F3 TERM 3 OPENER

ALL SUBJECTS

Dear Students, Attempt These Opener Exams!

FOR MARKING SCHEMES

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FORM 3 TERM 3 OPENER EXAM

NAME…… ADM NO……

BIOLOGY PAPER 1.

TIME: 2 HOURS.

FOR EXAMINERS USE ONLY.

QUESTIONS.	MAXIMUM SCORE.	CANDIDATE SCORE.
1-30	80	

1.(a)State the use of a sweep net ’. (1 mark).

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State two main branches of Biology. (2 marks).

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2. Name the organelle that performs each of the following functions in a cell.

(i) Protein synthesis. (1 mark).

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(ii) Transport of cell secretions. (1 mark).

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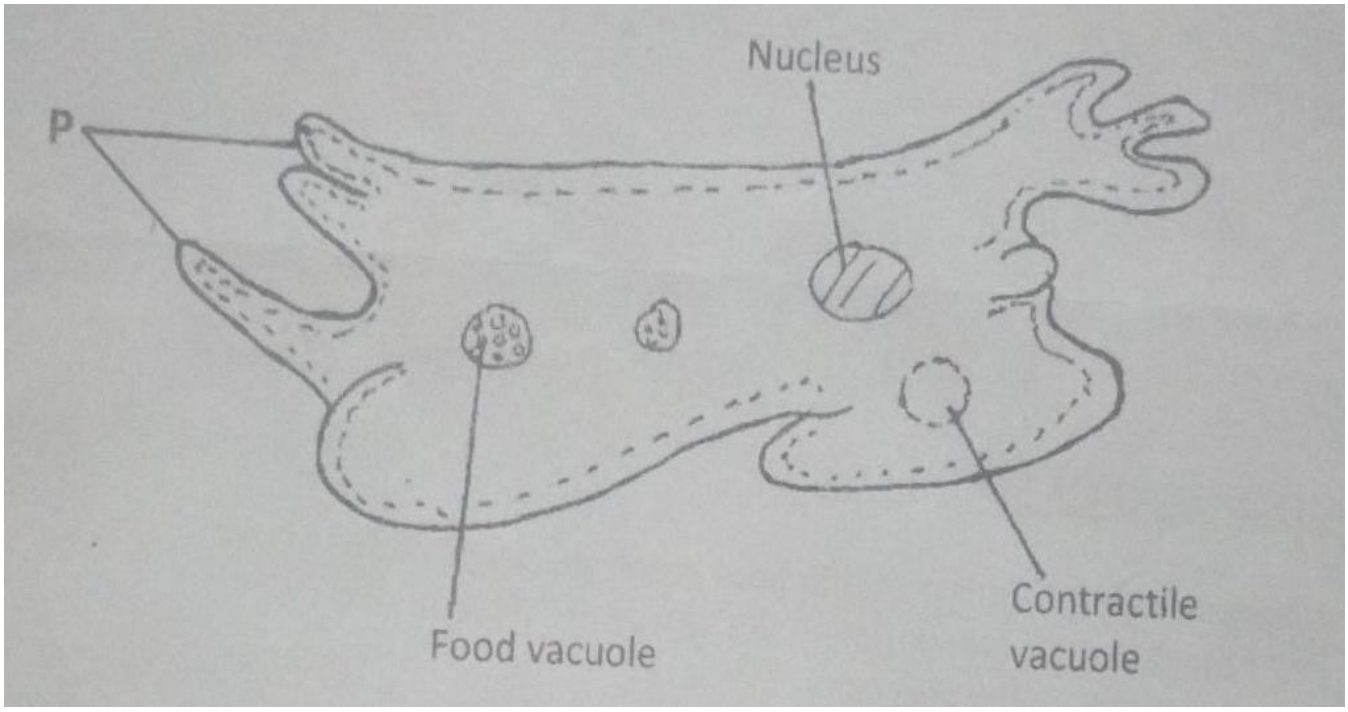
3. The diagram **below** represents a certain organism.



(a) Identify the kingdom to which the organism belongs. (1 mark).

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(b) Identify the part labeled **P.**

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(c) What is the function of contractile vacuole? (1 mark).

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4. Other than carbon (IV)oxide, name other products of anaerobic respiration. (2 marks).

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5. (a) Name the fluid that is produced by sebaceous glands. (1 mark).

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(b) State **one** functions of sweat in the human body. (1 mark).

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6. (a) State **two** characteristics that are used to divide the phylum Arthropoda into classes. (2 marks).

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(b) Name the class with the largest number of individuals in the phylum arthropoda. (1 mark).

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7. Why are people with blood group O referred to as universal donors? (1 mark).

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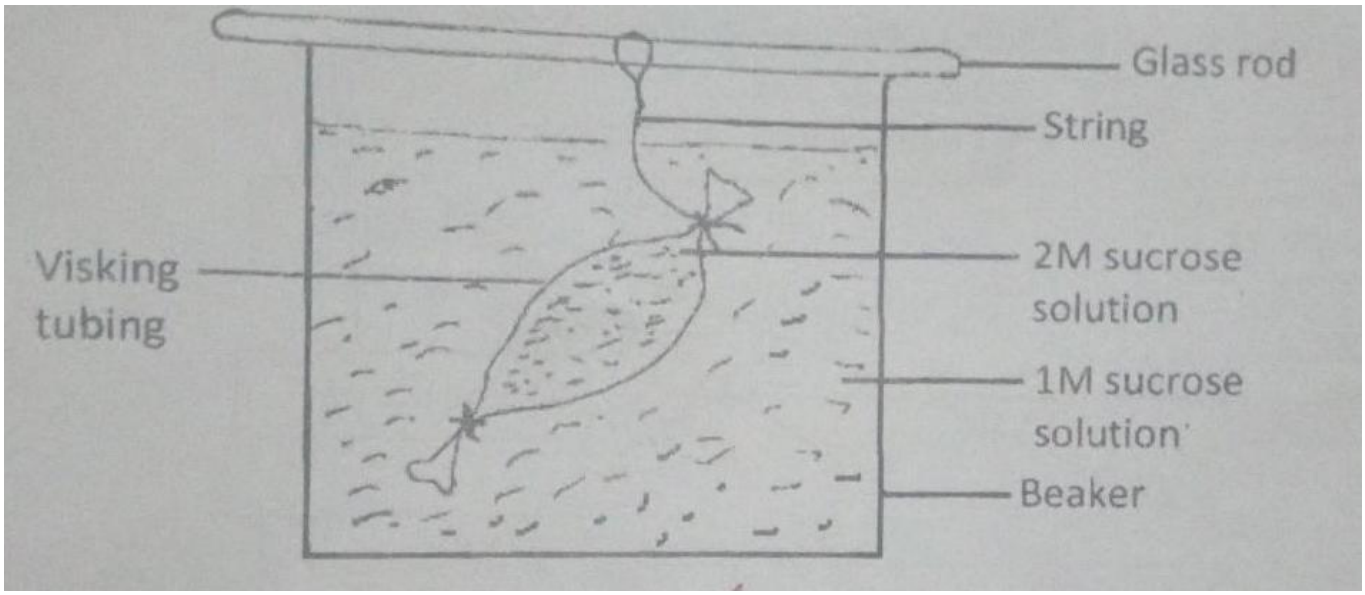
8. An experiment was set up as shown in the diagram **below.**



(a) Which process is being investigated by the above experiment? (1 mark).

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(b) State the expected results. (1 mark).

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(c) Explain your answer in (b) above.(2 marks).

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9. (a) What causes the following diseases? (1 mark).

(i) Diabetes mellitus.

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(ii) Diabetes insipidus.

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(b) How would you test that someone is a victim of Diabetes mellitus in the laboratory. (3 marks).

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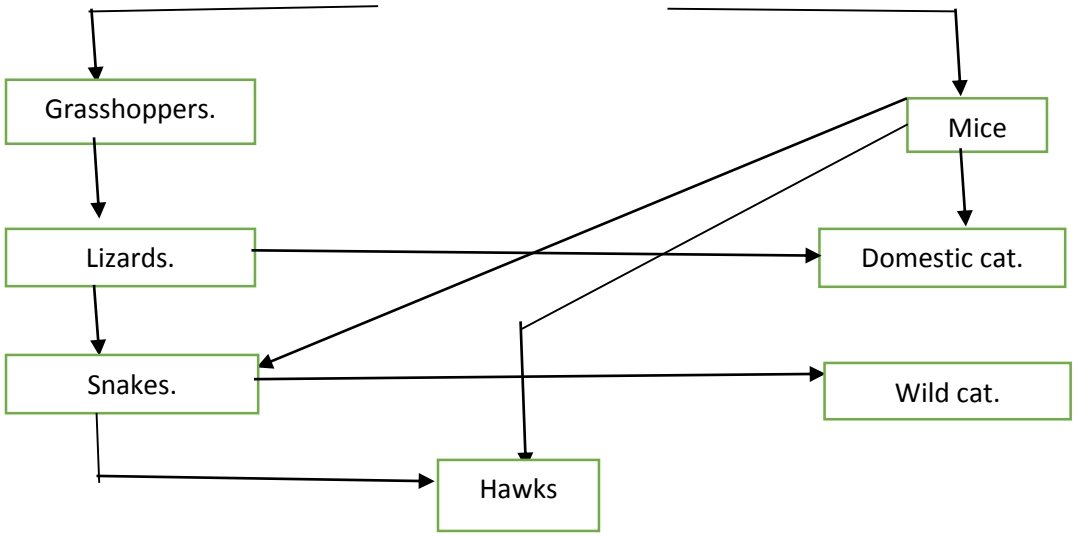
10. The following chart shows a feeding relationship in ecosystem.

Green Plants



(a) Construct **two** food chains ending with a tertiary consumer in each case. (2 marks).

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(b) Which organism has the largest variety of predators in food web? (1 mark).

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(c) Suggest **three** ways in which the ecosystem would be affected if there was prolonged drought.

(3 marks).

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11. Some of the fish found in Lake Victoria include;

- Tilapia zilli
- Lates niloticus
- Oreochromis niloticus

-Tilapia leucastica

-Tilapia variabilis

(a) From the names above, suggest which of the fish are most closely related. (3 marks).

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(b) Give a reason for your answer (1 mark).

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(c) Define the term species (1 mark).

