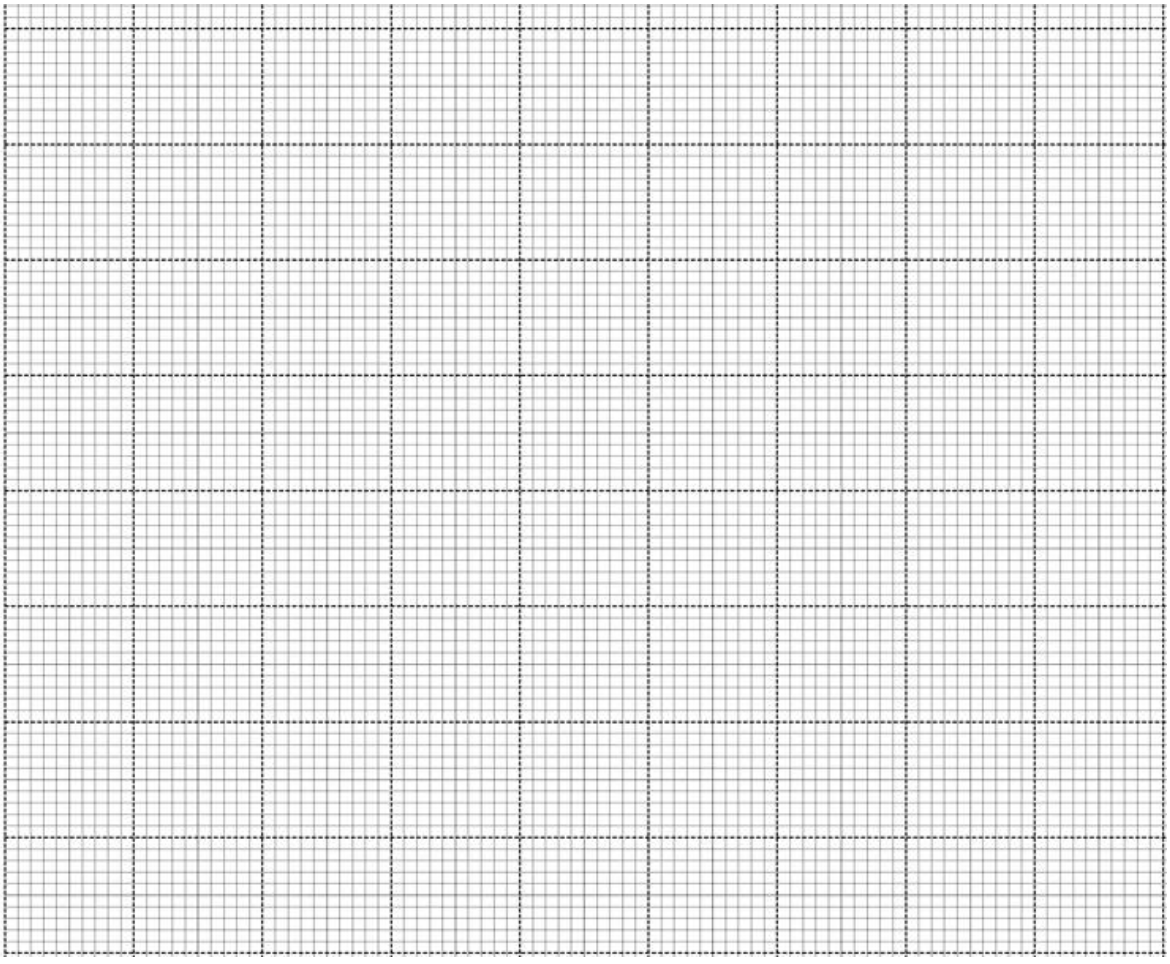
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7(a) In an experiment to study the rate of reaction excess calcium was reacted with 50cm^3 of 1M hydrochloric acid. The volume of hydrogen liberated was collected in a syringe and recorded in the table below.

Time(sec)	0	10	20	30	40	50	60	70	80
Volume of hydrogen (cm^3)	0	60	90	105	112	116	118	120	120

(i) Plot a graph of volume of hydrogen against time. **(3mks)**



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(ii) From the graph determine;

(I) Volume of hydrogen when t =36 seconds **(1mk)**

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(II) The time when volume is 100 cm^3. **(1mk)**

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(b). State **two** factors affecting reaction rate **(2mks)**

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c) What is dynamic equilibrium? **(1mk)**

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(d) Dinitrogen tetraoxide and nitrogen (IV) oxide exists in a dynamic equilibrium as shown below.

$$\underset{\textit{(yellow)}}{N_2O_4\,(g)} \rightleftharpoons \underset{\textit{(brown)}}{2NO_2\,(g)} \qquad \Delta H = +ve$$

State and explain effect of heating the above mixture on the equilibrium **(2mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

CHEMISTRY
Form 4
Time: 2 Hours

Instruction to the candidates

a)Write your Name and Index Number, Admission Number and Class in the spaces provided at the top of this page.
b)Answer all the questions in the spaces in the spaces provided in this paper using English.
c)KNEC Mathematical tables and silent electronic calculators may be used.
d)All working MUST be clearly shown where necessary.

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Questions	Maximum score	Candidate's Score
1	22	
2	12	
3	06	
	40	

1.You are provided with:

- 4.0g of solid P, ethane-1,2-dioic acid with formula **$(COOH)_2.nH_2O$**.
- Solution Q, 0.2 M sodium hydroxide solution.

You are required to determine:

- The solubility of solid P.
- The relative formula mass of the acid **$(COOH)_2.nH_2O$**

Procedure I

(i) Fill the burette with distilled water.
(ii) Place all solid P into a boiling tube.
(iii) Transfer 4.0 cm^3 of distilled water from the burette into the boiling tube containing solid P.
(iv) Heat the mixture gently while stirring with a thermometer until all the solid dissolves.
(v) Allow the mixture to cool while stirring with the thermometer.
(vi) Record the temperature at which the crystals start to form in **table 1** below.
(vii) Add a further 2 cm^3 of distilled water from the burette into the boiling tube.
(viii) Repeat procedure (iv) to (vii) above and record the temperature crystals form to complete **table 1** below.

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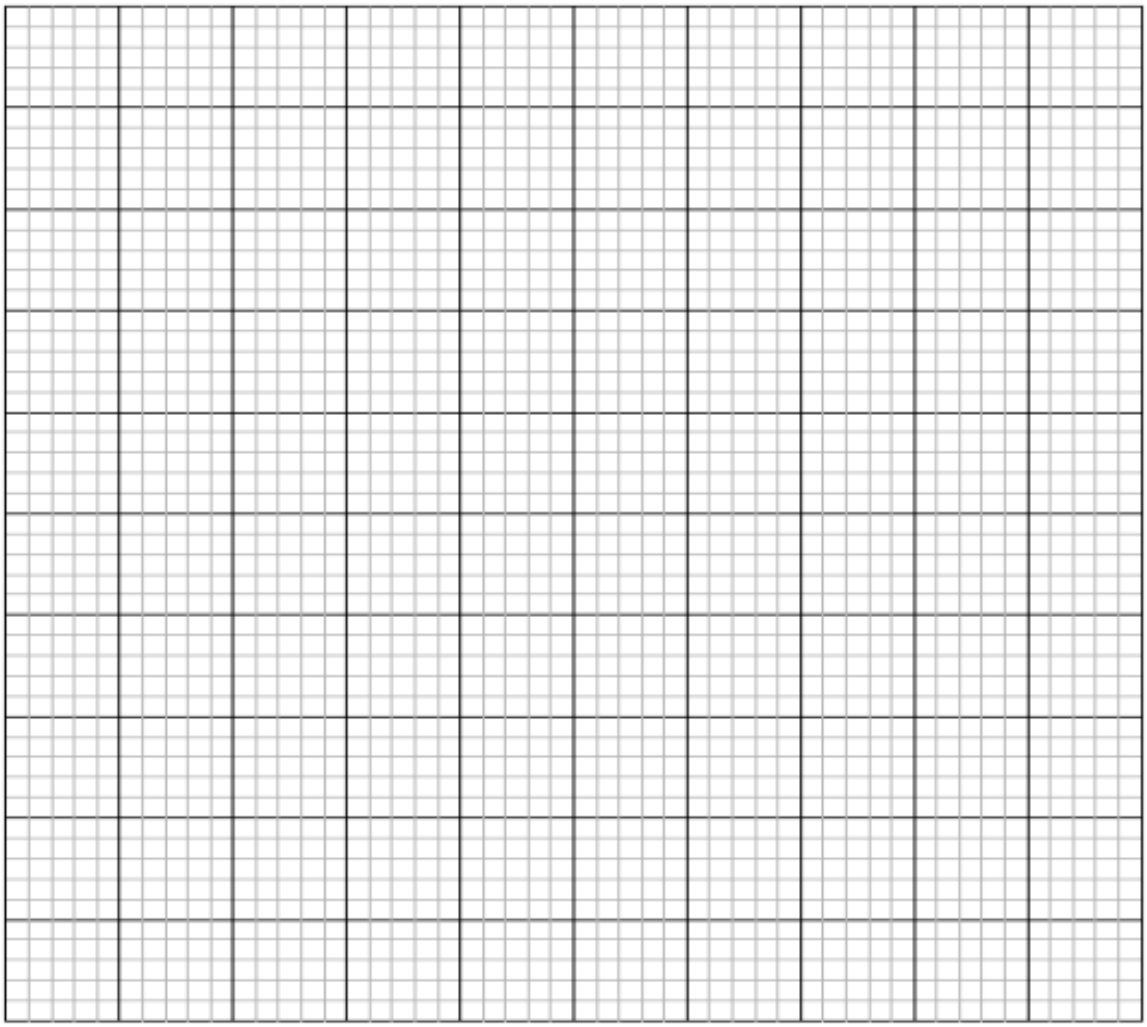
(Preserve the contents of the boiling tube for use in procedure II)

Table 1

Volume of distilled water (cm^3)	Temperature at which crystals of solid P first appear. (^oC)	Solubility of solid P in g/100g of water
4		
6		
8		
10		
12		

(6mks)

(a) On the grid below plot a graph of the solubility of solid P against temperature. **(3mks)**



(b) From your graph determine:

(i) the solubility of solid P at 45^oC **(1mk)**

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(ii) the temperature at which the solubility of solid P is 55g/100g of water**.** **(1mk)**

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(c) How does the solubility of solid P vary with temperature? (1 mark)

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Procedure II

(i) Transfer all the contents of the boiling tube from **procedure I** into a clean 250ml volumetric flask. Rinse the boiling tube and transfer the rinsing into the volumetric flask.

(ii) Add distilled water to the mark.

(iii) Label the resulting solution as solution R.

(iv) Fill the burette with solution R.

(v) Pipette 25 cm^3 of solution Q into a clean conical flask. Add 3 drops of phenolphthalein indicator.

(vi) Titrate solution R against solution Q to an accurate end-point.

Record your results in **table 2** below.

Table 2

Titration	I	II	III
Final burette reading (cm^3)			
Initial burette reading (cm^3)			
Volume of solution R used (cm^3)			

(4mks)

(a) Determine the average volume of **solution R** used. **(1mk)**

(b) Calculate:

(i) The number of **moles** of solution Q used. **(1mk)**

(ii) Given that solution R is a dibasic acid, calculate the number of moles of **solution R** that reacted. **(1mk)**

(iii) The **concentration** of **solution R** in moles per litre. **(1mk)**

(iv) Calculate the formula mass of acid **$(COOH)_2.nH_2O$,** hence find the value of *n*. (H = 1, O=16, C = 12**).**

(2mks)

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2.You **are provided** with **solid T,** which is a mixture of two compounds. **Carry out** the tests below. Write **your observations** and **inferences in the spaces** provided.

(a) Place about all **solid T** in a clean dry boiling tube. Add 5 ml of distilled water and shake thoroughly. Filter the mixture and keep both filtrate and residue. Divide the filtrate into three portions.

(i) Add aqueous NaOH dropwise to the first portion until in excess.

Observations	Inference
(1mk)	**(1mk)**

(ii) Add aqueous ammonia dropwise to the second portion until in excess.

Observations	Inference
(1mk)	**(1mk)**

(b) Rinse the residue with distilled water and transfer it into a clean boiling tube. Add the nitric (V) acid provided dropwise until all the solid dissolves.

Observations	Inference
(1mk)	**(1mk)**

(c) Divide the resulting solution into three portions.

(i) Add aqueous NaOH dropwise to the first portion until in excess.

Observations	Inference
(1mk)	**(1mk)**

(ii) Add aqueous ammonia dropwise to the second portion until in excess.

Observations	Inference
(1mk)	**(1mk)**

(iii) Add 3 drops of HCl to the third portion. Warm the mixture.

Observations	Inference
(1mk)	**(1mk)**

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3. You are provided with **liquid W**. Carry out the following tests and record your observations and inferences in the spaces provided.

(a) Place five drops of **liquid W** on a clean dry watch glass and ignite it.

Observations	Inference
(1mk)	**(1mk)**

(b) Place 2cm^3 of **liquid W** in a clean and dry test tube. Add all the sodium hydrogen carbonate provided.

Observations	Inference
(1mk)	**(1mk)**

(c) Place 2 cm^3 of **liquid W** in a clean and dry test tube. Add 1 cm^3 of acidified potassium dichromate (VI) and warm the mixture.

Observations	Inference
(1mk)	**(1mk)**

LAST PRINTED PAGE

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

FORM FOUR EXAMINATION
COMPUTER STUDIES Paper 1
TIME $2\frac{1}{2}$Hours

INSTRUCTION TO CANDIDATES

- Write your name and admission number in the spaces provided above
- This paper consists of **Two** sections **A** and **B**
- Answer **ALL** questions in section **A**
- Answer question16 and any other **THREE** questions from section **B**
- All answers should be written in the spaces provided on the question paper

FOR EXAMINER'S USE ONLY

SECTION	QUSTIONS	CANDIDATE'S SCORE
A	1 -15	
B	16	
	17	
	18	
	19	
	20	
	TOTAL SCORE	

SECTION A: 40 MARKS
Answer all the questions in this Section

1. State two objectives of normalization in Databases **(2mks)**

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2. Give three qualities of a good system analyst **(3mks)**

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3. Explain how data in a computer system can be secured using **(2marks)**

(i) Security monitors

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(ii) Biometric systems

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(i) Name two inputs devices that may be used as output devices **(2mks)**

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(ii) Give two limitations of voice input devices **(2mks)**

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5. Why is fibre optic more secure than Twisted pair and coaxial cables **(1mk)**

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6. State the function of the following features of a DTP publication window

(i) Pasteboard **(2mks)**

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(ii) Master page **(2mks)**

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7. Mention two effects of shutting down a computer using the wrong procedure **(2mks)**

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8. Levine is a System Analyst working with Victoria International Agencies. Levine was requested to develop a new information system to replace the current system in a stakeholder's meeting chaired by the General Manager. Give three reasons to justify why the organization is in need of a new system yet there is one in place **(3mks)**

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9. Mention three disadvantages of GUI based operating systems **(3mks)**

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10. Nairobi University ICT hub developed an Expert system to help in disease diagnosis. Describe three main components that developers must incorporate in this system to make it mimic human experts **(3mks)**

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11. Computer network technicians prefer to use command line based Operating systems when configuring networks. State three reasons for the preference **(3mks)**

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12. Explain the following limitations of Networking

(a) Over reliance **(2mks)**

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(b) Data security **(2mks)**

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13. Give two reasons for extensive use of Electronic Fund Transfer in modern society **(2mks)**

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14. State two ways of solving printing problem like lack of two way communication **(2mks)**

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15. Describe two challenges associated with the use of internet services like blogs, social media networks and instant messaging **(2mks)**

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SECTION B: 60 MARKS

Answer question number 16 any other three questions in this section

16.

(i) What is test data as used in programming environment **(2mks)**

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(ii) State three ways employed by computer programmers to make the program code easier to understand and follow **(3mks)**

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(iii) Describe a situation where a loop would be useful when writing a program code **(2mks)**

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(iv) Study the pseudo code below and use it draw a flow chart that will represent in all aspects **(8mks)**

1. Start
2. Count =1
3. Average =0
4. For Count =1 to 5 Do
5. Enter Mark1, Mark 2, Mark 3, Mark 4
6. Get the sum
7. Compute Average
8. Is average greater than or equal 50
9. Print Pass
10. Else
11. Output Fail
12. Average =average +Average
13. Count=count +1
14. Endfor
15. Mean score=Average/count
16. Stop

17.

(i) Perform the following number system conversion

(a) 19.1875_{10} to Binary **(2mks)**

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(b) AB_{16} to Octal **(2mks)**

(ii) Perform the twos complement on 13_{10} -23_{10}, leaving your answer in decimal number system **(4mks)**

(iii) Describe three challenges affecting electronic information processing **(3mks)**

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(iv) Most organizations today are migrating from manual file system to computerized filling system so as to have a competitive advantages in discharging their functions. State four advantages of adopting this innovation **(4mks)**

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18.

(i) Give four command buttons from Picture tools used to make an image more visually appealing **(4mks)**

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(ii) List four types of mail merge documents **(4mks)**

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(iii) Briefly describe the following features of Microsoft Excel screen layout

(a) Formula bar **(2mks)**

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(b) Name Box **(2mks)**

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(iv) Describe three data management features supported by Microsoft Excel **(3mks)**

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19.

(i) Mention three functions of a form in a database (**3mks)**

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(ii) Use an example to explain the following data types as used in DBMS

(a) Calculated **(2mks)**

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(b) Yes/No **(2mks)**

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(iii) Describe the types of relationships depicted by the diagram below

(a) **(2mks)**

People	
ID	**Name**
1	Alice
2	Bob
3	Cathy

Drivers Licenses	
UserID	**Number**
1	F25532
2	S43212
3	B98364

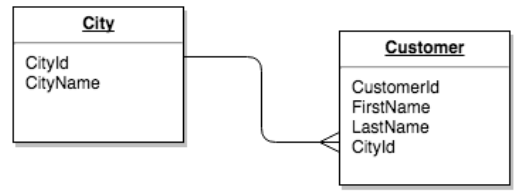
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(b) **(2mks)**



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(iv) The table below is an extract from a database table use it to answer the questions that follows

Product Code	Product Name	Date of Birth	Unit cost	Quantity	Total
01001101	Maize	02/03/2002	2000	10	20000
01223030	Millet	12/12/2002	1000	20	20000
10239345	Wallet	03/09/2005	100	10	1000
19019001	Sweet	09/09/2006	1000	5	5000

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(a) Write an input mask that will display the product names as represented in the table **(2mks)**

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(b) Set a validation rule in the date of Birth column to **(2mks)**

- Restrict entries of future dates

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- Accept year of Birth between 2002 and 2006

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20.

(a) Explain the following terms as used in Data security

(i) Exploits **(2mks)**

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(ii) Intellectual property right **(2mks)**

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(b) State five measure against theft that school managers need to impose to safeguard their computer laboratories **(5mks)**

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(c) Give three reasons for the adoption of e-commerce platform by most businesses **(3mks)**

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(d) Mention three factors to consider when choosing an ISP **(3mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

451/2
COMPUTER STUDIES (Practical)
FORM FOUR
Time 2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

• Indicate your name, admission number and stream at the top right of each printout.

• Write your name and admission number on the CD-R OR CD-RW

• Write the name and version of the software used for each question attempted in the answer sheet.

• Passwords should not be used while saving in the storage medium.

• Answer all the questions.

• All answers must be saved in your storage medium

• Make a printout of the answers on the answer sheets provided.

• Hand all the printouts and the storage medium.

QUESTION	MAXIMUM SCORE	SCORE
ONE	50	
TWO	50	
TOTAL	**100**	

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1.Future Tech Company Ltd deals with sales of **three** types of electronic goods namely television sets, radio systems and DVD players. Below is a table showing details of April 2013 sales.

Future Tech Company Ltd. Sales as per 30th April 2013							
Category Code	Type	Item Description	Unit Price	Sold	Sub-Total	Tax	Net Amount
TV001	TV	21" LG TV	16000	8			
TV003	TV	38"Samsung TV	60000	2			
RD001	Radio	JVC 3CD Changer	21000	12			
DV001	Radio	Philips DVD Player	5500	6			
TV004	TV	14" JVC TV	11000	22			
DV002	Radio	LG DVD Player	6200	18			
TV005	TV	21" Sony TV	15800	14			
DV003	DVD	Sony DVD Player	4500	20			
RD002	Radio	Panasonic Radio	3200	30			
RD003	Radio	Samsung Radio Player	4700	8			
TV007	TV	14" ZEC TV	8200	4			
DV001	Radio	Panasonic DVD Player	6500	16			
Tax Rates			TV	15%			
			DVD	12%			
			Radio	8%			

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Required:

(a) Enter the data in a worksheet and save it as **FutureTec.** **(16mks)**

(b) Format the worksheet as follows:

(i) Center the Title across columns. **(2mks)**

(ii) The text should be Arial, 18 points, bold and centered within a box. **(2mks)**

(iii) Column Headings to be wrapped within the cells and centered horizontally and vertically. **(2mks)**

(iv) The Unit Price to be in two decimals and currency prefix Ksh. **(3mks)**

(c) Use appropriate cell references to calculate:

(i) The Subtotal, rounded to two decimals places. **(2mks)**

(ii) The TAX is based on the type of the item. Use the rates given in the table above to calculate tax payable on each item sold. **(2mks)**

(iii) The Net Amount, which is the subtotal less tax. **(2mks)**

(d) Sort the worksheet in ascending order according to category. **(2mks)**

(e) Calculate the **subtotals** and **grand total** for **the three** types of electronic goods. **(6mks)**

(f) On a separate sheet, create a bar graph that compares sales for the three types of electronic goods. Label it appropriately. **(6mks)**

(g) Print the worksheet showing all formulae used instead of values and the graph. **(4mks)**

2. HIGH SEASONS is a holiday resort firm. It has several branches all over the world. In order to keep track of its employees, a database to organize employee information is required.

