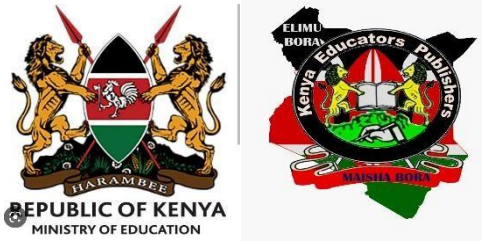
FRM 3 ENDTERM 1 EXAM

ALL SUBJECTS

SERIES 3



FOR MARKING SCHEMES AND MORE FORM 1 TO FORM 4 EXAMS :

CONTACT:

MR MACHUKI – 0724333200

OR

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FORM 3 END TERM 1 SET 3 EXAM 2023

Name……Adm No……Class……

School ……

Candidate's Signature ……

GRAND TOTAL

442/1

AGRICULTURE PAPER I

Time: 2 Hours

INSTRUCTIONS TO STUDENTS

1. All your answers must be written in the sheets provided and attached to this question paper.

SECTION A (30MKS)

1 State four factors which determines the farming systems adapted by farmers *(2mks)*

2. Give four reasons for sub in maize field *(2mks)*

3. Name two types of inventories in the farm *(1mk)*

4. State four negative of HIV/AIDS to agriculture *(2mks)*

5. State four effect of soil erosion *(2mks)*

6. State four deficiency symptoms of nitrogen in plants *(2mks)*

7. Highlight two effect of land title deed to farm *(1mk)*

8. State two methods of controlling heads mat in maize *(1mk)*

9. Give two forms of large scale farming practiced in Kenya *(1mk)*

10. State two ways in which parent rode influences soil characteristics *(1mk)*

11. Give four farming practices carried out to achieve minimum tillage *(2mks)*

12. State two characteristics of plantation farming *(1mk)*

13. Give three classes of weeds under growth cycle *(1 ½ mks)*

14. State four post-harvesting practices on crops *(2mks)*

15. List four advantages of mulching in Agriculture line *(2mks)*

16. State three benefits of using certified seeds *(2mks)*

17. State four importance of air in soil *(2mks)*

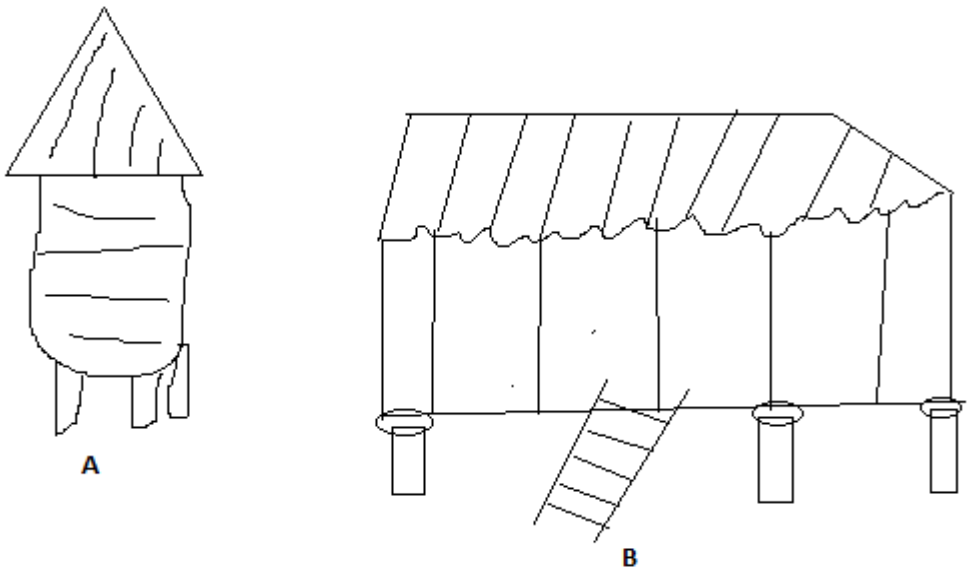
18. State four factors used in classification of inorganic fertilizer *(2mks)*

19. State one cause of hard pan in soil *(2mks)*

SECTION B (20MKS)

Answer All questions

20. The diagram labeled A and B illustrate storage structures study the diagram carefully and answer the question that follows.



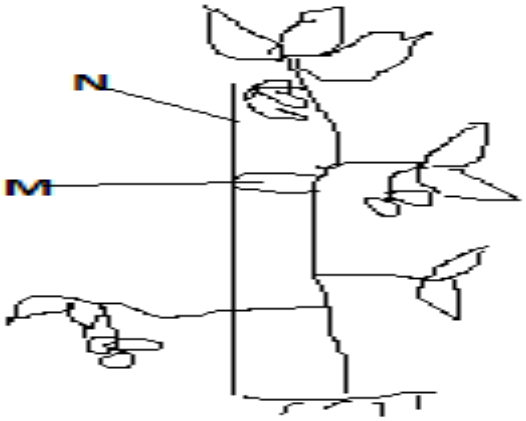
(a) Identify the structures *(2mks)*

A

B

(b) State four structural differences between (A and B)

(c) State four maintenance practices carried out on strandline *(2mks)*

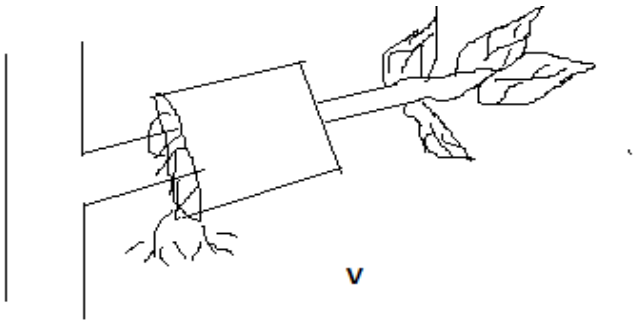


21. (a) Identify the practice illustrated *(1mk)*

(b) Name material used in N and M and then uses *(2mks)*

(d) List down four problems faced by a farmer who does not carry out the practice *(4mks)*

22. The diagram below illustrates a method of propagating some of the common field crop. Study the diagram and answer the questions that follow



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

(b) Name two field crop which can be propagated using above method
(2mks)

(c) State two conditions to be ensured at point V to ensure full rooting
(2mks)

SECTION C 60MKS

23. Discuss the production of bean under the following sub-headings
(a) Land preparation ***(4mks)***
(b) Selecting and treatment of planting materials
(4mks)
(c) Planting ***(4mks)***
(d) Field management practices ***(4mks)***
(e) Harvesting of bean ***(4mks)***

24. State five advantages and disadvantages of overhead irrigation (10mks)
(b) State factors used in choosing irrigation methods ***(5mks)***
(c) What are the uses of water in livestock farm ***(5mks)***

25. What factors determine the number of secondary cultivation during land preparation ***(5mks)***
(b) Give reasons why minimum tillage may be carried out ***(6mks)***
(c) Explain the activities carried out in tertiary cultivation ***(6mks)***
(d) What are the factors that determine the depth of ploughing ***(3mks)***

FORM 3 END TERM 1 SET 3 EXAM 2023

Name……Adm No……Class……

School ……

Candidate's Signature ……

GRAND TOTAL

443/2
AGRICULTURE
PAPER 2
TIME: 2 HOURS

INSTRUCTIONS TO STUDENTS:

- *Write **yourname**, **admission number** and **school** in the spaces provided.*
- *Sign and write the date of the examination in the spaces provided.*
- *This paper consists of **three** sections; **A, B** and **C.***
- *Answer **all** questions in section **A** and **B.***
- *Answerany **two** questions in section **C.***
- *All answers **must** be written in the spaces provided.*

For Examiner's Use Only;

SECTION	MAXIMUM SCORE	CANDIDATE SCORE
A	30	
B	20	
C	40	
TOTAL	90	

SECTION A (30MKS)

1. State four harmful effects of ticks on livestock ***(2mks)***

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2. a. Define the following terms as used in livestock breeding

i. hybrid vigor ***(1mk)***

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ii. mothering ability ***(1mk)***

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b. State four advantages of artificial insemination (A1) in a livestock breeding ***(2mks)***

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3. Give the use of a spoke shave on the farm ***(1mk)***

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4. Why is it necessary to vaccinate livestock ***(1mk)***

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5. State three factors that influence the amount of water taken by a farm animal ***(1 ½ mks)***

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6. Outline four factors affect the digestibility of a feed. ***(2mks)***

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7. List four safety precautions which should be considered when using farm tools ***(2mks)***

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8. State four effects of protein deficiency in animals ***(2mks)***

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9. Give four advantages of embryo transfers in livestock production ***(2mks)***

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10. Differentiate between steaming up and flushing as used livestock rearing ***(2mks)***

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11. Outline signs of heat in sows *(2mks)*

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12. State two qualities of crop feed that make it suitable for piglets *(1mk)*

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13. State two preventive measures for bloat in ruminant production *(1mk)*

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14. Name one intermediate hast in life cycle of a liver fluke *(1mk)*

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15. Give four advantages of ranching *(2mks)*

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16. State three maintenance practices carried out on a crosscut saw *(1 ½ mks)*

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17. Outline four factors that would influence the use of a jembe instead of a disc plough in seedbed preparation. *(2mks)*

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SECTION B (20MKS)

18.a) Identify the tools shown below ***(1 ½ mks)***

b).State one advantage of tool C over A and B ***(2mks)***

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c) Outline two maintenance practices carried out on the above tools ***(1mk)***

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19. The diagram below shows a livestock parasite

a) Identify the parasite *(1mk)*

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b) Name two species of livestock commonly attacked by the parasite *(1mk)*

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c) In which organ in livestock is the parasite found? *(1mk)*

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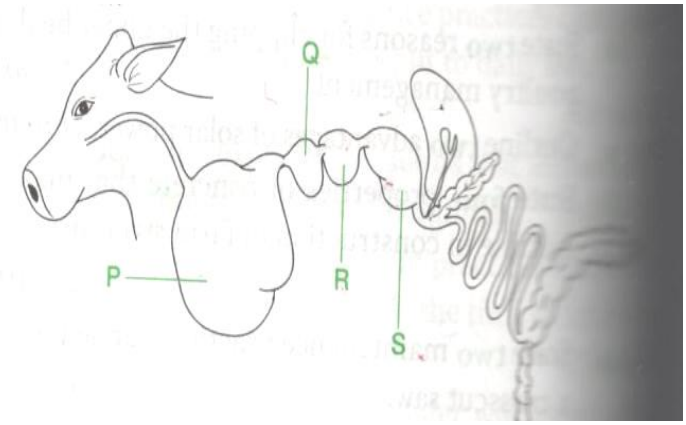
20. Study the diagram of the digestive system of a farm animal shown below and answer the questions that follow.



a) Name the parts labelled P, Q, R and S *(1mk)*

P.....

Q:.....

R.....

S.....

b) State the function of the part labelled R *(1mk)*

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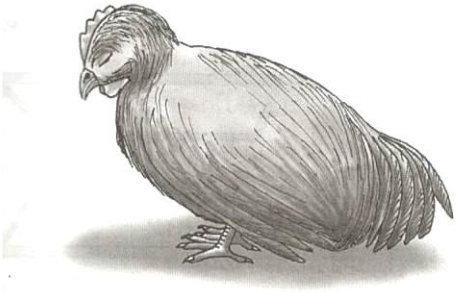
c) Using the Pearson's square method ,compute a 200kg ration with 20% DCP from oats which contains 10% DCP and simsim seed cake containing 60% DCP ***(4mks)***

21. The diagram below shows a chicken suffering from a certain disease.



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

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b) Outline three symptoms of the disease you have identified in (a) above ***(1 ½ mks)***

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c) State three control measures of the above disease ***(1 ½ mks)***

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SECTION C answer any two questions (40MKS)

22. Describe the measures used to control livestock disease ***(20mks)***

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23.a) Explain five differences between the digestive systems of a ruminant and non – ruminant when selecting livestock for breeding ***(10mks)***

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b) Describe factors considered when selecting livestock for breeding ***(10mks)***

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24. a) Explain five characteristics of indigenous cattle breeds ***(10mks)***

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b) Explain various parts and functions of the female reproductive system of a chicken ***(10mks)***

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FORM 3 END TERM 1 SET 3 EXAM 2023

Name……Adm No……Class……
School ……
Candidate's Signature ……

GRAND TOTAL

231/1
BIOLOGY PAPER 1
Time: 2 Hours

INSTRUCTIONS TO STUDENTS

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

Question	Maximum score	Candidate's score
1-29	*80*	

1. The scientific name of the cat is *FelisCatus* classify the cat into; **(3mks)**

   i) Kingdom……

   ii) Genus……

   iii) Species……

2. The figure below shows a structure of a tooth:

   (a) Identify the tooth: - ***(1 mk)***

   (b) State how the tooth named in (a) is modified to perform its function:- ***(1 mk)***

3. a) Name the hormone secreted in the human body when one takes in a large amount of water:- ***(1 mk)***

   (b) Which disease results from inadequate production of the hormone named in (a) above? ***(1mk)***

4. Give two structural features that can be used to separate a housefly, a millipede, and a tick into their respective classes. **(2mks)**

5. State three main functions of the stomach in human beings:- ***(3 mks)***

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6. It was found that during germination of bean seeds, 9.2 cm^3 of carbon IV Oxide was produced while 9.0 cm^3 of oxygen was used up.

   (a) (i) Calculate the respiratory quotient of the reaction:- ***(2 mks)***

   (ii) Identify the substrate being met abolished:- ***(1 mk)***

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   (b) In which part of the cell does glycolysis occur? ***(1 mk)***

7. State three functions of the mammalian blood other than transport ***(3mks)***

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8. Other than sexual intercourse name the other ways by which HIV/AIDS is spread ***(3mks)***

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9. State three characteristics features of an efficient respiratory surface *(3mks)*

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10. State three environmental factors that affect the rate of stomatal transpiration *(3mks)*

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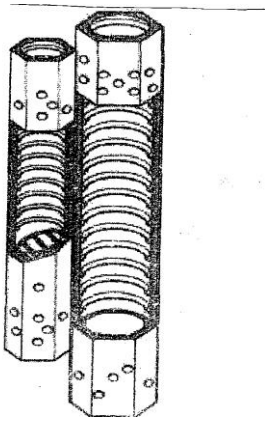
11. The cells shown below are adapted for transport in flowering plants.



(a) Name the tissue in which these cells are found. *(1 mk)*

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(b) Identify and explain **<u>two</u>** observable features of these cells that adapt them to their role in transport. *(2mks)*

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12. Name two areas in human body where active transport takes place. ***(2mks)***

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13. State the functions of the following cell organelles: ***(2mks)***

(a) Nucleolus.

(b) Plasma membrane

14.Distinguish between guttation and transpiration ***(2mks)***

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15. What are the functions of the following parts of a light microscope? ***(3mks)***

(a) Eye piece lens

(b) Condenser

(c) Diaphragm

16. (a) What is peristalsis? ***(1mk)***

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(b) Explain how the process above is brought about. ***(2mks)***

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17. (a) State **three** structural differences between arteries and veins in mammals ***(3mks)***

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(b) Name a disease that causes thickening and hardening of arteries ***(1mk)***

18. Identify **two** forces that help in upward movement of water in plants ***(2mks)***

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19. State **two** reasons why lipids are rarely used as a respiratory substrate compound to Carbohydrates. ***(2mks)***

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20. The equation below represents a metabolic process that occurs in the mammalian liver:

(2mks)

Amino acids =organic compound + urea

(a) Name the process

(b) What is the importance of the process to the mammals?

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21. (a) Define the term balanced diet. *(2mks)*

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(b) State the importance of roughage in a diet. *(1mark)*

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22. (a) How do the following factors affect the rate of diffusion? *(3marks)*

(i) Surface area to volume ratio

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(ii) Diffusion gradient

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(iii)Temperature

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23. Name any three specialized plant cells. *(3marks)*

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24. Name **three** sites where gaseous exchange takes place in terrestrial plants. *(3 marks)*

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25. A student in form three caught an organism which had the following characteristics

i) Body divided into two parts.

ii) Simple eyes.

iii) Eight legs.

Classify the organism up to the class level. *(3 marks)*

26. (a) Distinguish between the counter flow and parallel flow system in gaseous exchange ***(1mk)***

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(b) Which of the two systems mentioned in (a) above is efficient? Give a reason ***(2mks)***

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27. Name the enzyme, the vitamin and the metallic ions required in the clotting of blood.

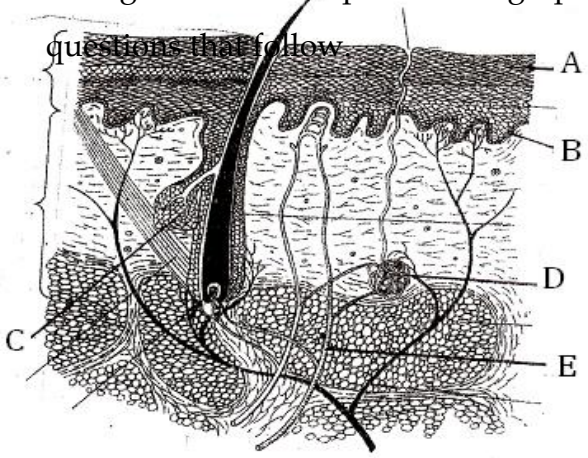
(3mks)

(i) Enzyme

ii) Vitamin

iii) Metallic ion

28. The figure below is a photomicrograph of a section of mammalian skin. Study it and answer the questions that follow.



(i) State two functions of the secretion from the gland labeled C ***(2marks)***

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(ii) Explain the behaviour of structure E when environmental temperature falls to 10^0c.

(2marks)

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29. Astronauts from the outer space brought a material to earth. Explain how you would establish if the material is living or non-living. ***(2marks)***

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FORM 3 END TERM 1 SET 3 EXAM 2023

Name……Adm No……Class……

School ……

Candidate's Signature ……

GRAND TOTAL

231/2

BIOLOGY
PAPER 2
THEORY
2 HOURS

INSTRUCTIONS TO STUDENTS

(i) Write your name and admission number in the spaces provided
(ii) This paper consists of section A and B
(iii) Answer ALL the questions in section A in the spaces provided
(iv) In section B, answer question 6 (compulsory) and either question 7 or 8 in the spaces provide.

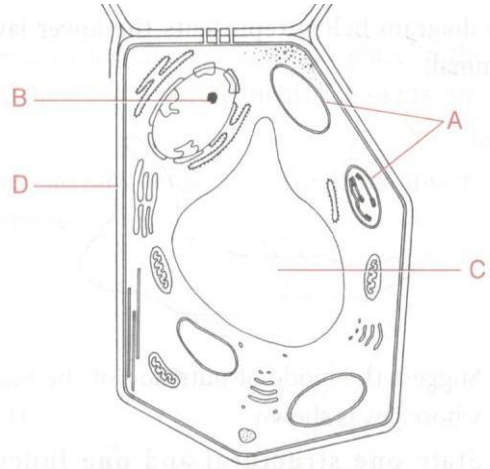
For examiner's use only

Section	Question	Maximum score	Candidate score
A	1	08	
	2	08	
	3	08	
	4	08	
	5	08	
B	6	20	
	7	20	
	8	20	
	Total	80	

SECTION A (40MKS)

Answer all questions in this section.

1. The diagram below represents a cell seen under an electron microscope . Study it and answer the questions that follow



a) i) suggest the Kingdom from which the cell shown in the diagram was obtained ***(1mark)***

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ii) Give two reasons for your answer in (a) (i) ***(2 marks)***

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

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c) State the functions of the part labelled C. ***(1mark)***

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d) Name a structure component of the part labelled D . ***(1mark)***

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e) Give one advantage of the electron microscope that makes it more efficient to use than a Light microscope. ***(1mark)***

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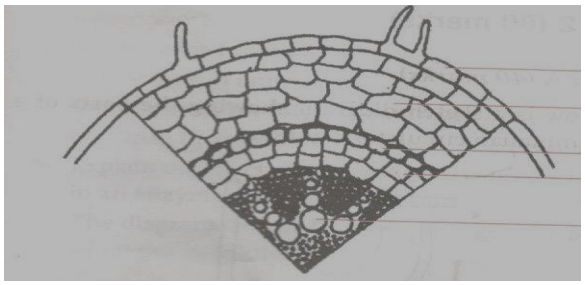
2. The diagram below shows a portion of the transverse section of a root drawn by a form two Student, as seen under a light microscope.



A
B
C
D

a) Giving a reason name the class of the plant from which the root was obtained. ***(2 marks)***

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b) Name the parts labelled A, B, C, D ***(3mks)***

A .....

B .....

C .....