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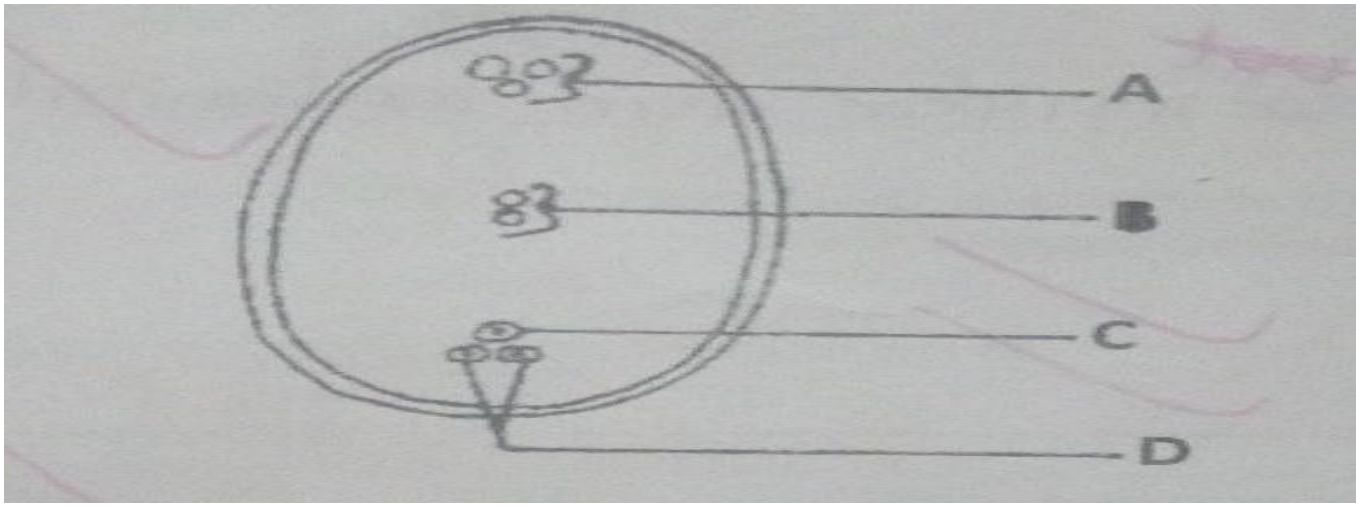
12. The diagram **below** shows a mature embryo sac of a flowering plant.



(a) Name the parts labelled **A** and **D**. (2 marks).

A……
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D……
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(b) What is the function of the structure labeled **B**. (1 mark).

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13. (a) Name the tissues that transport water in plants. (1 mark).

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(b) How is the tissue you named in (a) above strengthened? (1 mark).

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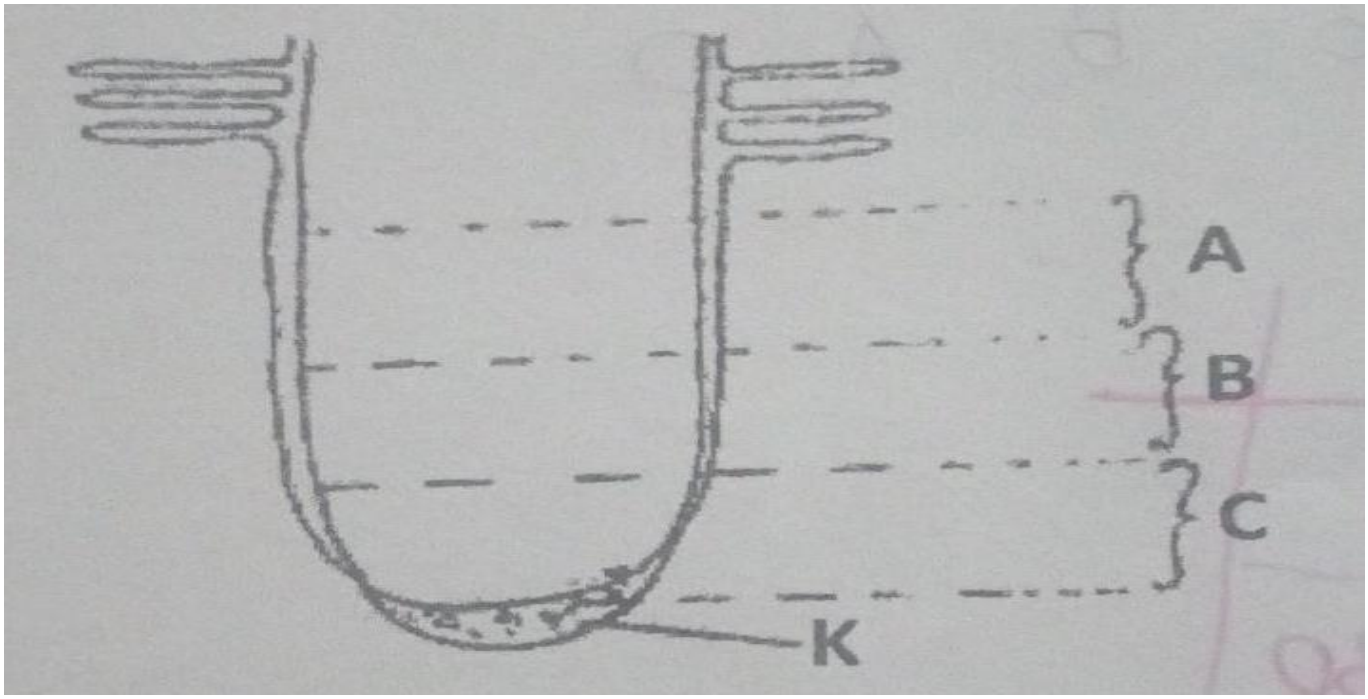
14. The diagram below shows regions of growth in a root. Study it and answer the questions that follow.



(a) Name the zones labelled. (3 marks).

A……
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B……
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C……
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(b) State the function of part **K.** (1 mark).

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15. The enzymes pepsin and trypsin are secreted in their inactive forms.

(a) Give the names of these inactive forms. (2 marks).

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(b) Why are they secreted in an inactive form? (1 mark).

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16.(a) A student drew 6cm long diagram of a plant flower. If the actual length of the flower was 12cm calculate the magnification of the drawing made by the student. (Show your working). (3 marks).

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(b) Name a vitamin and an ion important in blood clotting (2 marks).

Vitamin……
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Ion……
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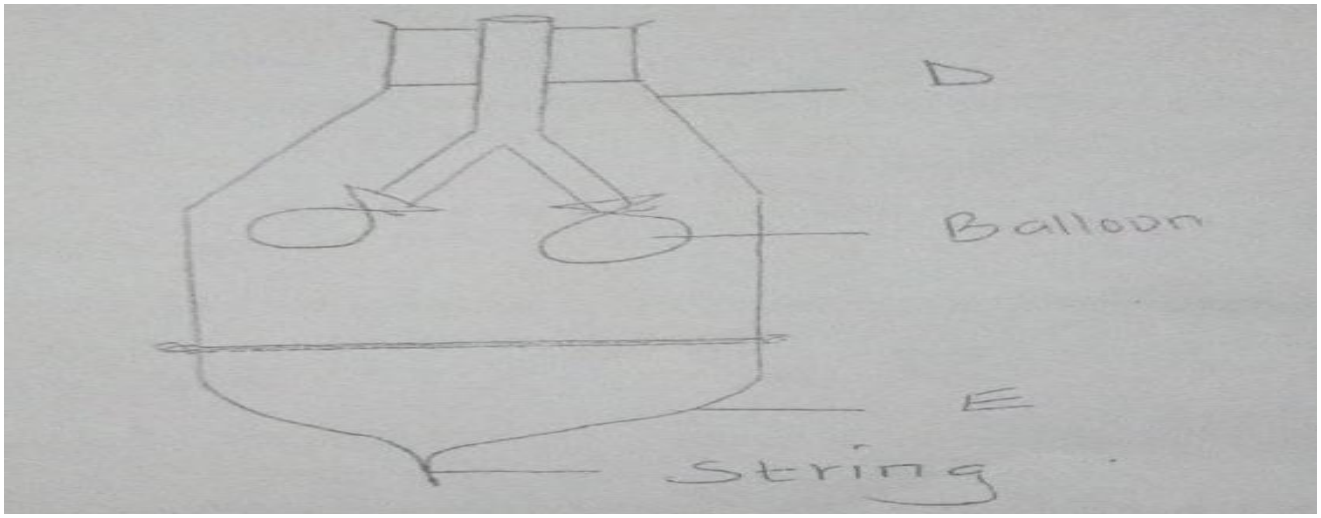
17. The diagram below represents a model used to demonstrate breathing in mammals. Study it and answer the questions that follow.



(a) Name the mammalian structure represented by the parts labelled **D** and **E**. (2 marks).

D……
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E……
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(b) State the observation made when the string is pulled downwards. (1 mark).

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(c) Explain the observation in (b) above. (2 marks).

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18. Study the diagram of the mammalian tooth **below** and answer the questions that follow.

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

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

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(c) State **one** adaptation of the tooth to its function. (1 mark).

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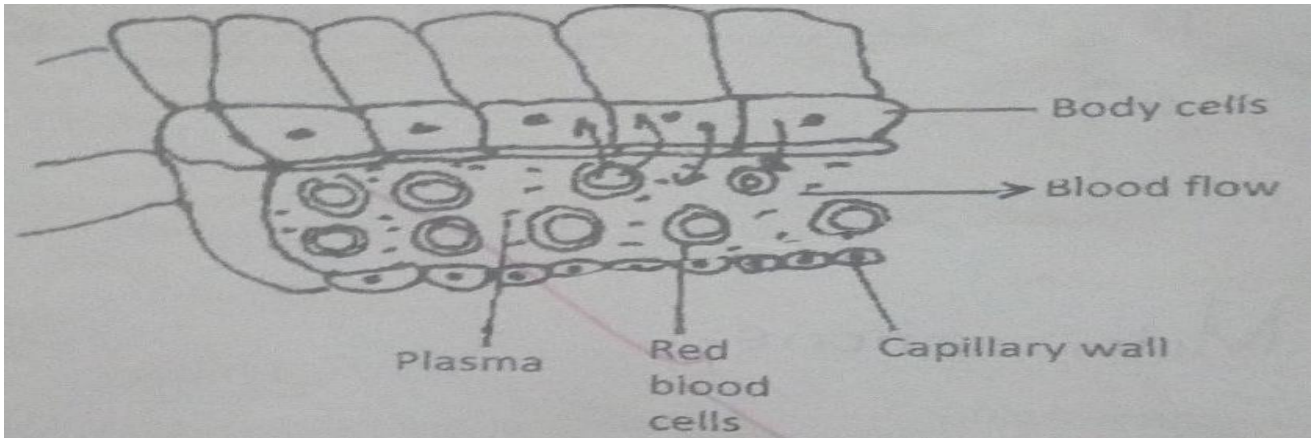
19. The diagram **below** shows gaseous exchange in tissues.



(a) Name the gas that diffuses.

(i) To the body cells…… (1 mark).

(ii) From body cells…… (1 mark).

(b) Which compound dissociates to release the gas named in (a)(i) above. (1 mark).