(a) Create a database file and save it as **SEASONS** in the removable storage provided. **(1mk)**

(b) (i) Create a table containing the following fields with correct data type and define field properties as follows: **(4mks)**

Field Name	**Field Properties**
EmployeeNo.	4 characters
Date of Birth	MM/DD/YY
Grade	1 character

(ii) Make the field Employee No. the primary key and save the table as EMPLOYEES. **(3mks)**

(c) (i) Create a form based on the EMPLOYEES table with the title as EMPLOYEESFORM. And save it as EMP FORM **(4mks)**

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(ii) Use the form to enter the records below: **(5mks)**

EmployeeNo.	Date_of_Birth	Grade
EMP01	5/15/1960	G
EMP02	4/28/1978	H
EMP03	10/30/1972	R
EMP04	12/5/1975	H
EMP05	2/28/1974	G
EMP06	1/3/1970	G
EMP07	11/24/1956	H
EMP08	3/10/1984	G
EMP09	4/4/1956	S
EMP10	8/11/1964	R

(d) (i) Create another table containing the following records: **(4mks)**

Job Group	Salary
G	24,000.00
H	32,000.00
R	48,000.00
S	52,000.00

(ii) Give the table appropriate primary key and save as Job Grade. **(2mks)**

(e) Create a relationship that enforces referential integrity. **(3mks)**

(f) (i) Create a query and save it as EMPLOYEESQUERY based on the EMPLOYEES table that would display
the entire employee's in Grade H, R and their salaries. **(5mks)**

(ii) Sort the records in the EMPLOYEESQUERY in alphabetical of Grade field. **(2mks)**

(iii) Add the Salary field on the EMPLOYEESQUERY to display the each employee salary and save the changes. **(2mks)**

(g) (i) Create a columnar report with portrait orientation from the EMPLOYEESQUERY. Save the report as EMPLOYEESREPORT. **(4mks)**

(ii) Enter a function to compute the salaries grand total displayed in the report. **(3mks)**

(iii) Insert a header EMPLOYEES IN GRADE H AND R in the report having font size 20pts to the left of the page.
(2mks)

(iv) Create a query from EMPLOYEESQUERY to display Empno, Date of Birth and age of every Employee. Save as age. **(4mks)**

(h) Print the EMPLOYEES Table, EMPLOYEESFORM, EMPLOYEESQUERY and EMPLOYEESREPORT. **(2mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

CHRISTIAN RELIGIOUS EDUCATION
FORM FOUR
CRE 313/1
TIME 2 1/2HOURS
Instruction: Answer Any 5 Questions

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

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

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

2.(a) Mention seven ways in which God rewarded Abraham's Faith **(7mks)**

(b) Describe the incident in which Abraham's faith was tested by God at Mt. Moriah **(7mks)**

(c) Identify six important values Christians learn from the life of Abraham **(6mks)**

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

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

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

4.(a) Explain four reasons why prophets in Israel condemned the Israelites way of worship **(8mks)**

(b) With reference to Amos prophetic ministry identify five evils committed by different nations apart from Israel and Judah **(5mks)**

(c) State six social problems that prophet Amos would condemn in Kenyan society if he were present today. **(7mks)**

5. (a) Identify the qualities of God from the call of Jeremiah **(6mks)**

(b) Discuss four circumstances, which led to the exile of the Israelites to Babylon **(8mks)**

(c) Outline actions Christians take today when they sin against God **(6mks)**

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

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

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

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

CHRISTIAN RELIGIOUS EDUCATION
CRE 313/2
TIME 2HOURS

Instructions: Answer Any 5 Questions

1. **(a)** Explain four missions of Jesus according to Isaiah. **(8mks)**

(b) Outline four similarities about each Zachariah's Benedictus and Mary's magnificent **(8mks)**

(c) Identify the lessons Christians learn from the stories of Jesus' birth **(4mks)**

2. **(a)** Describe the healing of the man with a withered hand Luke 6:6-11 **(8mks)**

(b) Show how Jesus tried to change the Jews attitude to the poor and the despised **(7mks)**

(c) What lessons do Christians learn from the man with a withered hand**?** **(5mks)**

3. **(a)** With reference to Luke 19:11-27 narrate the parable of the gold coin **(5mks)**

(b) Give eight reasons why religious leaders opposed Jesus in Jerusalem Luke 19:45-21 **(8mks)**

(c) Identify seven problems faced by new converts in the church today **(7mks)**

4. **(a)** State the criteria used to discern the gift of the Holy Spirit **(6mks)**

(b) Outline seven teachings of Peter concerning the people of God 1st peter 2:9-10 **(7mks)**

(c) Identify seven Christian values that help to promote a just society **(7mks)**

5. **(a)** Give reasons why the youth do not like manual work **(6mks)**

(b) Outline six situations when a strike is justified **(6mks)**

(c) Identify eight leisure activities common to both Christianity and traditional African communities **(8mks)**

6. **(a)** Explain why poverty was rare in traditional African societies **(6mks)**

(b) What was the impact of the introduction of money economy in traditional African society **(7mks)**

(c) Give ways in which the church is doing to alleviate the status of the poor in the society **(7mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

ENGLISH (101)
PAPER 1
FORM 4

INSTRUCTIONS TO CANDIDATES

a) Write your name and admission number in the spaces provided
b) Write the date of examination in the provided spaces
c) Answer all questions in this paper
d) All your answers must be written in the spaces provided in this paper.
e) This question paper consists of 6 printed pages.
f) Candidates should check and ensure that all the pages are printed as indicated and that no question(s) are missing.

For examiners use only

Question	Maximum score	Candidate's score
1 Functional Skills	20	
2 Cloze test	10	
3Oral skills	30	
Total score	**60**	

1.FUNCTIONAL WRITING **(20mks)**

Drama Club, of which you are the Secretary, needs to raise a sum of Kshs 20,000/= to aid them on their trip to Nairobi for a Drama Contest. To your astonishment as members, the school Principal has offered to give you Kshs 15,000/=.

a.Write an internal memo to the other club members inviting them to a meeting to discuss, among other issues:

1.Ways of raising the remaining 5,000 shillings.
2.Fixing dates for rehearsals for the contest.

b. Write the Principal a note to sincerely thank him/her for his/her generosity. **(8mks)**

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2. CLOZE TEST **(10MKS)**

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

Personal hygiene is very important in everybody's **(1) …….……** Many people do not understand how to take care of **(2)……** properly. Personal hygiene is the **(3) …….** of keeping your body clean and healthy. To **(4)……..**with, personal hygiene is important. It is really important **(5)……..**take care of yourself, and take **(6) ……** of your body. **(7)……** excellent personal hygiene can make you **(8)……** more confident, and increase you self- esteem because you feel **(9)…….** happy and clean. Having good personal hygiene can help a student feel **(10)……** in life for when you feel healthy you are happy.

3. ORAL SKILLS. **(30 Marks)**

(a)*Read the oral poem below and answer the questions that follow.*

O little buds all burgeoning with spring
You hold my winter in forgetfulness
Without my gate u hear a robin sing
O little laughing blooms that lift and bless!
It blew the breezes in a soft caress
Blowing my dreams upon swallows wing'
O little merry buds in dapped dress
You fill my heart with very wantonness
Oh little buds all burgeoning with spring.

Questions.

i. Which words would you stress in line one of the poem and why? **(2mks)**

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ii. How would you perform the last two lines of the poem? **(2mks)**

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iii. Identify two features of oral poetry present in the above oral poem. **(2mks)**

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iv. Which intonation would you use in the sentences below and why? **(2mks)**

a) O little laughing blooms that lift and bless!

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b) O little buds all burgeoning with spring.

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v. Give another word that is pronounced the same as the ones below. **(2mks)**

a) Bud

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b) Blew

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(b) ***Explain the meaning that comes out when the underlined words in the sentence below are stressed.*** (3mks)

i. The generous man gave the poor girl school fees.

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ii. The generous man gave the poor girl school fees.

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iii. The generous man gave the poor girl school fees.

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(c) ***Indicate the silent letter in the words below.*** **(3mks)**

i. Mortgage

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ii. Leopard

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iii. Paradigm

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(d) ***Use stress markers to indicate the stressed syllable in the words below.*** **(2mks)**

i. Beautiful

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ii. Agree

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(e) Pick the off one out according to the pronunciation of the underline vowels below. **(4mks)**

i. P<u>ea</u>sant	W<u>ea</u>pon	M<u>ea</u>ning
ii. <u>Sh</u>epherd	Enou<u>gh</u>	<u>F</u>airly
iii. Rappo<u>rt</u>	Depo<u>t</u>	Repo<u>rt</u>
iv. <u>Ch</u>assis	<u>Ch</u>eddar	<u>Ch</u>ic

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(f) You are invited as the motivational speaker to give a talk on discipline. State three factors you would consider about the audience before giving the talk. **(3mks)**

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(g) A friend of yours was vetted as the best group leader in class. State and explain the qualities that they embodied. **(5mks.)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

ENGLISH (101)
PAPER 2
FORM 4
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

1 .Answer all questions in this question paper.
2. All your answers must be written in the spaces provided in the question paper.

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QUESTION	TOTAL MARKS	SCORE
COMPREHENSION	20	
EXCERPT	25	
POETRY	20	
GRAMMAR	15	
TOTAL MARKS	80	

1. Read the Comprehension below and answer the questions below. (20marks)

Please show us mercy. Save us. We are dying of hunger and thirst. "This was the cry of four **emaciated** children who escaped from Shakahola forest in March this year. The four children aged between 10 and 15 arrived at a village elder's homestead in Shakahola trading center about 12km from the Shakahola extensive farm tired and bruised as they walked through the forest in their attempt to escape from the forced cult fast. In this new discovery, Shakahola village elder Changawa Mangi says the children had lost weight and told him they had been locked in by their parents and forced to fast while those who defied instructions were killed. "I gave them food and water and offered them refuge at my place for some time," the elder said. Mangi, however, says since the authorities were not aware of the cult activities in the forest, they decided to take time and investigate the children's allegations.

When they narrated the story to me, 1 took the matter to the area chief but he told me we should first investigate the matter since the children might be making up stories. "We thought maybe the children were just pretending and they were too lazy to work in the forest. That's why they had run away and we were afraid of giving the wrong information to the police," Mangi said. It is after this incident that the chief and the village elder started to **trail** the activities at Paul Mackenzie's farm, "We collaborated with youths who were grazing in the forest and after a week they told us they had seen many people who looked weak and that's when we decided to report the matter to the police," he said, adding that later on, the four children were taken to a rescue Centre in Malindi.

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As the second phase of exhumation continues, dozens of bodies have been **exhumed** and children were the most affected since they were the first to fast and die, followed by women and then men. Mackenzie told his followers that in the Kingdom of God, children were given first priority and that is why they were to die and go to heaven. Also, in his other teachings, Mackenzie explained that children should not be an obstacle in advancing the gospel. "God has created you to spread his word. Children should not be an obstacle to this. If you can't preach because you are considering providing for your kids, they better starve to death. Let them die. We will bury them."

The number of bodies exhumed from the Shakahola forest has surpassed 211. The **homicide** team led by Homicide director Martin Nyaguto has been digging the mass graves in the expansive Shakahola forest hoping to exhume all the victims and identify them to allow their families to bury them with dignity. After the first phase of exhumations, the morgue holds 112 bodies that have not been identified. Pathologists and forensic experts, desperate to return remains to loved ones, are working tirelessly to find out who they are so that their bodies can be laid to rest. Many families waiting in agony for news about their loved ones have continued to give DNA samples. This is after chief government pathologist Johansen Oduor said the bodies exhumed in the first phase were badly decomposed and would be difficult to identify.

The process begins inside the morgue, where pathologists extract tissue samples from the dead. Because of the bodies' advanced state of decomposition, often a piece of bone is the only option. The samples are then delivered to a laboratory where analysts work to build DNA profiles. "I'm hoping to get the bodies of my sister and my three nephews." said Priscar Zawadi who has been camping at the Malindi sub-county hospital mortuary for two weeks. "We just want to bury our loved ones with dignity," she says.

QUESTIONS

a) What emotions does the first line of this passage evoke? **(1mk)**

……...

.....

.....

b) Why were the children walking through the forest? **(1mk)**

……...

……...

.....

c) (i) According to the passage, why did the Authorities take time to investigate the children's allegations **(1mk)**

……...

.....

.....

ii) What does this reveal about the authorities? **(2mks)**

……...

.....

……...

.....

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d) What finally prompted the chief to report the matter to the police? **(1mk)**

……

……

……

e) Describe the prevailing tone in the passage. **(3mks)**

……

……

……

……

……

f) According to the passage, what is the homicide team tasked to do? **(2mks)**

……

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……

……

g) Make notes on the process of DNA **(4mks)**

……

……

……

……

……

h) We will bury them. Add a question tag **(1mk)**

……

……

i) Explain the meaning of the following words as used in the passage (4marks)

Emaciated

……

……

Trail

……

……

Exhumed

……

……

Homicide

……

……

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2. **Read the Fathers of Nations excerpt below and answer questions that follow(25 mks)**

"I'm leaving" she said. The bed creaked.
"What do you mean you are leaving? "Professor Kimani asked. He knew the answer: She didnot want to stay with him anymore. He pressed her. "What's going on, Asiya?"
"Newbom has asked me to marry him," she said.
This part he did not know. "Newborn Walomu?" he asked. Then he sat up in his half of thebed.
"Yes, Newborn Walomu. I'm leaving tomorrow."
"But why, Siya?" He did not wait for her answer. "Ah! It is his money, isn't it?"
"How dare you, Karanja!" she shouted. Then she also sat up in her half of the bed and turneda bedside lamp on and glowered at him. "For you, I've done without money for over thirty years. Repeat: thirty years! And now you have the gall to say money is the reason I want to leave?"
"Well, isn't it?" he retorted. "Look, Siya, money doesn't guarantee happiness."
"Ha!' she scoffed. Then she slid back into bed, turned to her other side, and wiggled away from him. The bed roared. "You talk of happiness. You! Have you no shame? You couldn'ttell what happiness was if it fell on your lap and cried out its name." She wiggled farther away. "Then you say money doesn't guarantee happiness. Never having had it, how would you know that it doesn't?"
"All I'm saying, Siya, is..." He slid back into bed as well. The bed protested. " trouble. Plus,more trouble from their wealth."
"Ha! If their wealth were a problem, why don't they simply give it away?"
He tried a different approach-Tuni. "In any case, is this a good time for us to part, so soonafter the death of our daughter?"
"Leave Tuni out of this!" she shouted. "She would still be alive if you had a real car," That really hurt.
"Tuni didn't die in our car, Siya,"he said limply in self-defence. Then hetried another angle-age.
"What happened to couples aging together gracefully anyway? Sixty is no age to part, surely,is it?"
"You mean I should have left earlier, before I turned sixty? Well, 'l did not' does not mean 'lshould not', nor does I did' mean 'l will'. That is why if I did not leave before, now I should.And it is why if I did stay then, now I will not."
She left the following morning.

EXCERPT QUESTIONS

a) Place the excerpt in its immediate context. **(4mks)**

……...

.....

.....

……...

.....

.....

b) Describe the cause of Tuni's death. **(4mks)**

……...

.....

.....

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……..

……..

……..

……..

c) Discuss one thematic concern evident in the excerpt. **(2mks)**

……..

……..

……..

……..

d) Who is Newborn Walomu? **(2mks)**

……..

……..

……..

……..

e) Identify and illustrate three styles used in the excerpt. **(6mks)**

……..

……..

……..

……..

……..

……..

……..

……..

f) How has Asiya been portrayed in this excerpt**?** **(4mks)**

……..

……..

……..

……..

……..

……..

g) "Money doesn't guarantee happiness." Why is this statement ironical coming fromKaranja? **(2mks)**

……..

……..

……..

……..

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h) Provide a question tag. **(1mk)**

He knew the answer**,… .....?**

3. POETRY (20mks)

Read the poem below and answer the questions that follow

You watched

You watched those unfortunate kidsThose so-called street urchins
With pleading beseeching sunken eyesDesperately calling out for help
A meal, a frock or shelter
You unflinchingly sent them packing Your excuse, they make the town unsafe

You watched those orphansGuilty of sins unknown
Agony masking their innocent faces
A testimony of years of anguish Timidly calling out for help
For love, kindness or hope
Big drops of tears rolled down from your eyesIs that all you can do?

You watched the handicapped Struggling to be like you and me Indifferent to their needs you walked onForgetting you too are handicapped Perhaps in a different way
Like a snail you abandoned your shellCan you soften your heart?

Questions

a).Who is the persona in the poem? **(2mks)**

……...

.....

……...

.....

b) What is the poem about? **(3mks)**

……...

.....

……...

.....

.....

c) Illustrate any **two** stylistic devices used in the poem **(4mks)**

……...

.....

……...

.....

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.....

.....

d) What is the attitude of the persona towards the 'you' in the poem? **(3mks)**

……...

.....

……...

.....

.....

e) Illustrate any character trait of the 'you' in the poem **(2mks)**

……...

.....

……...

.....

f) Mention the ills that the persona accuses the 'you' of doing **(2mks)**

……...

.....

……...

.....

g) "*Can you soften you heart?"* What does the persona mean by this? **(2mks)**

……...

.....

……...

.....

h) Explain the meaning of the following words as used in the poem **(2mks)**

indifferent ……...

anguish ……...

4. GRAMMAR (15 MARKS)

(a) Rewrite each of the following sentence according to the instruction given after each ***(3mks)***

i) Noah was determined to pass his examinations. He dedicated a lot his time to studies.
(Join using so……..that)

……...

……...

.....

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ii) Nyamita flew the plane over the pacific (Rewrite in passive voice)

……...

.....

iii) They did not have much money. They worked hard and kept their children in school. (join using in spite of)

……...

.....

b) Fill in the blanks with the correct form of the words in brackets **(2mks)**

i) William resigned from his position to..... (peace) his agitated accusers

ii) He did not want to be bothered, so he was..... (interest) in their discussion.

c) Replace the underlined words with appropriate phrasal verbs formed from the words given in brackets **(3mks)**

i) The student's performance did not **meet** the expected standard (measure)

……...

.....

ii) She was completely **deceived** by the man (take)

……...

.....

iii) I **recall** my primary school days with pleasure (look)

……...

.....

d) Fill in the blanks in the following sentences with appropriate prepositions **(3mks)**

i) The prisoners of war were deprived.....their freedom for seven years.

ii) ……She was indebted them for the assistance they gave when she was unwell.

iii) "I forbid you.....going there again!" Obadiah's mother said.

e) Fill in the spaces with the adjectives given in brackets in their correct order **(2mks)**

i) The couple bought a ……bed (new, wooden, huge)

ii) It was a/an..... car (sports , blue, expensive, German)

f) Explain two possible meanings of the sentence below **(2mks)**

The burglar robbed the woman with the knife

……...

.....

……...

.....

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

ENGLISH

FORM 4

ENGLISH

PAPER 3

TIME: 2 ½ HOURS

Instructions to the Candidates

1.Write your details in the spaces provided at the top of this page.
2.Answer **three** questions only.
3.Questions **one** and **two** are **compulsory**.
4.In question **three** choose only **one** of the optional texts you have prepared for.
5.Where a candidate presents work on more than one optional text, only the first one to appear will be marked.
6.Each of your essays must **not** exceed **450** words.
7.Candidates should check to ascertain that no questions are missing.
8.Candidates must answer the questions in English.

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Question	Maximum score	Candidate's score
1	20	
2	20	
3	20	
Total	**60**	

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Answer <u>three</u> questions only

1.IMAGINATIVE COMPOSITION (COMPULSORY) 20 MKS

EITHER

(a) Write a composition ending with the following words

----------since that day, I have always promised myself to remain focused in my studies.

OR

(b) Write a composition explaining what Kenyan youths can do to help in the fight against corruption.

2. (COMPULSORY) 20 MARKS

Betrayal causes pain and strain society. Using ***John's Lara's play, The Samaritan***, for examples, write an essay to validate this assertion. **(20marks)**

3. EITHER

(a) The short story (a silent song and other stories)

Some cultural practices do not add value hence should be done away with. Show the truth in this statement basing your illustrations from Eric Ng'maryo's Ivory Bangles..

OR

(b) The novel-Kazuo Ishiguro. An Artist of the Floating World

War has a way of affecting not only property but also people's lives. Drawing examples from the life of Masuji Ono in Ishiguro's An Artist of The Floating World, write an essay to show the truth of this statement.

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

Kenya Certificate of Secondary Education

312/1 GEOGRAPHY Paper 1

TIME: 2¾ Hours

Instructions to candidates

(a) Write your name, admission number and class in the spaces provided above.

(b) This paper has **two** sections: **A** and **B**

(c) Answer **all** the questions in section **A**

(d) Answer **question 6** and any other **two** questions from section **B**

(e) All answers must be written in the spaces provided after Question 10.

(f) 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

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

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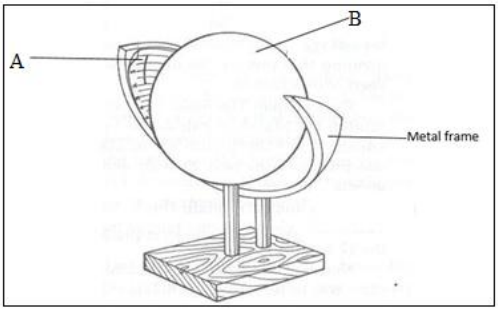
SECTION A

Answer all questions in this section.

1.(a) What is a natural satellite? **(2mks)**

(b) State **three** characteristics of planets. **(3mks).**

2.The diagram below shows one of the weather measuring instruments.



(a) (i) Give the weather element measured using the above instrument. **(1mk)**

(ii) Name the parts marked **A** and **B**. **(2mks)**

(b) State **three** factors considered when siting a weather station. **(3mks)**

3.(a) Name **two** fault scarps in Kenya. **(2mks)**

(b) Give **two** causes of earth movements. **(2mks)**

4.(a) Identify **two** features formed by underground water. **(2mks)**

(b) State **three** conditions that encourage development of karst scenery. **(3mks)**

5.(a) Differentiate between an ice sheet and an iceberg. **(2mks)**

(b) Give **three** features formed by glacial erosion in lowlands. **(3mks)**

SECTION B

*Answer **question 6** and any other **two** questions in this section.*

6.Study the map of Mumias 1:50,000 (sheet 101/2) provided and answer the following questions.

(a) (i) Name **two** map sheets to the north of Mumias. **(2mks)**

(ii) Give six-figure grid reference of Khamashia school in the eastern side. **(2mks)**

(iii) Measure the length of the road **C532** from the junction with road **C533** to Musanda. Give your answer in kilometres. **(2mks)**

(b) (i) Give **two** methods that have used to represent relief in the area covered by the map. **(2mks)**

(ii) Identify **three** human made features in grid square **5037**. **(3mks)**

(c) Describe the drainage of the area covered by the map. **(4mks)**

(d) (i) Draw a rectangle 20 cm by 16 cm to represent the area enclosed by eastings **46** and **50** and northings **41** and **44**. **(1mk)**

(ii) In the rectangle, mark and name the following;

- Woodland vegetation **(1mk)**
- Bumala dam **(1mk)**
- Papyrus swamp **(1mk)**

(iii) Calculate the new scale of your map. **(2mks)**

(e) Citing evidence from the map, identify economic activities carried out in Mumias. **(4mks)**

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7. (a)(i) Give **two** examples of non-metallic minerals. **(2mks)**

(ii) Identify **two** ways in which rocks can be classified. **(2mks)**

(b) Describe how the following rocks are formed.