D .....

c) State the function of parts B, C and D ***(3mks)***

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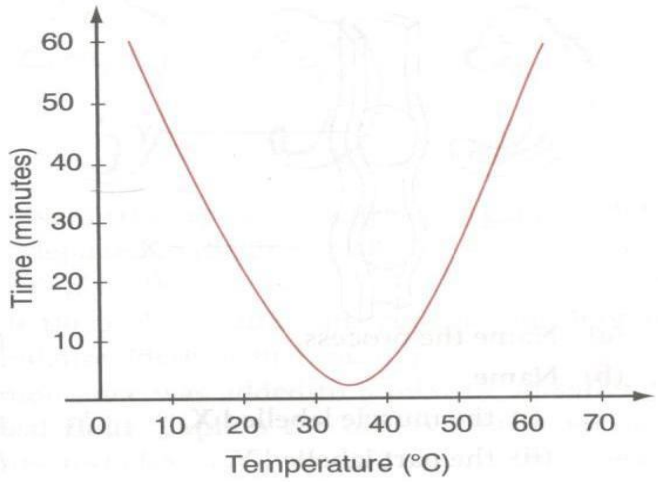
3. In an experiment to investigate the action of pepsin on egg albums, equal amounts of pepsin were added to equal of egg albumen in different test tubes. The test tube were placed I n water

baths at different temperatures. The graph below shows the time taken for the enzymes to digest protein at the temperatures.



a) what is the optimum temperature for the enzyme *(1mark)*

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b) Account for the time taken to digest egg albumen at $60^{o}C$ *(2marks)*

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c) With a reason name the form in which enzyme pepsin is secreted *(2marks)*

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d) State three other factors that affect enzyme controlled reactions *(3marks)*

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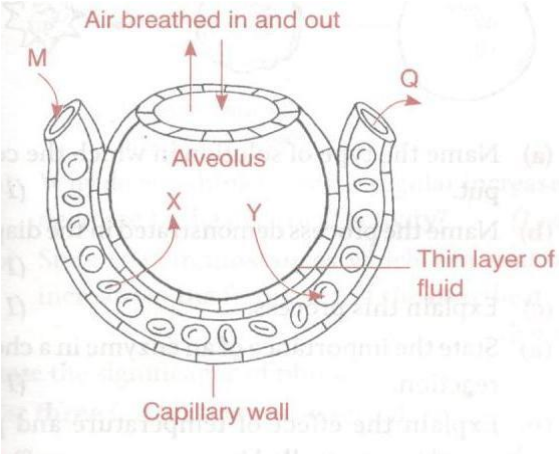
4) The diagram below shows gaseous exchange and flow in the alveolus in the mammalian lungs



a) Name the gases labelled X and Y. ` ***(2marks)***

X.....

Y .....

b) Explain the difference in concentration of the gases named in (a) at points M and Q

(4marks)

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c) Give two reasons why the blood leaving the lungs has less oxygen ***(2mks)***

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5a) State the dangers of smoking cigarettes to the respiratory tract ***(3mks)***

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b) The gills of a fish and the skin of the frog are efficient in the exchange of gases. Which characteristic do they have in common? ***(4marks)***

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c) What structures do mangroves use for gaseous exchange ***(1mark)***

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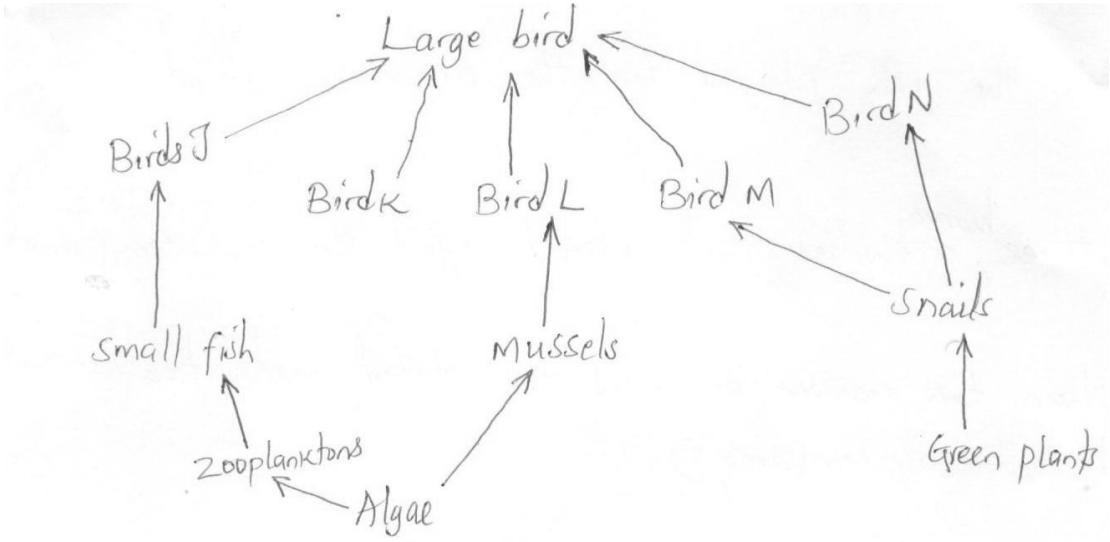
SECTION B (40MKS)

Answer question 6 and any other question (either 7 or 8 in spaces provided)

6. After an ecological study of feeding relationships, students constructed the food web below.



a) Name the process through which energy from the sun is incorporated into the food web. ***(1mark)***

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b)State the mode of feeding of birds in the food web. ***(1mark)***

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c) Name two ecosystem in which the organisms in food web lives ***(2marks)***

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d) From the information in the food web, construct three food chain with large bird as a quaternary consumer. ***(3marks)***

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e) State three likely possible occurrences that would happen to the organisms in the food web if bird M migrated ***(3marks)***

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f) Not all the energy from one trophic level is available to the next trophic level. Explain ***(2marks)***

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g) (i)Two organisms which play a role in the ecosystem are not included in the food web. Identify the two organisms. ***(2marks)***

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(ii) State the role played by the organisms in g (i) above. ***(1mark)***

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h) (i) State three human activities that would affect the ecosystem ***(3marks)***

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ii) Explain two reasons on how the stated activities would affect the ecosystem ***(2marks)***

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7. Explain how abiotic factors affect plants and animals ***(20mks)***

8. Explain how the human skin is adapted to its functions ***(20mks)***

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FORM 3 ENDTERM 1 SET 3 EXAM

231/3 –
BIOLOGY
FORM THREE
END TERM 1

CONFIDENTIAL

Moss plant labeled K in a watch glass / peri-dish.
Showing (Rhizoids, leaves, seta, capsule.

Hand lens

REQUIREMENTS

Each candidate will require the following:

- 5 test - tubes
- 5ml of solution L_1 – starch solution 0.5%
- 5ml of solution L_2 – diastase solution 10%
- 2ml of solution L_3 – Boiled diastase solution 10%

  NB: boiled for 10 minutes
- Means of labeling – 3 labels
- Water bath
- Thermometer
- Iodine solution
- 3 Droppers
- A White tile
- Means of timing

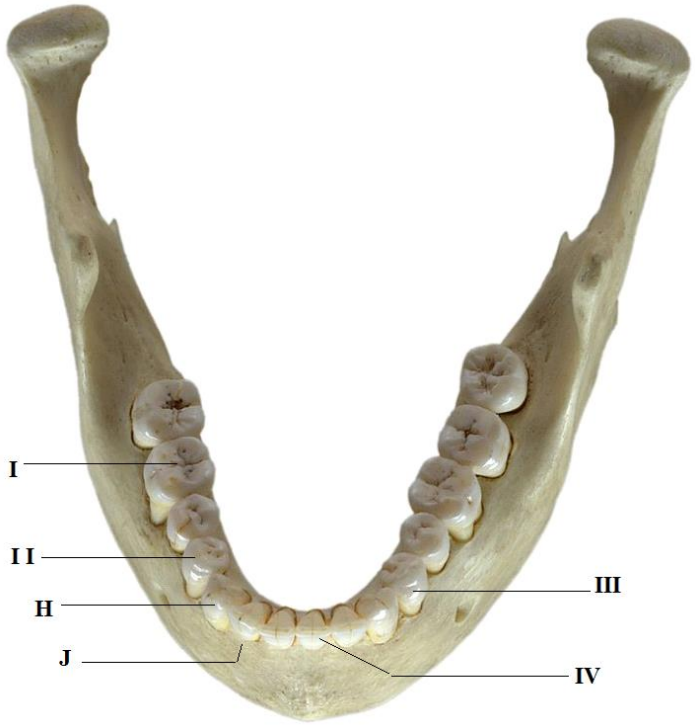
FORM 3 ENDTERM 1 SET 3 EXAM

Name: ……..…… Adm no ……..…..... Class.....
231/3
BIOLOGY
PAPER 3
FORM THREE
END OF TERM ONE

TIME: $1^{3}/_{4}$ HOURS
INSTRUCTIONS TO CANDIDATES:

- *Answer **ALL** the questions*
- *Answers should be written in the spaces provided*

1. Below is a photograph of an adult human jaw with teeth. Study the diagram and answer the questions that follow.



a) State the mode of nutrition in man. (1mk)

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b) Name the type of teeth labeled I and III. (2mks)

I:……..……

III:……..……

c) Name the parts of teeth labeled H and J. (2mks)

H:……

J:……

d) Identify **one** distinguishing feature between teeth labeled II and IV. (1mk)

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e) State **one** function of tooth IV. (1mk)

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f) Write the dental formula from the jaw shown in the photograph. (1mk)

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g) Explain why tooth I would be more prone to dental carries than tooth III, (2mks)

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2. Use the hand lens provided to observe specimen K and answer the questions that follow.

a) (i) In the space below draw a fully labeled diagram of representative part of the specimen.

(5mks)

(ii) Calculate the magnification of your drawing. (2mks)

b) Identify:

(i) The Kingdom (1mk)

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(ii) The Division, to which the specimen belongs. (1mk)

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

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c) State the functions of any **two** parts labeled in your diagram. (2mks)

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d) What is the mode of reproduction in the specimen? (1mk)

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e) Explain the significance of colour observed in the specimen M. (2mks)

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3. You are provided with solutions labeled L_1, L2 and L_3. Note that L_3 is the same as L2 except that L_3 has been boiled.

   Label three test- tubes A, B and C.
   Into the test- tube labeled A add 1ml of solution L_1.
   Into the test- tube labeled B add 1ml of L_1 and 1ml of L_2.
   Into the test- tube labeled C add 1ml of L_1 and 1ml of L_3.

   a) Withdraw a drop from test – tube A and place it on a white tile. To the drop add one drop of iodine solution. Record your observation in the table below. (3 mks)

Test - tube	observation	conclusion
A		
B		
C		

Repeat the procedure with contents in test – tubes B and C. Record your observations in the table.
Place the three test –tubes labeled A, B and C into a water bath at 37^0C.

NB. Ensure that the temperature of the water bath does not fall below 35^0C or exceed 38^0C

b) After 30 minutes, test the contents of each of the test – tubes labeled A, B and C following the procedure in (a) above. Record your observations in the table below. (6 mks)

Test - tube	**observation**	**conclusion**
A		
B		
C		

c) Why was test – tube labeled A included in the experiment? (1mk)

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d) (i) suggest the identity of solution L_2 (1mk)

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

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e) Suggest a part of the alimentary canal in the body of a mammal where the process being investigated in the experiment would take place. (1mk)

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f) Account for the results at the end of the experiment in the test – tube labeled.

i) B (1mk)

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ii) C (1mk)

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FORM 3 END TERM 1 SET 3 EXAM 2023

Name……Adm No……Class……

School ……

Candidate's Signature ……

GRAND TOTAL

565/1

BUSINESS STUDIES

PAPER 1

TIME: 2 Hours

INSTRUCTIONS TO STUDENTS

i) Write your name and admission number in the spaces provided above
ii) Sign and write the date of the examination in the spaces provided above.
iii) Answer all questions in the spaces provided.
iv) This paper consists of **6** printed pages
v) Check the question paper to ascertain that all the pages are printed as indicated and no questions are missing.

For Examiner's Use Only

Question	Maximum Score	Candidate's Score
1-25	100	

1. Mention **four** factors to consider before you locate an office. ***(4marks)***

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2. Mention **four** factors that influence decisions on what goods and services to produce. **(4marks)**

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3. Give **four** problems facing the savings and credit cooperative societies in Kenya.

(4marks)

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4. Disadvantages of a long chain of distribution.

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5. Highlight **four** sources of diseconomies of scale in a firm. ***(4marks)***

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6. Why would a business person find it necessary to advertise their product?

(4marks)

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7. State four essentials of effective communication.

(4marks)

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8. Mention **four** factors that one must take account when deciding on which method of product promotion to use. ***(4marks)***

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9. Give **four** reasons why diagonal communication needs to be encouraged in an organization. ***(4marks)***

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10. Explain **four** differences between hypermarkets and departmental stores.

(4marks)

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11. Highlight **four** trends in transport sector in Kenya. ***(4marks)***

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12. Give **four** reasons why a producer may need to have their own warehouse.

(4marks)

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13. State **four** factors that may hinder effective communication in an organization.

(4 marks)

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14. Highlight **four** features of land as a factor of production. ***(4marks)***

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15. Give **four** factors that positively influence internal business environment ***(4marks)***

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16. Give **four** reasons for continued use of human portage ***(4marks)***

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17. Mention **four** components of external business environment. ***(4marks)***

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18. Mention **four** methods of government participation in business activities. ***(4marks)***

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19. Suggest **four** circumstances under which a person would prefer a taxi over a matatu.

(4marks)

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20. Give **four** uses of a computer in an office ***(4marks)***

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21. Outline four sources of oligopoly power. ***(4marks)***

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22. Give four reasons that make insurance companies decline to insure acts of nature.

(4marks)

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23. Give **four** benefits a country derive from entrepreneurship. ***(4marks)***

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24. Identify **four** gaps that may exist in a market leading to a business opportunity.

(4marks)

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25. Mention **four** factors that limit the number of entrepreneurs in a country. ***(4marks)***

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FORM 3 END TERM 1 SET 3 EXAM 2023

Name……Adm No……Class……

School ……

Candidate's Signature ……

GRAND TOTAL

231/2

BIOLOGY
PAPER 2
THEORY
2 HOURS

INSTRUCTIONS TO STUDENTS

(i) Write your name and admission number in the spaces provided
(ii) This paper consists of section A and B
(iii) Answer ALL the questions in section A in the spaces provided
(iv) In section B, answer question 6 (compulsory) and either question 7 or 8 in the spaces provide.

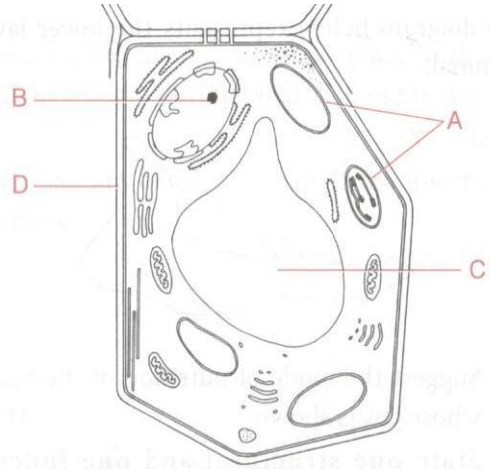
For examiner's use only

Section	Question	Maximum score	Candidate score
A	1	08	
	2	08	
	3	08	
	4	08	
	5	08	
B	6	20	
	7	20	
	8	20	
	Total	80	

SECTION A (40MKS)

Answer all questions in this section.

1. The diagram below represents a cell seen under an electron microscope . Study it and answer the questions that follow



a) i) suggest the Kingdom from which the cell shown in the diagram was obtained ***(1mark)***

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ii) Give two reasons for your answer in (a) (i) ***(2 marks)***

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

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c) State the functions of the part labelled C. ***(1mark)***

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d) Name a structure component of the part labelled D . ***(1mark)***

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e) Give one advantage of the electron microscope that makes it more efficient to use than a Light microscope. ***(1mark)***

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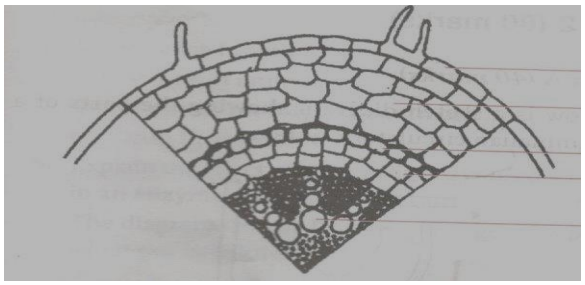
2. The diagram below shows a portion of the transverse section of a root drawn by a form two Student, as seen under a light microscope.



A
B
C
D

a) Giving a reason name the class of the plant from which the root was obtained. ***(2 marks)***

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b) Name the parts labelled A, B, C, D ***(3mks)***

A .....

B .....

C .....

D .....

c) State the function of parts B, C and D ***(3mks)***

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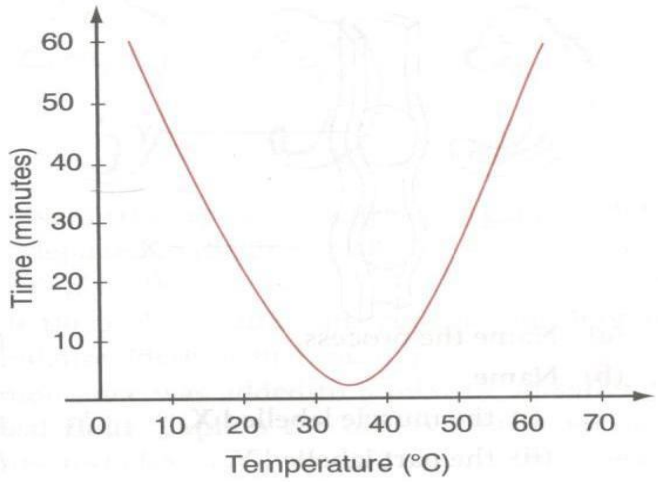
3. In an experiment to investigate the action of pepsin on egg albums, equal amounts of pepsin were added to equal of egg albumen in different test tubes. The test tube were placed I n water

baths at different temperatures. The graph below shows the time taken for the enzymes to digest protein at the temperatures.



a) what is the optimum temperature for the enzyme *(1mark)*

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b) Account for the time taken to digest egg albumen at $60^{o}C$ *(2marks)*

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c) With a reason name the form in which enzyme pepsin is secreted *(2marks)*

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d) State three other factors that affect enzyme controlled reactions *(3marks)*

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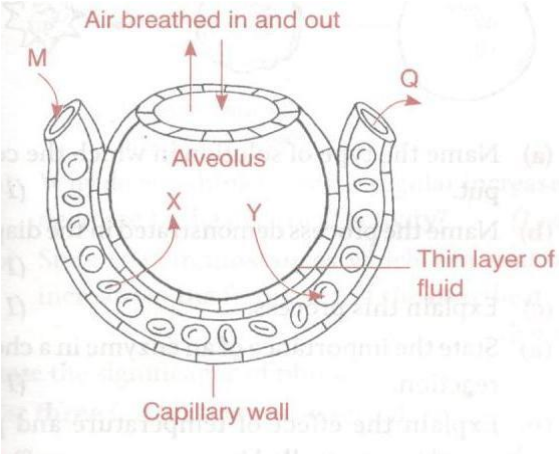
4) The diagram below shows gaseous exchange and flow in the alveolus in the mammalian lungs



a) Name the gases labelled X and Y. ` ***(2marks)***

X.....