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(c) What is tissue fluid? (1 mark).

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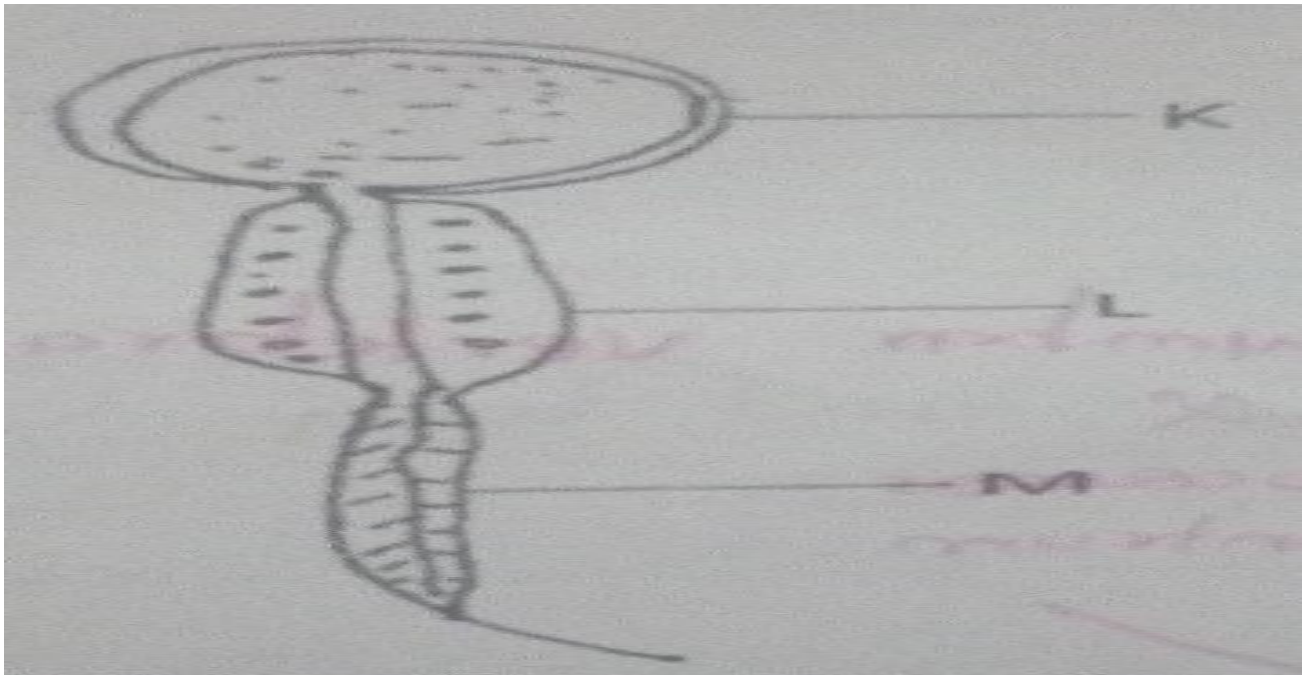
20. The diagram **below** represent one of the specialized cells found in the human body.



a) Identify the cell? (1 mark).

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b) What is the function of the cell? (2 marks).

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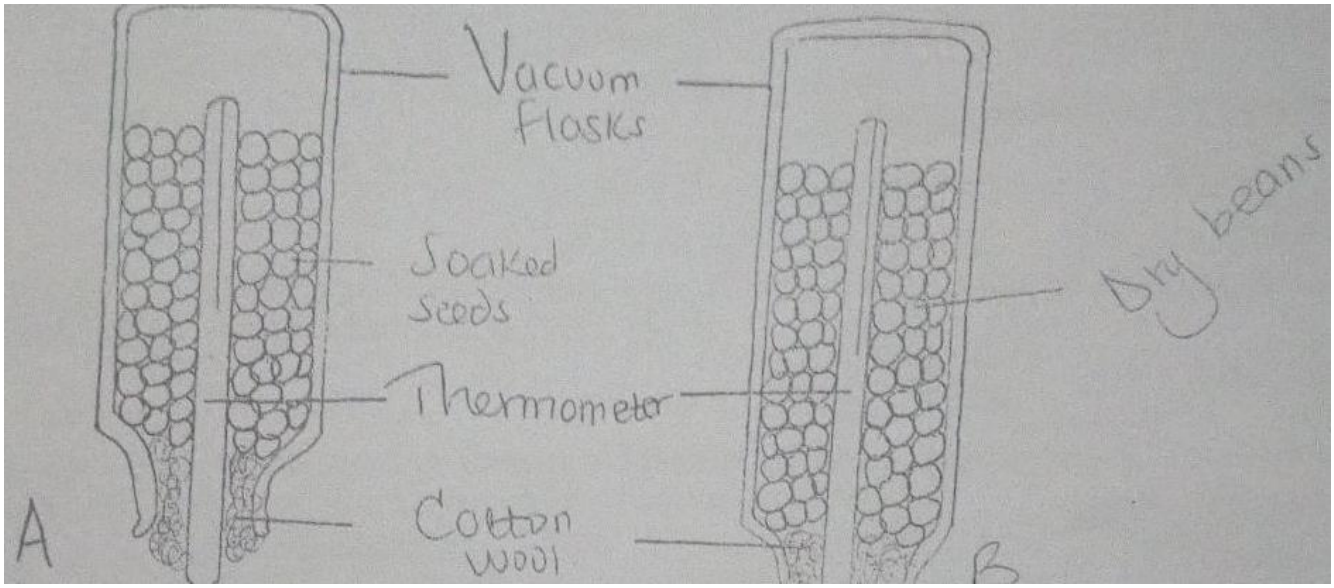
c) Name the parts labelled:

K……
…… (1 mark).

L……
…… (1 mark).

M……
……. (1 mark).

21. A student set up an experiment using soaked dry seeds as shown below.



(a) State the objective of this experiment (1mark)

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(b) State the observations made in each of the flasks after 24 hours (2marks)

Flask
A……
……..

Flask
B……
……..

(c) account for the observation made in flask **A** (2marks)

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(d) suggest why vacuum flasks were used in this experiment (1mark)

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22. The table provided below shows the concentration of sodium and iodine in sea water and cell sap of a plant

	Sodium ion concentration	Iodide ion concentration
Sea water	250	35
Cell sap	100	550

(a) i) Name the process through which the plant cells take up sodium ions (1 mark).

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

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(b) If the plant was sprayed with a chemical that inhibits respiration.

(i) Which of the two ions uptake will be affected? (1 mark).

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

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FORM 3 TERM 3 OPENER EXAM

NAME: ……..

ADMISSION NO…….. **CLASS**……..……..

DATE…….

231/2

BIOLOGY

PAPER 2

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

- *Write **your name** and **Admission number** in the spaces provided.*
- *Answer **all** the questions in Section **A** in the spaces provided.*
- *In section **B** answer questions **6** (compulsory) and either question **7** or **8** in the spaces provided.*

For Examiner's Use Only:

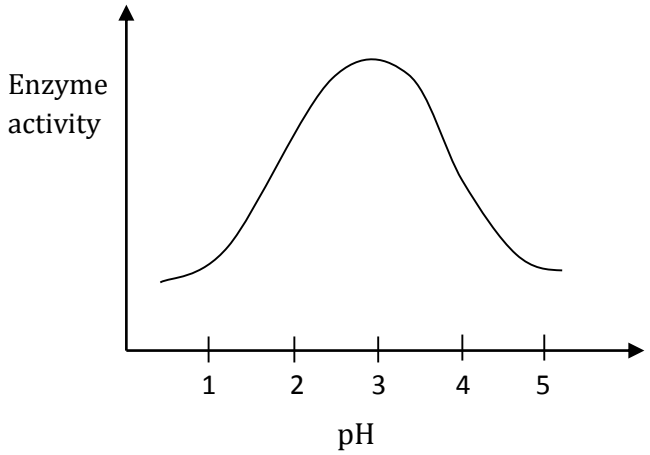
SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	

	8	20	
	TOTAL	**80**	

SECTION A (40 Marks)

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

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



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

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

Name.....

Location in the alimentary canal.....

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

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b) Explain how temperature affects the rate of enzyme controlled reactions (3 marks)

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c) What is enzyme specificity? (1 mark)

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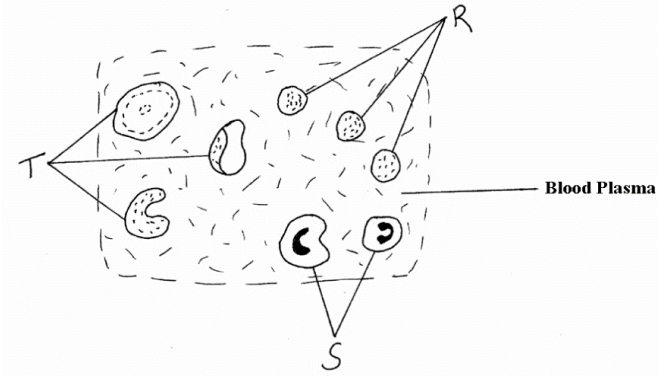
2. The figures below represent mammalian tissue as seen under a light microscope.



(a) Identify the tissue …… (1 mark)

(b) Name the cells represented by (3 marks)

R……

S……

T……

(c) State the function of structure S and R. (2 marks)

S ……

R……..

(d) Explain **one** adaptations of structure T to its function. (1 mark)

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(e) Name one defect of the circulatory system. (1 mark)

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2. (a)Define the term photosynthesis (1 mark)

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(b) State two raw materials of photosynthesis (2 marks)

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(c)State two factors that affect the rate of photosynthesis (2 marks)

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d)Describe briefly the light stage of photosynthesis (3 marks)

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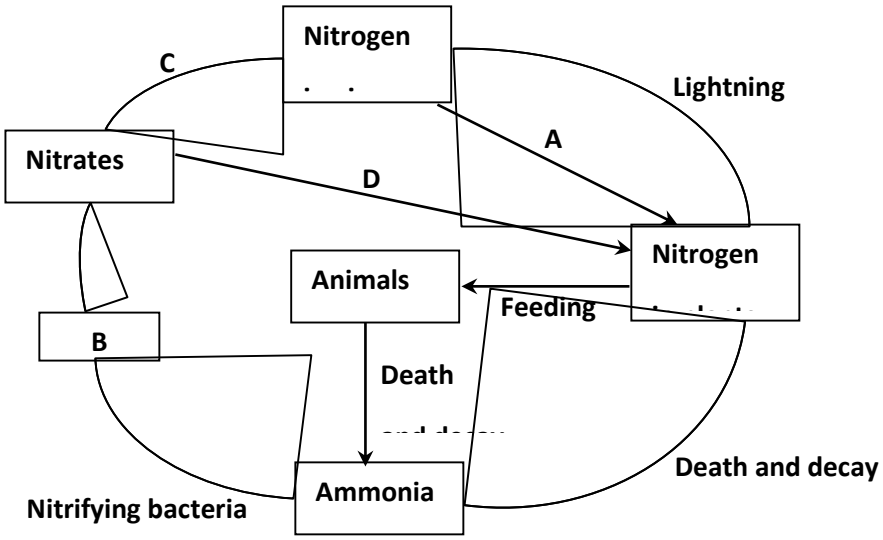
4. The diagram below represents the nitrogen cycle.