(i) Hypabyssal rocks **(4mks)**

(ii) Mechanically formed sedimentary rocks **(4mks)**

(c) (i) Outline the changes that occur when rocks undergo metamorphism. **(4mks)**

(ii) State three characteristics of volcanic rocks. **(3mks)**

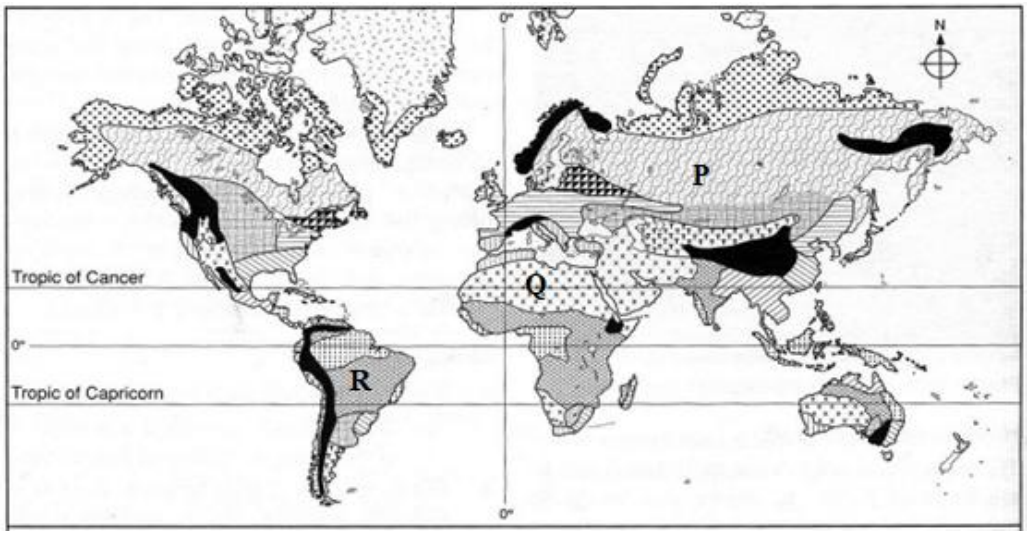
(d) Explain **three** significances of rocks to the economy of Kenya. **(6mks)**

8.(a)(i) What is derived vegetation? **(2mks)**

(ii) Explain how the following factors influence the distribution of vegetation.

- Relief **(4mks)**
- Wind **(4mks)**

(b) The map below shows the distribution of major vegetation regions of the world.



(i) Identify the vegetation regions marked **P** and **R**. **(2mks)**

(ii) Explain how the vegetation in the region **Q** is adopted to the environment. **(8mks)**

(c) State **five** uses of forests. **(5mks)**

9.(a) Identify **three** types of river erosion. **(3mks)**

(b) (i) A part from waterfalls, give **two** other features of river erosion. **(2mks)**

(ii) State **four** ways through which waterfalls are formed. **(4mks)**

(c) With the aid of diagrams, describe how an ox-bow lake is formed. **(8mks)**

(d) (i) What is river rejuvenation? **(2mks)**

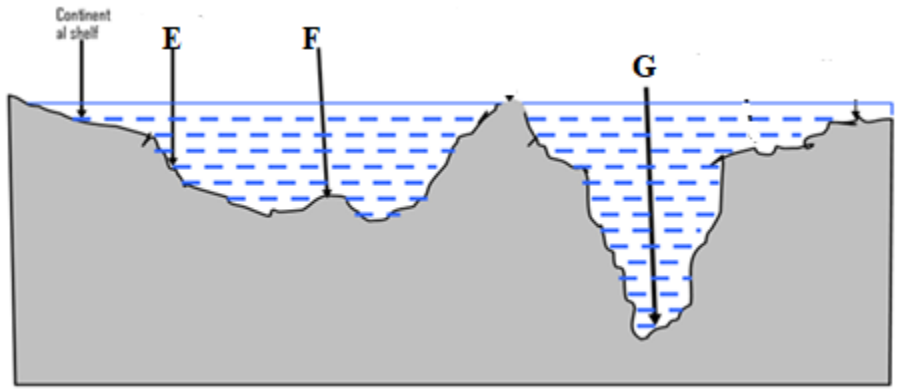
(ii) Explain **three** causes of river rejuvenation. **(6mks)**

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10. (a) (i) Define the term ocean. **(2mks)**

(ii) Name **three** main oceans on the earth's surface. **(3mks)**

(b) The diagram below shows ocean topography. Use it to answer the questions that follow.



(i) Name the parts marked **E**, **F** and **G**. **(3mks)**

(ii) State **three** characteristics of continental shelf. **(3mks)**

(c) (i) Give **two** factors that determine the rate of wave erosion. (2mks)

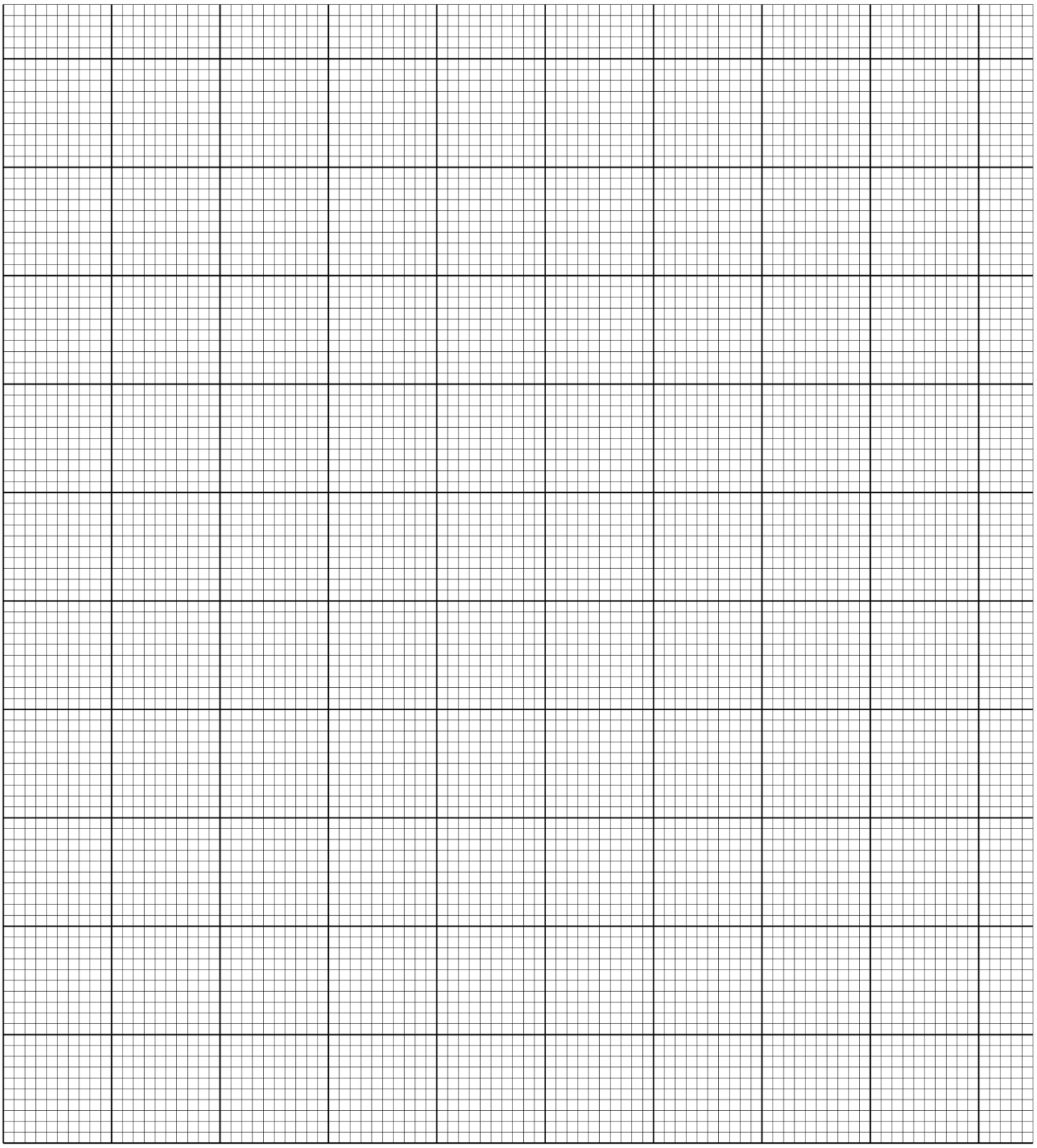
(ii) Describe how a wave-cut platform is formed. **(7mks)**

(d) Members of your class are planning to carry out a field study on a submerged highland coast.

(i) Give **two** types of submerged highland coasts you're likely to visit. **(2mks)**

(ii) State **three** reasons why you would need a working schedule. **(3mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

312/2
GEOGRAPHY
Paper 2
Time 2 hours 45 min.

INSTRUCTIONS TO STUDENTS

- This paper has **two** sections **A** and **B**
- Write all the personal details in the spaces provided
- Answer **ALL** the questions in section **A**. In section **B** answer questions **6** and any other **TWO** questions.
- Answer the Questions in English.

For examiners use only.

	Expected score	Students score
Section A	**25**	
Number 6	**25**	
	25	
	25	
	100	

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Section A:

Answer All Questions in This Section

1.(a) What is Human Environment? **(2Mks)**

(b) Identify areas of study under the Human Environment. **(3Mks)**

2(a) Give two reasons why pastoralists keep large herds of animals. **(2Mks)**

b) Give three ways in which the government of Kenya assist nomadic pastoralists **(3Mks)**

3(a) What is a polder? **(2Mks)**

(b) State three ways of land reclamation. **(3Mks)**

4(a) State three problems facing crop farming in Kenya**.** **(3Mks)**

(b) Outline two problems facing coffee farming in **Kenya** **(2Mks**

5. (a) A photograph is divided into three main parts. Name them. **(3Mks)**

(b) State two limitations of using photographs. **(2Mks)**

SECTION B:

Answer question 6 and any other two questions in this section

6. The table below shows the prices of sugar in Kenya shillings per ton in some countries in Africa. Use it to answer questions

YEAR	**KENYA**	UGANDA	**TANZANIA**	ZAMBIA
2014	93,400	61,923	67,102	84,556
2015	109,224	67,624	65,785	93,768
2016	110,897	65,170	90,647	86,236

a) (i) Draw a divided rectangle 16cm long to represent the prices of sugar in the year 2016 **(8Mks)**

(ii) State **two** advantages of using divide rectangle to present statistical data **(2Mks)**

(b) Give **three** physical factors that influence the growing of sugar cane in Kenya **(3Mks)**

(c). Describe the stages involved in processing of sugarcane at the factory (**7Mk**s)

d). State five challenges facing sugar farming in Kenya **(5Mks)**

7(a) (i) Distinguish between a forest and forestry. **(2Mks)**

(ii) Name **two** indigenous softwood trees species found in Kenya **(2Mks)**

(b)(i) Mention 3 characteristics of planted forests. **(3Mks)**

(ii) Name **two** forest reserves in West of the Rift valley of Kenya **(2Mks)**

b) (i) State **four** characteristics of temperate hardwood forests. **(4Mks)**

(ii) Explain any **three** problems which have limited exploitation of tropical hardwood forests in Africa **(6Mks)**

c) Give the difference between exploitation of softwood forests in Kenya and Canada under the following headings:

i) Trees species **(2Mks)**

(ii) Mode of exploitation **(2Mks)**

(iii) Marketing of products **(2Mks)**

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8.a) Define the term mineral **(2Mks)**

b) i) Name **two** areas in South Africa where diamond is mined **(2Mks)**

ii) Give **four** ways in which minerals occur **(4Mks)**

c) i) Explain **Three** negative effects of mining on the environment **(6Mks)**

ii) Identify any **two** main methods of mining **(2Mks)**

iii) Name a port through which minerals in East Africa are exported **(I Mk)**

d) Explain **four** ways in which soda ash contributes to the economy of Kenya) **(8Mks)**

9. (a) i) Name **three** exotic breeds of beef cattle reared in commercial ranches in Kenya. **(3Mks)**

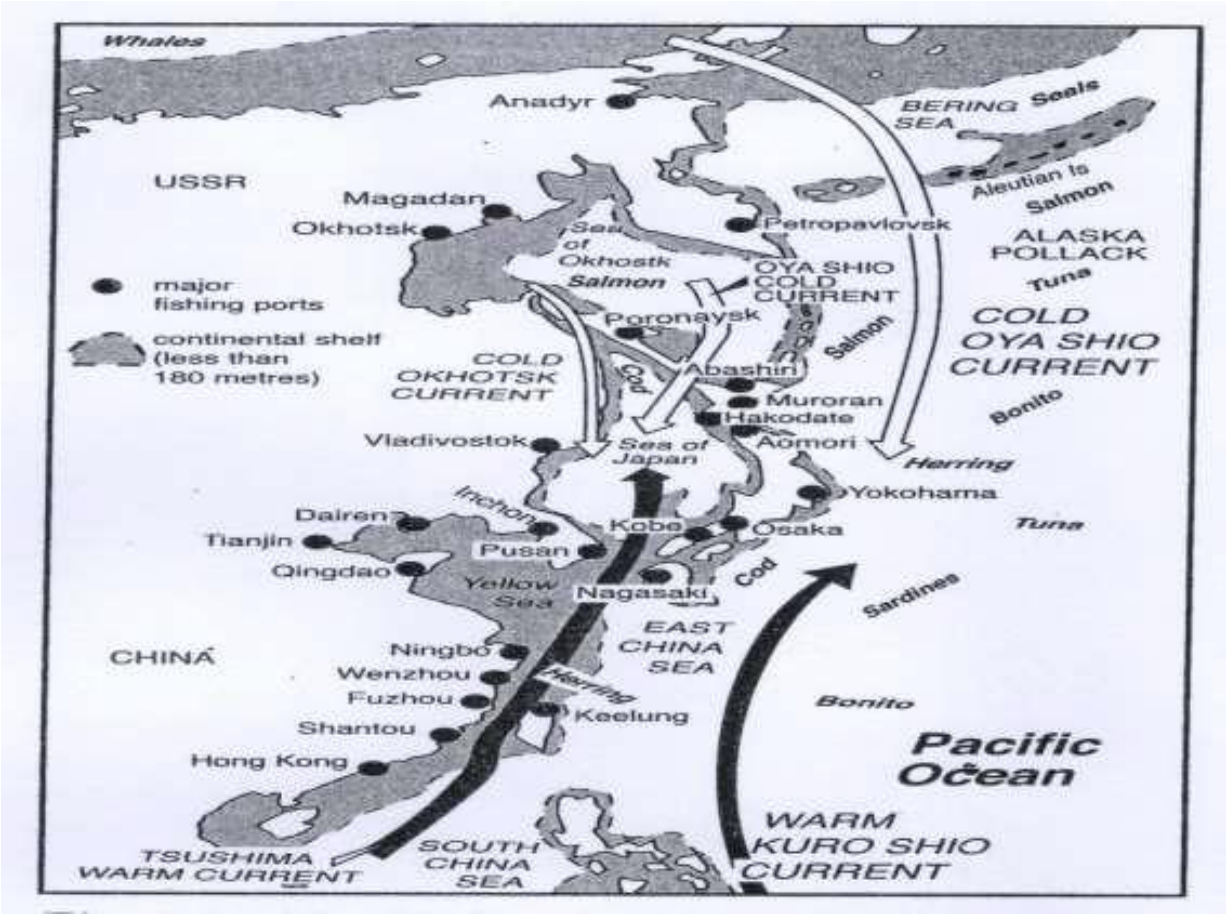
(ii). Explain **three** problems facing commercial beef farming in Kenya**.** **(6Mks)**

(**b). State four** physical factors that favour dairy farming in the Kenya highlands **(4Mks)**

(c) i) Apart from fresh milk name four other dairy products **(4Mks)**

(ii) Explain **four** ways in which dairy farming in Kenya is different from dairy farming in Denmark. **(8Mks)**

10. (a) The diagram below shows a fishing ground in the Pacific Ocean.



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(i) Identify the fishing ground shown above. **(2Mks)**

(ii) Name **two** types of fish species found in the fishing ground above. **(2Mks)**

(b) (i) Differentiate between fishing and fisheries. **(2Mks)**

(ii) Name **two** inland types of fisheries in Kenya. **(2Mks)**

(c) (i) Describe the long lining fishing method. **(4Mks)**

(ii) Explain **three** physical factors that have influenced the development of fishing in Japan. **(6Mks)**

(d) (i) State **four** problems that face Marine fishing in Kenya. **(4Mks)**

(ii) Give **three** ways of conserving fresh water fisheries in Kenya. **(3Mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

FORM FOUR

311/1 HISTORY AND GOVERNMENT Paper 1

TIME 2HRS 30 MINS

INSTRUCTIONS TO THE CANDIDATES

(a)This paper consists of three sections A, B and C.

(b) Answer all the questions in sections A.

FOR EXAMINER'S USE ONLY

Section	Question	Marks
A	**1-17**	
B	**18**	
	19	
	20	
	21	
C	**22**	
	23	
	24	
Total		

SECTION A (25 MARKS)

(Answer all questions in this section.)

1. Give two scientific sources of information on History of Kenyan communities during the pre -colonial period. **(2mks)**

2. Name the ethnic community that Maasai assimilated. **(1mk)**

3. State two ways in which the knowledge of iron working helped in the migration of the Bantus. **(2mks)**

4. Give one duty of warriors among the Maasai during the pre-colonial period**.** **(1mk)**

5. Highlight one reason why the Portuguese failed to spread Christianity along the coast of Kenya **(1mk)**

6. Give one advantage of using Arbitration as a method of conflict resolution. **(1mk)**

7. Define the term Dual citizenship. **(1mk)**

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8. State two reasons why Africans were denied the right to grow cash crops during colonial period in Kenya**.** **(2mks)**

9. Outline the main change brought by the constitutional amendment of 1982 in Kenya**.** **(1mk)**

10. Mention two factors that enabled British to colonized Kenya in the 19th century. **(2mks)**

11. State the main contribution of Jaramogi Oginga Odinga in the history of Kenya. **(1mk)**

12. Identify two methods used by Trade Unionists to demand for their rights during the colonial period in Kenya. **(2mks)**

13. Give two functions of the sergeant at arms in the Kenyan parliament**.** **(2mks)**

14. Identify two occasions which the president attends the parliament in Kenya. **(2mks)**

15. Name the body that is responsible for conducting elections in Kenya. **(1mk)**

16. State two ways through which Savings and Credit cooperation Societies in Kenya benefits their members. **(2mks)**

17. Identify one example of external sources of revenue to the Kenya Government. **(1mk)**

SECTION B (45 MARKS)

Answer any three questions in this section.

18 a). Name five Eastern Cushitic speakers in Kenya**.** **(5mks)**

b) Explain five results of the interaction between the Bantu and the Cushite during the pre-colonial period. **(10mks)**

19.a) Give three ways in which Seyyid Said promoted International Trade. **(3mks)**

b) Describe six results of the Plantation Agriculture in the East African Coast by Seyyid Said. **(12mks)**

20. a) State three terms of the Anglo-German Agreement of 1886**.** **(3mks)**

b) Discuss six factors that contributed to the formation of political Associations in Kenya before 1939. **(12mks)**

21.a) Identify three sources of Nyayoism. **(3mks)**

b) Explain six social effects of National Philosophies in Kenya. **(12mks)**

SECTION C (30 MARKS)

(Answer any two questions in this section)

22. a) Identify five challenges Kenyans encountered in search of a new constitution. **(5mks)**

b) Discuss five importance of human rights in the society. **(10mks)**

23.a) State five factors that can promote free and fair elections in Kenya. **(5mks)**

b) Describe five functions of the senate in Kenya **.** **(10mks)**

24.a) Give three roles of the County Executive Committee Members. **(3mks)**

b) Explain six ways in which independence of Judiciary is exercised in Kenya**.** **(12mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

311/2 HISTORY AND GOVERNMENT Paper 2
TIME 2HRS 30 MINS

INSTRUCTIONS TO THE CANDIDATES

(a) This paper consists of three sections A, B and C.
(b) Answer all the questions in sections A.

FOR EXAMINER'S USE ONLY

Section	Question	Marks
A	1-17	
B	18	
	19	
	20	
	21	
C	22	
	23	
	24	
Total		

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SECTION A (25 MARKS)

(Answer all questions in this section)

1. Give two shortcomings of Oral Tradition as a source of information in History and Government. **(2mks)**

2.Name the tools used by early man in the second phase of the Old Stone Age period**.** **(1mk)**

3. Give the main reason why Early Agriculture developed in Egypt **(1mk)**

4.Identify two roles played by Takshifs during the Trans-Saharan trade. **(2mks)**

5.State two challenges faced by space explorers**.** **(2mks)**

6.Mention two features of a cell phone. **(2mks)**

7.State one political effect of the development of iron technology in Africa. **(1mk)**

8. Give two natural factors for the growth of Meroe **(2mks)**

9.Identify the main symbol of unity in the Shona Kingdom. **(1mk)**

10. State one way in which public opinion in Europe contributed to the colonization of Africa. **(1mk)**

11. Name two communes in Senegal where Assimilation policy was successful**.** **(2mks)**

12. Identify two effects of Land Apportionment Act of 1930 in colonial Zimbabwe**.** **(2mks)**

13. Give two economic reasons for the growth of African nationalism in Ghana. **(2mks)**

14. State one way in which the raise of dictatorship in Europe contributed to the outbreak of the Second World War. **(1mk)**

15. Name one African who had served as Secretary General of the United Nation**.** **(1mk)**

16. What was the main cause of Cold War? **(1mk)**

17. State the main reason why Tanzania adopted Nationalisation policy**.** **(1mk)**

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SECTION B (45 MARKS)

(Answer any three questions in this section.)