Y .....

b) Explain the difference in concentration of the gases named in (a) at points M and Q

(4marks)

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c) Give two reasons why the blood leaving the lungs has less oxygen ***(2mks)***

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5a) State the dangers of smoking cigarettes to the respiratory tract ***(3mks)***

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b) The gills of a fish and the skin of the frog are efficient in the exchange of gases. Which characteristic do they have in common? ***(4marks)***

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c) What structures do mangroves use for gaseous exchange ***(1mark)***

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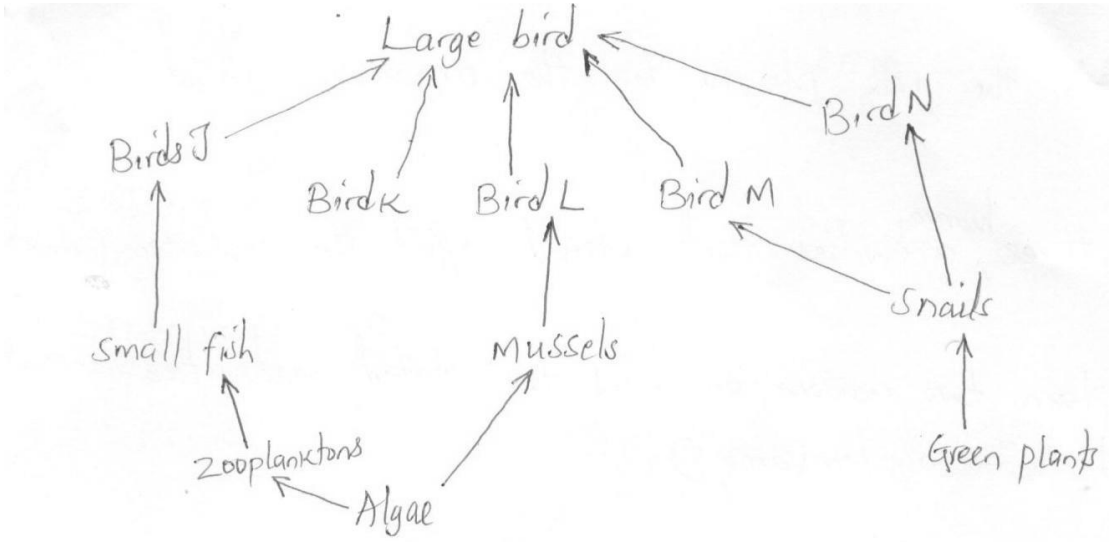
SECTION B (40MKS)

Answer question 6 and any other question (either 7 or 8 in spaces provided)

6. After an ecological study of feeding relationships, students constructed the food web below.



a) Name the process through which energy from the sun is incorporated into the food web. ***(1mark)***

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.....

b)State the mode of feeding of birds in the food web. ***(1mark)***

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.....

c) Name two ecosystem in which the organisms in food web lives ***(2marks)***

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d) From the information in the food web, construct three food chain with large bird as a quaternary consumer. ***(3marks)***

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e) State three likely possible occurrences that would happen to the organisms in the food web if bird M migrated ***(3marks)***

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f) Not all the energy from one trophic level is available to the next trophic level. Explain ***(2marks)***

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g) (i)Two organisms which play a role in the ecosystem are not included in the food web. Identify the two organisms. ***(2marks)***

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(ii) State the role played by the organisms in g (i) above. ***(1mark)***

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h) (i) State three human activities that would affect the ecosystem ***(3marks)***

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ii) Explain two reasons on how the stated activities would affect the ecosystem ***(2marks)***

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7. Explain how abiotic factors affect plants and animals ***(20mks)***

8. Explain how the human skin is adapted to its functions ***(20mks)***

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FORM 3 END TERM 1 SET 3 EXAM 2023

Name……Adm No……Class……

School ……

Candidate's Signature ……

GRAND TOTAL

233/1

CHEMISTRY

TERM 1

PAPER 1

INSTRUCTIONS TO CANDIDATES:

Answer ALL the questions

Mathematical tables and electronic calculations may be used

All working MUST be clearly shown where necessary

FOR EXAMINER'S USE ONLY:

Questions	Max. score	Candidates score
1 - 27	80	

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

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b) The atomic number of A and B are 9 and 17 respectively. Compare the electron affinity of A and B. Explain . ***(1mk)***

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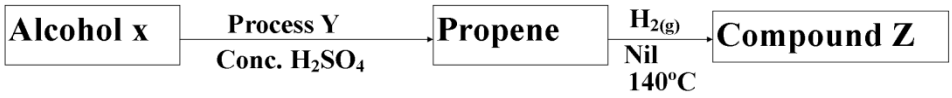
2. Use the reaction scheme below to answer the questions that follow.



i) Draw the structure of alcohol X. ***(1mk)***

ii) Name process Y. ***(1mk)***

……

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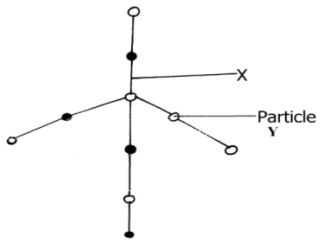
iii) Write the molecular formula of the 5th member in which propene belong. ***(1mk)***

3. Silicon (IV) oxide has a structure similar to that of diamond. Part of the structure is shown below.



a) What does x represent? ***(1mk)***

……

b) What type of structure is shown by the diagram? ***(1mk)***

……

……

c) Predict one physical property of silicon (IV) oxide and explain how it is related to its structure. ***(1mk)***

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4.Describe how a dry solid sample of lead (II) chloride can be prepared using the following reagents dilute nitric (V) acid dilute hydrochloric acid and lead (II) carbonate. ***(3mks)***

5a) State Graham's law of diffusion. ***(1mk)***

……

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b)Ammonia gas diffuses 1.41 times faster than gas XH_3.Determine the relative atomic mass of element X.(H = 1 , N = 14) ***(2mks)***

6.An ore of iron wasfound to contain 7g of iron and 3g. of oxygen.(fe = 56 O =16)

a) Workout its emprical formula. ***(2mks)***

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b) Write a balanced equation for reaction of the oxide in (a) with hot carbon.

(1mk)

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7. Carbon (iv) Oxide can undergo the changes below.

$$CO_{2(s)} \underset{B}{\overset{A}{\rightleftharpoons}} CO_{2\,(g)}$$

a) What are process A and B?

A..... ***(1mk)***

B..... ***(1mk)***

b)Suggest one use of carbon (iv) oxide that utilizes process A and B. ***(1 mk)***

.....

8.The table sows the PH values of solutions A to E

Solution	A	B	C	D	E
PH	6	13	2	10	7

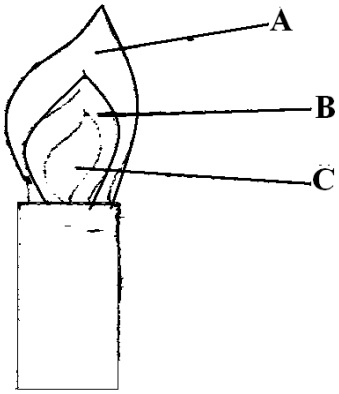
a) What is meant by the term PH? ***(1mk)***

b) Which of the solutions contains the largest number for hydroxide ions

(1mk)

c) What will be the PH value of the mixture of D and E. ***(1mk)***

9.The diagram below shows a Bunsen Burner when in use.



Which of the labeled parts is used for heating? Give a reason. ***(2mks)***

10.The table below shows the atomic numbers of elements T, U, V and W. Study it and answer the questions that follow. The letters are not the actual symbols of the elements.

Element	T	U	V	W
Atomic number	13	16	17	20

(a) What type of bond would be formed between:-

(i) elements U and W ***(1mk)***

……

(ii) elements V and U ***(1mk)***

……

(b) Which of the elements are metals. ***(1mk)***

11.Oxygen gas can be prepared in the laboratory by catalytic decomposition of hydrogen peroxide.

(a) Write the chemical equation for the reaction. ***(1mk)***

……

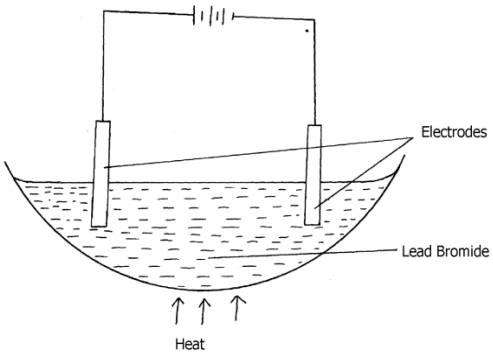
(b) State the Name of the suitable catalyst used. ***(1mk)***

……

(c) Give one industrial use of oxygen ***(1mk)***

……

12. The d diagram below shows electrolysis of lead bromide



a) Label the anode. ***(1mk)***

b) Write half equations to shows reactions at cathode. ***(1mk)***

c) State one application of electrolysis. ***(1mk)***

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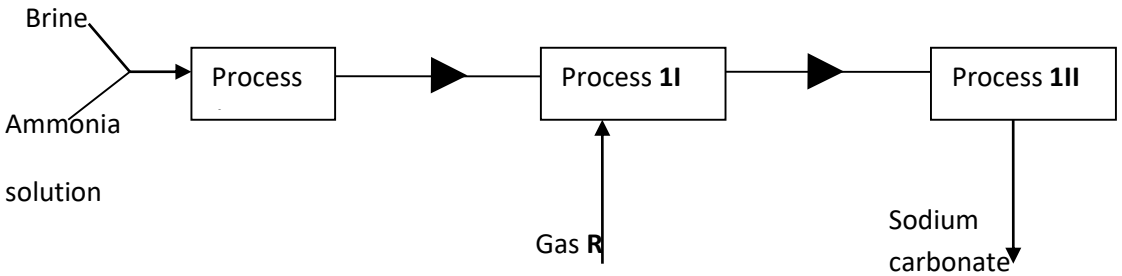
13.Below is a simplified scheme of solvary process. Study it and answer the questions that follow:



(a) Identify gas **R**…….. ***(1mk)***

(b) Write an equation for process **III** ***(1mk)***

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(c) Give **one** use of sodium carbonate ***(1mk)***

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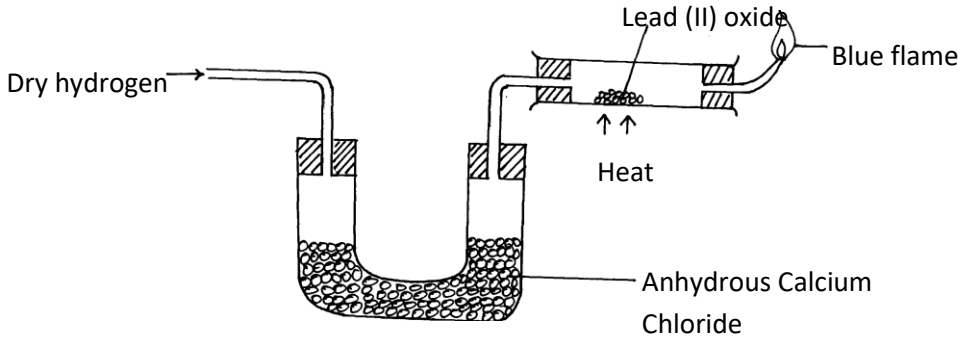
14. The set-up below was used to investigate the properties of hydrogen



(i) State the observations that was made in the combustion tube as the reaction progressed

to completion ***(2mks)***

(ii) Write equations for the reactions ;

I) In the combustion tube ***(1mk)***

……

II) At the jet of the delivery tube ***(1mk)***

……

III) State the properties of hydrogen that were investigated ***(2mks)***

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15.Classify the process below as chemical or physical changes

(2mks

Process	Physical or chemical change
(a) Fractional distillation	
(b) Displacement reaction	
(c) Sublimation	
(d) Neutralization	

16. Iron reacts with oxygen in the presence of moisture to form hydrated iron (III) oxide.
$Fe_2O_3.2H_2O$

(a) What name is given to the process that produces hydrated iron (III) oxide? ***(1 mk)***

(b) What does the term 'hydrated' mean? ***(1 mk)***

(c) Name one method used to prevent corrosion of iron. ***(1 mk)***

17. The table **below** gives elements represented by letters which are not the actual symbols.

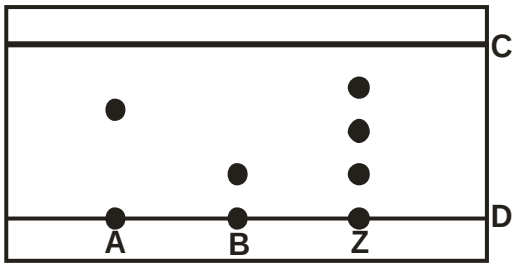
Element	U	V	W	X	Y	Z
Atomic No.	8	12	13	15	17	20

(i) Select an element that can form divalent anion. ***(1 mark)***

(ii) What is the structure of the oxide of **W**? ***(1 mark)***

(iii) Compare the atomic radius of **W** and **X**. ***(1 mark)***

18.Spots of three pure pigments A,B and mixture Z were placed on a filter paper and allowed to dry. The paper was then dipped in a solvent. The results obtained were as on the paper chromatogram.



i) Identify;

a) Baseline. ***(1mark)***

……

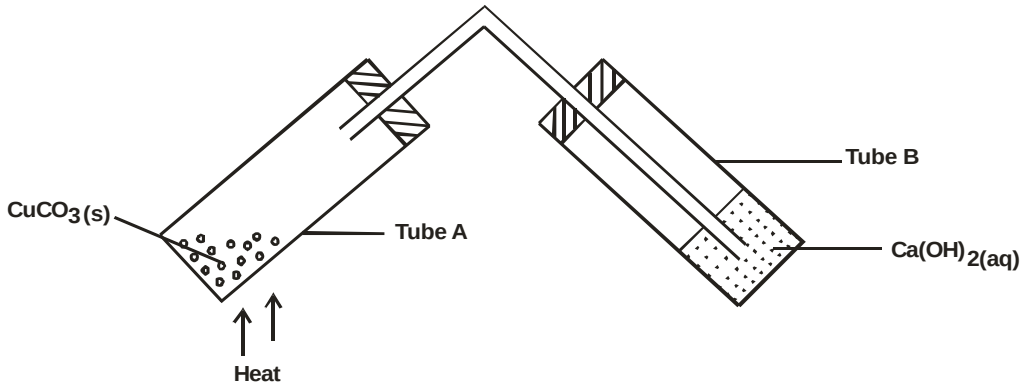
b) Solvent front. ***(1mark)***

……

ii) Which pure pigment was component of Z.? ***(1mark)***

……

19.The following was used to investigate the effect of heat on a sample of Copper(II) Carbonate.



a) State the observation made in test tube. ***(2 marks)***

A ……

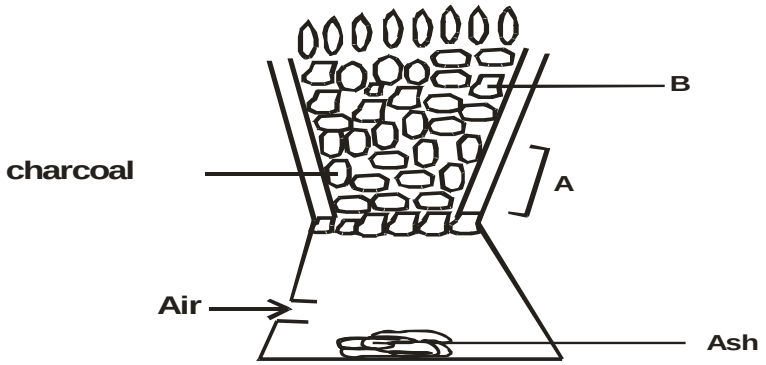
B……

b) Write equation for the reaction that occurs in tube A. ***(1mark)***

……

20. Sketch a graph of temperature time for a pure substance A with a melting point of 20^0C and boilingpoint of 90^0C and it is heated from 0^0C to 100^0C. ***(2marks)***

21.The diagram below shows a burning "jiko" in a room which has sufficient supply of oxygen.



i) Using chemical equations, explain what happens at A and B. ***(2marks)***

……

……

……

ii) State the main danger of emitting excess carbon (IV) oxide into the atmosphere.

(1mark)

……

……

22. 3.22g of hydrated Sodium Sulphate, $Na_2SO_4{}^{o}X\ H_2O$ were heated to a constant mass of 1.42g, determine the value of X in the formula. (Na = 23, S = 32, O = 16, H=1).

(2 mks)

23.a)The atomic number of Sulphur hydrogen and oxygen are 16, 1 and 8 respectively. Write

the electron arrangement of Sulphur in the following substances.

(i) H_2S…… ***(1 mk)***

(ii) SO_3^{2-}…… ***(1 mk)***

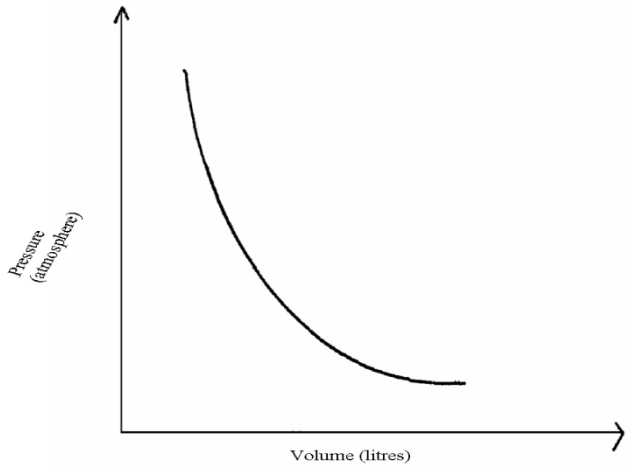
(b)State the number of neutrons and electrons in the species of Aluminum shown below:

$^{27}_{13}Al^{3+}$

Neutrons …….. ***(1mk)***

Electrons ……. ***(1 mk)***

24.The graph below shows the behaviour of a fixed mass of a gas at constant temperature.

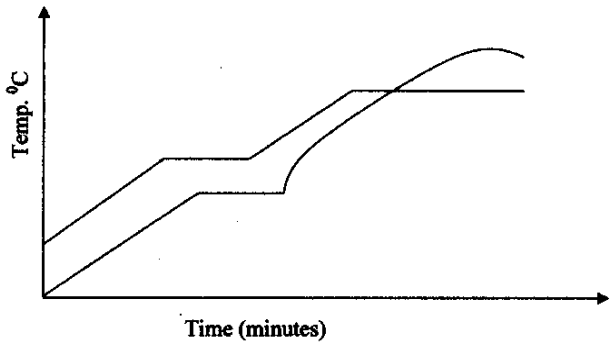


(i) What is the relationship between the volume and the pressure of the gas.

(1 mk)

(ii)12 litres of oxygen gas at one atmosphere pressure were compressed to 2.5 atmospheres pressure at constant temperature. Calculate the volume occupied by the oxygen gas. ***(2 mks)***

25.Two samples of a similar substance from different containers were investigated. The graph below represents the variation of temperature with time when heated.



a) Explain the variation in the curves of:

Sample I

……

(1mk)

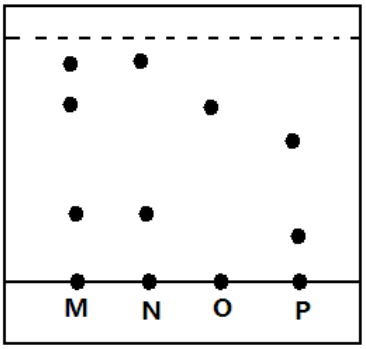
Sample II

……

(1mk)

b) Common salt is sprinkled on roads during winter in temperate countries. Explain. *(1mk)*

26.Study the diagram below and answer the questions.

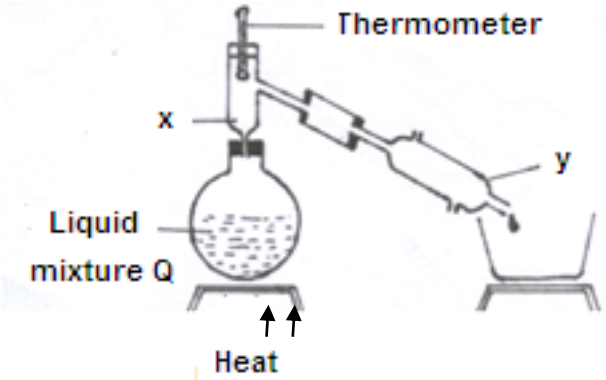


a) On the diagram mark the base line. *(1mk)*

b) Name the dyes which are in M. *(1mk)*

c) Which mixture of dyes has the dye with lowest solubility? Explain. *(1mk)*

27.Study the diagram below and answer the questions that follow. The diagram shows the method used to separate components of mixture Q.



a) Name X and Y. *(1mk)*

X……

Y……
…

b) What is the purpose of apparatus X? *(1mk)*

c)Show the direction of flow of cold water used for cooling the vapour formed. *(1mk)*

FORM 3 END TERM 1 SET 3 EXAM 2023

Name……Adm No……Class……

School ……

Candidate's Signature ……

GRAND TOTAL

CHEMISTRY
THEORY
PAPER
TIME: 1 ¾ HOURS

INSTRUCTIONS TO CANDIDATES

- Write your name and admission number in the spaces provided.
- Mathematical tables and non-programmable calculators may be used.
- Attempt all the questions in the spaces provided.
- ALLOW working MUST be clearly shown.

For Examiner's Use Only:

Question	Maximum score	Candidate's score
1	10	
2	10	
3	11	
4	09	
5	10	
6	08	
7	12	
Total	80	

1. The table below shows the atomic numbers and boiling points of element U, V, W, X and Y (not their actual symbols). Study it and answer the questions that follow.

Element	Atomic number	Boiling point (°C)
U	3	1330
V	13	2470
W	16	445
X	18	-186
Y	19	774

a) Select the elements which belong to the same

i) Group *(1 mark)*

……

…….

ii) Period *(1 mark)*

……

……..

b) Which element :

i) Is gaseous at room temperature ? Explain (room temperature = 298K)

(2 marks)

……

……

……

ii) Does not form an oxide *(1 mark)*

……

……..

c) Write the

(i) formula of the sulphate of element V. *(1 mark)*

ii) equation for the reaction between Y and W. *(1 mark)*

d) What type of bond exists in the compound formed between U and W ? Give a reason for your answer. *(2 marks)*

……

……

……..

e) An aqueous sulphate of element V was electrolysed using carbon electrodes. Name the products at the :

(i) Cathode *(1 mark)*

……

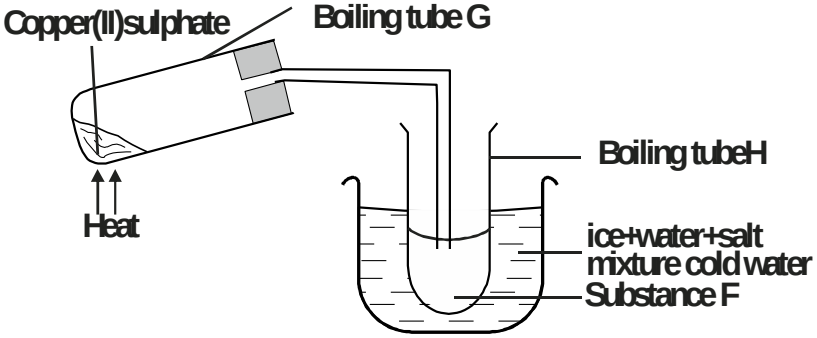
…….