(a) Identify the processes labelled **A** and **D**. (2 marks)

A ……

D ……

(b) Name the compound represented by **B**. …… (1 mark)

(c) Name the group of organisms labelled **C**. …… (1 mark)

(d) (i) Name the group of plants that promote process **A**

…… (1 mark)

(ii) In which part of the plant does process **A** take place? (1 mark)

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(e) How would excess pesticides in the soil interfere with process **A** (2 marks)

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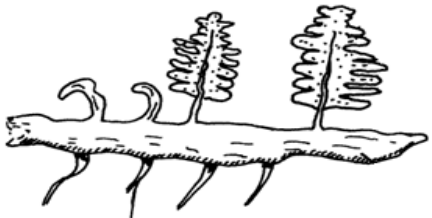
5. Below is a diagram of a plant a student collected while carrying out an ecological study.



Adventitious root

(a) With reasons identify the division into which the students classified the plant.

Division ……

(1mark)

Reasons ……..

(2marks)

……

(b) (i) **Name** the structure that produces spores in this plant.

(1mark)

……

(ii) State **two** differences between the plant division above and that of the division *spermatophyta.*

(2 marks)

	Spermatophyta

c) Give **two** distinguishing features of class *Amphibia*

(2 marks)

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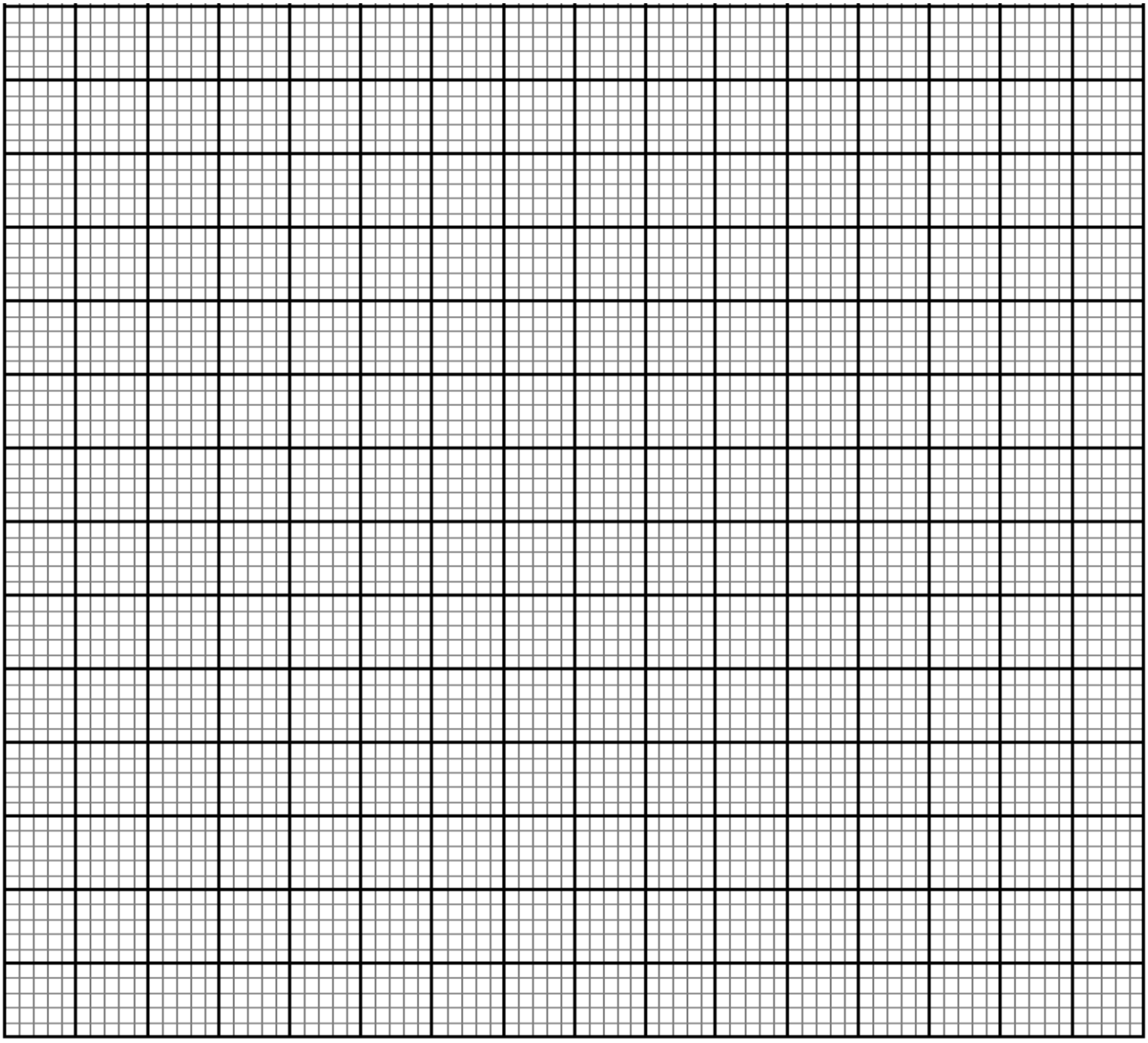
SECTION B (40 marks)

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

6. The table **below** shows how the quantities of sweat and urine vary with external temperature.

External temperature □C	0	5	10	15	20	25	30	35
Urine cm^3/hr	100	90	80	70	60	50	40	30
Sweat cm^3/hr	5	6	10	20	30	60	120	200

(a) On the same graph, plot the quantities of urine and sweat produced against the external temperature. (7 marks)



(b) At what temperature are the amounts of sweat and urine produced equal? (1 mark)

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(c) What happens to the amount of sweat produced as the temperature rises? Explain the observation. (3 marks)

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(d) Explain the observation made on the amount of urine produced as the temperature increases. (3 marks)

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(e) How does the skin regulate temperature? (6 marks)

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7.a) What is meant by the term digestion (2 marks)

b)Describe how mammalian small intestine is adapted to its function (18mks)

8. a) Explain how xerophytes are adapted to their habitats (10 marks)

b) Describe how insect pollinated flowers are adapted to pollination. (10 marks)

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FORM 3 TERM 3 OPENER EXAM

NAME…….ADMISSION NUMBER……

443/1

AGRICULTURE

TIME:2 HOURS

AGRICULTURE

PAPER ONE

TIME 2HOURS

INSTRUCTIONS TO CANDIDATES.

- *Write your name and admission number in the spaces provided.*
- *Answer all questions in the spaces provided.*
- *This question paper consists of three sections A, B and C.*
- *Answer all the questions in sections A and B any two questions from section C.*
- *Answers should be written in the spaces provided.*
- *The paper consists of 11 printed pages*

For Examiner's use only

n	**on**	**num score**	**date's score**

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

SECTION A

1. State four advantages of shifting cultivation. 2mks

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2. Give four characteristics of Horizon A in a soil profile 2mks

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3. Differentiate between soils formed in ‘situ’ and soil formed in deposition. 1mk

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4. State three factors which determine the depth of ploughing during land preparation. 1½mks

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5. What is secondary cultivation. ½mk

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6. State four types of water pumps. 2mks

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7. Give four reasons as to why green manure is not commonly used by farmers 2mks

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8. State four importance of keeping proper and up to date farm records.
2mks

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9. State four characteristics of Nitrogenous fertilizers. 2mks

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10. Give four advantages of using seeds as planting materials. 2mks

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11. State four advantages of budding in crop production. 2mks

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12. Outline four advantages of organic mulching in farming. 2mks

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13. Why is it not advisable to use organic manure when growing carrots .Give two reasons.1mk

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14. a)Give four ways of acquiring land. 2mks

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b)Outline four general objectives of the million acreschems.4mks

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15. State four types of soil erosion. 2mks

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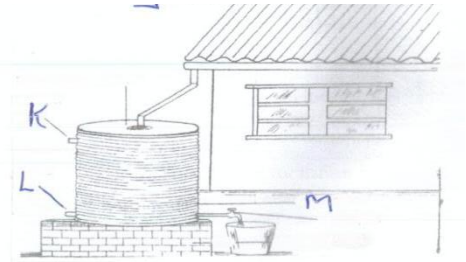
SECTION B(20mks)Attempt all questions in this section

16. The diagram below shows one way of harvesting water.Study the diagram and answer the questions which follows.



a. Identify the method of harvesting water above ½mk

……..

b. Name the parts labeled . 2mks

J……..
K……..
L…….
M……..

c. Give one reason as to why the part M should be covered. ½mk

……

d. State one maintenance practice labeled that must be carried out on the part labeled M.1mk

……

17. Study the diagram below carefully and answer the questions that follow.

a. Identify the structure shown above 1/2 mk

……

b. Name the parts labeled .2mks

O…….

P……..

Q……

R……..

c. Give a reason as to why each of the following are used when constructing the structure above.1mk

i. Q…….

ii. R……

d. What is the use of the stick in the structure 1/2mk

……..

18. A farmer applied 200kg of CAN (20%N) per hectare in his five hectares of maize crop. Calculate the amount of Nitrogen the farmer applied on his crop .Show your working.4mks

19. Study the diagram below and answer the questions below.

a. Name the parts labeled 2mks

S……..

T……..

U…….