18 a). State five distinctions between man and apes. (**5mks)**

b). Explain five ways in which Homo erectus attempted to better his life in the Stone Age period**.** **(10mks)**

19 a). Identify five factors that facilitated Scientific Revolution in Europe**.** **(5mks)**

b) Discuss five factors that enabled Germany to recover its industries after world wars. **(10mks)**

20 a). Give three factors that led to the defeat of Samori Toure by the French. **(3mks)**

b). Describe six negative effects of the partition of Africa on African Communities. **(12mks)**

21 a). Identify three ways in which Portugal benefited from Mozambique. **(3mks)**

b). Discuss six reasons why south Africa took long to achieve majority rule. **(12mks)**

SECTION C (30 MARKS)

(Answer any two questions in this section)

22 a). State three ways in which centralization of authority contributed to the growth of Buganda kingdom. **(3mks)**

b). Describe the political organization of Asante Kingdom**.** **(12mks)**

23 a). Give five ways in which Germany violated the Versailles treaty. **(5mks)**

b). Discuss five political effects of 2nd World War**.** **(10mks)**

24 a). State three causes of Army mutiny in DRC in 1960. **(3mks)**

b). Explain six achievements of commonwealth to its members**.** **(12mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

HOME SCIENCE
(Theory)
Time: 2½ hours

Instructions to students

- Write your name, class, and admission number in the spaces provided.
- Sign and write the date of the exam in the spaces provided.
- The paper consists of three sections: **A, B** and **C.** Answer all the questions in section **A** and **B** and any two questions in section **C**. Answers to all questions must be in the spaces provided.
- The paper has 15 printed pages. Check to see that all the pages are printed and no questions are missing.

For examiner's use only

Section	Question	Maximum Score	Student's Score
A	1-19	40	
B	20	20	
C		20	
		20	
Total Score		100	

SECTION A (40 marks)

*Answer **ALL** the questions in this section in the spaces provided.*

1. Suggest **two** reasons why a baby may be weaned abruptly. **(2mks)**

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2. Mention **two** functions of lipids in the body. **(2mks)**

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3.Give **three** possible reasons an adult would suffer from Marasmus. **(3mks)**

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4. List **four** metals used in making kitchen and household equipment. **(2mks)**

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5. Sate **two** ways of identifying a bad egg when frying an egg. **(1mk)**

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6. Give **two** reasons why proper drainage is important in the home**.** **(2mks)**

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7. Outline **three** advantages of baking as a method of cooking**.** **(3mks)**

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8. Suggest **four** areas in the home that need very bright light. **(2mks)**

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9. Identify **two** advantages of using carpets in the home. **(2mks)**

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10. Define the following terms as used in sewing. **(4mks)**

a) Edge stitching

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b) Under stitching

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c) Stay stitching

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d) Basting

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11. Name **three** pathogens that case infections. **(3mks)**

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12. State the **two** reflexes that control breast feeding. **(1mk)**

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13. Highlight **three** advantages of using firewood as a fuel**.** **(3mks)**

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14. Suggest **two** disadvantages of using iron sheets as roofing material**.** **(2mks)**

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15. List **four** sources of water used in homes in Kenya. **(2mks)**

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16. Suggest **two** uses of eggs in flour mixtures. **(1mk)**

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17. Mention **two** reasons for fortifying food. **(2mks)**

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18. Give **two** diseases that can be spread from dirty toilets. **(1mk)**

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19. Mention **two** ways of managing constipation**.** **(2mks)**

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SECTION B (20 marks) ***(Compulsory)***

Answer question 20 in the spaces provided

20. You are preparing for your sister's 21st birthday

a) Outline the procedure you would use to clean the polished dining table. **(9mks)**

b) Describe how you will launder the fast colored linen table napkins. **(7mks)**

c) Outlines the procedure for cleaning the crystal glasses to be used at the party. **(4mks)**

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SECTION C (40 marks)

*Answer **ANY** two questions from this section in the spaces provided.*

21 a) Identify **three** fabrics that need special consideration when laying out pattern pieces. **(6mks)**

b) Mention **six** general rules for making seams. **(6mks)**

c) Discuss **four** dangers of diarrhoea in children. **(8mks)**

22 a) Suggest **six** disadvantages of using left over food. **(6mks)**

b) Discuss **four** challenges families in urban areas face in disposing refuse. **(8mks)**

c) Highlight **three** reasons why immunization is important. **(6mks)**

23 a) Outline **five** points on care of a lactating mother. **(5mks)**

b) Discuss **four** factors that influence consumer buying. **(8mks)**

c) Suggest **four** reasons for laundering clothes. **(4mks)**

d) List **six** equipment/materials needed when arranging flowers. **(3mks)**

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Prefer Calling Amobi Group of Examiners @ 0743 333 000 or 0706 851 439 for Marking Schemes

DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

HOME SCIENCE CLOTHING CONSTRUCTION

PRACTICAL

Time:2 ½ hours

Instructions to candidates

a) This paper consists of 3 printed pages

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

c) Candidates **MUST** use machine stitches appropriately in the construction of the garment. Hand stitches used **INSTEAD** of machine stitches will not be marked.

d) Hand stitches will only be allowed where specified

A pattern of a boy's pair of shorts is provided. You are advised to study the sketches, instructions and layout carefully before you begin the test.

MATERIALS PROVIDED

1. Pattern pieces

A- Short front
B- Short back
C- Front waist facing
D- Back waist facing
E- Pocket

2. Plain light weight cotton fabric **60 cm long and 90 cm wide**
3. Sewing thread to match the fabric.
4. Embroidery thread 125 cm long.
5. One button 1.3 cm with two holes
6. One large envelope

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THE TEST

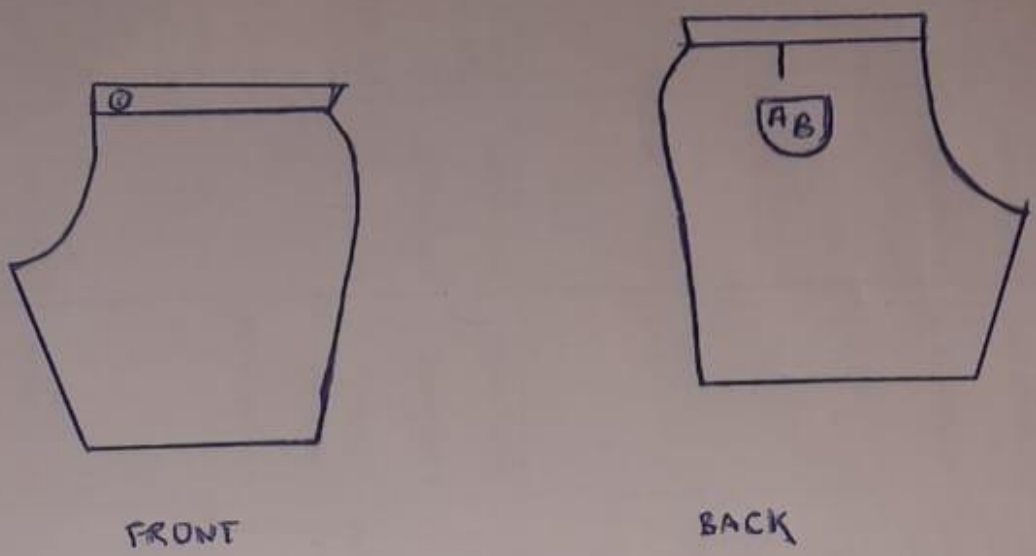
Using the materials provided, cut out and make the LEFT LEG of the short to show the following processes:

(a) Cutting out **(10½mks)**
(b) Making of the back dart **(7mks)**
(c) Making knife pleats at the short front **(6mks)**
(d) Embroidering the letters on the pocket using stem stitches **(3mks)**
(e) Preparation and attaching of the patch pocket **(9mks)**
(f) Joining the side seam of the short using an open seam **(10mks)**
(g) Joining the inner leg using a Machine fell seam **(7mks)**
(h) Preparation and attaching the waistband to the waistline and holding down using uneven tacking stitches **(17mks)**
(i) Finishing the lower edge by hemming the front half and holding the back hem using even tacking stitches. **(12mks)**
(j) Fixing the button **(2mks)**
(k) Overall presentation **(6½mks)**

At the end of the examination, trim all hanging thread, press your work, and firmly sew onto your work, on single fabric, a label bearing your name and index number. Remove needles and pins from your work, fold your work neatly and place it in the envelope provided. Do not put scraps of fabric in the envelope, however any piece cut and not stitched should be included in the envelope.

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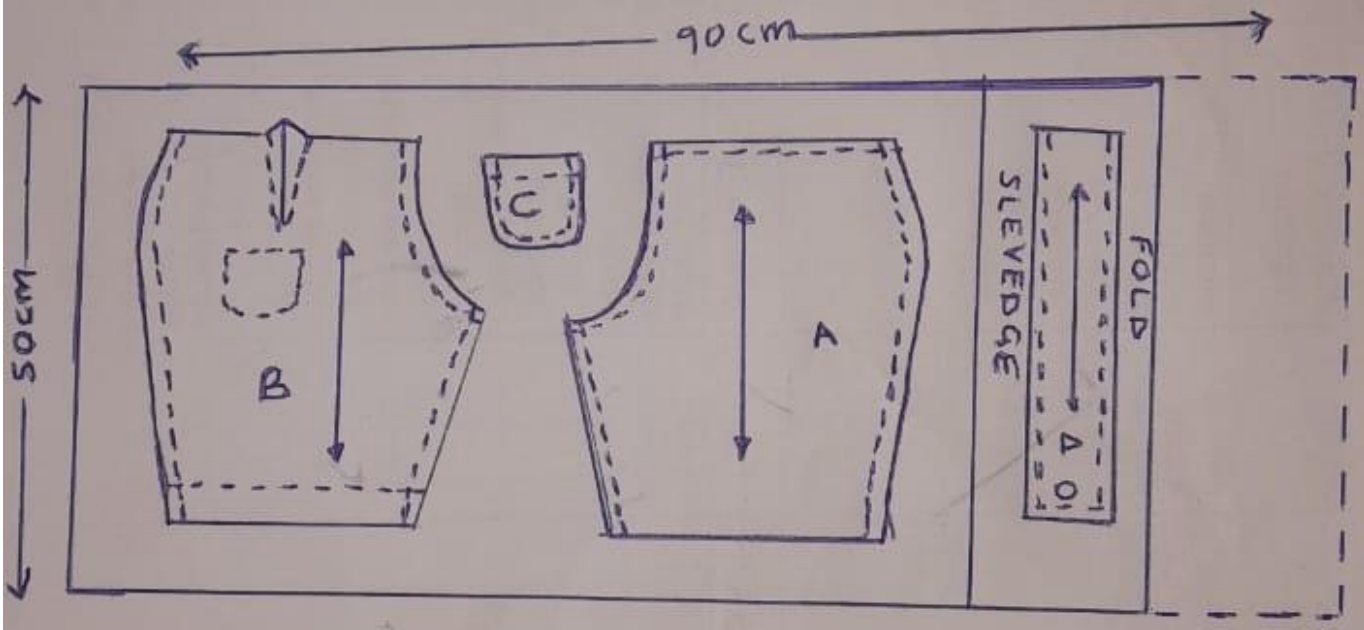
SHORT VIEW



FRONT

BACK

LAYOUT (NOT DRAWN TO SCALE)



DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

441/3
HOME SCIENCE
FOODS AND NUTRITION
Paper 3
PRACTICAL
1 ¾ hours

PLANNING: **30 minutes**
PRACTICAL TEST SESSION: **1 ¼ hours**

INSTRUCTIONS TO CANDIDATES

1.Read the test carefully
2.Write your name and admission number on every sheet of paper used
3.Textbooks and recipes may be used during the planning session as reference materials
4.You will be expected to keep your order of work during the practical
5.You are allowed to take away **only** your materials at the end of the planning session
6.You are not allowed to bring additional notes to the practical sessions

THE TEST

You plan to go on picnic with your two friends.
Using **all** the ingredients listed below, prepare, cook and pack two suitable items for the three of you. Include a refreshing drink.

Ingredients

Irish potatoes/wheat flour
Tomatoes
Bread
Margarine
Lettuce/cucumber
Sausage/Eggs
Salt
Oil/cooking fat
Sugar
Mangoes/Oranges/Pineapple

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PLANNING SESSION 30 minutes

For each task below use separate sheets of paper and a carbon paper to make duplicate copies then proceed as follows:

1. Identify the dishes and write their recipes.
2. Write your order of work.
3. Make a list of foodstuff and equipment you will require.

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

ISLAMIC RELIGIOUS EDUCATION/314

FORM FOUR

TIME: 2½ HRS

INSTRUCTIONS:

1. This paper contains six (6) questions.
2. Answer **ALL** the questions
3. Write your answers in the answer sheet provided.
4. **All** answers must be in English

1.

a) Discuss the reasons why mankind needed the revelation of the Qur'an. **(7mks)**

b) Explain the circumstances that led to the standardization of the Qur'an. **(5mks)**

c) Draw moral teachings of Surah an Nur. **(8mks)**

2.

a) Discuss the need for narratives in the Qur'an. **(8mks)**

b) Differentiate between Makkan and Madinan Surah's. **(6mks)**

c) Explain the teaching of Surratul Hujurat. **(6mks)**

3.

a) What are the criteria that can be used to detect a fabricated Hadith? **(7mks)**

b) Outline the themes of the forty Hadith book by Imam-an-Nawwawi. **(6mks)**

c) The prophet (SAW) said "Whoever is merciful even to sparrow that he slaughters, Allah will be merciful to Him on the day of judgment. "In light of this hadith and others on caring of animals. Explain the Islamic teachings of the Hadith on the care for animals. **(7mks)**

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4.

a) Describe the seven classes of Islamic legal acts. **(7mks)**

b) Outline the contributions of Imam Malik in the field of Fiqh. **(5mks)**

c. Differentiate between the Islamic law and the secular law **(8mks)**

5.

a) Explain the significance of the concept of Tawba in Islam. **(7mks)**

b) Discuss how the performance of Hajj creates equality and unity among Muslims **(8mks)**

c) Differentiate between Iddul-Adha and Friday prayers. **(5mks)**

6.

a) Outline the qualities of an Imam according to Shia doctrine. **(7mks)**

b) Explain the significance of Qadha and Qadar to a Muslim. **(7mks)**

c) Give characteristics/ features of angels. **(6mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

ISLAMIC RELIGIOUS EDUCATION PAPER TWO
314/2
FORM FOUR
TIME: $2^1/_2$ HRS

INSTRUCTIONS:
1. This paper contains six (6) questions.
*2. Answer any **FIVE** questions*
3. Write your answers in the answer sheet provided.
4. All answers must be in English.

1. a) State six benefits of exercising contentment. **(6mks)**
b) Explain the rationale for the prohibition of drugs and substance abuse in Islam. **(7mks)**
c) Suggest seven measures to discourage gambling in the society. **(7mks)**

2. a) State the importance of marriage in Islam. **(8mks)**
b) Describe the process (machinery) of *talaq*. **(6mks)**
c) Distinguish between the *eddat* of a widow and that of a divorced woman. **(6mks)**

3. a) Identify six duties of a Muslim husband. **(6mks)**
b) Discuss the conditions of agreements and contracts in Islam. **(7mks)**
c) Explain why *riba* is prohibited in Islam **(7mks)**

4. a) State five importance of the Madina Constitution. **(5mks)**
b) Highlight five social achievements of Prophet Muhammad (Pbuh) **(5mks)**
c) Discuss five consequences of the assassination of Caliph Uthman (RA). **(10mks)**

5. a) State the lessons Muslim leaders can learn from the first speech of Abubakar Assidiq after he was appointed as Caliph. **(6mks)**
b) Explain six challenges faced by muslims in Kenya in the Nineteenth Century. **(6mks)**
c) Discuss the contributions of Abdulmalik bin Marwan to the growth of Islam **(8mks)**

6. a) State the achievements of Sheikh Swaleh Farsy. **(8mks)**
b) Discuss Imam Ghazali's views on education. **(12mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

JINA: ……..

SHULE: ……..

TAREHE:…….. NAMBARI YA USAJILI: …… SAHIHI:……

MTIHANI WA MWISHO WA MUHULA

KIDATO CHA NNE

KARATASI YA 102/1

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

MAAGIZO: Swali la kwanza ni la lazima

1. **LAZIMA**
   Wewe ni waziri katika Wizara wa Elimu, umeombwa utoe hotuba mbele ya walimu na wazazi kuhusu changamoto zinazokabili Mfumo wa Elimu wa Umilisi wakati wa siku ya wazazi katika shule ya upili ya Darubini.

2. Mlipuko wa ugonjwa wa Kovid ulichangia kuboresha uchumi wa nchi yetu. Jadili

3. Tunga kisa kitachodhihirisha maana ya methali ifuatayo;
   Mpiga ngumi ukuta huumiza mkonowe.

4. Malizia insha yako kwa maneno haya; ndipo nikasikia mayowe kutoka kwa jiarani. Nilitoka nje mbio. Kumulika kwa jirani, nyumba yake haikuwa inaonekana.

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

JINA: ……..

SHULE: ……..

TAREHE:…….. NAMBARI YA USAJILI: …… SAHIHI:……

KIDATO CHA NNE
KARATASI YA PILI
MAAGIZO; JIBU MASWALI YOTE
MUDA: $2\frac{1}{2}$

1. **UFAHAMU (ALAMA 15)**

Soma makala yafuatayo kisha ujibu maswali yanayofuata.

Hapo kitambo, tarakilishi ilijulikana kuwa chombo cha wajuzi au kikundi fulani cha wakwasi waliosomea misimbo kwa miaka wakajipa shahada, stashahada na kuzamia katika vinamisi vya chini sana vya elimu hiyo. Mnamo miaka ya 1980, takwimu zinaonyesha kwamba si zaidi ya asilimia mbili ya ulimwengu iliyokuwa ikitumia tarakilishi. Sababu kuu ilikuwa ugumu wa misimbo na amri ambazo zingewezesha kompyuta kutekeleza majukumu ya kimsingi. Ilikuwa bughudha tupu kujaribu kukumbuka misimbo hiyo au misururu hiyo ya amri. Ndiposa maulana wa ngamizi au kompyuta wakatafakari na kutambua suluhisho la kutumia vieneo.Vieneo ni vibaa vilivyo na amri na vimeunganishwa na “nyuzi". Nduni nzuri zaidi ya mfumo vieneo ni mwambaazana ambao una michoro ya viungo vya tarakilishi kama vile printa,faili na kadhalika. Michoro hii inawakilisha kazi zinazotekelezwa na viumbile hivyo. Kwa mfano,ukibofya kwenye faili ilyofunguliwa, faili mpya itafunguliwa. Hivi ndivyo elimu ya teknohama, yaani habari na mawasiliano ilivyoimarishwa katika mwongo uliotupa kisogo.

Kando na urahisishaji huu ambao umeinua idadi ya watumiaji wa tarakilishikwa asilimia 37ulimwenguni katika mwongo mmoja, matatizo ambayo nchi zinazoendelea hukumbana nayo hayawezi kupuuzwa. Programu za tarakilishi zina bei mara kumi ya bei za tarakilishi.Maadam hali ya uchumi si nzuri, watu wengi hawawezi kutumia mtambo huu kwa sababu hawawezi kununua. Tatizo jingine kuu ni ukosefu wa umeme katika sehemu nyingi za nchi zinazoendelea, hasa barani Afrika. Matatizo ya kwanza mawili yameweza kusuluhishwa kwa kiwango fulani. Kwanza, makampuni makubwa yanayounda programu za kompyuta yamejaribu kupunguza bei ya leseni za kompyuta. Zipo nyingi zinazoletwa nchini zikiwa na programu tayari. Licha ya hayo. Makampuni ya kibinafsi yamejitolea katika nchi zilizoendelea ili kutafuta kompyuta zisizoendelea kwa bei rafi. Ingawa huku ni kama kumtupia mbwa tonge la ugali lisilo na mchuzi, lakini mkata hana kinyongo na mtu hujikuna ajipatapo.

Tatizo la mwisho ni ujuzi wenyewe wa tarakilishi. Kulingana na kauli ya pamoja kuhusu teknohama iliyofikiwa Kasablanka mwaka 2004, iwapo bara la Afrika litafikia maendeleo ya teknohama kufikia mwaka wa 2050, lugha za

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Kiafrika hazifai kupuuzwa katika elimu ya tarakilishi. Kuwafunza watu hawa wote Kiingereza ambayo ndiyo lugha iliyotumika kuunda

vieneo vya tarakilishi, ndipo wajifunze elimu ya teknohama, ni kazi nyingi ambayo itahitaji subira na uvumilivu mwingi; ambao watu wengi hawana. Lililobaki ni kujanibisha programu za kompyuta katika lugha zinazozungumzwa na watu wengi ili wapate fursa ya kutumia tarakilishi bila kushurutishiwa Kiingereza kilichowapiga chenga.

Katika Shule ya Upili ya Starehe, timu ya Kilinus ilizindua toleo jipya la programu ya 'Jambo Open Office' ambayo ni mseto wa programu za lugha ya Kiswahili. Toleo hili ni la kipekee kwani hufanya kazi katika mazingira ya Linu:x na Windows. Hili linawezesha mtu kutumia mazingira yoyote ayatakayo, bila haja ya kuyabadilishabadilisha kwa sababu ya programu.Pia,tovuti yoyote inaweza kurambazwa kwa kuturnia kirambizi cha Kiswahili ambacho kinaitwa Mozilla. Microsoft ambayo ndiyo kundi kubwa zaidi la kibiashara ulimwenguni limeamua kujanibisha programu zake pia katika lugha ya Kiswahili, Hausa na Amhara. Hili ni kutimiza kaulimbiu ya mratibu wa' Jambo Open Office' Simon Wanda kwamba, teknohama ni ya kila mtu; kila mtu anafaa kuielewa katika lugha apendayo.

Maswali

a) Je, ni tatizo gani lililowakumba watumiaji wa tarakilishi miaka ya 1980? **(alm2)**

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b) Taja matatizo yanayozikumba nchi zinazoerndelea katika teknohama. **(alm3)**

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c) Jamii ya kimataifa imetumia mbinu gani ili kujaribu kusuluhisha matatizo yanayokumba maendeleo ya teknohama katika bara la.Afrika.? **(alm3)**

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d) Kulingana na habari, ni nini maana ya kauli ya pamoja iliyoafikiwa Kasablankakuhusu teknohama? **(alm2)**

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e) Ni umuhimu gani mkuu zilizonazo programu za 'Jambo Open office'? **(alm2)**

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f)"Teknohama ni ya kila mtu". Kwa kurejelea kifungu, tetea kauli hii. **(alm2)**

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g) Eleza maana ya teknohama. **(alm1)**

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2. UFUPISHO (ALAMA 15)

Soma kifungu kufuatacho kisha ujibu maswali yanayofuata.