(ii) Anode *(1 mark)*

……

…….

2. The copper below shows the effect of heat on hydrated copper (II) sulphite.



I. (a) State the observations made in tube G. *(2 marks)*

……

……..……

……...

(b) Identify substance F. *(1 mark)*

……
……...

(c) Explain the use of the following in the above set up

(i) Ice cold water. ***(1 mark)***

……
……..……
……...

(ii) Salt in ice cold water. ***(1 mark)***

……
……..……
……...

(iii) Boiling tube G kept at a slanting position ***(1 mark)***

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……..……
……...

(d) Describe a chemical test for substance F. ***(1 mark)***

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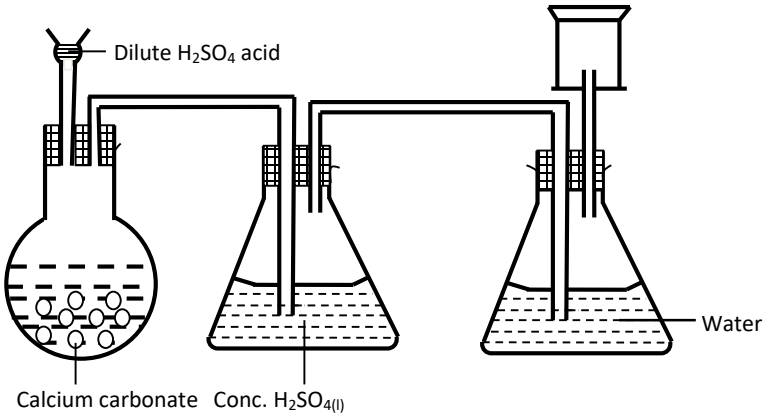
……..……
……...……
……

II. 12.5g of hydrated copper (II) sulphide were heated to constant mass 8.0g of solid residue was formed Determine the formula of the hydrated salt. (Cu=63.5, S=32.0, O=16.0, H=1.0) ***(3marks)***

3. A student set up the apparatus shown below to prepare and collect dry carbon (IV) oxide gas.



(a) State a correction for three mistakes in the set up above. ***(3 marks)***

……
……
……
……

(b) Give two reasons why carbon (IV) oxide is used as a fire extinguisher. ***(1 mark)***

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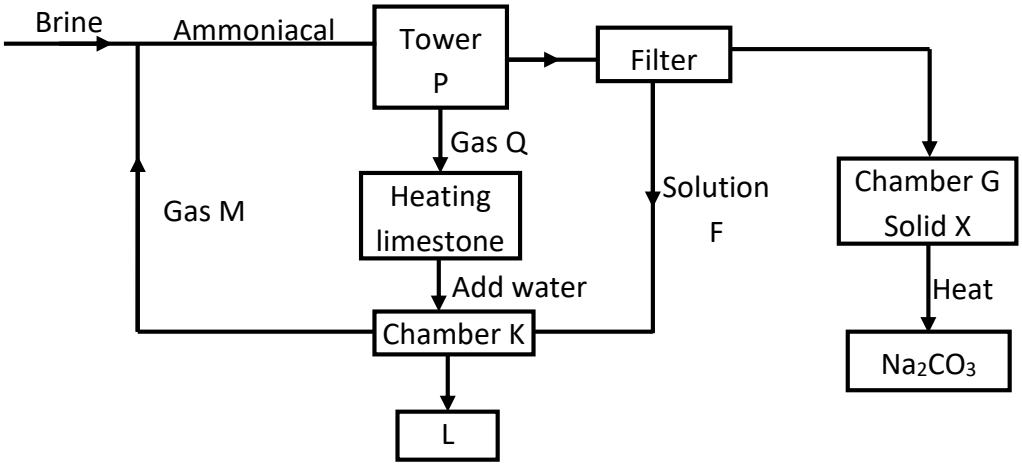
……

(c) The flow chart below is for the manufacture of sodium carbonate by the Solvay process. Use it to answer the questions that follow.



(i) Name gas M and Q *(1mark)*

……

……..

……...

(ii) Name solution F and solid X *(1 mark)*

……

……..

……...

(iii) Name the product L formed and give one of its uses *(2 marks)*

……

……..

……...

(iv) Write equations of the reactions in *(2 marks)*

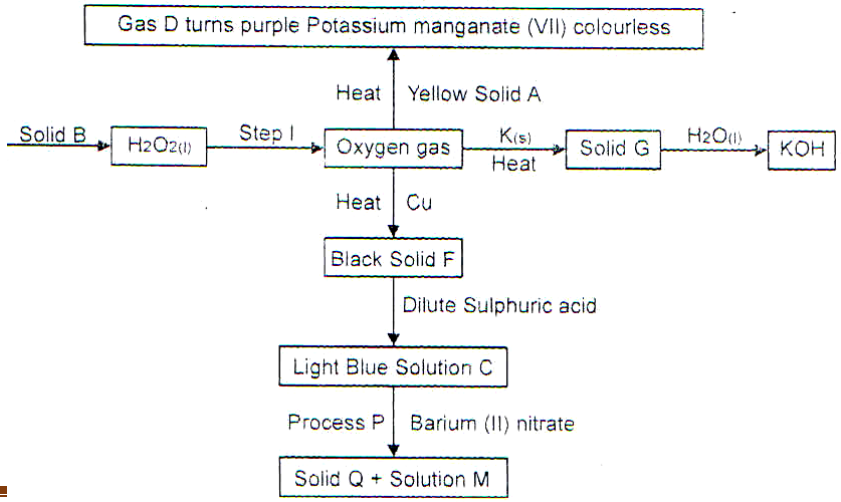
Tower P

Chamber K

(v) Name the two raw materials required in the manufacture of sodium carbonate.

(1 mark)

4. The flow chart represents preparation and properties of oxygen gas. Study it and answer the questions that follow.



i) Identify the following substances. ***(2 marks)***

a) Solid A

…….

b) Gas D

…….

c) Solid Q

…….

d) Solution M

…….

ii) Write a chemical equation for the reaction in step I. ***(1 mark)***

iii) Write the chemical equations for the formation of the following compounds. ***(3 marks)***

a) Solid G

b) Gas D

c) Light blue solution C

i) State the confirmation test for oxygen gas. ***(1 mark)***

……

……

ii) Write the ionic equation for reaction taking place in process P. ***(1 mark)***

iii) State one industrial use of oxygen. ***(1 mark)***

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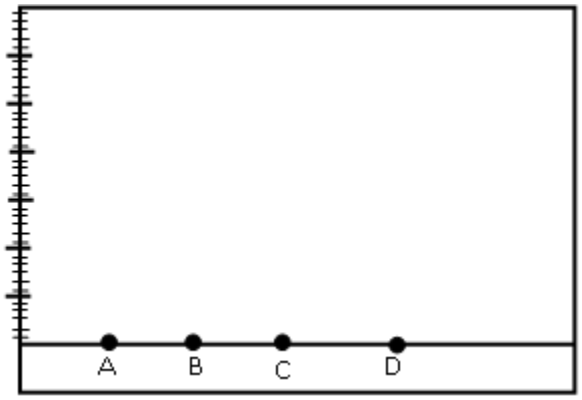
……..

5. (a) The diagram below shows spots of pure substances A, B and C on a chromatography paper. Spot D is that of a mixture.



After development A, B and C were found to have moved 7cm, 3cm and 5cm respectively. D had separated into two spots which moved 5cm and 7cm.

(i) On the diagram

(I) Label the baseline ***(1 mark)***

(II) Show the position of the all the spots after development

(2 marks)

(ii) Identify the substances present in mixture D. ***(1 mark)***

……

……...

(b) Describe how solid ammonium chloride can be separated from a solid mixture of ammonium chloride and sodium chloride. ***(2 marks)***

……

……...

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……

(c) The table below shows liquids that are miscible and those that are immiscible.

Liquid	Y	Z
W	Miscible	miscible
X	Miscible	Immiscible

Use the above information to answer the questions that follow.

(i) Name the method that can be used to separate W and Y of a mixture of the two
(½ mark)

……

……...

……

……

(ii) Describe how a mixture of X and Z can be separated. ***(2 marks)***

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……

(d) Crude oil is a source of many compounds that contain carbon and hydrogen only.

(i) Name the processes used to separate components of crude oil. ***(½ mark)***

……

……...

(ii) On what physical property of the above components does the separation depend?
(1 mark)

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……...

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……

6. (a) State the Graham's law of diffusion. ***(1 mark)***

…….

(b) In an experiment to prepare hydrogen gas in the laboratory, 4 gms of magnesium ribbon was reacted with $50cm^3$ of 0.1M hydrochloric acid.

(i) Identify the reactant that was in excess and by how many moles. ***(1 mark)***

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……..……
……...

(ii) Calculate the volume of hydrogen gas that was collected at room temperature and pressure. (Molar gas volume at r.t.p =24 L) ***(2 marks)***

(c) State twouses of hydrogen gas. ***(2 marks)***

……

……..……

……...

(d) When ammonium chloride solid was heated in a test tube, a moist red-litmus paper placed at the mouth of test tube turned first blue, then to red. Explain these observations. ***(2marks)***

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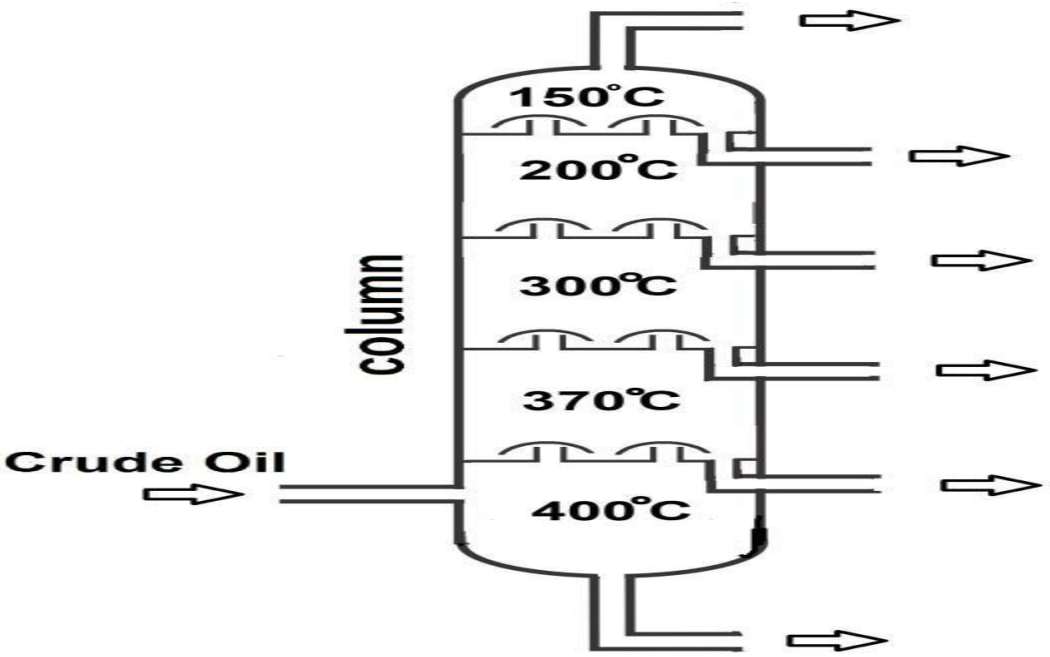
……..……

……..……

……...

7. a) Study the diagram below and answer the questions that follow.



(i) Name the method of separation above.

……..……..

(1 mark)

(ii) Bitumen has a boiling point of more than 500oC. Indicate on the diagram where bitumen can be collected.

(1 mark)

(ii) State one use of bitumen.

……..…….

(1 mark)

(iv) Explain how the column works. ***(1 mark)***

……..……

……..……..……

(v) Give one town in Kenya where crude oil is refined. ……*(1 mark)*

b) The apparatus below shows the setup used to determine the percentage of oxygen in air.

The air was slowly and repeatedly passed through the copper turnings until a constant volume was obtained.

(i) Explain why air was passed slowly and repeatedly. *(1 mark)*

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……

……

…….

(ii) State the observation made at the end of the experiment. *(1 mark)*

……

……

(iii) Is it advisable to use potassium in this experiment? Give a reason. *(1 mark)*

……

……

c) (i) What is rust? *(1 mark)*

……

……

(ii) Give the chemical formula of rust ……..

(1 mark)

(iii) Define the term galvanisation. *(1 mark)*

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CHEMISTRY

PAPER 3

FORM 3

Confidential

Each candidate requires;

- ✓ About 100cm_3 of Solution A containing 21.2g per litre of anhydrous sodium carbonate ($Na_2CO_{3(s)}$.
- ✓ About 150 cm_3 of 0.3M Nitric (V) acid solution B
- ✓ About 100cm^3 of 0.2M sodium hydroxide solution C.
- ✓ 50cm^3 burette
- ✓ 25cm^3 pipette
- ✓ A clamp, boss and stand
- ✓ Methyl range indicator
- ✓ 3 conical flasks
- ✓ White tile.

FORM 3 END TERM 1 SET 3 EXAM 2023

Name……Adm No……Class……..

School ……

Candidate's Signature ……

GRAND TOTAL

233/3

CHEMISTRY

PAPER 3

FORM III

Time: 2 hours

INSTRUCTIONS TO THE CANDIDATES:-

- Write your **name** and admission **number** on the spaces provided.
- Answer ***all*** the questions in the spaces provided.
- Mathematical tables and electronic used calculators may be
- All working **MUST** be clearly shown where necessary.

Question	Maximum score	Candidate's score
1	20	

1. You are provided with:

   - Solution A – containing 21.2g per litre of anhydrous sodium carbonate ($Na_2CO_{3(s)}$)
   - Solution B – Nitric (V) acid solution
   - Solution C – metal hydroxide $M(OH)_x$

Procedure 1

i) Fill the burette with solution B

ii) Using a pipette, transfer 25cm^3 of solution A into a clean conical flask and add 1-2 drops of methyl orange indicator.

iii) Titrate with solution B from burette.

iv) Repeat the titration to obtain accurate results and record the data in the table below.

(4 marks)

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

a) Find the average volume of solution B used. ***(1 mark)***

b) Given that the equation for the reaction is

$Na_2CO_{3(aq)} + HNO_{3(aq)} \quad NaNO_{3(aq)} + H_2O_{(l)} + CO_{2(g)}$

Calculate;

(i) The number of moles of sodium carbonate in 25 cm^3 of solution A *(3 marks)*

(ii) The number of moles of the acid in the titre volume obtained. *(1 mark)*

c) Hence find the molarity of nitric (V) acid solution B. *(1 mark)*

Procedure II

i) Pipette 25cm^3 of solution C into a clean conical flask.

ii) Add 1-2 drops of methyl orange indicator.

iii) Titrate with solution b.

iv) Repeat the titration to obtain accurate results and fill the table below.

(4 marks)

Table II

Titre	I	II	III
Final burette reading (cm^3)			

Initial burette reading (cm^3)			
Volume of solution B used (cm^3)			

a) Find the average titre volume of solution B used. ***(1 mark)***

b) Calculate;

i) The number of moles of solution B used in the reacting volume. ***(1 mark)***

ii) The number of moles of solution C in $25cm^3$ of the the solution. ***(1 mark)***

c) Determine the equation for the reaction between the hydroxide $M(OH)_x$ and nitric (V) acid. ***(2marks)***

d) What is the value of x in $M(OH)_x$? ***(1 mark)***

313/1
CHRISTIANS RELIGIOUS EDUCATION
PAPER I
Time: 2 Hours

(KENYA CERTIFICATE OF SECONDARY EDUCATION)

INSTRUCTIONS TO STUDENTS

1. Answer all questions

1. (a) Outline ways in which Christians use the Bible to spread the good news ***(6mks)***
(b) State **seven** problems which church leaders encounter in their work of evangelization ***(7mks)***
c) Explain the reasons why the bible was translated from original languages to local languages ***(7mks)***

2. (a) Outline the differences in the **two** accounts of creation in Genesis 1 and 2 ***(7mks)***
b) Outline the consequences of breaking taboo in the traditional concept in the African society. ***(7mks)***
c) Describe **six** ways in which Christians continue with God's work of creation ***(6mks)***

3.a) Explain ways in which King David promoted the worship of Yahweh in Israel ***(7mks)***
b) Outline **seven** failures of King Saul as the first King of Israel ***(7mks)***
c) Outline the duties of Samuel as a prophet of God ***(6mks)***

4.(a) Give s**even** reasons why Elijah faced danger and hostility in Israel ***(7mks)***
(b) List **five** forms of corruption in Kenya today ***(5mks)***
(c) Explain the relevance of Elijah's prophetic mission to Christians today ***(8mks)***

5(a) Explain four importance of Kinship ties in the traditional African society. ***(8mks)***
(b) Identify seven changes that have taken place in the rite of initiation today. ***(7 mks)***
(c) Give reasons why dowry is losing its meaning in the contempary Kenya. ***(5 marks)***
6.a) Highlight the difference between the traditional and Old Testament prophets
b) Identify various ways through which the Old Testament Prophets communicated their messages to the people
c) What lessons can a Christian learn from the Old Testament Prophets?

FORM 3 END TERM 1 SET 3 EXAM 2023

Name……Adm No……Class……
School ……
Candidate's Signature ……

GRAND TOTAL

313/2
CHRISTIANS RELIGIOUS EDUCATION
PAPER 2
Time: 2 Hours

(KENYA CERTIFICATE OF SECONDARY EDUCATION)

INSTRUCTIONS TO STUDENTS

1. Answer all questions

1. a) Explain **six** expectations of the Jews concerning the messiah. ***(6marks)***

b) Outline the similarities between the annunciation of the birth of John the Baptist and that of Jesus Christ. ***(8marks)***

c) State **six** New Testament teachings about children. ***(6marks)***

2. a) Describe the call of the first disciples according to (Luke 5:1-11). ***(8marks)***

b) Explain the reasons why Jesus chose the 12 disciples. ***(7marks)***

c) State **five** ways in which Christians demonstrate true discipleship. ***(5marks)***

3. (a) Describe what happened to Jesus from the time of his arrest to his death on the cross Luke 22: 47-Luke 23:48 ***(8mks)***

(b) Give **five** reasons why it was difficult for the disciples to believe that Jesus had resurrected ***(5mks)***

(c) Outline the importance of resurrection of Jesus to Christians today ***(5mks)***

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

(b) State **seven** teachings of Jesus on the role of the Holy Spirit. ***(7mks)***

(c) State **five** problems of spreading the Gospel today. ***(5mks)***

5.a) State **seven** fruits of the Holy Spirit according to Galatians 5:6-26 ***(7mks)***

b) Explain **seven**ways in which the gifts of the Holy Spirit is misused in Christians churches today

(7mks)

c) State any **six** characteristics of love according to **1st Corinthians 13** *(6mks)*

6.a) Identify five symbolic expressions used in teaching the unity of believers in the apostolic Church *(5mks)*

b) Identify factors which cause disunity among the Christians today. *(8mks)*

c) Give **five** ways in which Christians show their trust in God *(7mks)*

NAME …… ADM NUMBER …… CLASS ……

101/1
ENGLISH
Paper 1
Form 3
TIME: 2 hours

FORM 3 ENDTERM 1 SET 3 EXAM

Instructions to candidates

1. *Write our name and index number in the spaces provided above.*
2. *Answer **all** the questions in this question paper.*
3. *All your answer must be written in the spaces provided in this paper.*
4. *Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*

1. You are the manager of Quick Safaris Transport Company. Of late you've realized that the workers, mainly drivers and conductors have lost discipline, and this has made the company incur a lot of loss.

   a) Write an internal memo to them, warning them of dire consequences if they do not change their behaviour and attitude.
   Some of the areas you wish to address are:
   i. Punctuality
   ii. Foul language
   iii. Lack of courtesy
   iv. Policy bribery
   v. Any other relevant area from your observation

   (13 marks)

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b) Design a Card inviting the workers to a motivational talk with an aim of changing their behaviour and attitude**.** ***(7 marks)***

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2. Read the passage below and fill in each blank space with an appropriate word.