V……

b. Apart from the above crop .Name any other two crops which are propagated using part v.1mk…….. ……

c. Why are part S and U more preferred than V when propagating the above crop. 1mk

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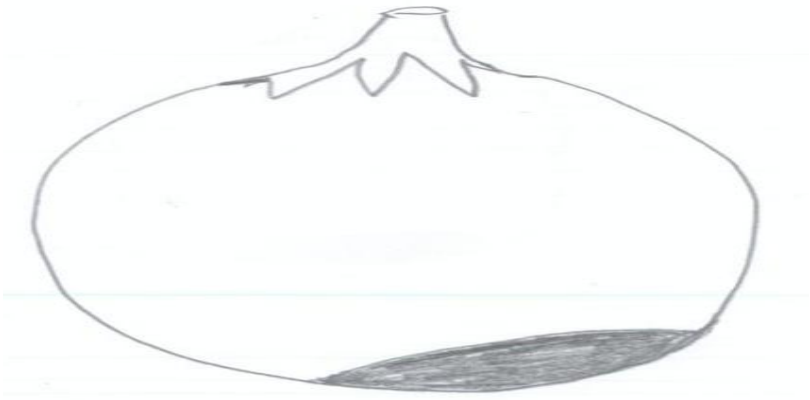
20. The diagram below shows a certain disease of tomatoes .Study the diagram and answer the questions that follow.



a. Identify the disease 1mk

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b. Give two causes of the disease above. 2mks

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c. Give one way of controlling the above disease. 1x1=1mk

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SECTION C(40MKS)(ANSWER ONLY TWO QUESTIONS FROM THIS SECTION)

21. (a)Discuss the importance of Agriculture to the economy of Kenya. 5mks

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(b) Explain the influence of soil depth on crop production . 5mks

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(c)Give five reasons for carrying out minimum tillage. 5mks

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(d) Explain the importance of treating water in the farm.5mks

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22. (a) Describe various ways through which soil can lose its fertility. 5mks

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(b) What is the meaning of the following terms as used in Agricultural production . 4mks

i. Agricultural economic…….....
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ii. Scarcity ……..
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iii. Preference and choice…….
……..

iv. Opportunity cost……
……..

(c) State two conditions under which the opportunity cost is equal to zero. 1mk

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(d) Outline procedure of soil sampling . 5mks

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(e) Describe the chemical method of breaking seed dormancy . 5mks

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23. (a) Describe the importance of crop rotation . 5mks

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(b) Explain the importance of having a title deed . 5mks

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(c) discuss the role of trees in soil and water conservation. 5mks

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(d) Outline the harmful effect of weeds. 5mks

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FORM 3 TERM 3 OPENER EXAM

NAME: ……ADM No: ……

Date: …… **Signature:……**

AGRICULTURE

PAPER 2

TIME: 2 HOURS

Instructions to Students

(a) Write your name and admission no. in the space provided.

(b) Sign and write the date of exam in the space provided.

(c) Answer all the questions in this paper.

(d) All your answers must be written in the space provided.

For Examiners use only

SECTION	MAXIMUM SCORES	STUDENT SCORES
A	30	
B	**20**	
C	**40**	

SECTION A 30 MKS

1. Distinguish the functional difference between a cross cut saw and a rip saw. = 1mks

2. Give **two** reasons why ewes disown lambs. (1 mks)

.

3. Give four factors to consider when selecting goats for breeding. (2mks)

4. Name the structure that is used to ensure that honeycomb and brood combs are found in different chambers in the hive. (1mk)

5.Differentiate between in breeding and out breeding. (1mk)

6. Give four symptoms of roundworm (Ascaris) attack. 2 mks

7. (a) State four importance of keeping rabbits.4 x ½ = 2 marks

(b) Givetwo dual purpose breeds of cattle. (2 x ½ = 1 mark)

8.Give two reasons for flushing in sheep. Any first 2 x ½ = 1 mark

9. Four qualities of a good vaccine. 4 x ½ = 2 marks

10. **State the role of the following practices when rearing piglets**

(i) Iron injection **(1x 1= 1mk**

(ii) tooth clipping-1 mks

11.**State 4functions of fats and oils in animals body(4x ½ =2mk)**

12.**State four reasons for breeding in animals**

-
-
-
-
- **2mrks**

13. **State the functions of each of the following**

(a) Shovel-

(1 mks)

(b) Strip cup

(1mk)

b. **Why is it necessary to have guard rails in a farrowing pen**
(1mk)

14. **Distinguish between the following practices as used in fish farming**

i. cropping and harvesting (1mk)

15.State 4 factors that determine water intake in animals

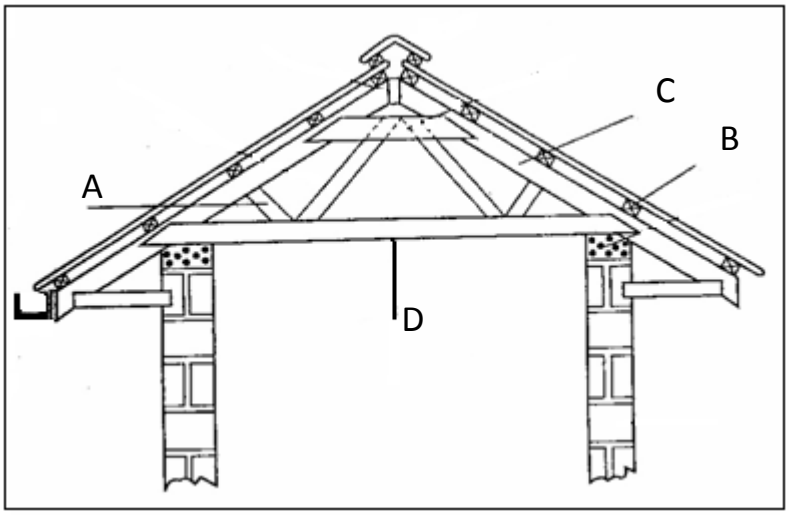
(4 x½=2 mks)

16.(a)Give 4 Signs of furrowing in pig (2msk)

17.Give four methods of preserving fish. 4 x ½ = 2 marks

SECTION B 20 MKS

18. (a) The diagram **below** represents roof of a building.



(i) Identify the parts labeled **A**, **B**, **C**. (3mks)

A -

B -

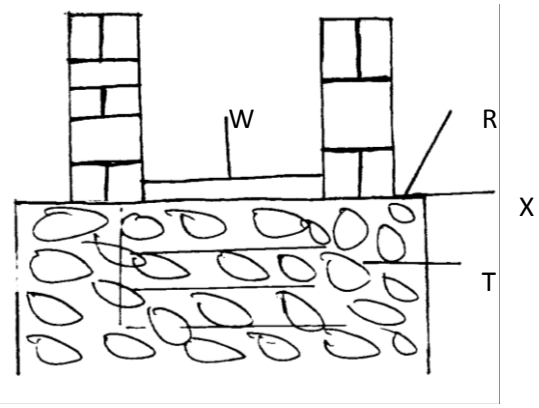
C -

(ii)Give **six** factors considered when sitting farm buildings and structures. (3smks)

b.State **six** factors which would be considered in choosing materials for construction of farm building and structures. (3mks)

.

(19) Study the illustrations below of a hard flow foundation in a farm structure



(i) Name the parts labeled **R** and **T** (2mks)

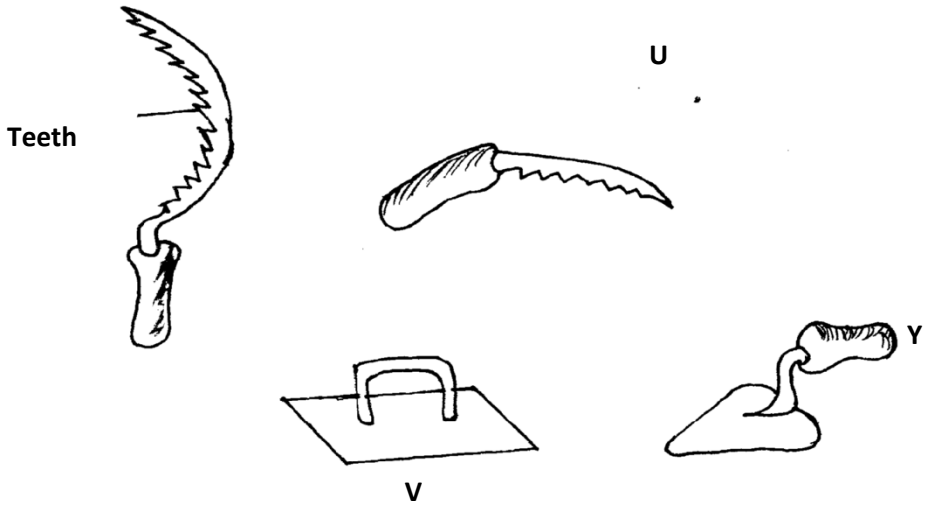
R-)

T-

(ii) State **three** advantages of concrete floor

(3x1=3mks

20. The diagram below represents some farm tools



(**a) State the use of each tool on the farm.** **4mks**

S-

U-

V-

Y-

(b) Explain two maintenance practices that should be carried out on the teeth of tools in the diagram

(2x1=2mks)

SECTION BC 40 MKS

ATTEMPT ANY TWO QUESTIONS

(21) Write Short notes on Friesian breed of cattle on;

(i) **Origin.**

. 1 x 1 =

(ii) **Characteristics.**

8 x 1 = 8mks

(b) Describe management practices carried out on a fish pond (11mks)

22(a) Describe the rearing of lambs from lambing up to weaning time. (10x1=10mks

(b) State any five factors that should be considered when choosing tools and equipments to use in the farm 5mks

(c) State **five** differences between Ruminants and non Ruminants. (5mks

(23)Outline importance of fences in the farm(8x1=8mks)

(b) **Describe the life cycle of a three host tick**
(7mks)

(d) Describe the general effects of parasites on livestock

(5x1= 5marks)

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FORM 3 TERM 3 OPENER EXAM

NAME……ADM.NO…….CLASS……

565/1

BUSINESS STUDIES

PAPER 1

2 hours

1. Outline **four** differences between goods and services. 4 marks

Goods	Services
a)	

2. State **four** advantages of an open office layout to an organization. 4 marks

a. ……

b. ……

c. ……

d. ……

3. State **four** types of complaints that a consumer organization may receive from consumers. (4 mks)

a. ……

b. ……

c. ……

d. ……

4. The following terms relate to communication. Vertical, horizontal, formal, informal. Write the appropriate term of communication associated with each of the following statement. 4 marks

Statement	Term
a) A manager gives instructions to a junior in her department.	
b) Rumors going around that the most disciplined worker will be rewarded.	
c) A circular issued to give instructions in an organisation	
d) Prefects discussing discipline in their school.	