Mtoto ni mtoto, awe wa kike au wa kiume. Huu ni msemo ambao mara kadha sisi hukumbana nao pasi na kujua uzito wake unapozama katika uwanja wa jinsia na masuala yanayohusu jinsia. Awali ulielekea kumnusuru mtoto msichana kutokana na utamaduni na ubabedume uliotishia kuangamiza kizazi chote cha ulimwengu wa kike.

Mwana alipozaliwa katika enzi hizo alisherehekewa mithili ya mshindi wa uchaguzi wa urais kule Marekani. Aliletewa si mavazi, mafuta, mahindi ya kuyala usisahau walioandamana kumbebea mzigo ule wote wa misamiati yote ya fanaka, maombi na dua zote ilmuradi alisherehekewa. Ndani ya familia alitukuzwa, alibembelezwa zaidi hasa alipozaliwa wa pekee.Alikuzwa kwa hadithi zote nzuri na zenye hekima ili angalau aje awe mwokozi wa ukoo huo wote. Haikuwa nadra kulisikia jimama likisimama kwenye umati mkubwa na kusema,"Nimejaliwa sio mtoto tu bali mvulana." Ujio wa kwenda shule ulipofika angepelekwa wa kwanza kisha mwenzake wa kike au hata angekosa. Mtoto wa kike angeozwa mapema ili wa kiume aende ng'ambo kusoma. Mvulana alitukuzwa na kila mtu

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hata wasichana wenyewe.Kazini mwanamume alipewa nafasi ya kwanza, waajiri wengi walipendelea mwajiriwa wa kiume kabla ya kuwazia yule wa kike.

Katika maisha ya sasa, mtoto mvulana anaishi maisha ya upweke ukilinganisha na maisha ya mtoto msichana. Hii ilitokana na juhudi za mashirika ya kijamii kama vile FIDA - shirika linalojihusisha na kumkomboa mtoto wa kike au mhusika mwanamke. Mashirika haya yameendelea kutetea jinsia ya kike kiasi cha kwamba jinsia ya kiume ni dhulumati, hatari na yenye kushikiwa kila wakati. Sasa mtotc wa kiume yu hatarini kutokana na kile anachoona babaye akitendewa kule nje na jamii na hal :a ndani ya nyumba.

Ni jambo la kawaida kuwaona wavulana wakijikinga mvua chini ya mti, mvua isiyoweza kukingwa hata kwa mwavuli huku waki,-hunga mbuzi. ra kondoo wawili. Wakati huo mtoto msichana yuko nyumbani akipumzika baa'da ya kuosha 'ryombo na kujitia nakshi. Mvulana huvaa mavazi chafu na hata yaliyochaka'a hadi kukosa chochote makalioni. Msichana hufikiriwa mwanzo. Baba au mama humfikir.ia mwanzo msi, -hana kabla ya kuwazia mvulana.Msichana hupewa chumba chake kando na cha wazazi ilhali mvulana hujikuta akienda kuomba pa kulala kilomita mbili kwa jirani wa.u. Hali hii hum;weka katarini hasa kutokana na shinikizo la marika linaloweza kuwatumbukiza katika uraibu wa sigara na mihadarati kwa jumla.

Shuleni mtoto mvulana hujipata pabaya anapoenda kosa. Yeye huadhibiwa vikali iwe kichapo au kazi ngumu ya kufanya. Mwenzake hupewa kichapo kidogo au kazi ndogo. Hii inatokana na dhana potovu kuwa miili ya wasichana ni dhaifu. Hali kadhalika mtoto mvulana anapoketi au hata kujihusisha na wasichana ,huchukuliwa kuhafusha maisha ya msichana na hivyo hufukuzwa mbali.

Mtoto mvulana huwa na haki kama mwanadamu yeyote. Haki zake kuhusu haki ya kuishi,kutangamana, elimu, huduma bora za afya, kupendwa, kusii. izwa na hata kuheshimiwa.

Maswali

(a) Mtoto wa kiume yumo hatarini. Jadili kwa kutumia maneno 40 -50.

(alama 7,mti -iriko alama 1)

Matayarisho

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Jibu

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(b) Fupisha aya ya pili kwa maneno 45 -55. **(alama 6,mtiririko alama 1)**

Matayarisho

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Jibu

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MATUMIZI YA LUGHA (ALAMA 40)

(a) Bainisha virai katika sentensi ifuatayo: **(alm3)**

Mwanafunzi mwenye kitabu cheusi ameingia ndani ya darasa.

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(b) Ainisha miundo ya silabi katika neno lifuatalo. **(alm2)**

Shwari

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(c) Tunga sentensi yenye kitenzi kishirikishi kilkamilifu. **(alm1)**

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(d) Linganua sauti zifuatazo: **(alm2)**

/ny/na/ch/

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(e) Eleza matumizi ya viakifishi katika sentensi ifuatayo. **(alm2)**

N'taimba na ghulamu/ mvulana yule aliyejibu maswali.

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(f) Changanua sentensi ifuatayo kwa njia ya jedwali, **(alm5)**

Mwakio alimwona nyoka mvunguni mwa kitancla kilichonunuliwa jana.

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(g) Tunga sentensi ukitumia kitenzi kutokana na nomino karaha. **(alm2)**

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(h) Andika sentensi ifuatayo kulingana na maagizo uliyopewa. **(alm1)**
Kiti hiki kilipotea jana. (Tumia kivumishi kisisitizi)

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(i) Bainisha shamirisho katika sentensi ifuatayo. **(alm2)**
Mama aliyepikiwa wali na mwanawe amefurahi.

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(j) Sahihisha sentensi ifuatayo. **(alm1)**
Baba alinikelelesha kwa kuweka chakula kitandani.

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(k) Tunga sentensi moja kuonyesha maana mbili za neno *walakini.* **(alm2)**

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(1) Andika upya sentensi ifuatayo katika ukubwa wingi. **(alm2)**
Mkoba uliojaa mzigo umetupwa.

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(m) Tumia kitenzi'la' kutunga sentensi katika kauli ya kutendwa. **(alm1)**

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(n) Taja sifa tatu za kishazi tegemezi. **(alm3)**

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(o) Eleza maana mbili za sentensi ifuatayo. **(alm2)**
Askari huyu amekuja kutuliza.

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(p) Eleza matumizi ya viambishi vilivyopigwa mstari katika sentensi ifuatayo. **(alm2)**
Mwizi ata**ku**ibia u**ki**acha mali yako ovyo.

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(q) Tunga sentensi kuonyesha wakati usiodhihirika. **(alm1)**

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(r) Tunga sentensi ukitumia neno hadi kama:
(i) Kihusishi cha ujirani **(alm1)**

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(ii) Kihusishi cha wakati **(alm1)**

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(s) Ainisha viambishi tamati **(alm1)**
Tumetosheka

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(t) Tambua na ueleze aina za nomino katika sentensi ifuatayo.
Kikosi cha askari kilisafiri kwenda mpakani. **(alm2)**

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(u) Andika kinyume cha sentensi hii.
Mama anayemeza chakula ametia nguo mfukoni. **(alm1)**

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ISIMUJAMII (alama 10)

a) Eleza maana ya usanifishaji wa lugha. **(alm2)**

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b) Taja umuhimu wa usanifishaji huu. **(alm2)**

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c) Fafanua nadharia tatu zinazoeleza kuhusu chimbuko la Kiswahili. **(alm6)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

JINA: ……..

SHULE: ……..

TAREHE:…….. NAMBARI YA USAJILI: …… SAHIHI:……

SHULE YA UPILI
MTIHANI WA MWISHO WA MUHULA
KIDATO CHA NNE
KARATASI YA TATU 102/3
MUDA: $2\frac{1}{2}$masaa

• Andika jina lako, shule na nambari ya mtihani kisha utie sahihi katika nafasi ulizoachiwa hapo juu.

• Jibu maswali manne pekee.

• Swali la kwanza ni la lazima.

•Maswali hayo mengine matatu yachaguliwe kutoka sehemu nne zilizobaki

yaani Tamthilia,Riwaya,Hadithi Fupi na Fasihi Simulizi.

• Usijibu maswali mawili kutoka sehemu moja

• Majibu yote lazima yaandikwe kwa lugha ya Kiswahili pekee

KWA MATUMIZI YA MTAHINI PEKEE

Swali	Upeo	Alama
1	20	
	20	
	20	
	20	
JUMLA	80	

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SEHEMU YA A: USHAIRI **(ALAMA 20)**

LAZIMA

Na ujenge nyumba yako, jingi jasho likuoshe,
Ufyeke, upime na uweke nguzo,
Kisha paa uweke na ukandike,
Siku nyingi bila kuingiliwa na mgeni hutakaa.

Wataanza kutalii mpaka mende usiku,
Nje na ndani ya nyumba watazunguka,
Bila woga, bila ruhusa ulichonacho watakula,
Masalia yatakuwa yako, ijara ya kaziyo.

Na nyingi dawa uweke, nyumba nzima uihame,
Ukae nje nzima siku usubiri,
Wazima wamelala ukirudi usiku,
Vichwa vigumu hawafi mende rahisi.

Kifo cha mende sharti miguu juu
Kichwa ukikanyage kipasuke usikie,
Na kisha wengine usiku mchana uwasake.
Mpaka watakapokwisha. Usiseme nao.

Maswali

(i) Hili ni shairi la aina gani? **(alm1)**

(ii) Eleza **muundo** wa shairi hili **(alm3)**

iii) Eleza jinsi mshairi alivyoutumia **uhuru** wake katika utunzi wa shairi hili**.** **(alm4)**

iv) Taja mbinu **mbili za lugha** alizotumia mshairi na uzitolee mifano. **(alm4)**

v)Andika **ubeti wa tatu** kwa lugha nathari. **(alm4)**

vi) Eleza **ujumbe** wa mshairi. **(alm2)**

vii) Toa mfano mmoja wa mshororo **mshata**. **(alm1)**

viii) Kichwa gani kinaliafiki shairi hili? **(alm1)**

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SEHEMU YA B:TAMTHILIA
BEMBEA YA MAISHA (TIMOTHY M. AREGE)

Jibu swali la 2 au 3

2.‘Lakini ndiyo tabia yenu wanawake.Miaka inaposonga kama hivi mnatuona kama...kama…kama vile tambara bovu.’’

a. i) Yaweke maneno haya katika **muktadha** wake. **(Alm4)**

ii) Tambua mbinu **mbili** za kimtindo katika dondoo. **(Alm2)**

b) Fafanua **umuhimu wa msemaji** katika kujenga ploti. **(Alm4)**

c) Utamanduni huthaminiwa sana na jamii ya tamthilia ya Bembea ya Maisha.

Jadili ukweli wa kauli hii kwa kutoa mifano **kumi** mwafaka tamthiliani. **(alm10)**

3.Beni:Afadhali hao.Mjukuu wangu hatofautishi kondoo,mbuzi na mbwa.Wote hao kwake yeye ni mbwa!(*wanacheka wote)*

Yona: Inachekesha.

Swali

Mazungumzo haya kati ya Beni na Yona yanabainisha tofauti iliopo kati ya suala la *usasa na ukale*. Kwa kutoa mifano **kumi** inayoonyesha usasa na **kumi** inayoonyesha ukale,linganua masuala haya. **(alm20)**

SEHEMU YA C: RIWAYA

NGUU ZA JADI:*CLARA MOMANYI*

Jibu swali la 4 au 5

4.“Naweza kuoa wakati wowote na idadi yoyote ya wanawake.”

(a) Weka dondoo hili katika **muktadha** wake. **(alm4)**

(b) Tambua **maudhui** katika dondoo hili. **(alm4)**

(c) Kwa kutoa mifano **kumi na miwili** mwafaka kutoka riwayani,onyesha jinsi maudhui uliyotambua hapo juu(4b) yalivyoshughulikiwa na mwandishi. **(alm12)**

5. Tamaa na ubinafsi ni baadhi ya masuala makuu yaliyoshughulikiwa kwa mapana na marefu na *Clara Momanyi* katika riwaya yake ya *Nguu za Jadi*. Kwa kutoa mifano mwafaka riwayani thibitisha ukweli wa kauli hii. **(alm20)**

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SEHEMU YA D :HADITHI FUPI
MAPAMBAZUKO YA MACHWEONA HADITHI NYINGINE
Jibu swali la 6 au 7
WINNIE NYARURI OGENCHE:SABINA

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

a)Eleza umuhimu wa mhusika Sabina katika **kukuza hadithi husika.** **(alm6)**

b)Kwa kutoa mifano mwafaka kutoka kifunguni,onyesha **aina nne za taswira** zilizojitokeza. **(alm4)**

c)Fafanua **changamoto** zinazokabili jinsia ya kike kwa mujibu wa hadithi hii. **(alm10)**

YUSSUF SHOKA HAMAD: ***Mzimu wa Kipwerere***
7."…Kabla mwanamke yule hajakiwasha kile kibatari,nilijitokeza mle mvunguni na maguo yangu meupe kama ya maiti nikaangua mwangwi mkali mfano wa parapanda ya siku ya kiama."

(a) Yaweke maneno haya katika muktadha wake. **(Alm4)**

(b) Fafanua umuhimu wa mandhari katika dondoo hili. **(Alm4)**

(c) Fafanua mbinu za kimtindo katika dondoo hili. **(Alm2)**

(d) Onyesha jinsi itikadi ilivyomwezesha *mlinda mzimu na wahenga waliotukuka* kuwafanya wanakijiji kuogopa na kuamini mzimu wa Kipwerere kiasi cha kutofanya mzaha na maeneo yale ambayo mzimu uliotea.. **(alm10)**

SEHEMU YA E: FASI HI SIMULIZI

Swali la nane
8.a) Ulumbi ni nini? **(alm2)**

ii) Ulumbi hutekeleza **majukumu** gani katika jamii?. **(alm6)**

iii) Eleza **vipengele sita** vya kuzingatia katika uchanganuzi wa hadithi. **(alm6)**

b) Eleza namna ambavyo hadhira huhusishwa katika uwasilishaji wa fasihi simulizi. **(alm6)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

MATHEMATICS (Alternative A)

121/1 – Paper 1

FORM FOUR (4)

Time: 2½ Hours

INSTRUCTIONS TO CANDIDATES

(a) Write your name, admission number, school and class in the spaces provided at the top of this page.

(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** questions in **Section I** and **any five** questions from **Section II.**

(e) Show all the steps in your calculations, giving your answers at each stage in the spaces provided 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.

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

For Examiners' 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	

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SECTION I (50 Marks)

Answer all the questions in this section

1.Express $6.\dot{7}\dot{5}$ in the form $p\frac{q}{t}$ hence find the absolute value of **(3mks)**

$p-\frac{q}{t}$

2.A business woman bought two bags of maize at the same price per bag. She discovered that one bag was of high quality and the other of low quality. On the high quality bag, she made a profit by selling it at Ksh. 1040, while on the low quality bag, she made a loss by selling it at Ksh. 880. If the profit was three times the loss. Calculate the buying price per bag. **(3mks)**

3.Find the values of a and b in the equation below. **(2mks)**

$5^a \times 7^b = 6125$

4.A foreign exchange bureau in Mombasa buys and sells selected foreign currencies at the rates shown in the table below.

Currency	Buying (Ksh)	Selling (Ksh)
1 South African Rand	7.48	7.95
1 Chinese Yuan	20.03	20.20

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A tourist arrived in Kenya from South Africa with 7,435,000 South African Rands. She converted the whole amount to Kenya shillings through an agent at a commission of 2%. While in Kenya, she spent 25% of this money and converted the balance to Chinese Yuan. Calculate the amount of Chinese Yuan that she received. **(3mks)**

5.Simplify the expression. **(4mks)**

$$\frac{a - 4ab + a^2 - 4b}{4b^2 - a^2b - ab - 4ab^2}$$

6.Given that $a = -2$, $b = 5$ and $c = -1$, evaluate **(3mks)**

$$\frac{4a^3 + 5b - c}{\frac{1}{3}(c^2 - a^2)}$$

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7. The size of an interior angle of a regular polygon is 144^0. Find the sum of its interior angles **(3mks)**

8.Use logarithms only, correct to 4 significant figures to evaluate **(4mks)**

$$\sqrt[3]{\frac{23.45\cos 67.89^0}{31.6^2}}$$

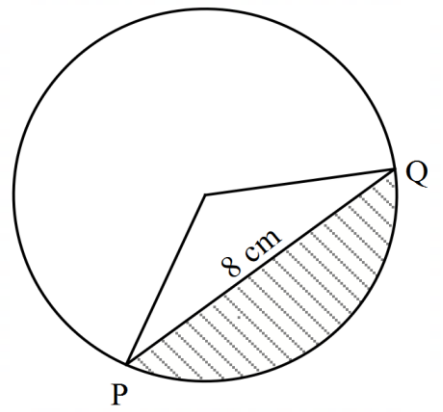
9.The surface areas of two similar solids are 528 cm^2 and 1188 cm^2. If the volume of the smaller solid is 1350 cm^3, calculate the volume of the larger solid. **(3mks)**

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10. Find the value of θ given that; **(3mks)**

$$\frac{\cos\left(\frac{1}{2}\theta - 60\right)^{0}}{\sin(2\theta + 20)^{0}} = \tan 45^{0}$$

11. The figure below shows a circle centre O radius $4\sqrt{2}$ cm. The length of chord PQ = 8 cm.



Calculate the area of the shaded region. Leave your answer in terms of π **(4mks)**

12. Simplify; **(3mks)**

$$\frac{3^{n+3} - 3 \times 3^{n-1}}{4 \times 3^{n-1}}$$

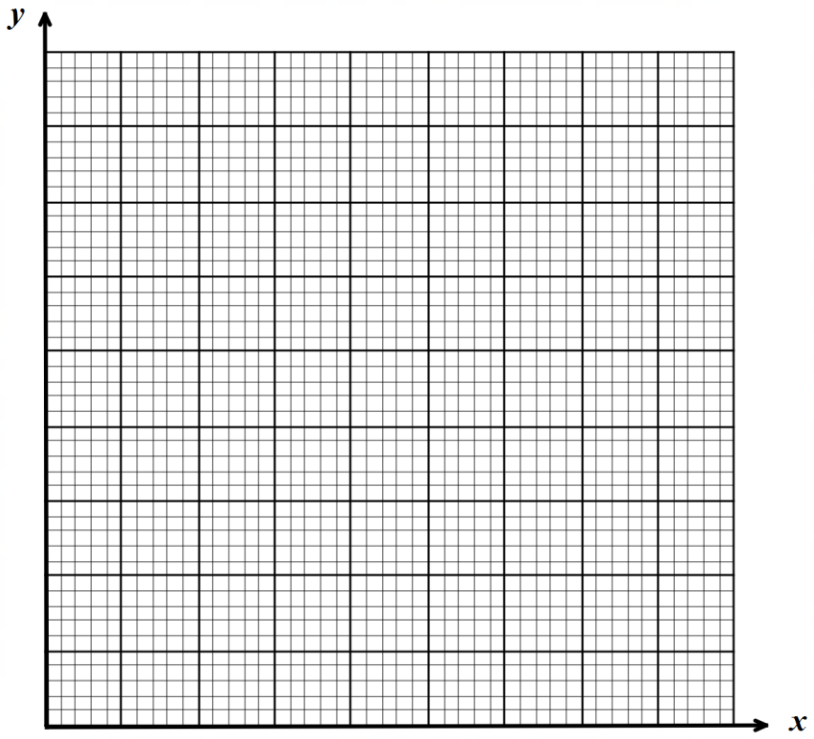
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13. On the grid provided below, show and mark the region R defined by the following inequalities: **(3mks)**

$L_1 = y \leq x$

$L_2 = \frac{x}{8} + \frac{y}{4} \geq 1$

$L_3 = x < 5$



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14. In a 4 by 400 metres relay race, athletes A, B, C and D took 42.91 seconds, 42.95 seconds, 43.11 and 43 seconds respectively to do their race. An average of one second is spent on each button exchange. Calculate the time they started the race if they completed at 8:24:36 p.m. **(3mks)**

15. Expand and simplify: **(2mks)**

$(3x - 2y)^2 - (2y + 3x)^2$

16. Using a ruler and a pair of compasses only, construct a trapezium KLMN such that KL=7.2 cm, KN=4.3 cm, $\angle$NKL =90^0 and $\angle$KLM = 52.5^0 and KL is parallel NM

Measure NM **(4mks)**

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SECTION II – 50 Marks

Answer any *five* questions in this section.