Poaching is increasing *(1)* _____ a menance, not just in Kenya, (2) _____ also in other parts of the continent, (3) _____ a grave danger to the survival of various animal species particularly the elephant. Whereas, there have been *(4)* _____ to raise awareness about the danger posed by the menance, not enough has been done to *(5)*_____ it out and punish offenders. As it is, poaching is becoming a crisis, threatening species like elephants, which are hunted *(6)* _____ for their ivory, rhinos which are targeted because of their horns and other game like lions.
The Kenya Wildlife Service has been doing well to combat *(7)* _____ but it appears that more is needed if the criminals *(8)* _____ to be stopped. If the killers have more sophisticated weaponry, then KWS must *(9)* _____ its game or call *(10)* _____ the military to assist.

Oral Skills (***30 marks)***

3 (a). Read the poem below and then answer the questions that follow.

Her lip suckle the nipples
Milk bubbles, foams and ripples
Little hands up in the air
Catch on the mother's hair
Sweet sensation rises in pressure
Tiny legs kick with pleasure
Sleep comes gently and strong
Sleep whispers softly and long.

(EmusaraOssieEnekase)

i. Identify any two pairs of rhyming words in the poem. ***(1mk)***

……
……

ii. Identify one major sound pattern in the poem***.*** ***(1mk)***

……
……

iii. Give two examples of the above sound pattern***.*** ***(2mks)***

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……
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iv. How would you perform the last two lines of the poem? (***3mks)***

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b) Suppose you were asked to make a speech at a friend's graduation party. What would you do to capture the audience's attention? ***(5 mks)***

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……

c) Challenger: Two Europeans peeping through the window.
Response : Mucus

i. Classify the above genre. ***(1mk)***

……
……

ii. Identify and illustrate the most outstading stylistic device used in the above genre. ***(1mk)***

……
……

iii. Give two functions of the above genre. ***(2mks)***
i)…….
ii)……

d) In the words below, underline the part that should be stressed.

i. Suc.cess
ii. ad.vice
iii. Chal.lenge
iv. ob.serve ***(4mk)***

e) Give a word with a similar pronounciation (***4mks)***
i. Muscle…….
ii. Worn …….
iii. Come…….
iv. Which…….

f) The following is a conversation between a father and his daughter. Identify six shortcomings in the father's listening skills. ***(6mks)***

DAUGHTER: *(Shortly after having arrived home from school)* Good afternoon, Daddy.

FATHER: *(Sitting complacently in the sofa, reading a newspaper. Looking up……..)*

Good afternoon.*(Resumes reading).*

DAUGHTER: *(Holding out her school report form)* Daddy, I'm excited. My classteachersaid I was the best improved. I was…

FATHER: Oh, you were? Me, I used to be number one. I was absolutely unbeatable.

DAUGHTER: Chemistry has been a particular headache (*now looking at the report form which she thought her father would wan see),* but this time…

FATHER: *(Stretching his arms, looking preoccupied)* Chemistry for me was particularly easy I never scored anything less than 90%.

DAUGHTER: Dad, I was going to tell you that this time…

FATHER: *(Absent-mindedly)* By the way, where is your mum?

DAUGHTER: Mum is in the garden pickng vegetables. But Dad, you are not listening to my story I was telling you about Chemistry.

FATHER: You mean you have a story about Chemistry? Chemistry is not about stories. It is hard science.

DAUGHTER: It's about my improvement…

FATHER:(*Laughing)* Me, it wasn't a matter of improvement. I was always at the top of the class.

DAUGHTER: Daddy, I give up. You are not listening.

FATHER:*(looking surprised)* Listening? I heard you: you were talking about improvement in Chemistry, weren't you?

DAUGHTER: Anyway, Dad. Thank you for paying attention. Enjoy your newspaper.

FATHER:Oh, yes I'm reading an interesting story about politics.

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Name: …… Adm: ……

Signature: …… Date ……Class ……..

FORM 3 ENDTERM 1 SET 3 EXAM

ENGLISH COMPREHENSIVE PAPER

FORM 3

TIME: 2 HOURS

Instructions to Students

(1) Write your name, admission number in the spaces provided.

(2) Sign and write the date of the examination in the space provided above.

(3) Answer all questions provided in this question paper.

(4) All your answers must be written in the spaces provided in this question paper.

(5) Check the question paper to ascertain that all pages are printed as indicated and that no questions are missing.

FUNCIONAL WRITING. 20 MARKS

Imagine you are the patron of the music club in your school. Write a letter, through your principal, to the secretary of the county music board to enquire about this year's categories so as to enable you start preparations for the annual festival.

CLOZE TEST. 10 MARKS.

Fill in the following passage with the most appropriate word.

"Help! Help! It's a gang fight.

Shoppers at Marina Center in Singapore 1…….cries coming from the field nearby. A girl screamed, loudly and very shrilly. The fright in her 2……. turned Daryl's blood cold. 3……. a split second, time seemed to be frozen as the horror

4……. the situation penetrated every shoppers' brain. Then, all of a sudden, everybody 5…….…. running towards the field. It seemed as if everyone had gone mad! Daryl ran 6 ……..…… with them, eager to see part of the action.

When he 7…… …… the field, the fight was over. All he could 8 …….. was a huge crowd huddled in the middle of the field. Daryl pushed his 9……..…… through the crowd and stared. 10…… on the ground was a teenager.

READING COMPREHENSION. 15 MARKS

Read the following story and then answer questions that follow.

In the beginning, the Maasai did not have any cattle. One day God called Maasinta, who was the first Maasai and said to him: "I want you to make a large enclosure, and when you have done so, come back and inform me." Maasinta went and did as he was instructed, and came back to report what he had done. Next God said to him: "Tomorrow, very early in the morning, I want you to go and stand against the outside wall of the house for I will give you something called cattle. But when you see or hear anything do not be surprised. Keep very silent."

Very early in the morning, Maasinta went to wait for what was to be given him. He soon heard the sound of thunder and God released a long leather thong from heaven to earth. Cattle descended down this thong into the enclosure. The surface of the earth shook so vigorously that his house almost fell over. Maasinta was gripped with fear, but did not make any move or sound. While the cattle were still descending, the Dorobo, who was a house-mate of Maasinta, woke up from his sleep. He went outside and on seeing the countless cattle coming down the strap, he was so surprised that he said: "Ayieyieyie!", an exclamation of utter shock. On hearing this, God took back the thong and the cattle stopped descending. God then said to Maasinta, thinking he was the one who had spoken: "Is it that these cattle are enough for you? I will never again do this to you, so you had better love these cattle in the same way I love you." That is why the Maasai love cattle very much.

How about the Dorobo? Maasinta was very upset with him for having cut God's thong. He cursed him thus: "Dorobo, are you the one who cut God's thong? May you remain as poor as you have always been. You and your offspring will forever remain my servants. Let it be that you

will live off animals in the wild. May the milk of my cattle be poison if you ever taste it." This is why up to this day the Dorobo still live in the forest and they are never given milk.

(a) Classify this oral narrative. Why do you classify it as so? (2marks)

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(b) Why did God instruct Maasinta to make a large enclosure?
(2marks)

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…… ……...

(c) Discuss the main character trait of Maasinta as brought out in the story. (3marks)

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(d) Explain the lesson that you learn from the passage. (2marks)

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(e) Explain **one** <u>economic</u> activity of the community in which Maasinta belong. (2marks)

……

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(f) On hearing this, God took back the thong and the cattle stopped descending.

Rewrite beginning with: God… (1mark)

……

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……....

(g) In your own words, explain why the Dorobo lives in the forest. (2marks)

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……

(h) Which narrative is usually confused with the above narrative? (1 mark)

……

ORAL SKILLS. 15 MARKS

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

He clasps the crag with crooked hands:
Close to the sun in lonely hands,
Rung with the azure world, he stands,

The wrinkled sea beneath crawls:
He watches from his mountain walls,
And like a thunder belt he falls.

Questions

i. Identify two sound patterns employed in the poem. (2marks)

ii. What has the poet achieved by use of the above? (1 mark)

iii. Which words would you stress in the last line and why? (2marks)

b) Underline the odd one out ***(3marks)***

Picked wicked packed sacked

World worker wolf worship

Think this thing thistle

c) Give a word that has the following silent letter. ***(3 marks)***

i. G

ii. Z

iii. H

d) Imagine you are part of the audience that is listening to a speech. You look around and notice that some people are looking at their watches, a few are yawning and one or two are shifting in their seats.

What would likely be the cause of such behavior? Give three reasons ***(3 marks)***

GRAMMAR. 10 MARKS

1. ***Choose the correct alternative from those given in brackets to fill in the gaps. (2 marks)***
   a) Ojwang' spends…… his time acting. (many of/ much of)
   b) ……. students left school before time. (A great deal of/ a great number of)
2. ***Underline the adverbial phrases in the following sentences. (3 marks)***
   a) Ngala wanted to go to the farm.

b) The frightened thief hid in the barn.

c) We shall decide when we get there.

3. ***Use the verb below to construct two sentences, one as a transitive and the other intransitive. (2 marks)***

eat

4. ***Use the correct form of the words in brackets to fill in each blank. (3 marks)***

a) She……. (have) very interesting ideas.

b) I think those……. (be) the most dreadful experiences they went through.

c) They……(do) not go to the beautiful mansion yesterday as expected.

FORM 3 END TERM 1 SET 3 EXAM 2023

Name……Adm No……Class……

School ……

Candidate's Signature ……

GRAND TOTAL

GEOGRAPHY
PAPER 1
2 ½ hours
Instructions to candidates

(a) This paper contains two sections: ***A*** *and* ***B****.*

(b) Answer ***all*** *the questions in section* ***A*** *and* ***B****.*

(c) All answers must be written in the foolscaps provided.

SECTION A (25 MARKS)

Answer ALL questions in this section.

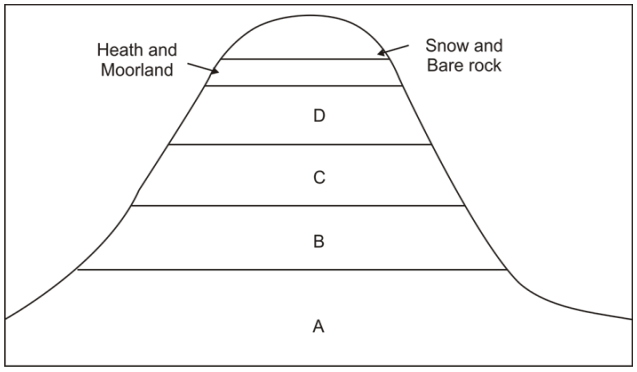
1. a) State **two** forces that shape the surface of the earth. ***(2marks)***

   b) State **three** characteristics of the crust. ***(3marks)***

2. (a) State **two** traditional methods of forecasting weather. ***(2 marks)***

   (b) Mention **three** factors that hinder weather forecasting. ***(3 marks)***

3. Use the diagram below of a mountain vegetation zone of a mountain in Kenya to answer the following questions.



a) Name vegetation zones A, B, and D. ***(3marks)***

b) Explain three importance of vegetation in zone C. ***(2marks)***

4. a) Give three components of the solar system. ***(3marks)***

   b) State two theories of the origin of the solar system. ***(2marks)***

5. The table below shows temperature and rainfall figures for Transtein , Germany . Use it to answer the questions that follow.

Months	J	F	M	A	M	J	J	A	S	O	N	D
Temps in 0^0c	-4	-2	2	6	11	15	16	16	12	7	2	-2
Rainfall in mm	84	78	97	114	143	181	188	167	150	96	85	96

(a) Calculate the annual range of temperature. ***(2marks)***

(b) Describe the climate of the above station ***(3marks)***

SECTION B (75 MARKS)

Answer all questions in this section.

6. a) (i) Define the term faulting. ***(2 marks)***

(ii) Mention three types of features associated with faulting. ***(3 marks)***

(iii) With the help of a diagram explain the formation of the rift valley through the tension process. Supposing you were to carry out a field study on the Rift Valley. ***(7 marks)***

b) (i) State any two objectives of the study.

(2 marks) (ii) State three importance of studying faulting through field work. ***(3 marks)***

(iii) Explain the significance of faulting to human activities. ***(8 marks)***

7. (a) (i) Name **three** types of rocks according to their mode of formation. ***(3 marks)***

(ii) Mention **three** areas where sedimentary rocks are found in Kenya. ***(3 marks)***

(b) (i) State **four** characteristics of sedimentary rocks. ***(4 marks)***

(ii) Describe the formation of mechanically formed sedimentary rocks. ***(5 marks)***

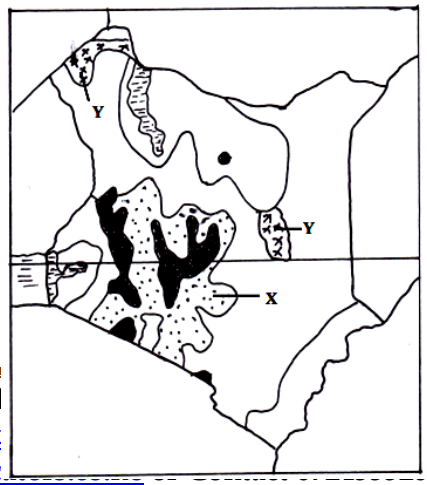
(c) Explain **five** significance of rocks to the economy of Kenya. ***(10 marks)***

8. Explain how the following factors influence the distribution of vegetation.

(i) Climate ***(2 marks)***

(ii) Human beings ***(2 marks)***

(b) The map below shows some vegetation zones of Kenya. Use it to answer question (i).



(i) Name the vegetation zone marked X and Y. ***(2 marks)***

(ii) Give two uses of Savannah vegetation. ***(2 marks)***

(iv) Describe the characteristics of Mediterranean type of vegetation. ***(5 marks)***

(c) Explain three ways in which desert vegetation adapts to climatic conditions. ***(6 marks)***

(d) You are planning to carry out a field study of the vegetation within the local environment.

(i)State three preparations you will make for the field study. ***(3 marks)***

(ii)How will you identify the different types of vegetation? ***(3 marks)***

FORM 3 END TERM 1 SET 3 EXAM 2023

312/2
GEOGRAPHY PAPER 2
Time: 2 Hours

INSTRUCTIONS TO STUDENTS

1. Answer all questions in Section A .
2. In section B answer question 6 and any other two questions.

SECTION A

1. Name three patterns of human settlements. ***(3mks)***

2. i) List any two products from Jua kali industry in Kenya exported to other countries. ***(2mks)***

   ii) Name two renewable sources of energy used in Kenyan industries. **(2mks)**

3. a) Name three surfaces that are reclaimed in Kenya. ***(3mks)***

   b) Identify the method of reclamation used in each surface mentioned in 3(a) ***(3mks)***

4. Explain how the following practices help in soil conservation

   i) Mulching ***(2mks)***

   ii) Terracing ***(2mks)***

5. a) Describe how deep-shaft mining takes place. ***(5mks)***

   b) Name three products from an oil refinery other than petrol. ***(3mks)***

SECTION B

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

6. The table below shows milk yield in kilograms per daily cow in Denmark between 1990 and 1995.

Year	1990	1991	1992	1993	1994	1995
Yields in kg	5243	6693	7398	7610	7792	7946

(a) (i) Draw a divided circle of radius 3-5cm to represent the milk yield in Denmrk, Show all your calculations ***(2mks)***

(ii) State two advantages of using the divided circle to represent data ***(2mks)***

(iii) Name two other methods, apart from the divided circle, that could be used to represent the above data. ***(2mks)***

(b) (i) Explain <u>three</u> physical factors that have favoured farming in Denmark ***(6mks)***

(ii) State <u>three</u> problems facing dairy Farmers in Kenya ***(3mks)***

(c) Explain two reasons why beef farming is more developed in Argentina than in Kenya. ***(4mks)***

7 (a) (i) State any <u>two</u> forms in which minerals occur ***(2mks)***

(ii) Name any three places where limestone is mined in Kenya ***(3mks)***

(b) Explain how the following factors influence the exploitation of a mineral

(i) Market ***(2mks)***

(ii) The quality of ore ***(2mks)***

(iii) Technology ***(2mks)***

(c) (i) Name <u>two</u> provinces in south Africa where gold is mined ***(2mks)***

(ii) Explain <u>three</u> problems facing gold mining in south Africa ***(6mks)***

(d) Describe the processing of diamond in south Africa.

8 (a) (i) Apart from oil, name **<u>two</u>** sources of non-renewable energy. ***(2 mks)***

(ii) List **<u>three</u>** advantages of solar energy. ***(3 mks)***

(b) Explain **<u>four</u>** problems encountered in mineral exploitation in Kenya. ***(8 mks)***

(c) Explain the effects of over-reliance on oil as a source of energy. ***(8 mks)***

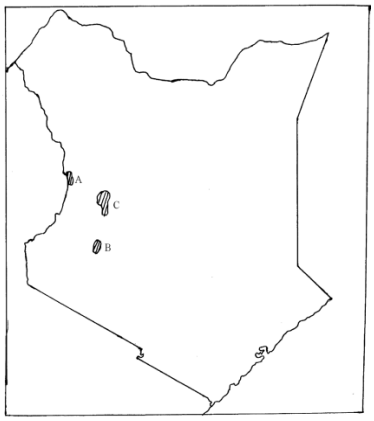
(d) State **<u>four</u>** methods the Government of Kenya uses to manage and conserve her energy resources. ***(4 mks)***

9 a) i) define the term forestry. ***(1 mark)***

ii) Give three differences between natural forest and planted forests. ***(3 marks)***

b) Explain FOUR causes of forest depletion in Kenya today. ***(8 marks)***

c) i) From the map below, give the names of the forests marked A, B ad C



ii)State FOUR measures that are being undertaken by the Kenya Government to conserve forests.

(4 marks)

d)Explain THREE factors favouring the exploitation of softwoods inCanada

(6mks)

FORM 3 END TERM 1 SET 3 EXAM 2023

311/1

History and government

PAPER 1

Time: 2 Hours

(KENYA CERTIFICATE OF SECONDARY EDUCATION)

INSTRUCTIONS TO STUDENTS

1. *This paper consists of THREE sections: A, B & C.*
2. *Answer ALL the Questions in Section A, THREE Questions from Section B & TWO Questions from Section C.*
3. *Answer ALL the Questions in the Answer BOOKLETS provided*

QUESTIONS

SECTION A (25MKS)

Answer all questions in this section.

1. Identify two archeological evidences that show Kenya was inhabited by Stone Age people 2 million years ago. ***(2mks)***

2. State two practices that the Agikuyu borrowed from the Gumbo during the pre-colonial period. ***(2mks)***

3. Give two reasons why Africans moved to urban centers in Kenya during the colonial period. ***(2mks)***

4. Name two exports to East Africa from China during the Indian Ocean trade. ***(2mks)***

5. State two duties of the governor in the colonial Kenya. ***(2mks)***

6. Name the Amani coalition's presidential candidate and his running mate in the just concluded general elections. ***(2mks)***

7. Name the chief executive officer of the Independent Electoral and Boundaries commission. ***(1mk)***

8. Name the longest serving Kenyan vice-president since independence. ***(1mk)***

9. State two significance of the initiation ceremonies among the Mijikenda during the pre-colonial period. ***(2mks)***

10. Name two functions of the Wanga king during the pre-colonial period. ***(2mks)***

11. Name two archeological sites in Kenya. ***(2mks)***

12. How many counties are there in Kenya under the new constitution? ***(1mk)***

13. Name the immediate former government spokesperson. ***(1mk)***

14. Name the levels of government in Kenya. ***(2mks)***

15. Identify two Portuguese officials involved in the Portuguese conquest of the East coast. (2mks)

SECTION B (45MKS)

Answer any THREE questions.

16. (a) What were the factors that led to the development of urban centres in the colonial Kenya. ***(5mks)***

(b)Explain the positive effects of **urbanization** during the period of colonial rule in Kenya. ***(10mks)***

17. (a) What are the causes of food shortage in Kenya. ***(3mks)***

(b)Explain the measures that the Kenyan government has taken to solve food shortages. ***(12mks)***

18. (a) Identify the groups of the Ameru during the pre-colonial period. ***(5mks)***

(b)Explain the functions of the NjuriNcheke among the Ameru. ***(10mks)***

19. (a) What were the grievances presented by the coast African Association to the colonial government? ***(3mks)***

(b)Explain problems faced by early political organizations in Kenya. ***(12mks)***

SECTION C (30MKS)

Answer any TWO questions.