5. Outline **four** features of a Re-insurance company. 4marks

a. ……

b. ……

c. ……

d. ……

6. A firm wishes to introduce a new product into the market. Outline **four** factors that should be considered in choosing an appropriate medium for promotion. 4 marks

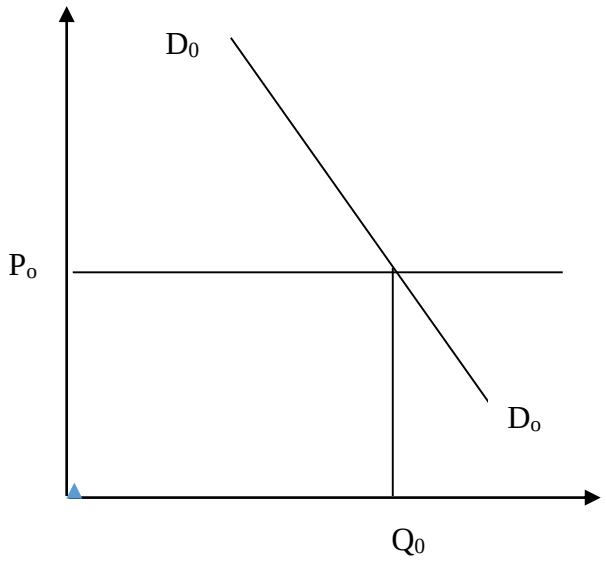
a. ……

b. ……

c. ……

d. ……

7. The diagram below shows the current demand for petrol.



a) What is the effect of a fall in the price of cars on the demand for petrol? 2marks

……
……

……
……...

b) Draw a new demand curve on the diagram above to show the effect of a fall in price of cars. 2 mks

8. State **four** circumstances under which air transport may be used to ferry goods. 4 marks

a. ……
……

b. ……
……

c. ……
……

d. ……
……

9. Outline **four** benefits to a business that uses its own warehouse. 4 marks

a. ……

b. ……

c. ……

d. ……

10. State **four** circumstances under which one may decide to start a personal business. 4 marks

a. ……

b. ……

c. ……

d. ……

11. Outline four ways of reducing the level of unemployment in Kenya. 4 marks

a. ……

b. ……

c. ……

d. ……

12. Outline **four** reasons why a firm may remain small. 4 marks

a. ……

b. ……

c. ……

d. ……

13. Highlight **four** ways in which households contribute to national income of a country. 4 marks

a. ……

b. ……

c. ……

d. ……

14. Outline **four** circumstances under which a co-operative society may be dissolved. 4 marks

a. ……

b. ……

c. ……

d. ……

15. Highlight **four** external factors that may negatively influence the operations of a business.

4mks

a. ……

b. ……

c. ……

d. ……

16. The following information relates to Karibu traders for the year ended 31st December 2008.

Details	**Shs**
Fixed assets	1,840,000
Current assets	400,000
6 years bank loan	600,000
Current liabilities	150,000

Determine owner's capital using the information given above 4 marks

17. State **four** basic features of a market. 4 marks

a. ……

b. ……

c. ……

d. ……

18. The following information relates to businesses Kweyu, Omariba, Juma and Mbithi.

Determine the figures represented by x, y, z and w. 4 marks

Business	Assets	Liabilities	Capital
Kweyu	500,000	X	300,000
Omariba	Y	800,000	1,200,000
Juma	300,000	120,000	Z
Mbithi	700,000	w	500,000

19. Outline **four** positive effects that production activities may have on community health. 4mks

a. ……

b. ……

c. ……

d. ……

20. Give the document issued by the trader under the following circumstances. 4 marks

mstance	**Document**
e customer a summary of transactions in a given period.	
replying a specific letter of inquiry.	

nand payment for goods supplied.	
a customer buys and pays at the same time.	

21. Give **four** reasons why the government requires that businesses acquire licenses before starting trading.

    4 marks

a. ……

b. ……

c. ……

d. ……

22. For each of the following transactions, indicate with a tick in the space provided, whether it will **increase, decrease** or have **no effect** on the balance sheet totals. 4 marks

	on the balance sheet		
Transaction	**ase**	**ase**	**ect**
ing more cash into the business			
g creditors in cash			
g a piece of furniture in cash			
g creditors using money from private sources			

23. List **four** ways in which an investor may benefit from the stock exchange. 4 marks

a. ……

b. ……

c. ……

d. ……

24. Outline **four** differences between hire purchase and credit sales. 4 marks

Hire purchase	**Credit sales**

25. The following transactions were extracted from the books of Sarah Trader for the month of March 2006.

March 10: purchased goods on credit worth ksh 200,000 from Salim Traders.

March 25: sold goods on credit worth ksh. 420,000 to Shah Traders.

Record the above transactions in the relevant ledger accounts. 4 marks

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FORM 3 TERM 3 OPENER EXAM

NAME. ……..ADM. NO……...CLASS:……..

565/1

BUSINESS STUDIES

PAPER 2

Time: 2½ hrs

1. a) Describe any five disadvantages of operating sole proprietorship business. (10mks)
   b) Explain any five factors that may contribute to low national income in a country. (10mks)
2. a) Explain five factors that may slow entrepreneurship in a country. (10mks)
   b) Explain any five circumstances which may make it necessary for an insurance company to re-insure. (10mks)
3. a) Explain any five channels of distributing imported goods. (10mks)

b) The following transactions relates to Laito traders for the month of January 2014.
1st Jan – Started business with shs. 100,000 cash and shs. 200,000 in bank.
2nd Jan- Withdrew shs. 20,000 for office use.
14th Jan – Withdrew shs. 10,000 from bank for private use
Required: Prepare the relevant ledger accounts and balance off the accounts. (10mks)

4. a) Explain any five disadvantages to a country where the government involves itself in business. (10mks)

b) Explain any five benefits to a business that uses computers to file documents. (10mks)

5. a) The following balances were obtained from the books of Kenya Moja traders on 1st June 2018.

l	600,000
van	200,000
ure	200,000
	60,000

rs	80,000
	270,000
ors	180,000
nding electricity bill	30,000

The following transactions took place during the year ended 31st December, 2018.

i) Paid creditors shs. 80,000 by cheque

ii) Sold motor van and was paid shs. 150,000 in cash and the balance was still outstanding at the end of the year.

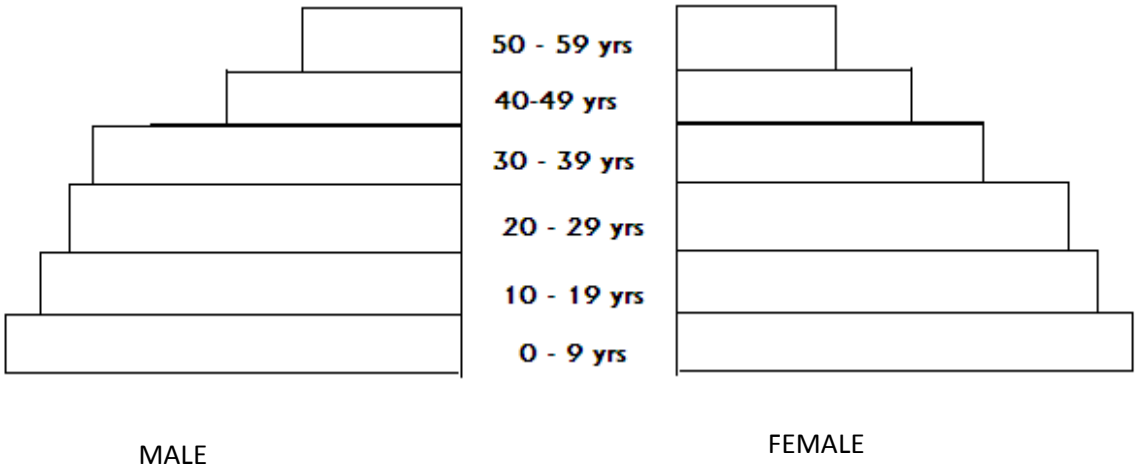
iii) Paid an electricity bill of shs. 20,000 in cash and shs. 10,000 was still outstanding at the end of the year.

Required: Prepare Kenya moja traders balance sheet as at 31st December, 2018. (10mks)

b) Outline any five factors that have facilitated growth of commerce in Kenya. (10mks)

6. a) Outline any five conditions under which a business may find it appropriate to accept deferred terms of payment. (10mks)

b) Below is a population structure according to the ages. Explain any five challenges to a country with such a population structure.



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FORM 3 TERM 3 OPENER EXAM

NAME …….. Candidate's Sign……

CHEMISTRY

PAPER – 233/1

TIME: 2 HRS

INSTRUCTIONS TO CANDIDATES

a) Write your name and admission number in the spaces provided above.
b) Sign and write the date of examination in the spaces provided.
c) ANSWER ALL QUESTIONS IN THE SPACES PROVIDED.
d) All working must be clearly shown where necessary.
e) Mathematical tables or silent electronic calculators may be used.

FOR EXAMINER'S USE ONLY

QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
1 - 28	80	

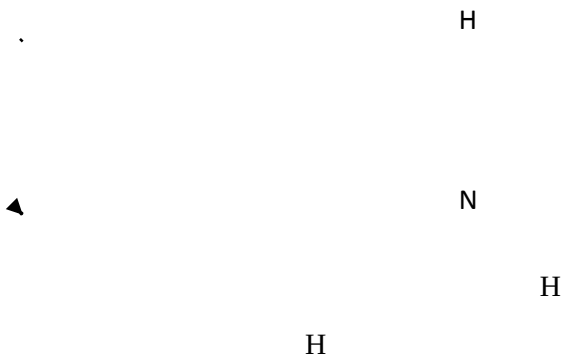
1. Define the following terms (3mks)
   (a) Isotopes

   (b)Mass number

   (c) Isomers

2. (a) Give a reason why ammonia gas is highly soluble in water. (1mk)

   (b) The structure of ammonium ion is shown below



   Name the type of bond represented in the diagram by N H…… (1mk)

3. Both diamond and graphite have giant atomic structures. Explain why diamond is hard while graphite is soft. (2mks)

4. (a) Using dot (.) and crosses(x) to represent electrons, show bonding in the compounds formed when

the following elements reacts. (C-=6, Na=11, F=9)

(a) Sodium and fluorine
(1mk)

(b) Carbon and fluorine (1mk)

5. The table below gives information about the major components of crude oil. Study it and answer the questions that follow.