17. In a Mathematics test, 48 students scored the following marks:

89	75	56	90	68	74	85	69
90	70	83	75	87	55	86	70
88	74	90	75	96	71	84	71
87	84	58	43	65	70	93	98
62	86	56	80	64	59	73	69
40	63	89	84	80	60	56	74

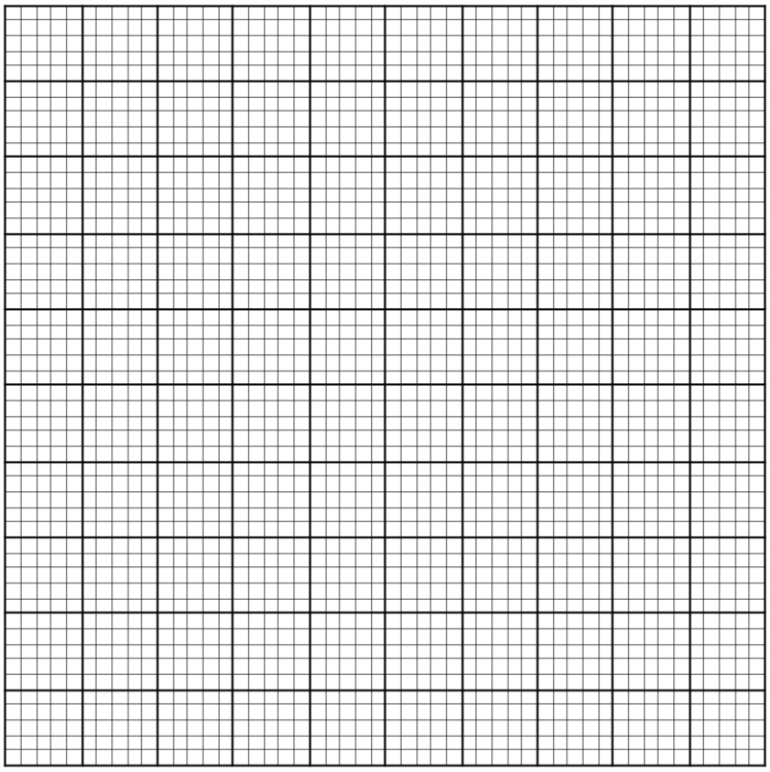
(a) Using a class interval of 10 and starting with the least mark recorded, make a frequency distribution table for the data. **(2mks)**

(b) Using the frequency distribution table in (a) above, calculate the mean mark. **(4mks)**

(c) Identify the median class. **(1mk)**

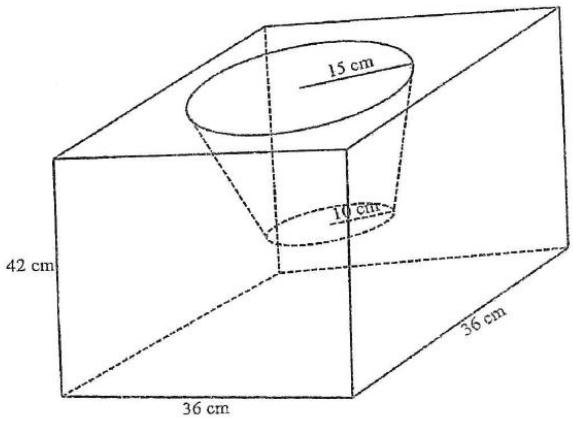
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(d) On the grid provided, draw a frequency polygon for the data. **(3mks)**



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18. The figure below shows a solid cuboid with a square base of side 36 cm and height of 42 cm. A conical frustum with a vertical height of 12 cm is drilled. The top and bottom radii of the frustum are 15 cm and 10 cm respectively. Use π=3.142



Calculate

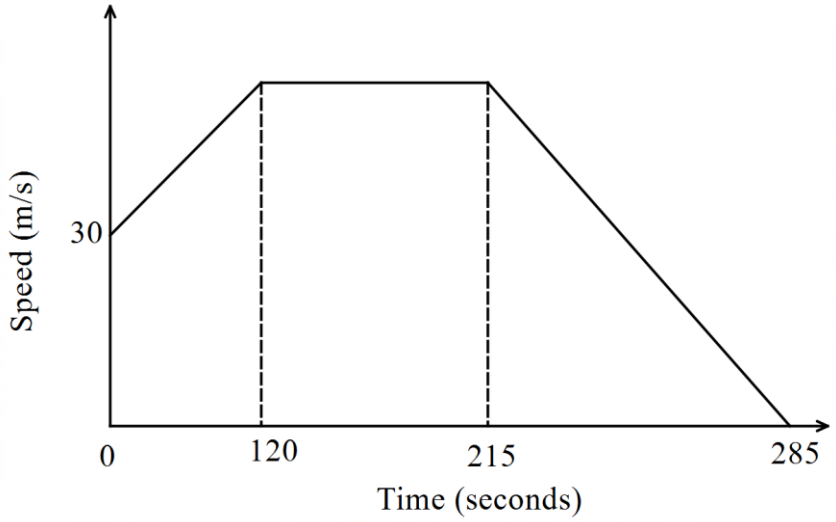
(a) the slant height of the frustum **(2mks)**

(b) the percentage of the volume of the frustum to the volume of the cuboid **(5mks)**

(c) the volume of the solid. **(3mks)**

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19. (a) The figure below shows a speed-time graph of a train travelling between two terminuses



If the distance between the two terminuses is 16.05 km, calculate the maximum speed attained by the train.

(3mks)

(b) Towns M and N are 409 km apart. An express bus travelling at an average speed of 60 km/h left town M for town N at 9.45 a.m. A car left town N on the same day at 11.15 a.m. and met with the bus at 1327 hours.

(i) Determine the average speed of the car in km/h **(5mks)**

(ii) The distance from M to the meeting point. **(2mks)**

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20. The second, third and fourteenth terms of an increasing Arithmetic Progression (AP) from the first three terms of Geometric Progression (GP). The tenth term of AP is 18.

(a) (i) Using a as the first term and d as the common difference, write down expressions for the second, third and the fourteenth terms of the AP. **(1mk)**

(ii) Hence determine the values of a and d. **(4mks)**

(b) Calculate

(i) S_{10} for the AP **(2mks)**

(ii) S_5 for the GP **(3mks)**

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21. A line T passes through $(-5, 4)$ and $(3, -2)$

(a) Find the equation of T in the form $y = mx + c$, where m and c are constants. **(2mks)**

(b) Find the equation of line D, the perpendicular bisector of line T. Leave your answer in the form $ax + by + c = 0$, where a, b and c are integers. **(3mks)**

(c) Another line Y is parallel to line T at the point $(-8, 0)$ and interssect with line D at point Z. Find the coordinates of Z. **(3mks)**

(d) Calculate the obtuse angle line Y makes with the x-axis correct to the nearest degree. **(2mks)**

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22. A salesman earns a basic salary of Ksh. 25000 per month. In addition, he is paid commissions as follows:

- For sales up to Ksh. 50000 – 0%
- For sales above Ksh. 50000

(i) For the first Ksh. 25000 – 2%

(ii) For the next Ksh. 25000 – 3%

- For any sales above Ksh. 100000 – 5%

(a) During one month, he sold goods worth Ksh. 135000

(i) How much commission did he earn that month? **(3mks)**

(ii) Calculate his total pay for the month. **(2mks)**

(b) In another month, he received a total pay of Ksh. 40000. Calculate the total sales for that month. **(5mks)**

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23. (a) A hot water tap H can fill a bathtub in 5 minutes while a cold water tap C can fill the same bathtub in 3 minutes. The drain pipe D can empty the full bathtub in 3 minutes 45 seconds. Given that the bathtub is empty and that the two taps and the drain pipe are fully open for one and a half minutes, after which the drain pipe is closed, how much longer it will take to fill the bathtub? **(4mks)**

(b) A quantity **B** varies partly as the square of a quantity **M** and partly as the inverse of another quantity **N**. **B**, **M** and **N** are such that when $\mathbf{M} = 2$, $\mathbf{N} = 4$ and $\mathbf{B} = 11.5$ while when $\mathbf{M} = 3$, $\mathbf{N} = 5$ and $\mathbf{B} = 26.6$

(i) Write an expression of **B** in terms of **M** and **N**. **(4mks)**

(ii) Find the value of B when $\mathbf{M} = 5$ and $\mathbf{N} = 6$. **(2mks)**

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24. Betty and Joan entered into a business partnership in which they contributed Ksh. 320000 and Ksh. 400000 every year respectively. After one year, Kevin joined the business and contributed Ksh. 240000.

(a) Calculate the ratio of their investment after three years of business. **(3mks)**

(b) The three partners agreed that 30% of the profits after the three years be used to cater for the costs of running the business, while the remaining would be shared proportionally according to their ratio of contributions. If at the end of the third year, the business realised a profit of Ksh. 561000, calculate the share each person got. **(4mks)**

(c) If each of them re-invested their shares back in the business, find their new individual investments at the beginning of the fourth year. **(3mks)**

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NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

MATHEMATICS (Alternative A)

121/2 – Paper 2

FORM FOUR (4)

Time: 2½ Hours

INSTRUCTIONS TO CANDIDATES

(a) Write your name, admission number, school and class in the spaces provided at the top of this page.

(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** questions in **Section I** and **any five** questions from **Section II.**

(e) Show all the steps in your calculations, giving your answers at each stage in the spaces provided 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.

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

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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	

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SECTION I (50 Marks)

Answer all the questions in this section

1. The base and height of a right angled triangle were measured as 6.4 cm and 3.5 cm respectively. Determine to 1 decimal place the percentage error in calculating the area of the triangle **(3mks)**

2. Find the value of x that satisfies the equation $\log(2x - 11) - \log 2 = \log 3 - \log x$ **(4mks)**

3. Five men working 8 hours a day take 2 days to cultivate an acre of land. How many days would four men working 10 hours a day at double rate take to cultivate 3 acres of land? **(3mks)**

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4. Simplify the expression below leaving your answer in the form $a + b\sqrt{c}$ where a, b and c are integral values. **(3mks)**

$$\frac{\sqrt{48}}{\sqrt{5} - \sqrt{3}}$$

5. Two parallel chords of dimensions 15.6 cm and 13 cm are such that they are on the same side of the centre of a circle centre O and radius 12 cm. Calculate the perpendicular distance between the two chords, correct to 2 decimal places. **(3mks)**

6. Frank bought a motor cycle on hire purchase terms. The cash price of the motor cycle was Kshs. 125000. He paid 15 equal monthly installments of Kshs. 13500 each. Calculate the monthly rate at which compound interest was charged. **(4mks)**

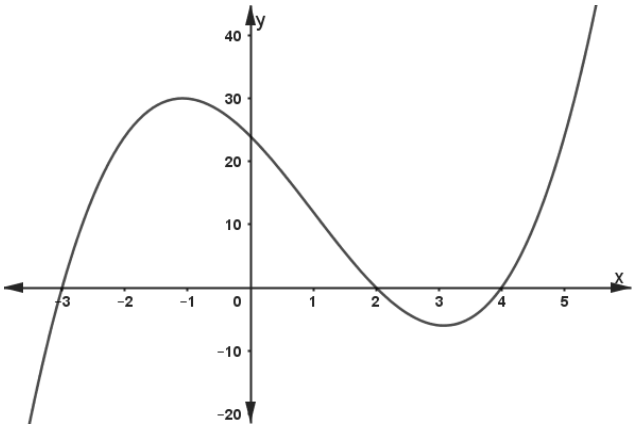
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7.Make n the subject of the formula **(3mks)**

$$\boldsymbol{Q = \frac{\sqrt[3]{P^2 - n^3}}{n}}$$

8.A bag has 3 red balls, 6 blue ball and some green balls of the same shape and size. The probability of picking a green ball is 0.5. Find the probability of picking either a green or a blue ball. **(3mks)**

9.The figure below shows the graph of a cubic function.



Write the equation of the function in the form $y = x^3 + ax^2 + bx + c$, where a, b and c are constants. **(3mks)**

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10. Given that $\mathbf{A} = \begin{pmatrix} 1 & k \\ 3 & 3 \end{pmatrix}$ and $\mathbf{B} = \begin{pmatrix} -3 & 5 \\ 1 & -2 \end{pmatrix}$, find k if the determinant of **AB** is 9 **(3mks)**

11. Determine the independent term in the expansion of **(2mks)**

$$\left(2x - \frac{1}{3x^2}\right)^6$$

12. A trader bought two grades of rice; grade A at Ksh.109 per kilogram and grade B at Ksh. 81.50 per kilogram. She blended the two grades of rice in the ratio $5:n$ and by selling the blend at Ksh. 112.80 per kilogram, a profit of 20% was realised. Determine the value of n. **(3mks)**

13. Use trigonometric identities to show that: **(3mks)**

$$\frac{\tan^2\theta + 1}{\tan^2\theta} = \frac{1}{1 - \cos^2\theta}$$

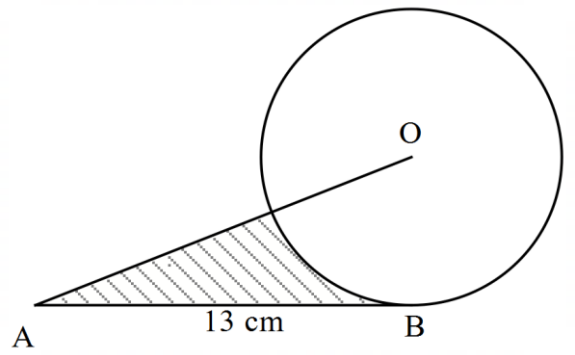
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14. Draw a line PQ=9 cm. On the upper side of line PQ, construct the locus of a point T such that the area of triangle ATB = 13.5 cm^2. On the locus of T, locate and label points T_1 and T_2 such that $\angle PT_1Q=\angle PT_2Q=90^0$ **(4mks)**

15. Determine the centre and radius of a circle whose equation is given by; **(3mks)**

$$2x^2 + 2y^2 - 32x + 48y + 254 = 0$$

16. In the figure below, AB is a tangent to the circle centre O at B. The radius of the circle is 5 cm and AB = 13 cm.



Calculate the shaded area. Use $\pi = 3.142$. **(3mks)**

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SECTION II – 50 Marks

Answer any *five* questions in this section.

17. The table below shows income tax rates for the year 2020

Taxable income (Ksh. per month)	Tax Rate (% per Ksh)
1 – 15000	0
15001 – 27000	10
27001 – 37000	15
37001 – 45000	20
45001 – 50000	25
Above 50000	30

In June 2022, Eric earned a basic salary of Ksh. 34320. In addition, he was entitled to a house allowance of Ksh. 12000 per month and medical allowance of Ksh. 6450. He also has a non-taxable risk allowance of Ksh. 6000 per month. He contributes to a provident fund of Ksh. 7500. He also has tax relief of Ksh. 1180 monthly.

(a) Calculate Eric's taxable income in that month. **(2mks)**

(b) Calculate Eric's Pay As You Earn for June 2022. **(5mks)**

(c) In the month of July 2022, Eric's tax in the last band was Ksh. 2556. Calculate his net salary in July. **(3mks)**

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18. The table below shows the frequency distribution of the heights of 100 seedlings in a tree nursery.

Height (cm)	Number of seedlings (f)	Midpoint (x)	$d = \frac{x - 55.5}{10}$	fd	fd^2
1 – 10	3				
11 – 20	5				
21 – 30	8				
31 – 40	11				
41 – 50	12				
51 – 60	18				
61 – 70	20				
71 – 80	10				
81 – 90	7				
91 – 100	6				
	$\Sigma f = 100$			$\Sigma fd =$	$\Sigma fd^2 =$

(a) Complete the table **(4mks)**

(b) State the modal class **(1mk)**

(c) Calculate

(i) Mean **(2mks)**

(ii) standard deviation **(3mks)**

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19. A farm is quadrilateral in shape with vertices at A, B, C and D such that B is 160 metres from A on a bearing of 090^0. C is 140 metres from A on a bearing of 130^0, and D is 260 metres to the west of C and on a bearing of 240^0 from A

(a) Sketch the relative positions of A, B, C and D. **(1mk)**

(b) Calculate:

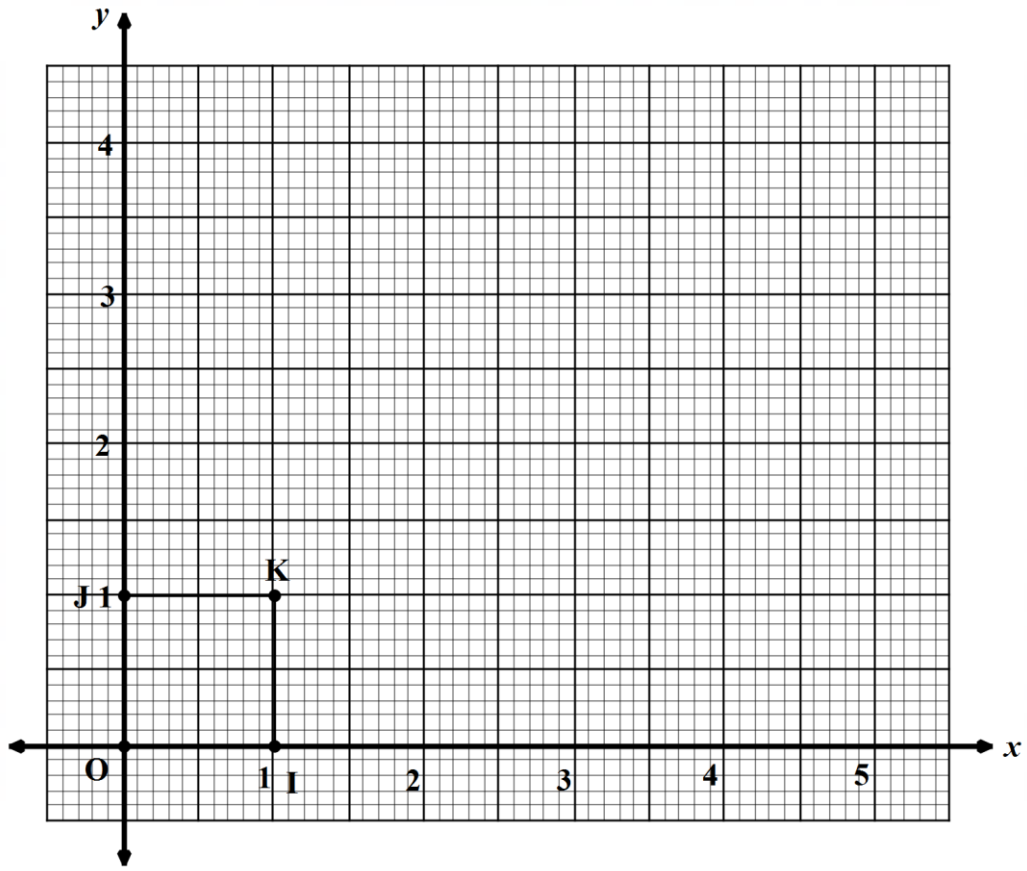
(i) The distance BC, correct to 1 decimal place. **(3mks)**

(ii) The bearing of C from D to the nearest degree. **(3mks)**

(c) Find the area of the farm in hectares, correct to 3 significant figures. **(3mks)**

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20. The grid below shows the unit square OIKJ such that O(0, 0), I(1, 0), K(1, 1) and J(0, 1)



(b) $O'I'K'J'$ is the image OIKJ after a transformation **M** such that $O'(0,0)$, $I'(4,0)$, $K'(4,1)$ and $J'(0,1)$

(i) On the same grid, draw $O'I'K'J'$ **(1mk)**

(ii) Describe fully the transformation **M**. **(3mks)**

(iii) Find the matrix of **M**. **(1mk)**

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(c) $O''I''K''J''$ is the image of $O'I'K'J'$ under a transformation described by the matrix $\begin{pmatrix} 1 & 0 \\ 0 & 4 \end{pmatrix}$

(i) Find the coordinates of $O''I''K''J''$ **(2mks)**

(ii) On the same grid, draw $O''I''K''J''$ **(1mk)**

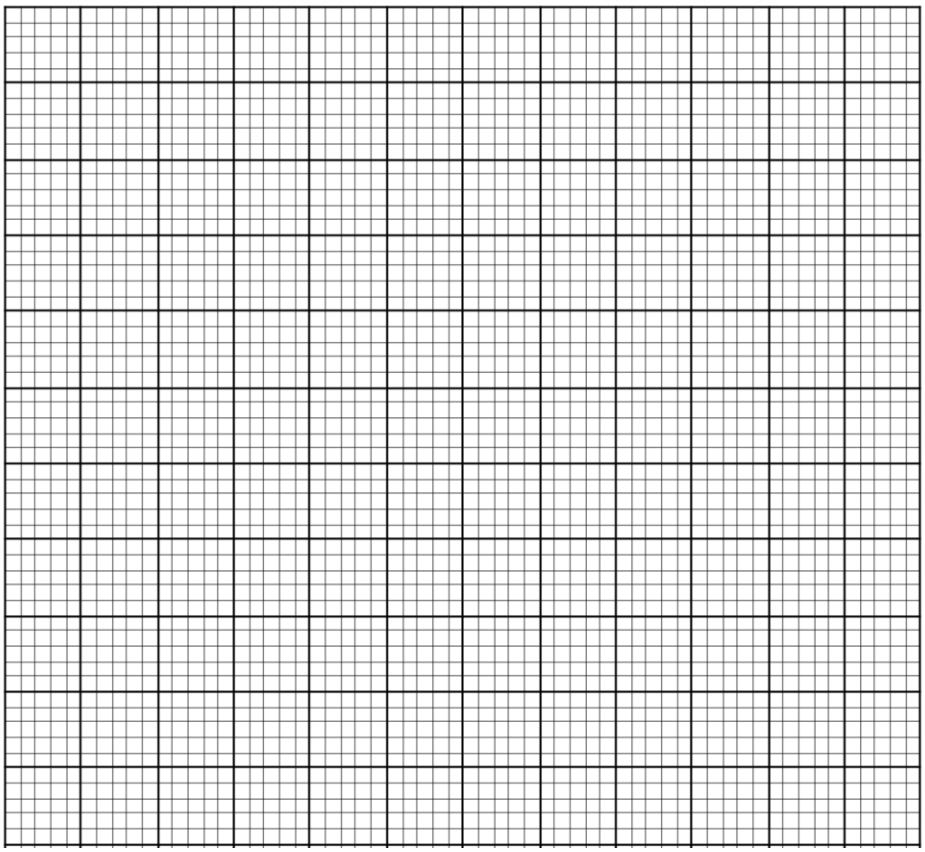
(d) Describe a single transformation that maps OIKJ onto $O''I''K''J''$. **(2mks)**

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21. (a) Complete the table given below for the functions $y = -3\cos 2x$ and $y = 2\sin\left(\frac{3}{2}x + 30\right)^0$ for $0^0 \leq x \leq 180^0$ (2 marks)

x^0	0	20	40	60	80	100	120	140	160	180
$-3\cos 2x$	-3.00			1.50	2.82	2.82		-0.52	-2.30	
$2\sin\left(\frac{3}{2}x + 30\right)^0$	1.00		2.00	1.73		0.00	-1.00			-1.73

(b) Using the grid provided, draw the graphs of $y = -3\cos 2x$ and $y = 2\sin\left(\frac{3}{2}x + 30\right)^0$ for $0^0 \leq x \leq 180^0$ on the same pair of axes. Take 1cm to represent 20^0 on the $x-$ axis and 2cm to represent 1 unit on the $y-$ axis. **(5mks)**



(c)From the graphs in (b) above, find;

(i) the period of $y = 2\sin\left(\frac{3}{2}x + 30\right)^0$ **(1mk)**

(ii) the values of x given that $2\sin\left(\frac{3}{2}x + 30\right)^0 + 3\cos 2x = 0$ **(2mks)**

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22. Awuor was paid an initial salary of Kshs. 180000 per annum with a fixed annual increment. Wasonga was paid and initial salary of Kshs. 150000 per annum with a 10% increment compounded annually.