20.(a) What are the limitations to freedom of movement in Kenya? ***(3mks)***

(b)Discuss the social duties of a Kenyan citizen. ***(12mks)***

21. (a) Give hierarchy of courts in the current court system in Kenya. ***(5mks)***

(b)Discuss the challenges faced by the Kenyan judiciary. ***(10mks)***

22. (a) State the economic issues that cause conflict. ***(5mks)***

(b)Describe the various methods of conflict resolution. ***(10mks)***

FORM 3 END TERM 1 SET 3 EXAM 2023

Name……Adm No……Class……

School ……

Candidate's Signature ……

GRAND TOTAL

311/2
HISTORY AND GOVERNMENT
PAPER 2
TIME: 2 ½ HOURS

INSTRUCTIONS TO THE CANDIDATES:

- *This paper consists of **three** sections **A, B** and **C.***
- *Answer **all** questions in section **A, three** questions from section **B** , and **two** questions from section **C***
- *Answers to **all questions** must be written in a separate booklet provided.*
- ***This paper consists of 3 printed pages.***
- ***Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing***

For Examiner's Use Only

Sections	**A**	**B**				**C**			**Total Score**
Questions	**1 – 17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	
Marks									

SECTION A(25 MARKS)

Answer all questions in this section.

1. Identify the historical period when oral traditions was the main source of information. ***(1mark)***
2. State **one** limitation of Anthropology as a source of information on History and Government. ***(1mark)***
3. State **two** main features of roman roads. ***(2marks)***
4. Give **two** negative impacts of internet today. ***(2 marks)***
5. Name **one**holy document in which the creation theory is recorded. ***(1mark)***
6. Name **two** written evidences that show that there were early visitors at the Coast of East Africa. ***(2 marks)***
7. Give **two** roles played by the Portuguese captains in the administration of the East African Coast. ***(2 marks)***
8. Give **two** features of regional trade. ***(2 marks)***
9. Identify **two** earliest traditional means of water transport. ***(2 marks)***
10. Name the conference in which partition of Africa was discussed. ***(1 mark)***
11. Identify one form of writing during the early civilizations resulting from early agriculture. ***(1 mark)***
12. Identify **two** uses of copper in Africa during the 19th century. ***(2 marks)***
13. Give one early source of energy. ***(1 mark)***
14. Give **one** way in which poor transport hinders industrialization in third world nations. ***(1 mark)***
15. List **two** treaties signed between Lobengula and the British during the process of colonization in Africa. ***(2 marks)***
16. . Name **one** African leader during the Maji maji resistance to German rule. ***(1 mark)***
17. Name the leader of the Madinka Empire in their resistance against the Fresh Invasion in the late 19th century. ***(1 mark)***

SECTION B: (45 MARKS)

Answer any THREE questions in this section.

18. (a) Make a list of Tanzanian communities who took part in the Maji Maji rebellion. ***(3 marks)***

(b) Explain **six** consequences of the maji maji uprising. ***(12 marks)***

19. (a) State three factors that influence the growth of London. ***(3marks)***

(b)Explain six problems facing Johannesburg as an urban centre. ***(12marks)***

20. (a) Identify **three** problems which European colonialists in Africa faced in the second half of the 19th century. ***(3 marks)***

(b) Explain **six** effects of the Lozi collaboration with the British. ***(12 marks)***

21. (a) State FIVE ways in which agriculture changed the lives of the early people. ***(5 marks)***

(b) Explain FIVE factors that facilitated plantation farming in Britain during the Agrarian Revolution. ***(10 marks)***

SECTION C: (30 MARKS)

Answer any two questions in this section.

22. (a) Give three duties of the Katikiro in the Buganda Kingdom of 19th century. ***(3 marks)***

(b) Explain **six** factors that led to the rise and growth of the Asante empire. ***(12 marks)***

23. (a) Name **three** communes in Senegal where assimilation policy was successfully applied. ***(3marks)***

b) Explain six reasons why indirect rule failed in Southern Nigeria. ***(12 marks)***

24. (a) List the **three** parts that comprised the Asante empire. *(3 marks)*

(b) Describe the political organization of the Shona. *(12 marks)*

JINA: .....NAMBA YAKO :.....

SHULE …….....TAREHE :.....

102/1

KISWAHILI

KARATASI YA 1

INSHA

MUDA: SAA 1¾

MAAGIZO

(a) Andika insha mbili. Insha ya kwanza ni ya lazima.
(b) Kisha chagua insha moja nyingine kutoka hizo tatu zilizobakia
(c) Kila insha isipungue maneno 400
(d) Kila insha ina alama 20

Kila mtahiniwa lazima aangalie kama kurusa zote za karatasi hii zimepigwa chapa sawasawa na kuwa maswali yote yamo

1. Wewe ni katibu wa chama cha waandishi habari chipukizi shuleni mwako. Andika kumbukumbu za mkutano uliofanyika mnamo MACHI 7, 2014.

2. Fahali wawili wapiganapo ziumiazo ni nyasi.

3. Anza kisa kwa maneno haya:

   Mtoto aliletwa mbele yangu akiwa anatiririkwa damu usoni. Singeweza kumtambua hadi pale…….
   ……
   ……
   ……

4. Mvua husababisha madhara mengi. Jadili

JINA:----------NAMBARI YAKO:----------

SHULE:---------- SAHIHI:----------TAREHE:----------

102/2

KISWAHILI

KARATASI YA PILI

UFAHAMU, UFUPISHO, LUGHA, ISIMUJAMII

MUDA: 2 ½

MTIHANI WA MWISHO WA MUHULA WA TATU: KIDATO CHA TATUI 2018

MAAGIZO

(a) Andika jina lako na nambari yako katika nafasi ulizoachiwa hapo juu.

(b) Tia sahihi yako na uandike tarehe ya mtihani katika nafasi ulizoacha hapo juu

ci) Jibu maswali yote katika karatasi hii.

(d) Andika majibu yako katika nafasi zilizoachwa katika kijitabu hiki cha maswali.

(e) Mtahini ahakikishe kwamba kurasa zote zimepigwa chapa.

Kwa matumizi ya mtahini pekee

	Swali	Upeo	Alama
A	Ufahamu	15	
B	Ufupisho	15	
C	Matumizi ya Lugha	40	
D	Isimujamii	10	
	Jumla	80	

UFAHAMU A: (ALAMA 15)

Soma kifungu hiki kisha ujibu maswali yanayofuata

Zimesalia siku chache kabla ya mitihani ya mwisho wa mwaka pamoja na mitihani ya Kitaifa. Kila mwanafunzi yu mbioni kutimiza malengo yake ya mwaka masomoni. Kwa watahiniwa wa mitihani ya kitaifa, ni fursa ya kudhihirisha matokeo ya jitihada zao za miaka minane, mine, mitatu au miwili(kwa wanafunzi wa vyuo vikuu na vya kadri.

Kawaida ya wanafunzi wa ngazi zote ni kujihakikishia kwamba hakuna cha kuwazuia kuzoa alama wazitakazo mradi wamefanya bidii kabla nay a wakati wa mitihani yao. Imani yao ni sahihi kwa kiasi kikubwa lakini ina upungufu.

Sikusudii kudai kwamba msingi wa matokeo bora si jitihada, la. Jitihada ni muhimu lakini sizo tu msingi wa ufanisi.

Hali nzuri ya kiakili ni muhimu katika maandalizi kwa mtihani ila wengi ama hawajui, hawajali au hupuuza ukweli huu. Hujamsikia mtu akimwambia mwenziwe ikiwa ndiwe ungeniwezesha kufanikiwa afadhali nifeli badala ya kupata msaada wako? Ajabu ni kwamba msemaji hasemi tu hali huwa anamaanisha alisemalo. Je, itakufaa nini kupoteza nafasi mwafaka ya kuimarika kutokana na msaada wa mwenzio kwa sababu ya kutofautiana naye kimsimamo? Japo siasa huitwa mchezo mchafu, maadili tu tunayoweza kujifunza kwayo ni kwamba haina maadui wa kudumu. Uadui ukiwapo, ni wa muda tu na ambao hauvurugi ajenda za kisiasa. Ni radhi kukosolewa kwa hili.

Nakubaliana fika na hekima ya Waswahili kwamba yatupasa kusahau yaliyopita na kuganga yajayo. Uchungu unaoambatana na mafukio ya awali hutuvuta nyuma pakubwa ingawa huwa hatukiri hivyo kwa urahisi.
Kusahau matukio ya awali yaliyotukwaza huimarisha uwezo wetu wa kufanya maamuzi huru. Maamuzi haya hujikita katika dhamiri safi; yaani, hatuyahusishi na kufeli kwetu kwa awali. Tunaiona kila fursa mpya kama iliyo huru na yenye nafasi aali ya kujiendeleza. Unapojiandaa kuukabili mtihani wako wa kitaifa au wa mwisho wa mwaka, jiweke kwenye mizani upya na kuyasahau matokeo yako duni ya awali.

Walimu wako wanapojitolea kukusaidia kuimarisha matokeo yako, usiwavunje moyo kwa kudai huna tumaini tena. Shirikiana nao na kutekeleza kila hatua wanayokupendekezea kwa dhati. Mathalan, mwanafunzi uliyezoa alama duni katika somo la Hisabati na ungependa kuimarika angaa kwa kiasi kidogo, uzingatie wasia wa mwalimu wako bila kutumia alama hiyo duni kama kizingizio.

Unaposahau tofauti za awali baina yako na wenzio unajipa fursa ya kushirikiana nao. Waweza kuwafaa au wakakufaa. Vyovyote iwavyo, ushirika ni muhimu katika kuvumbua mbinu mpya za utatuzi wa migogoro, taaluma, zilizoingizwa kwenye soko la ajira nchini, pengine zinazoambatana na maendeleo ya kiteknolojia, utambuzi wa kipaji chako au cha mwenzio.

Ni kweli kwamba baadhi ya habari muhimu kama vile matangazo ya nafasi za kazi, mabadiliko katika ratiba za mitihani na mengine ya jinsi hii huwa tunazipata kutoka kwa rafiki zetu. Tukiziruhusu tofauti zetu za awali kututawala, tunajitia katika hatari za kupitwa na habari muhimu tunazozifahamu lakini ninazozifahamu lakini zinazofahamika kwa wenzetu.

Tunawathamini sana viongozi wenye uwezo wa kutatua migogoro kwa kuyapa uzito mahitaji yaliyopo wakati wa kutatua mgogoro husika.

Aidha, ni wengi tunaotamani kuwa viongozi wa jinsi hii. Ni sharti tufahamu hata hivyo kwamba kujihini kunahitajika ili kufanikisha azma hii. Inatubidi kujifunza kusahau mambo yanayotukwaza haraka iwezekanavyo ili kuangaza macho mbele zaidi na kuwa viongozi wa kupigiwa mfano. Ni wenzo muhimu wa kutufanikisha katika shughuli zetu za kila aina.

Jizoeze kumkabili mwenzio tofauti inaibuka kati yenu na kuisuluhisha haraka iwezekanavyo ukiwa umekosea au umekosewa. Kujiingiza katika mashindano ya 'acha tuone nani ndiye nani' ni kupoteza wakati nap engine fursa ambazo zingeimarisha maisha yako pakubwa. Makosa yako ya awali yasiwe kizingiti cha kufikia upeo unaowiana na uwezo wako. Uvue 'ukale' uliougandia na upige hatua za dhati hadi ufike kwenye kileleta hasa cha maisha yako.

Maswali

1. Andika kichwa mwafaka cha taarifa uliyosoma. (ala. 2)

---

2. Ni vipi wanafunzi wanaweza kuhakikisha wanajizolea alama wanazohitaji? (alama 2)

---

3. Taja mambo mawili muhimu ya kuzingatia ili kupata matokeo bora ya mtihani kwa mujibu wa kifungu?(alama 2)

---

4. Thibitisha kauli kwa uadui katika siasa ni wa muda tu. (al. 2)

---

5. Kusahau matukio ya awali kuna faida gani? (al. 2)

---

6. Toa mifano miwili ya habari muhimu ambazo wanafunzi wanaweza kupata kwa marafiki zao (alama 2)

---

7. Mja anafaa kufanyaje tofauti inapoibuka na wenzake? (alama 1)

---

8. Eleza maana ya maneno haya kama yalivyotumika katika kifungu. (alama 2)

(i) aali

(ii) Kujihini

SEHEMU B: UFUPISHO (ALAMA 15)

Soma kifungu kasha ujibu maswali yafuatayo

Ni nani asiyejua kuwa Kiswahili ni lugha ya Kitaifa na kimataifa? Basi makinika, Kiswahili ni lugha rahisi inayosemwa na kufahamika na kila adinasi, isitoshe Kiswahili kimeenea na kinatumika na kila mja kote nchini. Lugha ya Kiswahili ina manufaa mengi sio tu kwa waja bali pia kwa taifa kwa jumla. Mathalan, lugha ya Kiswahili imehakikisha kuwepo kwa utangamano baina ya watu wa mataifa. Aghalabu waja hupenda kuhusiana na watu wanaozungumza lugha inayoeleweka. Licha ya hayo, Kiswahili huunganisha mataifa kwani yataelewana kwa urahisi mazungumzoni.

Kando na hayo, Kiswahili hutumika katika mawasiliano. Je, lugha hii imesaidiaje watu katika mawasiliano? Kwa kuwa ni lugha rahisi, waja wengi wamejifunza kuzungumza. Hivyo basi mawasiliano baina ya waja huwa rahisi kwani Kiswahili kinaeleweka na wote.
Juu ya hayo, lugha ya Kiswahili imewezesha habari aina ainati kuwafikia watu. Lugha hii aghalabu hutumiwa katika vituo vya habari. Licha ya kukieneza, hukisaidia kujulikana zaidi na adinasi sufufu.
Isitoshe, lugha hii imewasaidia sana wabunge. Hivi ni kuwa wakiwa bungeni wao hukitumia sana Kiswahili kushiriki mjadala. Kwa njia hii, kando na Kiswahili kuwatangamanisha, kimewasaidia kuelewana kwa urahisi mno.

Wanabiashara nao wanafaidika mno kutokana na Kiswahili. Kupitia kwa Kiswahili, hawapati taabu kamwe kuelewana wenyewe kwa wenyewe. Kando na hayo, Kiswahili huwawezesha wanunuzi na wauzaji kuelewana katika kuuza na kununua.
Lugha ya Kiswahili imechangia pakubwa kuwepo kwa ajira.Kuna njia anuwai amabpo ajira hizi hupatikana. Mathalani walimu na wahadhiri huajiriwa ili kufunza lugha ya Kiswahili. Isitoshe, wachapishaji wengi wa vitabu hupata kazi wanapoajiriwa kuvichapisha vitabu vya Kiswahili.

Kwa kuwa adinasi wengi hawana elimu ya lugha ya Kimombo, Kiswahili hutumiwa kuwasilisha ujumbe. Aghalabu, wanasiasa hukitumia Kiswahili katika kampeni zao . Juu ya hayo, Kiswahili hutumika kwenye mikutano ya hadhara kuelimisha watu.
Ni dhahiri kuwa hakuna mja razini anayependa ukabila. Kiswahili nacho kimesaidia kuondoa ukabila. Kiswahili ni lugha rahisi inayoweza kusemwa na yeyote. Pindi watu wa makabila tofauti wanapokutana, hawategemei lugha ya mama bali utangamano huhimizwa.
Fauka ya hayo, Kiswahili ni lugha inayofunzwa na kutahimizwa. Hufunzwa kwa kutumia silabasi hivyo basi kuwahimiza waja kukienzi. Kinapotahiniwa, humpa mwanafunzi ari ya kukipita kwani Kiswahili ndicho mwongozo dira wa maisha.

Waandishi wengi hutumia lugha ya Kiswahili ili kuwasilisha ujumbe wao. Hii si kwa sababu nyingine bali kuwa ujumbe utaeleweka upesi. Hivyo basi wao huchukua fursa wanayopewa na lugha hii ili kuwaelimisha. Kuwashauri na hata kuwaonya waja juu ya mambo anuwai.

Jamani Kiswahili kitukuzwe kwani ni lugha ya taifa. Ningependa kuwahimiza vijana wenzangu wakienzi na kukiinua Kiswahili. Wawe katika mstari wa mbele katika kuhakikisha kuwa Kiswahili kinadumishwa kote. Bila kusahau, ningependa kuwashauri waepukane na lugha ya 'sheng'. Lugha hii simo inaathiri Kiswahili mno kwani kuchipuka kwake kunadunisha Kiswahili. Aidha ningependa kuwasihi nyote mshirikiane kukieneza Kiswahili. Chambilecho wahenga, kinga na kinga ndipo moto uwakapo. Naam! Kiswahili Kitukuzwe.

Maswali

(a) Fupisha aya tatu za mwanzo kuonyesha umuhimu wa Kiswahili. (maneno 35 – 40) (alama 7, alama 2 za utiririko)

Matayarisho

Jibu

(b) Andika kwa muhtasari mambo muhimu katika aya ya mwisho. (Maneno 30 – 35) (alama 5, alama 1 ya utiririko)

Matayarisho

Jibu

SEHEMU C: MATUMIZI YA LUGHA (ALAMA 40)

1(i) Kimandende hutamkiwa wapi? (alama 1)

(ii) Eleza tofauti iliyopo kati ya sauti / K / na / g/ (alama 2)

---

2. Eleza miundo ya silabi za neno lifuatalo (alama 2)

Udhaifu

---

3. Onyesha mofimu katika neno lifuatalo. (alama 3)

Waliopewa

---

4. Eleza matumizi ya 'ki' katika sentensi ifuatayo. (alama 2)

Mama na kitoto wamekuwa wakila wakiimba kikasuku. (alama 2)

---

5. Tumia 'O' rejeshi tamati katika sentensi hii. (alama 2)

Vitabu ambavyo anapata ni vile vinapendeza.

---

6. Huku ukitoa mifano fafanua miundo minne ya ngeli ya U-ZI (ala. 2)

---

7. Kanusha (alama 1)
   Naimba nikilala.

---

8. Andika kinyume cha sentensi hii. (alama 3)
   Shangazi aliingia ndani na kumfungia mtoto nguo haraka.

---

9. Andika katika ukubwa (alama 2)
   Kiti kilichokuwa kimebebwa na mvulana kilivunjika.

---

10. Maneno yaliyopigiwa mstari ni ya aina gani? (alama 2)
(a) Mkulima <u>mganga</u> ametabiri baraka.

(b) <u>Mganga</u> mzee ametabiri baraka.

---

11. Uunda vitenzi kutoka kwa majina . (alama 2)

(i) Mtukufu

(ii) Mchumba

---

12. Bainisha vishazi katika sentensi. (alama 2)
Gari lililoibiwa jana limepatikana.

---

13. Tambua kirai kilichopigiwa mstari katika sentensi hii. (alama 1)
Watu wenye woga mwingi hukimbia ovyo.

---

14. Tambua matumizi mawili ya alama ya kibainishi. (alama 2)

---

15. Onyesha shamirisho katika sentensi ifuatayo. (alama 2)
Mtoto alisomewa barua na nyanya.

---

16. Andika katika usemi halisi. (alama 2)
Mama alisema kuwa angewatembelea kwao mwezi ambao ungefuata.

---

17. Geuza vitenzi ulivyopewa kuwa katika kauli zilizo kwenye mabano. (alama 2)

(i) Ficha (kutendana)

(ii) Fumba

---

18. Changanua sentensi ifuatayo ukitumia jedwali. (alama 3)

Juma, Suleimani na Joshua wamefurahi kupita mtihani.

19. Eleza maana mbili za neno somo. (alama 2)

SEHEMU D; ISIMUJAMII (ALAMA 10)

Jadili mikakati iliyowekwa kukua kwa Kiswahili nchini baada ya uhuru.

FORM 3 END TERM 1 SET 3 EXAM 2023

Name……Adm No……Class……

School ……

Candidate's Signature ……

GRAND TOTAL

233/1
PHYSICS 1
PAPER 1
THEORY
TIME: 2 HOURS

INSTRUCTIONS TO THE CANDIDATES:

- *Write your **name and admission number** in the spaces provided above.*
- *Answer **all** the questions both in section **A** and **B** in the spaces provided below each question*
- *All workings **must** be clearly shown; marks may be awarded for correct steps even if the answers are wrong.*
- *Mathematical tables and non-programmable silent electronic calculators may be used.*

(*Take acceleration due to gravity g= 10ms^{-2} Density of water 1g/m^{-3}*)

For examiners use only

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
Section A	1-12	25	
Section B	13	13	
	14	06	
	16	12	
	17 18	13 11	

	TOTAL	**80**	

SECTION A (25 MKS)

Answer all questions in the spaces provided.

1. State one factor that would affect surface tension of pure water in a beaker of water.

(1 mark)

……

……

2. Use the information below to answer questions that follow.
In an experiment to determine the density of a liquid, the following readings were made.
Mass of empty density bottle = 20g
Mass of bottle filled with water = 70g
Mass of bottle filled with a liquid = 695g

(a) Find the density of the liquid, given that density of water is $1000kgm^{-3}$. ***(3marks)***

(b) Find the mass of the liquid. ***(3marks)***

3. Explain why water does not wet a waxed glass surface. ***(1 mark)***

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4. Give a reason why mercury is preferred for use in a thermometer. ***(1 mark)***

……

……..

5. The figure below shows a U-tube connected to gas supply containing liquids L1 and L2 of densities 1.8gcm-3 and 0.8gcm-3 respectively in equilibrium.

   Given that h1 = 8cm, h2 = 10cm and atmospheric pressure is 1.02 x 105Pa.