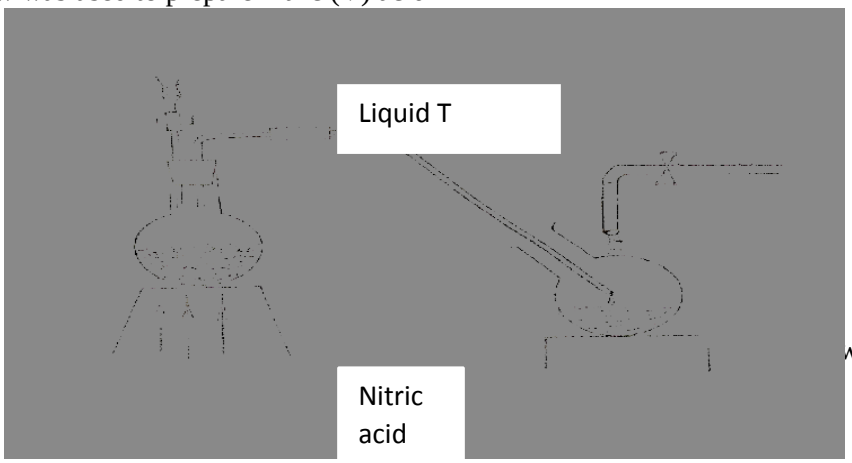
ɔnents	g point ^oC
	40
ne	0
oil	0
ating oil	0
ɔn	400

(i) Which of the compounds of crude oil has molecules with the highest number of carbon atoms? Explain (1mk)

(ii) Name the process you would use to separate a mixture of diesel and petrol (1mk)

(iii) What condition could cause a poisonous gas to be formed when Kerosene is burnt (1mk)

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



Sodium Nitrate water

(a) Give the name of liquid T(1mk)

T…… ..(1mk)

(b) Write the equation for the reaction which took place in the reaction flask (1mk)

(c) Explain why nitric acid is stored in a dark bottle

(1mk)

7. The table below gives information on four elements represented by K L M & N. Study it and answer the questions that follow. The letters do not represent the actual symbols of the elements.

nts	n arrangement	radius	adius
K			
L			
M	1		
N	2		

(a) Which two elements have similar chemical properties? Explain (2mks)

8. A certain carbonate XCO_3, reacts with dilute hydrochloric acid according to the equation

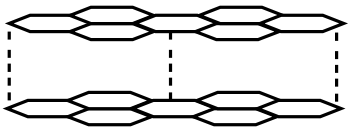
$XCO_{3(s)} + 2HCl_{(aq)} \longrightarrow XCl_{2(aq)} + CO_{2(g)} + H_2O_{(l)}$

If 4g of the carbonate reacts completely with $40cm^3$ of 2M hydrochloric acid, calculate the relative atomic mass of X. (C=12.0 ,O=16.0, Cl=35.5). (3 Marks)

9. Give two uses of ethene gas
(2Marks)

10. a) What is meant by allotropy? (1 Mark)

b) The diagram below shows the structure of one of the allotropes of carbon.



(i) Identify the allotrope (1 Mark)

(ii) State **one** property of the above allotrope and explain how it is related to its structure. (2Mark)

(iii) $60cm^3$ of oxygen gas diffused through a porous hole in 50seconds. How long will it take $80cm^3$ of sulphur(iv)oxide to diffuse through the same hole under the same conditions (S=32.0 , O=16). (3 Marks)

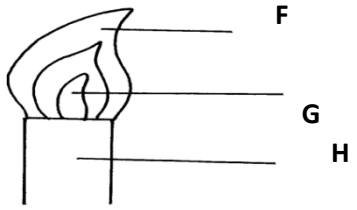
11. The ionisation energies for three elements X,Y, and Z are shown in the table below:

ıt			
ion energy ole)			

(a) What is meant by ionisation energy? (1 Mark)

(b) Which element is the strongest reducing agent? Give a reason. (2 Marks)

12. In the figure below:



(a) Name the parts labeled **F, G**, and **H**. (1 ½mks)

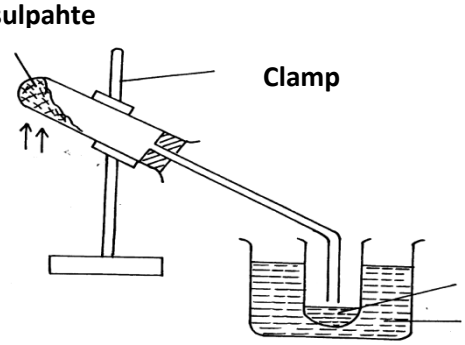
F……....

G……....

H……....

(c) Describe an experiment that would confirm that region labeled G is unsuitable for heating (1½mks)

13. The diagram below is a set up used to investigate the effect of heat on hydrated copper(II) sulphate. Study the diagram and answer the questions that follow.



(a) Why is boiling tube slanted as shown?

(1mk)

(b) What is observed in the boiling tube.

(1mk)

(c) Identify liquid **G.**

(1mk)

14. The electronic arrangement of two stable ions Q^{2+} and P^{2-} are 2.8.8 and 2.8.8 respectively.

(a) Write the electron arrangement of atoms **Q** and **P**. (1mks)

Q……...…

P……...…

(b) What is the most likely structure of an oxide element **P**? (1mk)

15. The set up below was used by a student. Filter paper soaked in purple litmus solution was placed in the middle of the combustion tube.

(i) What is the main aim of the experiment.

(1mk)

(ii) State the **first** observation likely to have been made in the tube. Explain the observation. (2mks)

16. The empirical formula of a compound is CH_2 and it has a molecular mass of 42.

a) What is the molecular formula of this compound? (1mk)

b) Write the general formula of the homologous series to which the compound belongs. (1mk)

c) Draw the structural formula of the third member of this series and give its IUPAC name. (1mk)

17. 3.22g of hydrated sodium sulphate, Na_2SO_4 X H_2O were heated to a constant mass of 1.42 g. determine the value of X in the formula (Na=23.0, S = 32.0, O = 16, H = 1) (3mks)

18. Complete the following reactions. (2mks)

(i) C_2H_2 1 mole of $HCl_{(s)}$

(ii) CH_3CH_3 U.V light

19. A white solid K was heated. It produced a brown gas **A** and another gas **B** which relights a glowing splint. The residue left was yellow even after cooling.

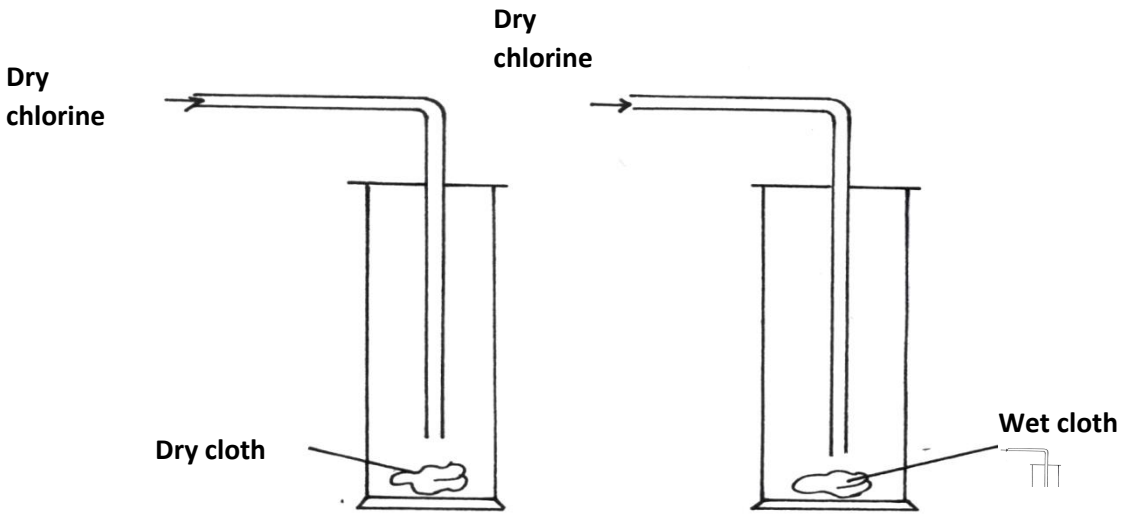
a) Identify gases **A** and **B** (1mks)

b) Write a balanced chemical equation for the decomposition of solid **K**. (1mk)

20. An atom **X** contains 90% of isotope and 10% of isotope. Calculate the relative atomic mass of **X**.
(2mks)

21. Explain why aluminium articles are not easily corroded. (1mk)

22. Dry chlorine gas was passed through two pieces of coloured cotton cloth as shown



2

a) State what is observed in each experiment. (2mks)

Experiment 1

Experiment 2

b) Explain your observation using an equation for experiment 2 (1mk)

23. When burning magnesium ribbon is put into a gas jar of carbon (IV) oxide gas, it continues to burn leaving behind white solid powder and black solid specks as residue write chemical equation for the reaction that produces.

i) The white solid powder.
(1mk)

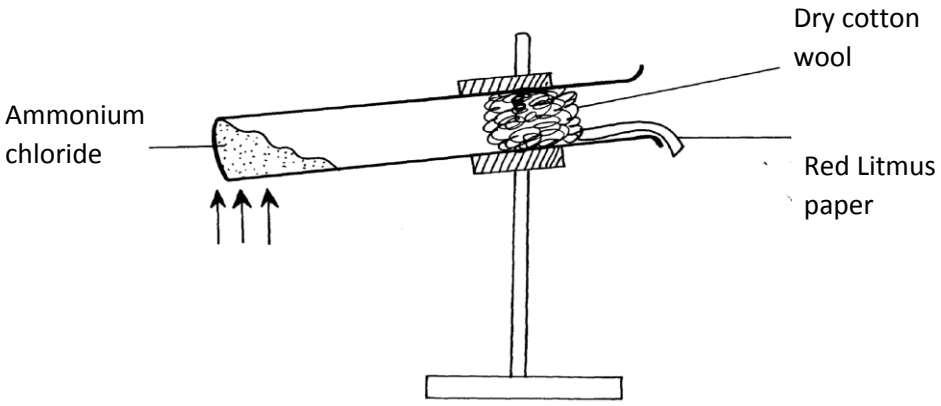
ii) Black solid specks.
(1mk)

24. Describe how you would obtain pure solid samples of each of the following components of a solid mixture containing ; Lead (II) chloride, Sodium carbonate and calcium sulphate. (3mks)

25.a) State Boyle's gas Law. (1mk)

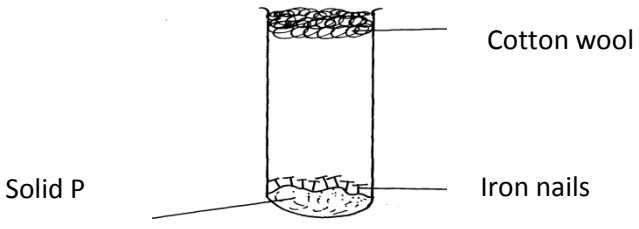
b) A fixed mass of a gas has a volume of 250cm^3 at 27^oC and 750mmHg pressure. Calculate the gas volume that the gas would occupy at 41^oC and 750mmHg pressure. (0^o = 273k) (2mks)

26. The diagram below shows a sample of ammonium chloride being heated in a dry boiling tube containing a plug of cotton and dump red litmus paper



State and explain what would be observed on the red litmus paper. (2mks)

27. a) The following diagram represents a set-up used to investigate conditions necessary fro rusting of iron.



After several days it was found that the nails did not rust. Identify solid P. (1mk)

28. a) Write a chemical equation for the combustion of laboratory gas , when the Bunsen burner produces a non-luminous flame. (1mk)

b) Describe **two** observable characteristics of aluminous flame. (1mk)

29 **.** Name the following compounds **(1 mark)**

(i) $CH_3CH=CHCH_3$

(ii) $CH_3\text{-}CH_2\text{-}CH\text{-}CH_2CH_2CH_3$ **(1 mark)**

CH_2CH_3

30 . The diagram below represents aset up that can be used to react Lithium with water to produce gas X which is then reacted with copper II oxide.