(a) Given that Awuor's annual salary in the 11^{th} year was Kshs. 288,000, determine:

(i) Her annual increment. **(2mks)**

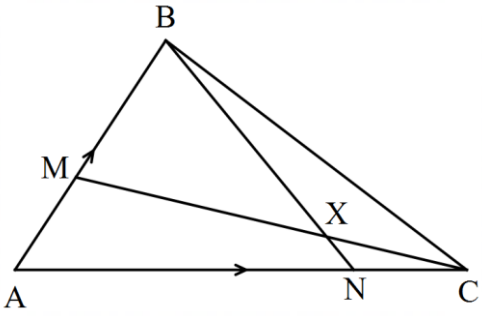
(ii) The total amount of money Awuor earned during the 11 years. **(2mks)**

(b) Determine Wasonga's monthly earning, correct to the nearest 10 shillings during the 11^{th} year **(3mks)**

(c) Calculate the number of years it will take Awuor's total earnings to be Ksh. 1022400. **(3mks)**

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23. In the triangle ABC shown below, $\mathbf{AB} = \boldsymbol{a}$ and $\mathbf{AC} = \boldsymbol{c}$. Point M lies on AB such that AM: MB=2: 3 and point N lies on AC such that AN: NC = 5: 1. Lines BN and MC at X



(a) Express the following in terms of $\boldsymbol{a}$ and $\boldsymbol{c}$;

(i) BN; **(1mk)**

(ii) CM. **(1mk)**

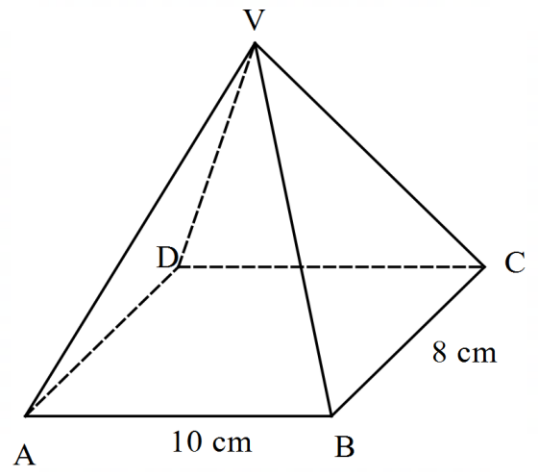
(b) Given further that $\mathbf{BX} = h\mathbf{BN}$ and $\mathbf{CX} = k\mathbf{CM}$ where h and k are constants

(i) Write two different expressions for **AX** in terms of $\boldsymbol{a}$, $\boldsymbol{c}$, h and k. **(4mks)**

(ii) Hence find the values of h and k. **(4mks)**

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24. The figure below shows a right pyramid VABCD standing on a rectangular base of length 10 cm and width 8 cm. The diagonals of the base intersect at O and M is the midpoint of BC. The vertical height OP of the pyramid is 12 cm and that all the slant edges are equal.



Calculate correct to 2 decimal places:

(a) The length of VM, **(2mks)**

(b) **(i)**State the projection of VB on the plane ABCD. **(1mk)**

(ii) Calculate the angle VB makes with the plane ABCD. **(3mks)**

(c) The angle between planes VAD and ABCD. **(2mks)**

(d) The volume of the pyramid. **(2mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

(Kenya Certificate of Secondary Education)
Physics paper one
232/1
Form 4
2 hours

Instructions to candidates

- This paper consists of two sections ***A*** and ***B***.
- Answer **all** the questions in the two sections in the spaces provided after each question
- All working **must** be clearly shown.
- Electronic calculators, mathematical tables may be used.
- All numerical answers **should be expressed** in the **decimal** notations.
- You may use:

➢ 'gravitational acceleration, g, as $10m/s^2$
➢ Density of water = $1000kg/m^3$
➢ Density of air = $1.25kg/m^3$
➢ Density of mercury = $13\ 600kg/m^3$

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

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SECTION A (25 MARKS)

1. Explain the meaning of 'thermodynamics' as a field of study in physics **(1mk)**

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2. The volume of mercury thread in a capillary tube is 1 cm^3. If the length of the mercury thread is 1 m, calculate the radius of the bore of the capillary tube in SI unit **(3mks)**

3. The figure 1 below shows the scale of a Vernier calipers when the jaws of the calipers are closed as shown.

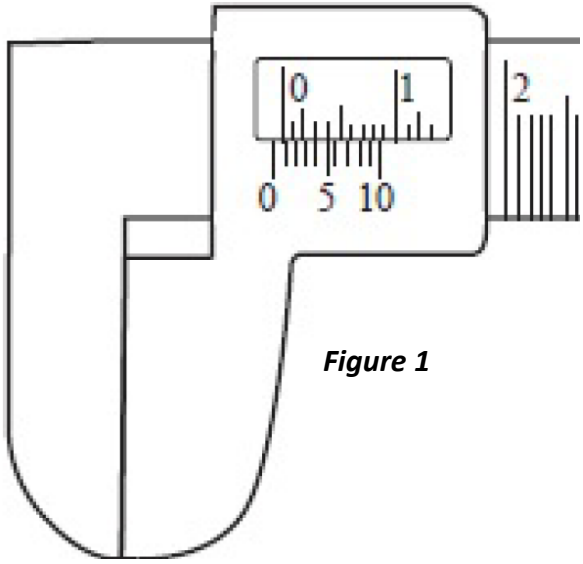


Figure 1

a) State the nature of the error in the scale **(1mk)**

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b) The Vernier calipers in figure 1 was used to measure the diameter of a marble whose actual diameter is 1.50cm. If the size of the error in the calipers' scale is 0.05 cm, state the reading and draw the scale showing the reading as measured by the Vernier calipers. **(2mks)**

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4. State the kinetic theory of matter **(1mk)**

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5. Figure 2(a) shows a spiral spring of length, 6 cm fixed on a bench vertically. A mass of 0.5kg is now placed on it as shown in figure 2(b).

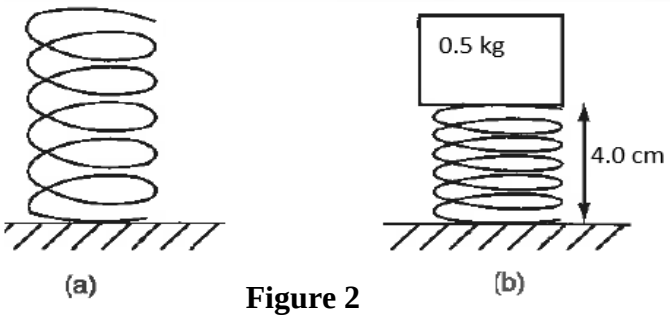
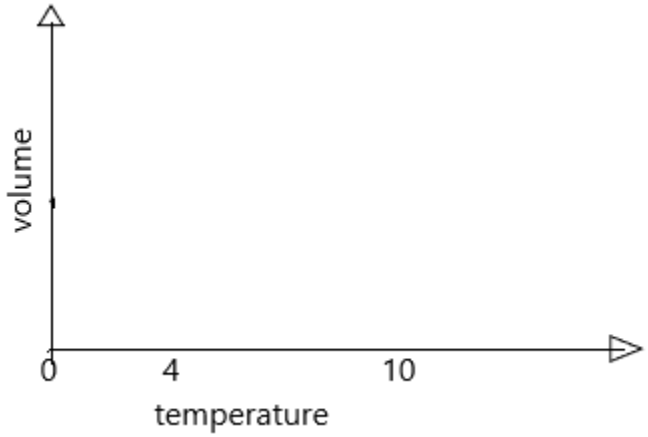


Figure 2

Determine the energy stored in the spring in (b) **(3mks)**

6. Equal volumes of water and mercury at 0^oc are subject to heat up to 10^oc. On the same axes provided below, sketch their graphs of volume against temperature **(2mks)**



7. The earth is said to be accelerating yet its speed in the orbital circle around the sun is uniform. Explain **(1mk)**

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8. Roads are usually 'banked' at bends to ensure that vehicles do not overturn when negotiating the bends. Explain the meaning of the term 'banking.' **(1mk)**

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9. State Archimedes principle **(1mk)**

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10. Figure 3 shows two identical balloons A and B. The balloons were filled with equal amounts of the same type of gas. The balloons are suspended at equal distances from a metal cube filled with boiling water and placed on an insulating material.

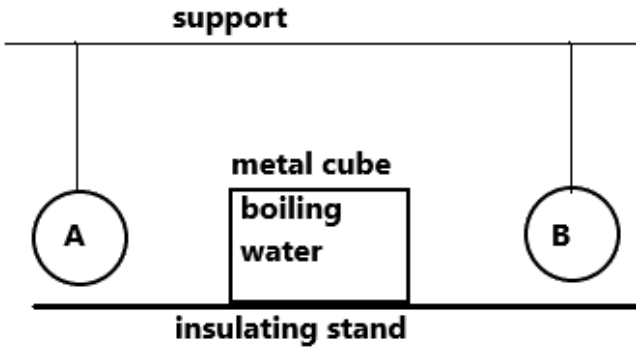


Figure 3

State the mode by which heat travels from the cube to the balloons. Explain **(2mks)**

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11. Boiling water cannot be used for sterilization of clinical thermometer. Explain **(2mks)**

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12. The diagram below shows two identical strings A and B attached to a large mass M. String A is attached to the ceiling. State the reason why string B cuts when its free and is suddenly pulled downward while string A does not snap. **(2mks)**

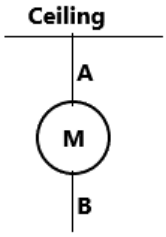


Figure 4

13. A ball is kicked vertically upwards at an initial velocity of 5m/s. The ball attains maximum height after a duration of t seconds.

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a) State the velocity of the ball at the maximum height **(1mk)**

b) Sketch the velocity-time graph for the motion of the ball between the time when it is kicked and when it attains maximum height. **(2mks)**

SECTION B (55 MARKS)

14. State Charles' law **(1mk)**

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b) The following diagram is an incomplete set-up for verifying Charles' law. Study it carefully and answer the questions, b and c that follow:

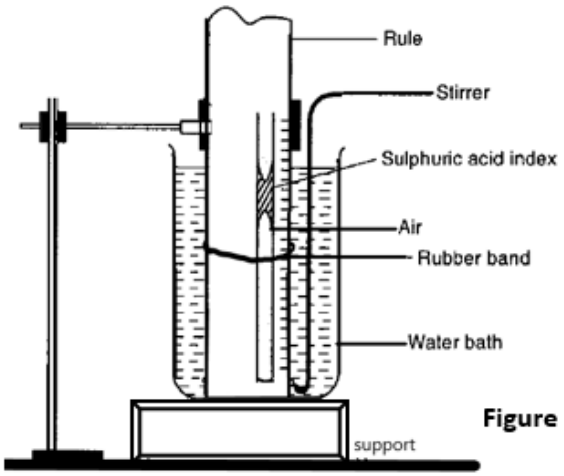


Figure 5

i. On the same diagram, insert and label the missing apparatus **(2mks)**

ii. State any **TWO** functions of the Sulphuric acid index **(2mks)**

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c) It is important to stir the bath before any reading is taken. Explain **(1mk)**

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……

……

d) Assuming that the gas used above is ideal, sketch on a Celsius scale, a graph of volume against temperature. **(2mks)**

e) Explain the meaning of an 'ideal gas'. **(1mk)**

……

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f) The volume of a mass of air at 27^0C and 75 cmHg pressure is 200 cm^3. Find the volume of the air at -73^0C and 80 cmHg pressure. **(3mks)**

15. Define the term 'radian' **(1mk)**

……

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b) Distinguish between angular velocity and linear velocity **(1mk)**

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c) An object 0.5kg on the end of a string is whirled around in a vertical circle of radius 2m, with a speed of 10m/s. Determine the maximum tension in the string. **(3mks)**

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d) Figure 6 shows identical unit masses A, B and C placed at different points on a rotating table. The angular velocity, ω of the table can be varied.

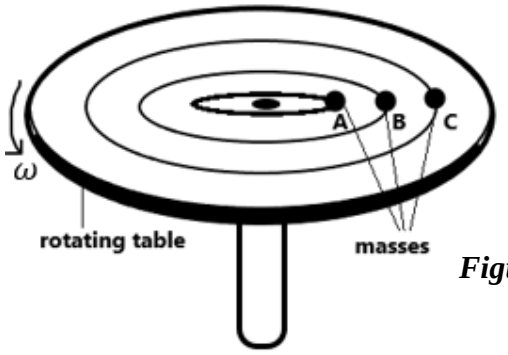


Figure 5

i. State two factors that determine whether a particular mass slides off the table or not. **(2mks)**

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ii. If the masses A, B and C slide off at angular velocities: $\omega_A, \omega_B \ and \ \omega_C$ respectively. Arrange the angular velocities in decreasing order. **(1mk)**

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iii. The rotating table makes 33 revolutions per minute. Determine the linear velocity of mass, B which is 0.12m from the center. **(3mks)**

16. State the law of flotation **(1mk)**

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b) A spherical buoy of diameter 0.4m and mass of 20kg is connected to a rope tied to a sea-bed as shown below so that ¾ of it submerged in the water.

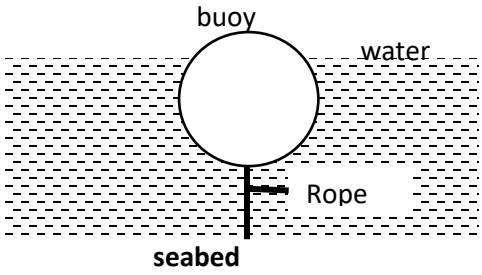


Figure 6

Assuming the weight of the rope, determine the tension in the rope. (density of seawater = 1030kg/m^3)**(4mks)**

c) Submarine is an application of Archimedes principle. Explain how the submarine is made to sink and float when it is required to do so. **(3mks)**

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d) Figure 8 is a hydrometer used for measuring the densities of various liquids. Study it and label the parts: A and B. **(2mks)**

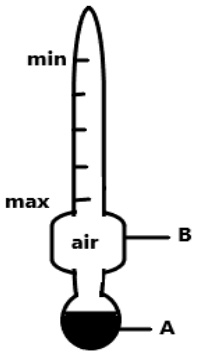


Figure 7

e) Explain the function of the part labelled B **(2mks)**

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17. Define specific latent heat of fusion of a substance. **(1mk)**

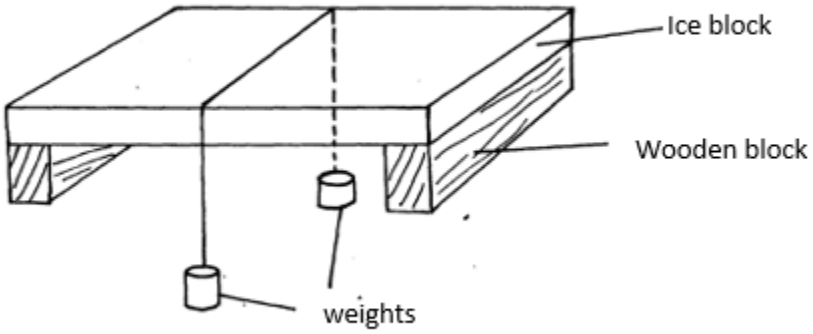
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b) Figure 9 below shows a block of ice with two heavy weights hanging such that the copper wire connecting them passes over the block.

Figure 8



c) It is observed that the wire gradually cuts through the ice block, but leaves it as one piece. Explain **(3mks)**

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d) State and explain the change that would be observed if the copper wire used in the experiment was replaced by a cotton thread. **(2mks)**

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e) A block of ice of mass 40g at 0^oC is placed in a calorimeter containing 400g of water at 20^oC. The heat absorbed by the calorimeter is negligible. The final temperature of the mixture after all the ice has melted is T. (specific latent heat of fusion of ice=340,000 J/kg, specific heat capacity of water = $4200JKg^{-1}k^{-1}$)

i.Derive an expression for the heat gained by the ice as it melts to water at temperature **T**. **(2mks)**

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ii. Derive an expression for the heat lost by the water. **(2mks)**

iii. Determine the value of **T**. **(2mks)**

f) State **ONE** difference between boiling and evaporation. **(1mk)**

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18. Give reason why ink is most likely to ooze out of a pen when one is high up in an airplane. **(1mk)**

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b) The figure 10 below is a simple hydraulic machine used to raise heavy loads.

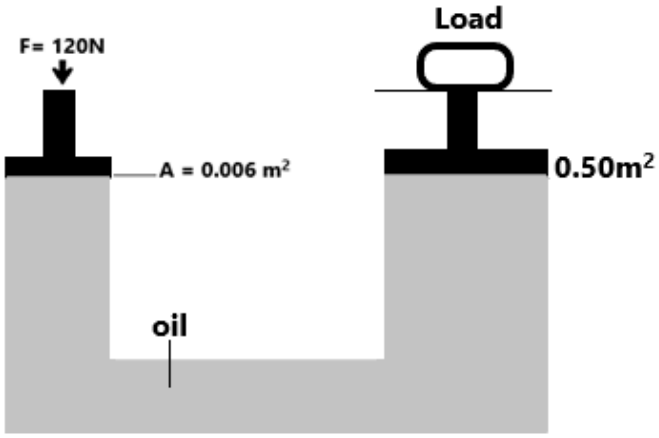


Figure 9

i. Calculate the amount of load raised at B **(3mks)**

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ii. Give any **ONE** property which make the oil suitable for use in this machine **(1mk)**

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c) The height of a mountain is 1360m. The barometer reading at the base of the mountain is 74cmHg. Determine the barometer reading at the top of the mountain. **(3mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

PHYSICS
THEORY
Time: 2 hours

Kenya Certificate of Secondary Education
PHYSICS
FORM 4 TERM 1
Instructions to Candidates

- Write your name, admission number, class and signature in the spaces provided at the top of the page. This paper consists of two sections; **A** and **B.**
- Answer **ALL** the questions in the spaces provided.
- Mathematical tables and electronic calculator may be used.
- All working MUST be clearly shown.
- Candidates should answer the questions in English and check to ensure that no question(s) is missing.

FOR EXAMINER'S USE ONLY

SECTION	QUESTION	MAXIMUM SCOR	ANDIDATE'S SCO
A	1 – 12	25	
B	13	11	
	14	12	
	15	11	
	16	11	
	17	10	
TOTAL SCORE		**80**	

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SECTION A (25 MARKS)

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

1. Figure 1 shows an object placed in front of a pin-hole camera whose length X is adjustable.

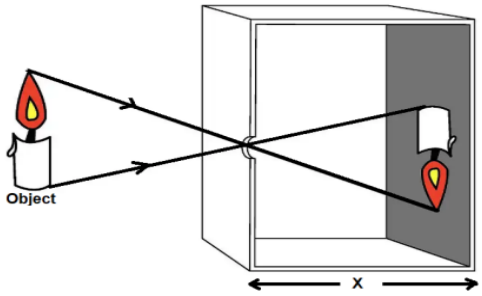


Figure 10

a.) State the effect of increasing length X. **(1mk)**

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b.) The pinhole size was also made smaller; what observation was made on the screen? **(1mk)**

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2. Figure 2 shows the printing system of an inkjet printer.

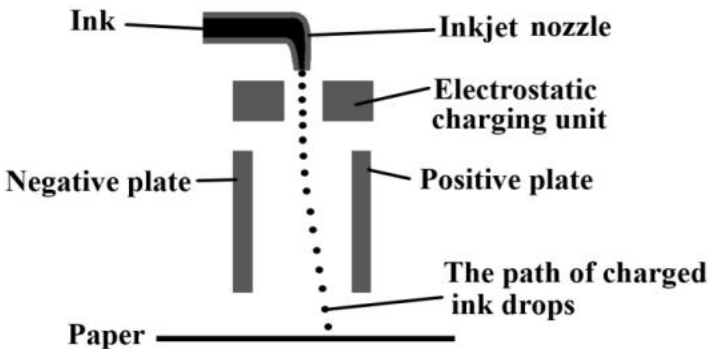


Figure 11

Identify the type of charge on the charged ink drops**.** **(1mk)**

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3.When does a lead acid accumulator need to be charged? **(2mks)**

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4.A magnetic material was heated and then cooled in a magnetic field. After cooling, it was found to be magnetized. Explain this using domain theory. **(2mks)**

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5.Complete the ray diagram in figure 3 to illustrate how a concave mirror can be used as a shaving mirror. **(2mks)**

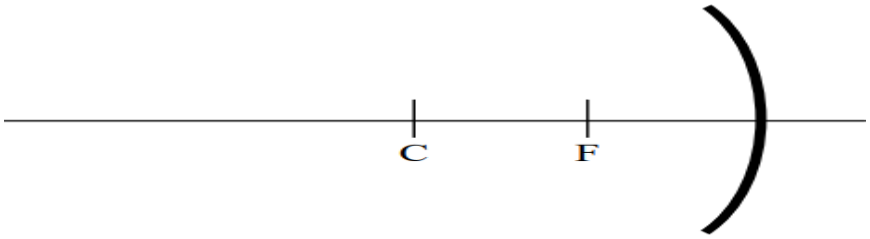


Figure 12

6.Figure 4 shows a conductor carrying current placed in the magnetic field as shown and moves in the direction shown

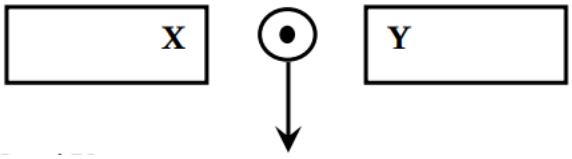


Figure 13

Identify the polarities of X and Y. **(1mk)**

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b) State one adjustment that can be made on the diagram to increase the magnitude of the force on the conductor carrying current. **(1mk)**

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7.Figure 5 shows a longitudinal wave that takes 0.5s to move from point A to B and at a speed of 36 m/s.

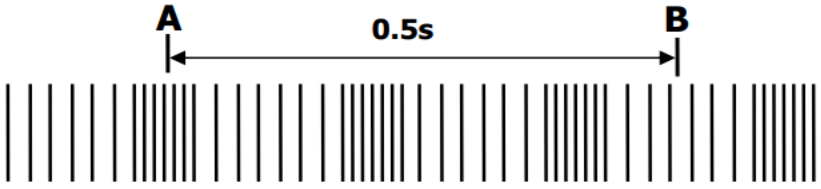


Figure 14

Calculate;

(a) The frequency of the wave. **(1mk)**

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(b) The wavelength of the wave. **(2mks)**

8. A student standing some distance from a wall blows a whistle and hears its echo 1800ms later. How far is the wall from the student. (Speed of sound in air = 320 m/s). **(2mks)**

9. A pin is placed at the bottom of a beaker filled with water to a height of 13 cm. When observed from above the water it appeared to be 10 cm deep. Determine the refractive index of water. **(3mks)**

10. An optician in Nairobi Hospital examined an eye of a patient and made the following observations: Eye ball too long and the focal length of the eye lens too short.

(a) State the eye defect the patient could be having. **(1mk)**

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(b) Use a diagram to describe how the defect could be corrected**.** **(2mks)**

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11. The table below shows the arrangement of electromagnetic waves in the order of increasing energy of radiation.