   Determine the gas pressure. ***(3 marks)***

6. Explain why gases have larger intermolecular distances than solids. ***(1 mark)***

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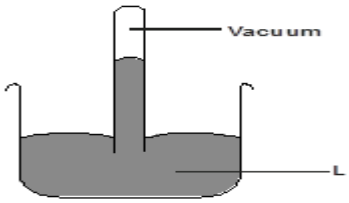
   ……..

7. The figure below shows an instrument used to measure atmospheric pressure.



   (a) Name the instrument. ***(1 mark)***

   ……

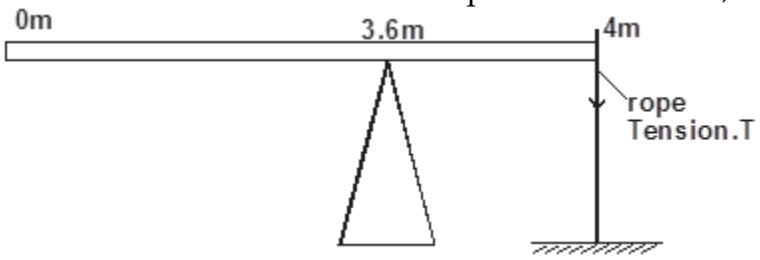
   ……..

   (b) Name the liquid marked L. ***(1 mark)***

   ……

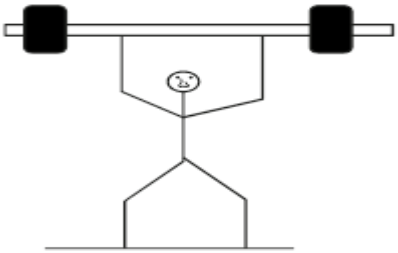
   ……..

8. A uniform rod of length 4m and mass of 4kg is pivoted at 3.6m mark. The rod is held horizontal with a vertical rope at the 4m mark, as shown in the figure below.



Calculate the tension, T in the rope (Take g = 10N/kg). ***(3 marks)***

9. The figure below shows an athlete lifting weights while standing with the feet apart.



Explain why standing with the feet apart improves the athlete's stability.***(1 mark)***

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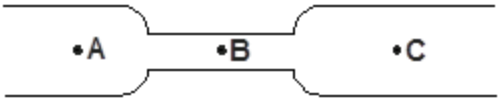
10. The figure below shows parts A, B and C of a glass tube.



State with reason the part in the tube in which the pressure will be lowest when air is blown through the tube from A towards C. ***(2 marks)***

……

……

……

11. State how the pressure in a moving fluid changes when the velocity of the fluid increases. ***(1 mark)***

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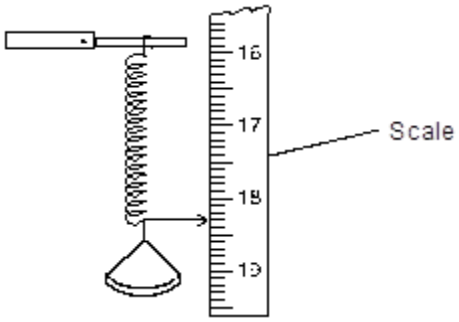
12. The spring is fitted with a scale pan as shown in the figure below and the pointer points to the 30cm mark on the scale. When some sand is placed in the pan the pointer points to 15cm mark.



When a 20g mass is placed on top of the sand the pointer points to 5.0cm mark.

a) What extension is produced by the sand?

b) What extension is produced by the 20g mass?

c) What is the mass of the sand? ***(3 marks)***

SECTION B

Answer all questions in this section.

13. (a) Differentiate between displacement and speed. ***(2 marks)***

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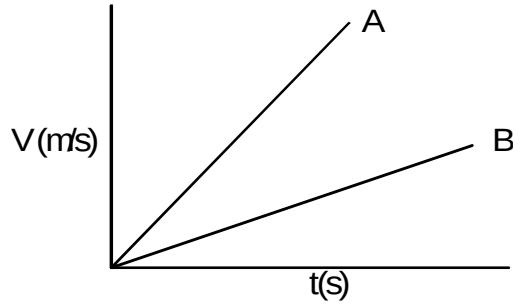
b)The figure below shows velocity time graphs for two objects A and B drawn on the same axes.



State with a reason which of the two objects stops in a shorter distance when the same size of force in applied against each given that they are of equal masses.

(2 marks)

……

……

c) An object moving at 26m/s starts to accelerate at 2m/s² so that its velocity becomes 48m/s. Find

i) The distance moved during this acceleration. ***(3 marks)***

ii) The object is now braked so that it comes to rest in a time of 12 seconds. Find the braking force if its mass was 27000g. ***(3 marks)***

d) A body moving with uniform acceleration of 10 m/s^2 covers a distance of 320 m. if its initial velocity was 60 m/s. Calculate its final velocity. ***(3 marks)***

14. a)(i) Distinguish between streamline flow and turbulent flow. ***(2marks)***

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…

(ii) A boat travelling at a very high speed is likely to be dragged into a ship travelling in the opposite direction at high speed. Explain this observation. ***(1mark)***

……..……

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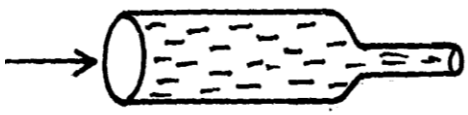
(i) The figure below shows a non-viscous fluid that is not compressible moving through a tube of varied cross-sectional area



If the area of the narrower end is $0.05m^2$.calculate the diameter of the wider region.

(3 marks)

15. a) i) State Newton's second law of motion. ***(1 mark)***

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ii) Explain why a high jumper flexes his knees when landing on the ground.***(1 mark)***

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b) A ball of mass 100g is dropped from a height 1.25m above the ground surface. It rebounds to a height of 1.1.m.

Calculate

i) Velocity of the ball before impact. ***(3 marks)***

ii) Force of impact (take g = 10N/kg) ***(3 marks)***

c) i) Differentiate between elastic and inelastic collision. ***(1 mark)***

……

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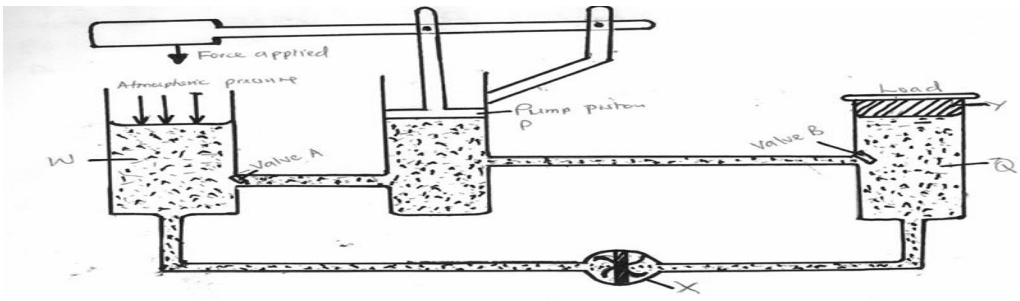
……

ii) A car of mass 800g collides head on with a truck of mass 5000kg travelling at 40m/s. The car is thrawn on to the bonnet of the truck which continues to move after impact at 10m/s in the original direction. How fast was the car moving? ***(3 marks)***

16. The figure below is a hydraulic jack system.



(a)Name the parts labeled W,X and Y ***(3marks)***

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…….

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…….

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……

(c) Briefly explain how the device may be used to raise a load at the position shown.
(3marks)

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…..……
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……..

(c) Part W is left open to the atmosphere as indicated. Explain. ***(2marks)***

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……..……
……

(d) State two ways by which the mechanical advantage of the device may be increased.
(2marks)

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……..……
……..……
……

(e) One such hydraulic brake system was used to lift a car whose mass was 1200kg. The cross sectional area of Q was 5000cm^2 and that of P was 5cm^2. Determine the force exerted on the pump piston ***(3marks)***

17. (a) State HOOKE'S LAW. ***(1 mark)***

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b) i) What is a spring constant? ***(1 mark)***

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ii) Explain three factors determining spring constant. ***(6 marks)***

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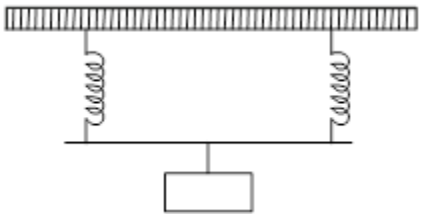
(e) Two identical springs of spring constant 3N/cm are used to support a load of 30N as shown in the figure below. Determine the extension of each spring. ***(3 marks)***



FORM 3 END TERM 1 SET 3 EXAM 2023

Name……Adm No……Class……
School ……
Candidate's Signature ……

GRAND TOTAL

232/2
PHYSICS
PAPER 2
(THEORY)
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

1. Write your name and admission number in the spaces provided at the top of this page.
2. Sign and write the date of examination in the spaces provided above.
3. This paper consists of TWO sections: A and B
4. Answer ALL the questions in the sections A and B in the spaces provided.
5. ALL working MUST be clearly shown.
6. Non-programmable silent electronic calculators and KNEC mathematical tables may be used.

FOR EXAMINERS USE ONLY.

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1 – 13	25	
B	14	12	
	15	11	
	16	12	
	17	08	
	19	11	
Total Score		**80**	

Section A (25 marks)

1. Give one difference between luminous and non-luminous sources of light. ***(1mk)***

2. When a negatively charged rod is brought near the cap of a leaf electroscope, the leaf rises. Explain this observation, ***(2mks)***

3. **Figure 2** represents a displacement-time graph for a wave.

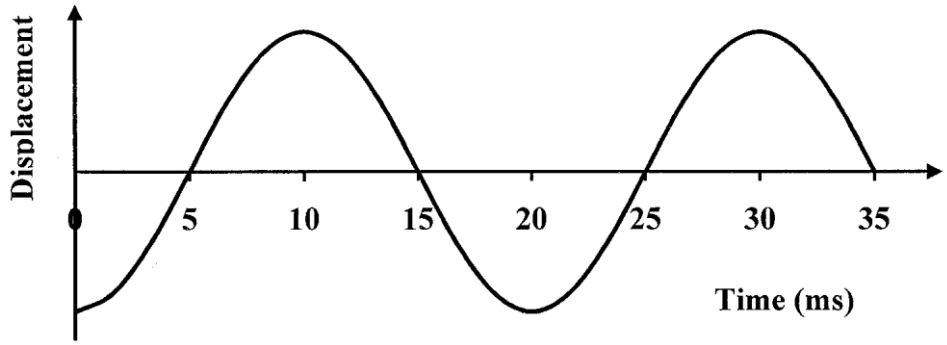


Figure 2

Determine the frequency of the wave. ***(2mks)***

4. ***State*** the conditions necessary for a wave incident on a slit to be diffracted. ***(2mks)***

5. In an experiment to determine the focal length of a concave mirror, magnification M was determined for various image distances v. Figure 3 shows a graph of magnification M against image distance v for the results from the experiment.

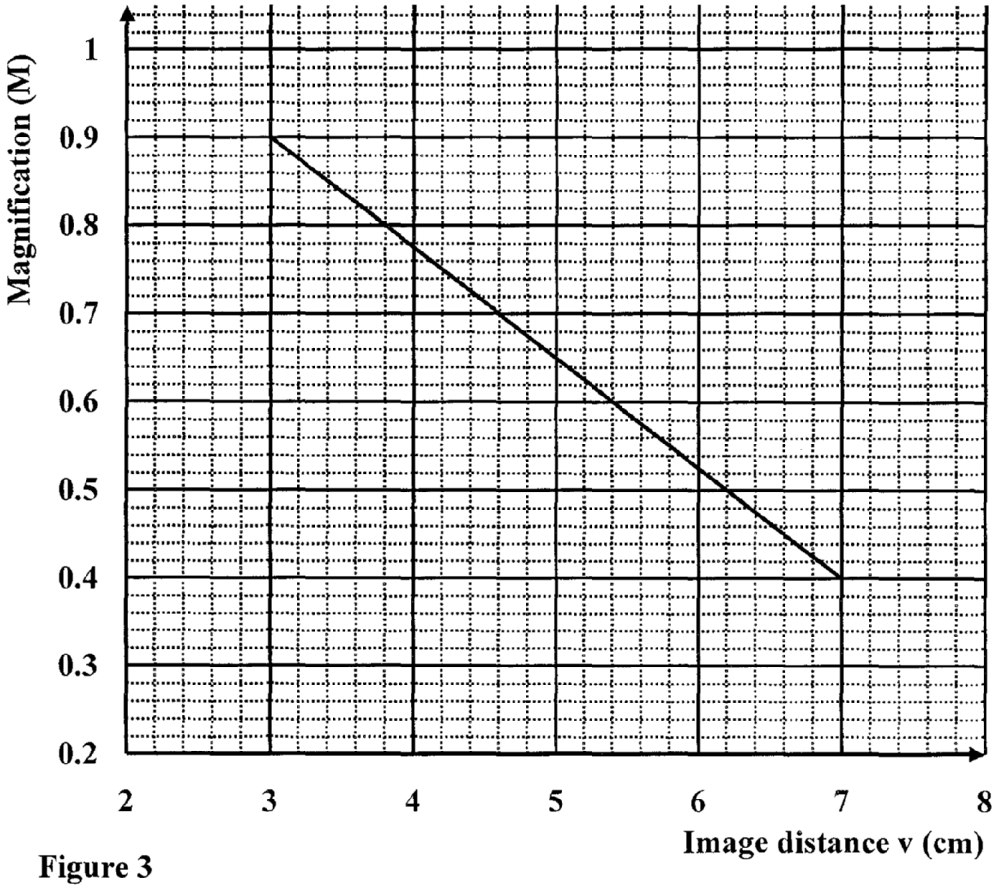


Figure 3

Given that M = 1 $\frac{v}{f}$, determine the focal length f of the mirror. ***(3mks)***

A hair dryer is rated 2500W, 240V. Determine its resistance. ***(2mks)***

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6. **Figure 4** shows the magnetic field pattern round a current-carrying conductor. Indicate on the
conductor the direction of the current. ***(1mk)***

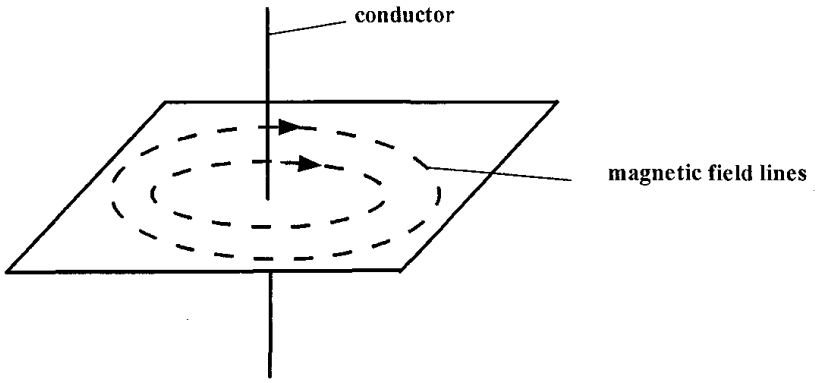

Figure 4

7. Why is repulsion the sure test for a magnet? ***(1mk)***

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8. **Figure 5** shows a ray of light incident on an air bubble which is inside water,

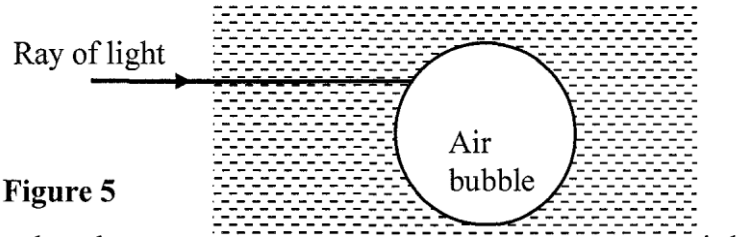


Figure 5

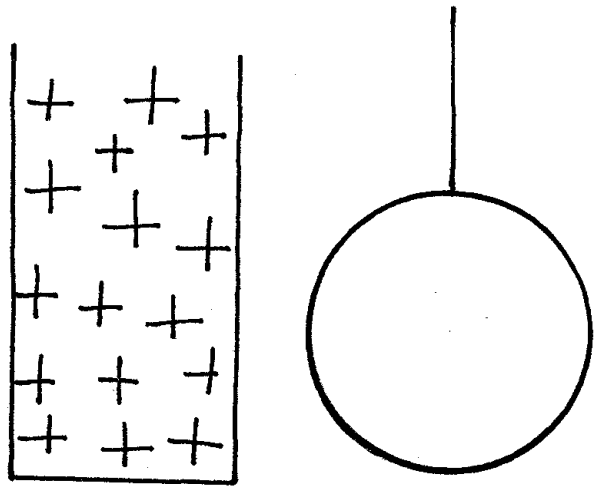
Complete the ray to show the path it follows through the air bubble. ***(1mk)***

9. Explain how polarization of a cell increases the cell's internal resistance. ***(2mks)***

10.

1. A positively charged material was brought close to an insulated metallic ball as shown in
   Fig 4. State and explain the distribution of charge in the ball *(2mks)*

Fig. 4



Explain why sound cannot be heard from far when one shouts in a forest *(1mk)*

Using the variation of resistance with temperature, differentiate between a conductor and a semiconductor. *(1mk)*

11. A cell of internal resistance O.5 Ω is in a circuit containing a 10 Ω resistor. A current of 2A flows in the circuit. Determine the emf of the cell. *(2mks)*

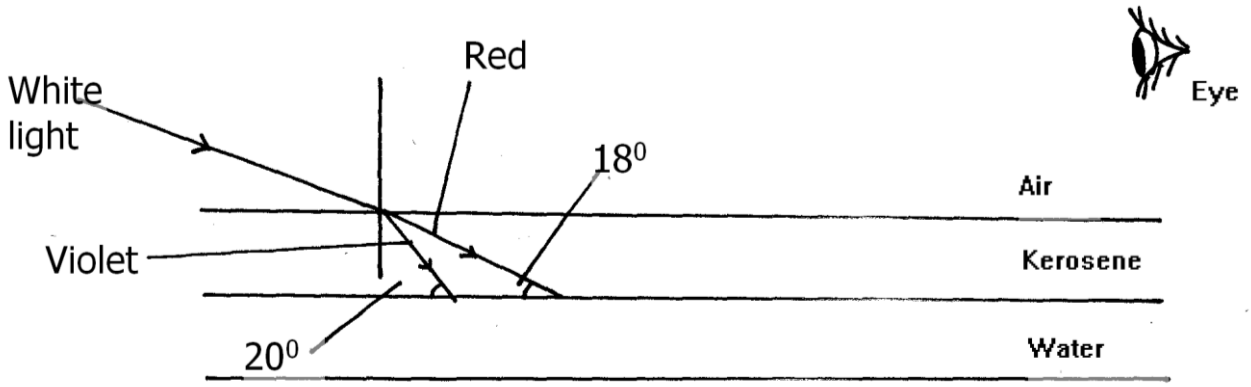
Section B (55 marks)

12. (a) (i) State Snell's law of refraction of light *(1mk)*

(ii) Give two advantages of totally internally reflecting prisms over plane mirrors. *(2mks)*

(b) A ray of light is incident on a kerosene water interfaces as shown in figure 7

Fig. 7



Given that the refractive index of water and kerosene are 1.33 and 1.44 respectively, Determine

(i) the refractive index for the kerosene + water interface *(3mks)*

(ii) determine and show on the figure the path of the rays of light between the Kerosene-water surface *(3mks)*

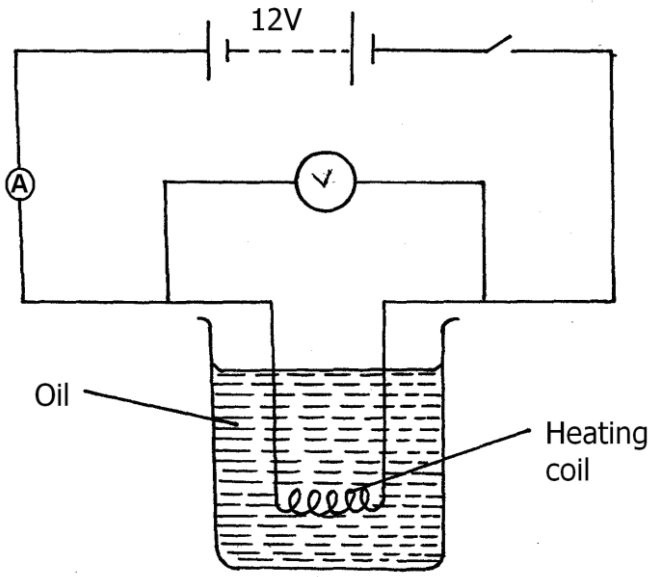
(iii) Why does the colours of the light separate at the kerosene layer. **(1mk)**

State and explain the observation that the eye above the two surfaces would see ***(2mks)***

(a) State Ohm's law ***(1mk)***

(b) The figure 8 below shows a circuit with a coil used to warm oil in a beaker.

Fig. 8



(i) Explain how heat is produced in the coil ***(2mks)***

(ii) Given that the reading of the ammeter is 2.4A determine the resistance of the coil. ***(3mks)***

(iii) How much heat is produced in the coil in a minute? ***(3mks)***

(iv) Give two changes that can be made in the set up in order to produce more heat per minute. ***(2mks)***

13. (a) Define capacitance of a capacitor ***(1mk)***

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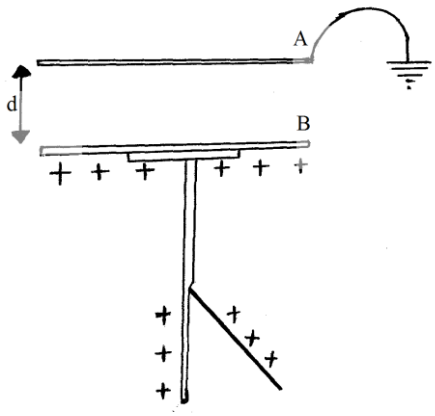
The figure below shows a charged electroscope two aluminium plates A and B arranged a shown



State and explain the observations made when:

(i) d is reduced ***(2mks)***

.....

.....

(ii) the plate A is more horizontally *(2mks)*

.....

.....

(iii) a sheet of polythene is placed between A and B *(2mks)*

.....

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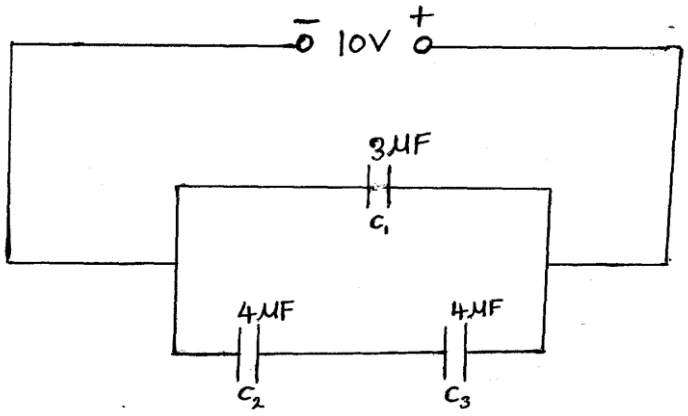
(b) Three capacitors are connected to a 10V battery as shown below.

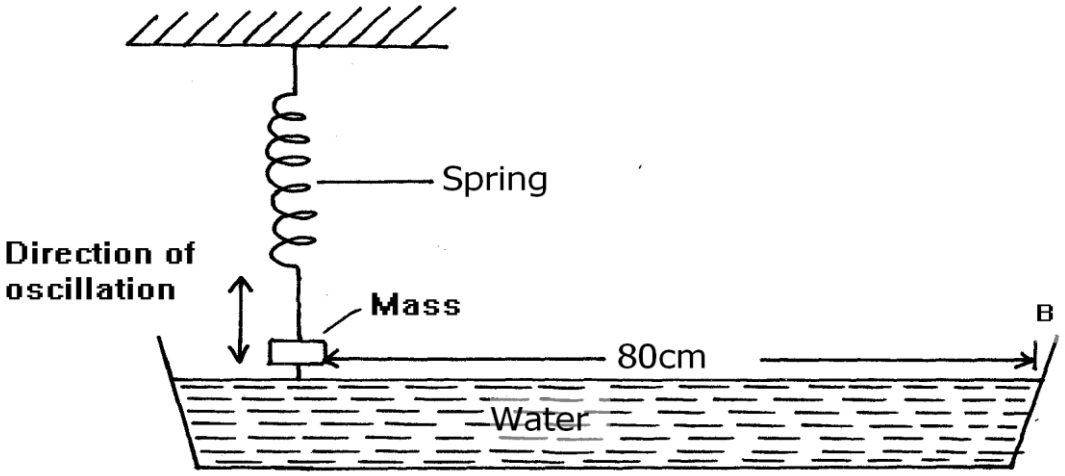


(i) Calculate the combined capacitance *(3mks)*

(ii) What is the charge on the 3 μF capacitor *(3mks)*

14. Students set up a mass attached to spring such that when it oscillates it taps on water surface in a wide shallow tank.

Fig. 6



The students measured time for 20 oscillations and found that the mass takes 36 seconds.

(i) Determine the periodic time of the mass ***(2mks)***

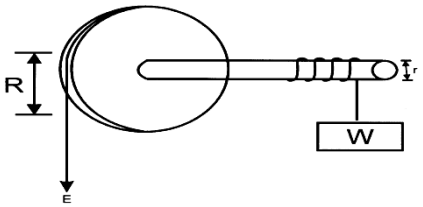
(ii) Calculate the frequency of the waves produced on the water surface ***(3mks)***

(iii) Given that the student counted four ripples between the mass and end B of the tank, Determine the speed of the waves. ***(3mks)***

15.

a. A machine is a device that enables work to be done more easily and conveniently. State any two ways in which a machine makes work easier. ***(2 marks)***

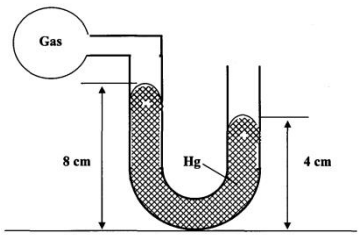
b. Figure 7 shows a wheel and axle being used to raise a load W by applying an effort E. The radius of the wheel is R and of the axle is r.



i) Show that the velocity ratio (V.R) of this machine is given by $\frac{R}{r}$ ***(3 Marks)***

ii) Given that r = 5cm and R = 50cm, determine the effort required to raise a load of 200N if the efficiency of the machine is 90%. ***(3 mks)***

c. An airtight flask containing a gas is connected to a mercury manometer. The levels of mercury in the two limbs of the manometer are as shown in the diagram below.



Calculate the pressure of the gas (Density of mercury = 1.36×10^4 kg/m^3 and atmospheric pressure = 1.0×10^5 N/m^2) ***(3mks)***

d.) State one way of making the surface tension of a liquid stronger. ***(1mk)***

FORM 3

TERM 1

PHYSICS PRACTICAL

REQUIREMENT (CONFIDENTIAL)

NB: Physics teachers should ensure that candidates do not get prior knowledge of the content of this paper

Question 1

Each student should have

- A concave mirror of f = (15-20cm) on a lens holder
- A screen
- A metre rule
- A candle and a match box The match box may be shared)

Question 2

Each student should have:

- An ammeter (0-1A)
- A voltmeter (0-2.5V) or (0-5V)
- A switch
- A nichrome wire (29-28mm) mounted on a mm scale -1 metre long
- Along wire with a crocodile clip at one end (or a jockey)
- Two new size D dry cells and cell holder
- Six connecting wires, two with crocodile clips at one end
- A micrometer screw gauge (may be shared)

FORM 3 END TERM 1 SET 3 EXAM 2023

Name……Adm No……Class……
School ……
Candidate's Signature ……

GRAND TOTAL

232/3
PHYSICS
Paper 3 (Practical)
Time: 2 ½ Hours

INSTRUCTIONS TO THE CANDIDATES:

- *Write your **name** and **index number** in the spaces provided above.*
- ***Sign** and **write** the **date** of the examination in the spaces provided above.*
- *You are supposed to spend the first **15** minutes of the **2 ½** hours allowed for this paper reading the whole paper carefully.*
- *Marks are given for a clear record of the observation actually made, their suitability, accuracy and the use made of them*

.

FOR EXAMINER'S USE ONLY

Question	Maximum Score	Candidate's Score
1	20	
2	20	
TOTAL	40	

This paper consists of 6 printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.

QUESTION 1

Apparatus

Concave mirror on a lens holder

Screen

Metre rule

Candle

Proceed as follows;

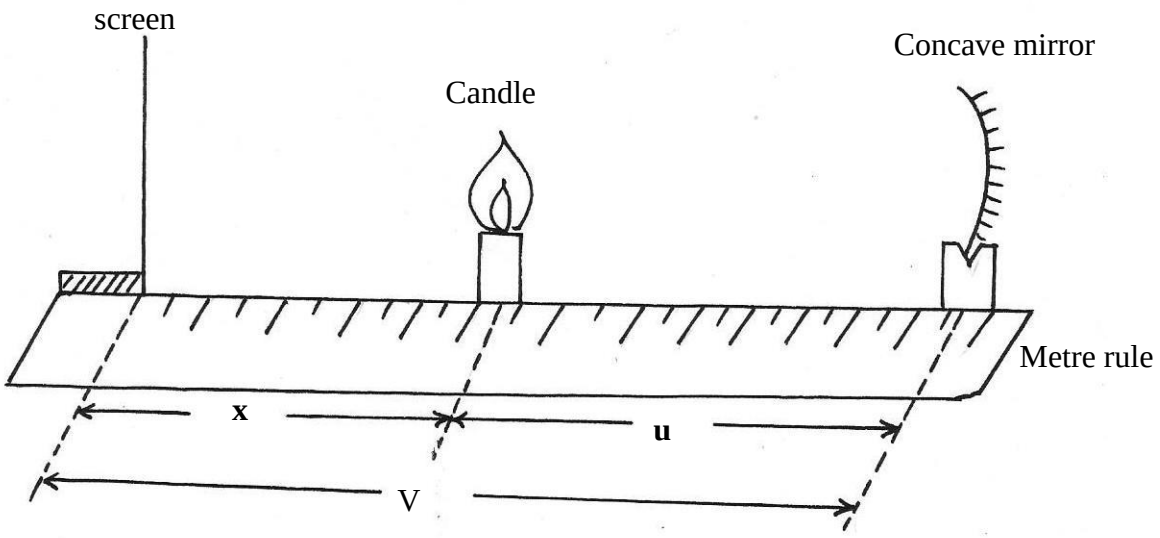


Figure 1

(i) Set the apparatus as shown in fig 1

(ii) Place the candle at a distance x= 5.0cm from the screen

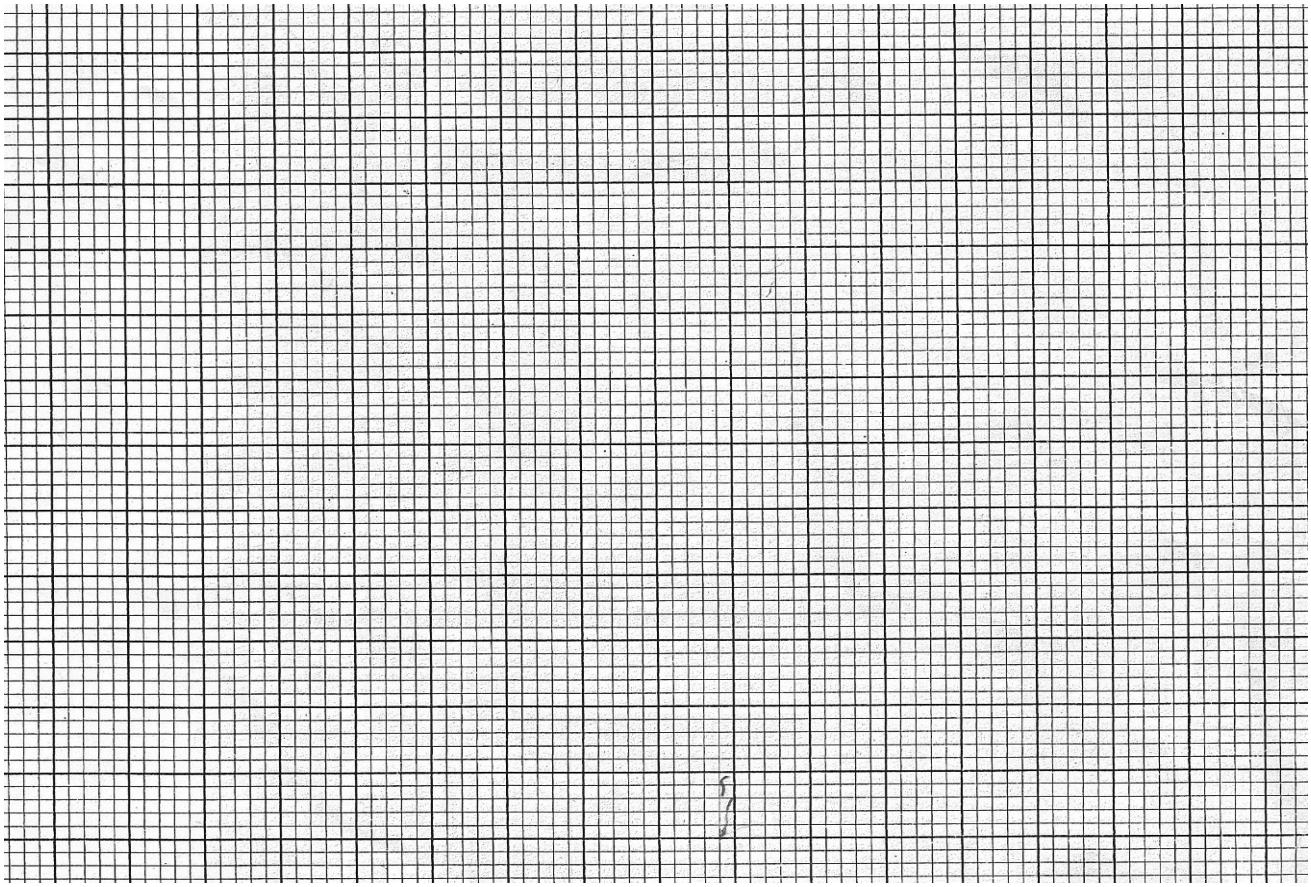
(iii) Move the mirror to and from to focus a clear, sharp image of the candle on the screen

(iv) Measure and record the distance u between the mirror and candle and the distance v between the screen and the mirror.

(v) Repeat the experiment for other values of x and complete the table below (table 1)

X(cm)	5.0	10.0	15.0	20.0	25.0	30.0
U(cm)						
V(cm)						
(u+v) cm						
Uv(cm2)						

(vi) Plot a graph of (u+v) (y axis) against uv *(5mks)*



(v) Determine the slope S of the graph *(5mks)*

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.....

(b) Using the value of S obtained in VII above, determines the value of f, the focal length of the mirror. *(2mks)*

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.....

(c) Given that $R = \frac{4f}{S^2}$ determine the value of R *(2mks)*

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QUESTION 2

You are provided with the following

- An ammeter (0-1A)
- A voltmeter
- A wire mounted on a mm scale
- A switch
- A long wire with a crocodile clip at one end (crocodile clip to be used or a jockey)
- 2 new size D dry cells and a cell holder
- A micrometer screw gauge(may be shared)
- Six connecting wires, two with crocodile clips at the end

Proceed as follows

(i) measure the diameter d of the mounted wire at 3 different points

Average diameter= mm *(1mk)*

(ii) Set up the apparatus as shown in the circuit diagram in fig 2

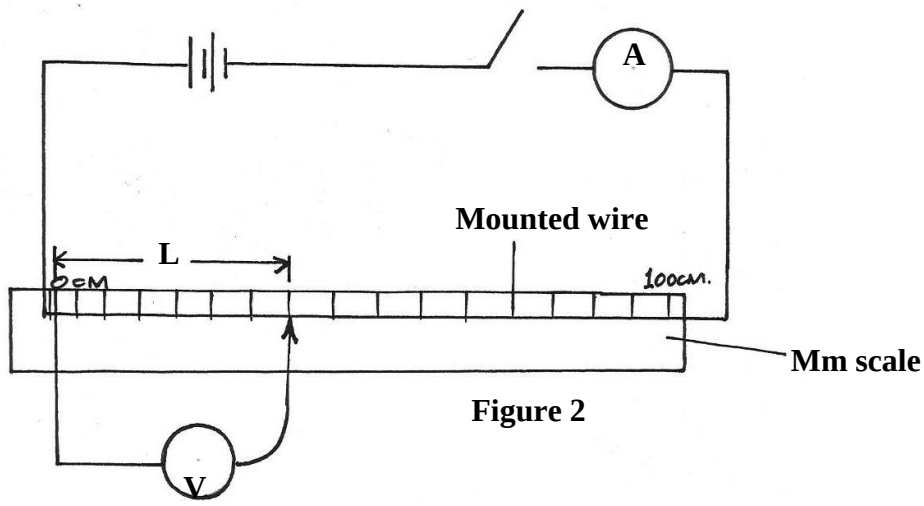


Figure 2

(iii) Close the switch and tap the mounted wire with crocodile chip as shown in the circuit. Ensure that both meters show possible deflection. Open the switch

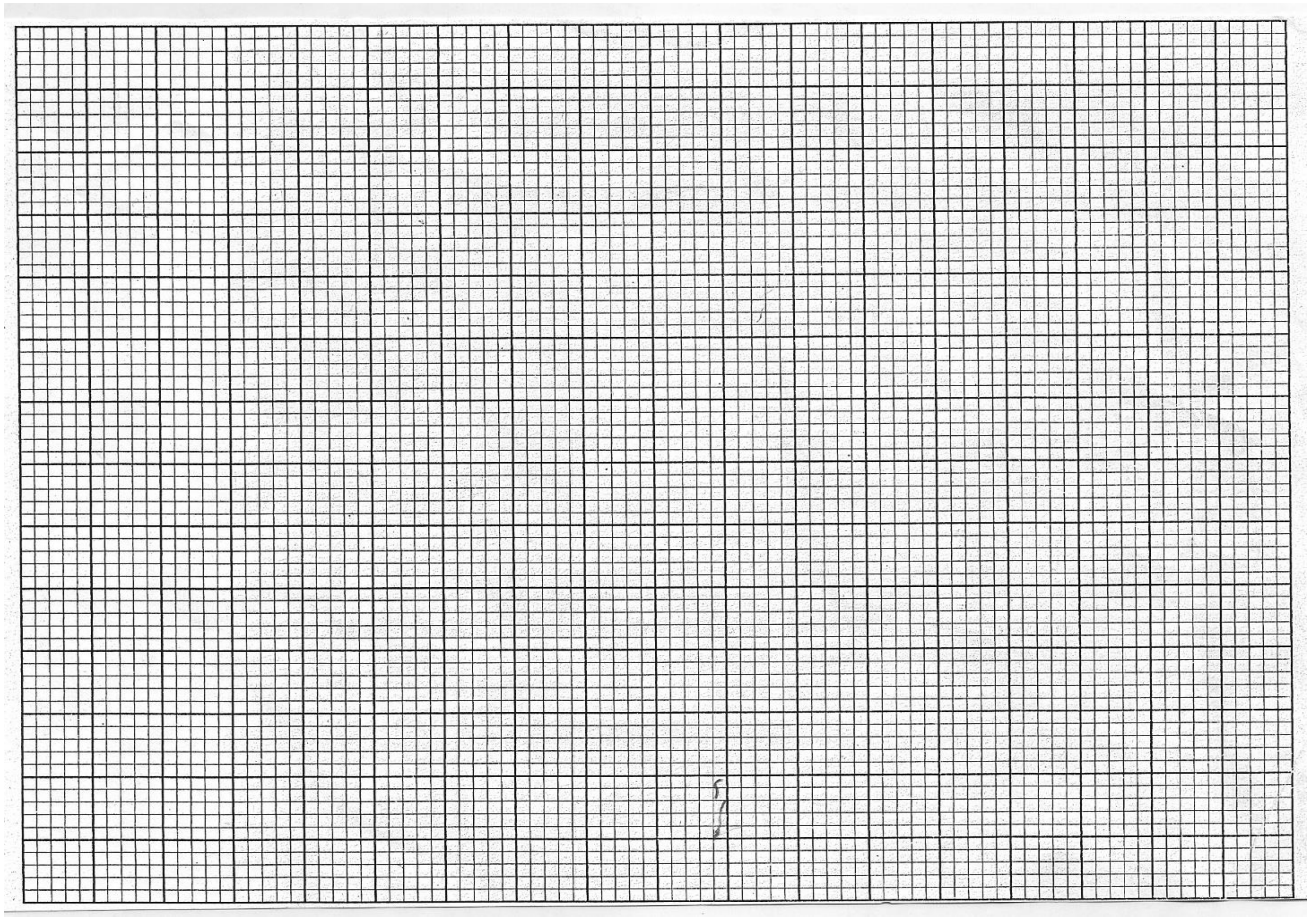
(iv) Tap the wire at L= 20cm, close the switch, and record in the table provided the ammeter and the voltmeter reading.

(v) Repeat procedure in IV for the other values of L, shown in the table below and complete the table.

(8mks)

L (cm)	L(m)	V(volts)	I	R= V/I (Ω)
20				
30				
40				
50				
60				
70				
80				

(vi) Plot the graph of R(y-axis) against Lcm (grid provided)



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

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(b) Given that the $R = \frac{\ell L}{A}$ where A is the cross sectional area of the wire and ρ is a constant for the material of wire. Determine the value of the constant ρ