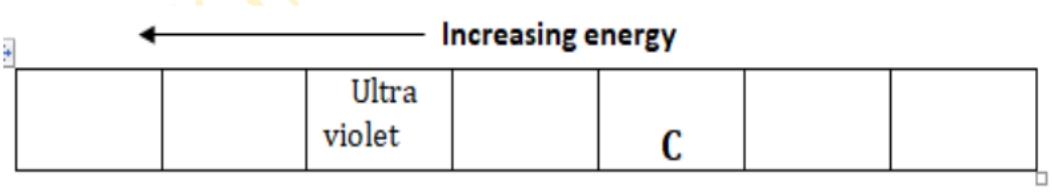


Figure 15

Identify the wave marked C and State one of its uses. **(2mks)**

12. Figure 7 shows a connection to a three-pin plug.

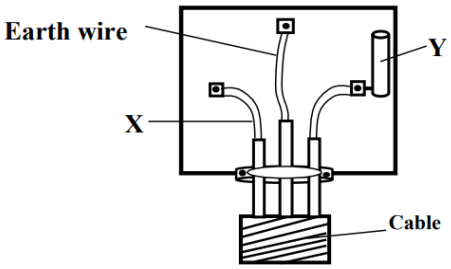


Figure 16

Give one reason why the earth pin is normally longer than the other pins. **(1mk)**

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SECTION B (55 MARKS)

Answer all the questions in this section in the spaces provided

13. a) (i) Define principal axis as used in diverging lenses. **(1mk)**

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(ii) The figure 8 below shows an object in front of a lens.

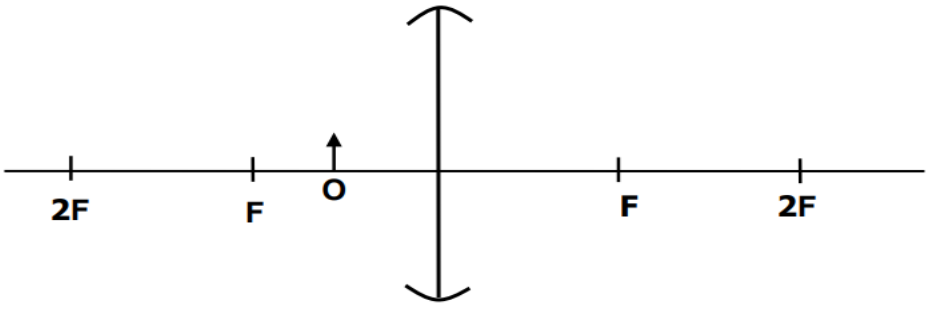


Figure 17

Using rays locate the image of the object**.** **(3mks)**

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b) In an experiment to determine the focal length of a converging lens, the following graph of magnification M against image distance V (cm) was drawn.

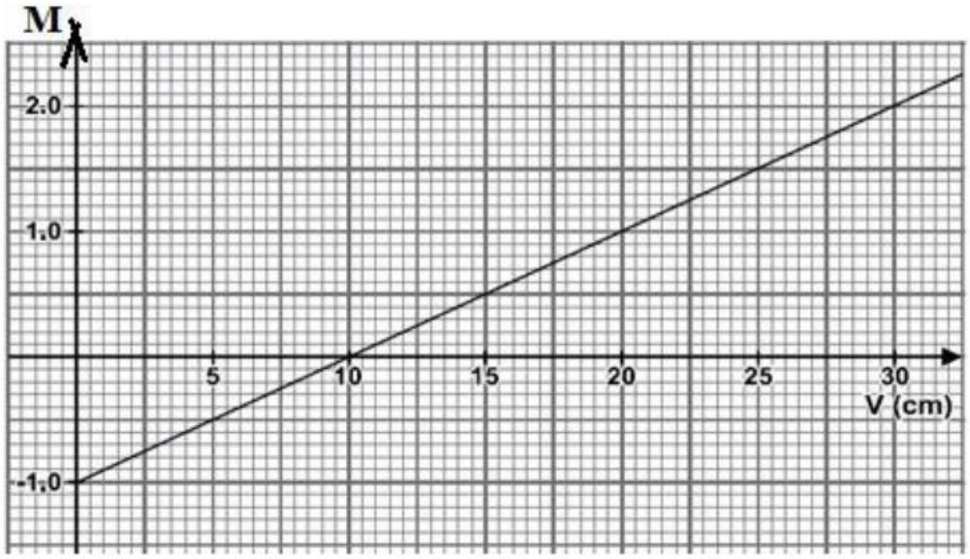


Figure 18

From the graph, calculate the focal length of the lens**.** **(3mks)**

c) A lens has focal length of 12.5cm. Determine its power**.** **(2mks)**

d) State two differences between the camera and the human eye**.** **(2mks)**

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14. (a) (i) On axes provided, sketch a graph of capacitance against distance of separation of the plates of a parallel-plate capacitor**.** **(1mk)**

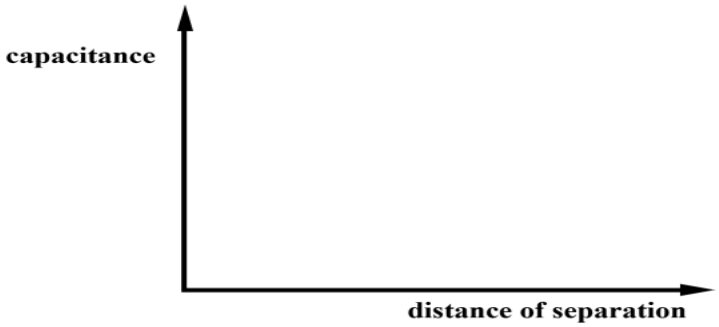


Figure 19

(ii) Figure 11 shows a charged parallel-plate capacitor with one plate connected to the cap of a gold leaf electroscope and the other plate earthed.

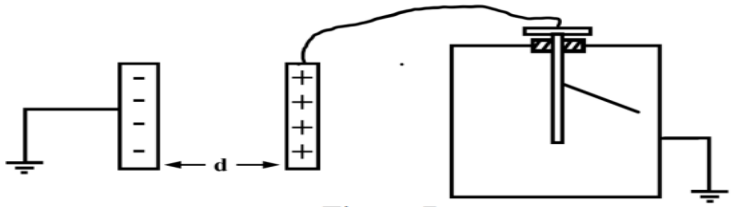


Figure 20

State and explain how the divergence of the leaf of the gold leaf electroscope changes when the distance of separation of the plates decreases**.** **(3mks)**

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(b) Figure 12 shows three capacitors of capacitance 1.0μ F, 4.0μ F and 6.0μ F, connected in a circuit containing a battery of 6.0V.

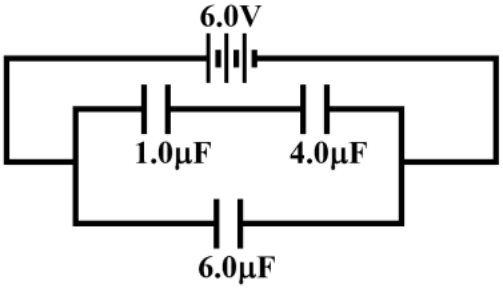


Figure 21

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Determine the:

(i) Effective capacitance of the circuit**.** **(3mks)**

(ii) Total charge stored in the capacitors. **(2mks)**

(iii) Voltage across the 4.0μF capacitor**.** **(3mks)**

15. (a)(i) Define the term interference as used in waves. **(1mk)**

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(ii) State the necessary conditions for interference to occur when waves from two sources overlap. **(2mks)**

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(b) In figure 13, sound waves from a loudspeaker are shown as waveforms on the screen of a C.R.O.

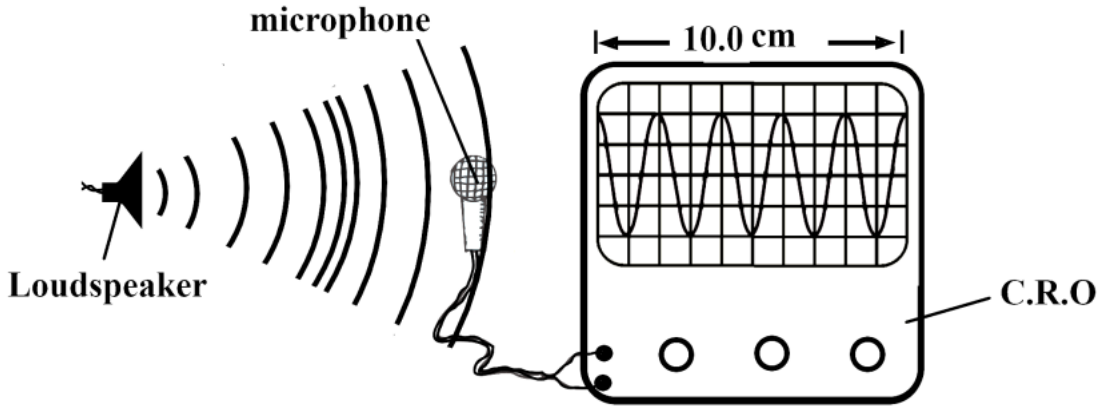


Figure 22

The scale is set at 1 millisecond per centimeter. (i)Determine the:

(I) frequency of the waves. **(3mks)**

(II) Wavelength of the waves. (Take speed of sound = $340ms^{-1}$) **(2mks)**

(ii) Explain how sound is converted to electrical signals by the microphone. **(3mks)**

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16. (a)(i) State what is meant by e.m.f. of a cell**.** **(1mk)**

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(ii) You are provided with three identical cells, each e.m.f E, an ammeter A, a voltmeter V, a resistor R and a switch S.

(I) Sketch a circuit diagram to show how the cells should be connected together to give an e.m.f. equal to E, across the resistor. **(2mks)**

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(II) When the switch is closed the voltmeter gives a reading which less than E. Give a reason for this observation. **(1mk)**

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(b) The battery in the circuit in figure 14 has an e.m.f of 4.5V and negligible internal resistance. Two resistors P and Q of resistances 3.5Ω and R respectively are connected in series with the battery. A current of 0.5A flows in the circuit.

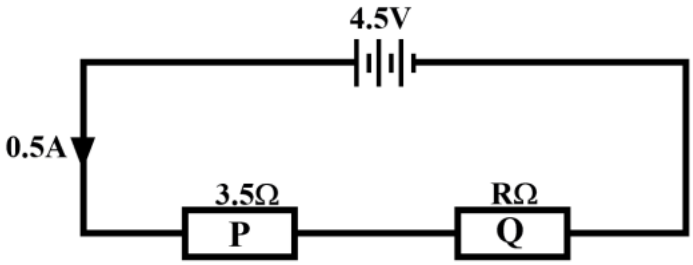


Figure 23

(i) Calculate:

(I) The effective resistance of the circuit**.** **(2mks)**

(II) The value of R**.** **(3mks)**

(ii) The student now connected the resistors in figure 14 in parallel. State how the effective resistance and current in the circuit change**.** **(2mks)**

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17. (a) State Snell's law**.** **(1mk)**

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(b) One of the conditions for total internal reflection to occur is that the angle of incidence must be greater than the critical angle of the medium. State the other condition. **(1mk)**

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(c) A ray of light makes a glancing angle of incidence$i = 60°$ with a flat glass surface as shown in figure 15 below.

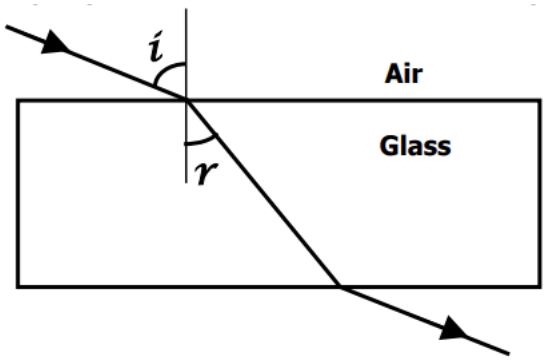


Figure 24

Given that the critical angle for glass is $42°$ determine;

(i) The refractive index of glass. **(2mks)**

(ii) The angle of refraction r. **(2mks)**

(iii) Given that the speed of light in air 3.0 x 108 m/s, find the speed of light in glass**.** **(2mks)**

(d) Kenya launched the use of optical fibers in communication recently. State two reasons why optical fibers are preferred to ordinary cables**.** **(2mks)**

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DILIGENT STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

Kenya Certificate of Secondary Education (KCSE)
PHYSICS PAPER 3
232/3
(PHYSICS PRACTICAL)

FORM 4

$\boldsymbol{TIME: 2\frac{1}{2}\ hours}$

INSTRUCTIONS:

- Answer all the questions in this paper
- You are supposed to spend the first 15 minutes of the $2\frac{1}{2}$ hours allowed for this paper reading the whole paper carefully before starting your work.
- Marks are given for clear record of the observations made, their suitability and accuracy and the use made of them.
- Candidates are advised to record observations as soon as they are made
- Mathematical table and electronic calculators may be used.
- **The earth's gravitational pull, $g = 10Nkg^{-1}$**

For Examiner's use only:

QUESTION	TOTAL MARKS	CANDIDATE'S SCORE
1	20	
2	20	
GRAND TOTAL	40	

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QUESTION 1

You are provided with the following apparatus:

- One dry cell
- A cell holder
- A volt-meter (0-3V)
- An ammeter (0-1A)
- A switch
- Amounted resistance wire labelled AB

a) Set up the apparatus as shown in the circuit below, figure 1

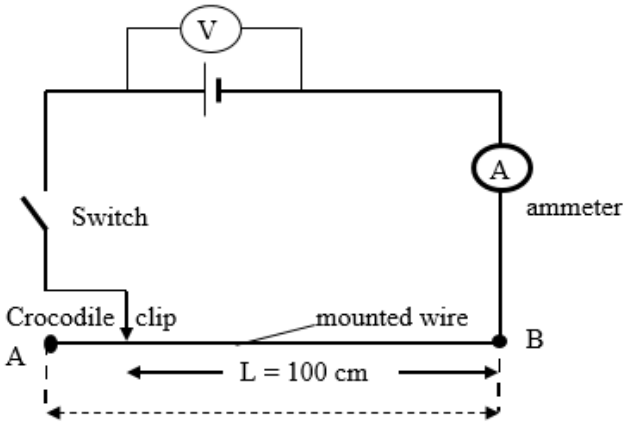


Figure 25

b) While the switch is open, record the voltmeter reading, V_0

$V_0 =$ ……. **(1mk)**

c) Put on the switch. While the crocodile clip is at A (i.e. L = 100 cm) take the volt-meter reading (V) and the ammeter reading (I). Record V and I in the table 1 below.

Table 1

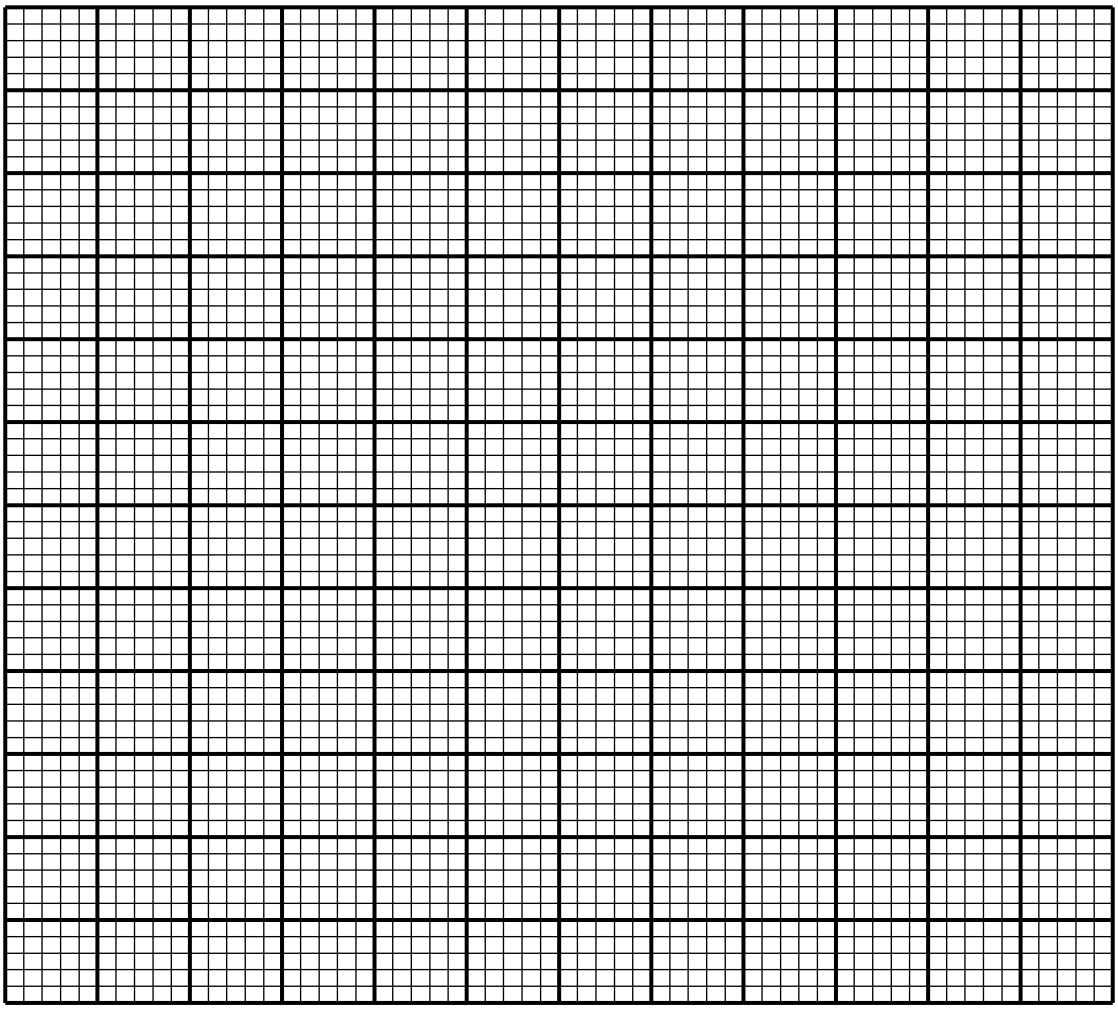
Length, ***L*** (cm)	100	80	60	40	20
Voltage (V)					
Current, I (A)					
Resistance, R (Ω)					
$\frac{1}{R}$ (Ω^{-1})					

(8mks)

d) Repeat the procedure in (c) above for the lengths shown and complete the table 1 above.

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e) Plot a graph of current (Y-axis) against $\frac{1}{resistance}$ (X-axis) **(5mks)**



f) Determine the slopes, S of the graph **(3mks)**

g) The resistance and current are related by the equation: $\frac{z}{R} = I$. Determine the value of z **(2mks)**

h) State the physical quantity that the slope of the graph represent **(1mk)**

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QUESTION TWO

PART A

You are provided with the following:

-A candle
-A lens and a lens holder
-A screen
-A metre-rule
-Some plasticine (use it to fix the metre-rule firmly on the bench)

a) Set up the apparatus as shown in figure 2 below (ensure that the candle flame and the lens are approximately the same height above the bench)

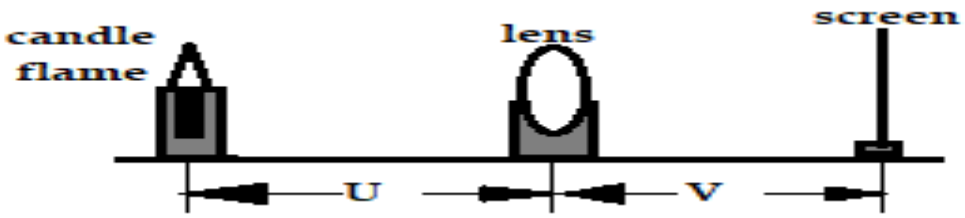


Figure 26

b) Set the position of the lens so that it is 40cm from the candle (U = 40 cm). Adjust the position of the screen until a sharp image of the candle flame is obtained. Measure the distance, V between the lens and the screen. Record the value of V

V = …… cm **(1mk)**

c) Repeat the procedures in b) above for other values of U in the table b below. **(6mks)**

Table 2

U(cm)	45	50	55	60
V(cm)				
Magnification (m) $= \frac{v}{u}$				
P = $\frac{v}{(m+1)}$				

d) Determine, z the average values of $\frac{v}{(m+1)}$ **(2mks)**

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Part B

You are provided with the following apparatus:

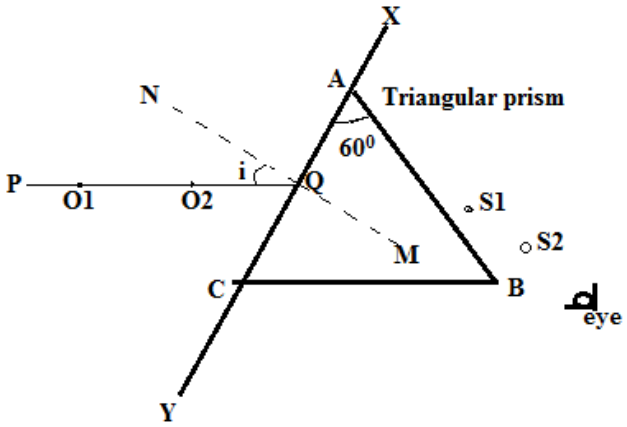
✓A soft-board,
✓an equilateral glass prism,
✓4 optical pins and 4 drawing pins,
✓plain white paper

Proceed as follows:

e) On a plain white paper draw a line XY and mark its midpoint Q. At Q draw a normal NQM at right angles to XY. Draw a line PQ such that the angle of incidence, i, (PQN) is 25^0 (figure below). Fix the paper on the soft-board with the drawing pins.

f) Place the triangular prism vertically with the triangular base down, on the paper such that the midpoint of the edge CA of the prism coincides with the midpoint, Q, of the line XY, as shown. Draw the outline CAB of the prism.

(The plain paper to be collected with the answer sheet) **(3mks)**



g) Stick two pins, O1 and O2 (object pins), on the line PQ vertically into the soft-board, about 5cm apart. View from the side AB of the prism and look for the images of the pins O1 and O2, as shown in the figure. Keeping the eye along the plane of the paper, fix two pins S1 and S2 (search pins), one after the other between your eye and the prism so that S1 and S2 and the images of O1 and O2, seen through the prism, appear one behind the other in a straight line. Mark the positions of the four pins and remove the pins, the prism and the paper.

h) Draw a line joining the points S1 and S2 to meet the line AB at R. Draw the line QR. Measure the angle of refraction, r (MQR). Record the values of the angles i and r in the table below.

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i) Repeat the experiment for the other values of i and entre your results in the table 2 below. Complete the table. **(6mks)**

i (^{0})	r (^{0})	Sin i	Sin r	$\frac{\sin i}{\sin r}$
25				
30				
35				
40				
45				

j) Determine, k the average value of: $\frac{\sin i}{\sin r}$ **(2mks)**

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