(i) Write an equation for the reaction between gas X and CuO **(1mark)**

(ii) Give the observation made in the apparatus **(1 mark)**

(iii) Why is it necessary to burn excess gas at the end of the jet **(1 mark)**

31. Solution R,S and T have P^H values shown in the table below:

Solution	pH value
R	1.0
S	6.5
T	8.0

a) What do you deduce about the nature of solution R? **(1 mark)**

b) Which solution would react most vigorously with sodium hydrogen carbonate. **(1 mark)**

c) Which solution is likely to be ammonia solution?

d) (1 mark)

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FORM 3 TERM 3 OPENER EXAM

NAME……CLASS……ADM……

233/2

CHEMISTRY PAPER 2

TIME 2HRS

INSTRUCTIONS TO CANDIDATES

a) Write your name and admission number in the spaces provided above.
b) Sign and write the date of examination in the spaces provided.
c) ANSWER ALL QUESTIONS IN THE SPACES PROVIDED.
d) All working must be clearly shown where necessary.
e) Mathematical tables or silent electronic calculators may be used.

QUESTIONS	MAX SCORE	STUDENT SCORE
1	14	
2	14	
3	14	
4	12	
5	13	
6	13	
TOTAL	80	

Q1(a) The grid below represents part of the periodic table. Letters are not actual symbols of the elements. Use it to answer the questions that follow.

A									B
			C		H				
J	E		D				G		
	F								

(i) Name the family to which E and F belong. (1mk)

(ii) Name the least reactive element and give a reason. (1mk)

(iii) What type of structure is formed when E and G react. (1mk)

(iv) Draw the structure of the molecular compound formed between D and G clearly showing the types of bonds that exist. (2mks)

(v) Write the formula of the compound formed between E and H. (1mk)

(vi) Name the product formed when sodium is burnt in insufficient oxygen and write the equation for reaction between the product and water. (2mks)

(vii) Indicate using a tick on the grid the position of element M which forms an ion with formula M^{2-} and electronic arrangement 2.8.8.8 (1mk)

aa(b) Study the table below and use it to answer the questions that follow. (Letters are not actual symbols)

Element	Atomic number
L	13
M	16
N	19
P	9
Q	17

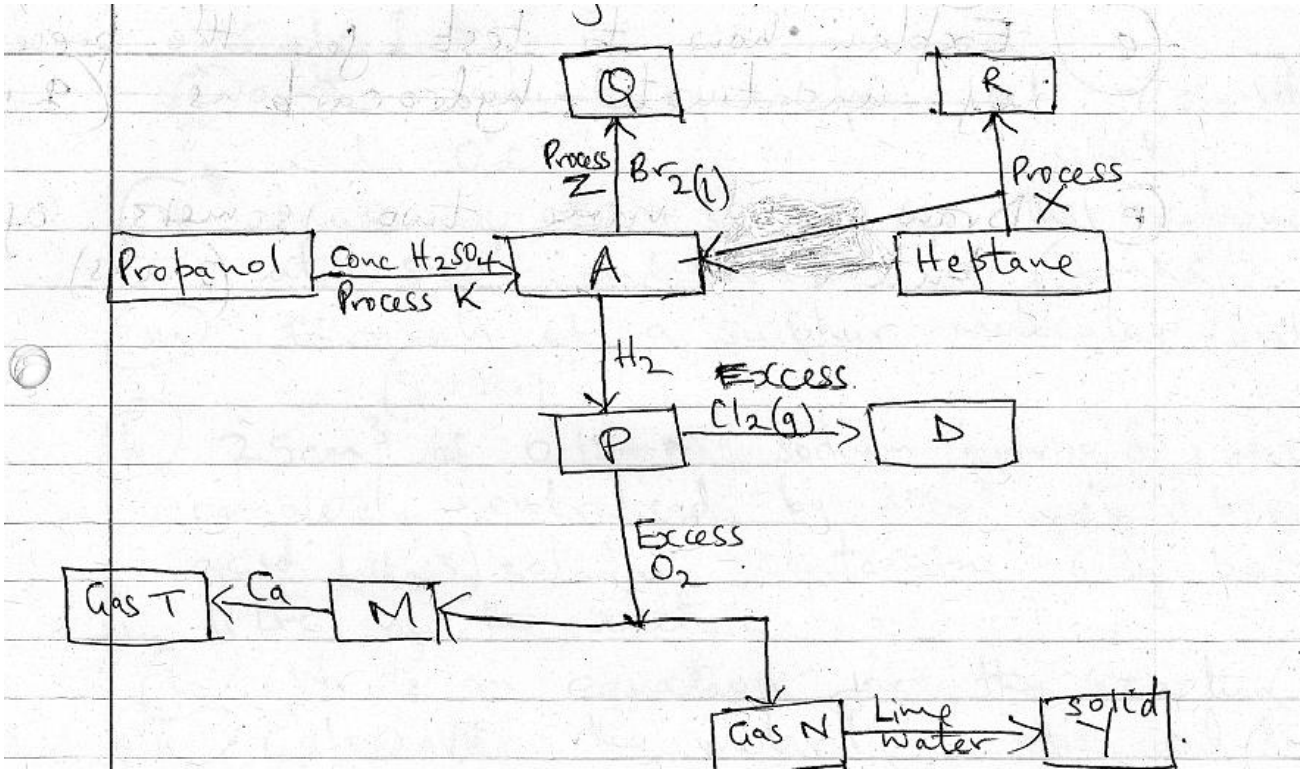
(i) Compare giving reasons the reactivity of P and Q. (2mks)

(ii) How does the radius of L and M compare (1mk)

(iii) Select the most reactive metal from the group. (1mk)

(iv) Write an equation for reaction between N and water. (1mk)

Q2 Use the flow chart below to answer the questions that follow.



(a) Name the substances

(i) P

(ii) R

(iii) T

(iv) Y

(4mks)

(b) Write equations using actual formula of substances for formation of

(i) Q

(ii) M and N

(III) Gas T

(3mks)

(c) Name the processes

(i) X

(ii) K

(iii) Z

(3mks)

(d) Draw the structures of

(i) A

(ii) D

(2mks)

(e) Draw and name two isomers of butene. (2mks)

Q3(a) 2.56g of sulphur formed vapour at 546^{o}C and 760mmHg. The vapour occupied a volume of 672cm^{3}.

Calculate

(i) the volume of vapour at 760mmHg and O^{O}C. (2mks)

(ii) Mass of 22.4 litres of the vapour at STP conditions. (2mks)

(iii) Formula of a sulphur molecule. (S =32) (2mks)

(b) $25cm^3$ of 0.154M sodium hydroxide, was completely neutralized by $30cm^3$ of mineral dibasic acid (H_2X) solution containing 6.3g per litre of the solution.

(i) Write an equation for the reaction. (1mk)

……

……

……

……

(ii) Calculate the molarity of the acid. (3mks)

……

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……

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……

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……

.

(iii) Determine the RFM of the acid. (2mks)

……

……

……

……

(iv) Identify x (2mks)

(C=12,O=16,S=32,Cl=35.5,H=1,N=14)

……

……

……

……

Q4 Hydrogen gas is passed through solid Y in a U-tube before being burnt in air.

(i) Explain how to test for presence of hydrogen gas. (1mk)

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……

(ii) What is the purpose of substance Y and suggest its identity. (2mks)

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(b) The products of burning hydrogen were passed through a test tube dipped in ice-cold water. Unburnt gas was then passed over heated CuO.

(i) Write an equation for burning of hydrogen in air. (1mk)

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……

(ii) Name a substance that can be used to test for the substance collected in the test-tube dipped in ice-cold water. (1mk)

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(iii) What is the observation made on the copper(II) oxide after a short while. (1mk)

……

……

(iv) Write an equation for the reaction that takes place on the copper(II) oxide solid. (1mk)

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(v) Other than for manufacture of ammonia and hydrochloric acid, , state another use of hydrogen. (1mks)

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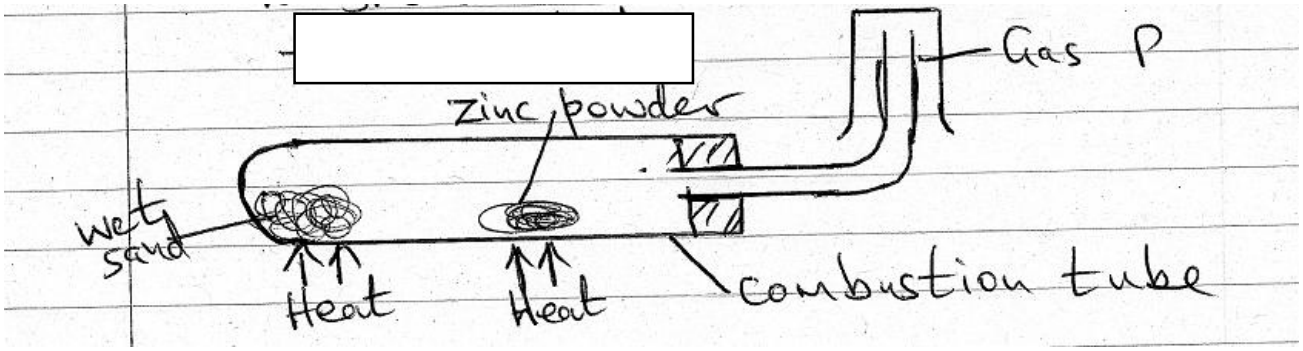
……

(c) The diagram below is a set-up used to show how water reacts with zinc metal.



(i) Why is wet sand used and not water. (1mk)

(ii) Write an equation for the reaction in the combustion tube. (1mk)

(iii) What observation is made in the combustion tube as heating went on. (1mk)

(iv) Explain why potassium cannot be used in place of zinc. (1mk)

Q5(a) Carbon(II) Oxide gas can be prepared by dehydrating methanoic acid using concentrated sulphuric(VI) acid.

(i) Give two physical properties of carbon(II) oxide gas. (2mks)

(ii) Explain how carbon(II) oxide gas causes poisoning if inhaled. (1mk)

(iii) Describe a simple chemical test that can be used to distinguish between carbon(II) oxide and carbon(IV) oxide. (2mks)

(b) Soot is a form of impure carbon

(i) Name another form of carbon that is amorphous. (1mk)

(ii) State the difference in conductivity between the two crystalline allotropes of carbon. (2mks)

(iii) Give one use for each of the two crystalline allotropes. (2mks)

(c)(i) Write an equation for decomposition of ammonium carbonate on heating. (1mk)

(ii) Explain the observations made when each of the carbonates below is reacted with dilute sulphure(VI) acid:

Lead carbonate

……

……

……

……

Copper(II) carbonate

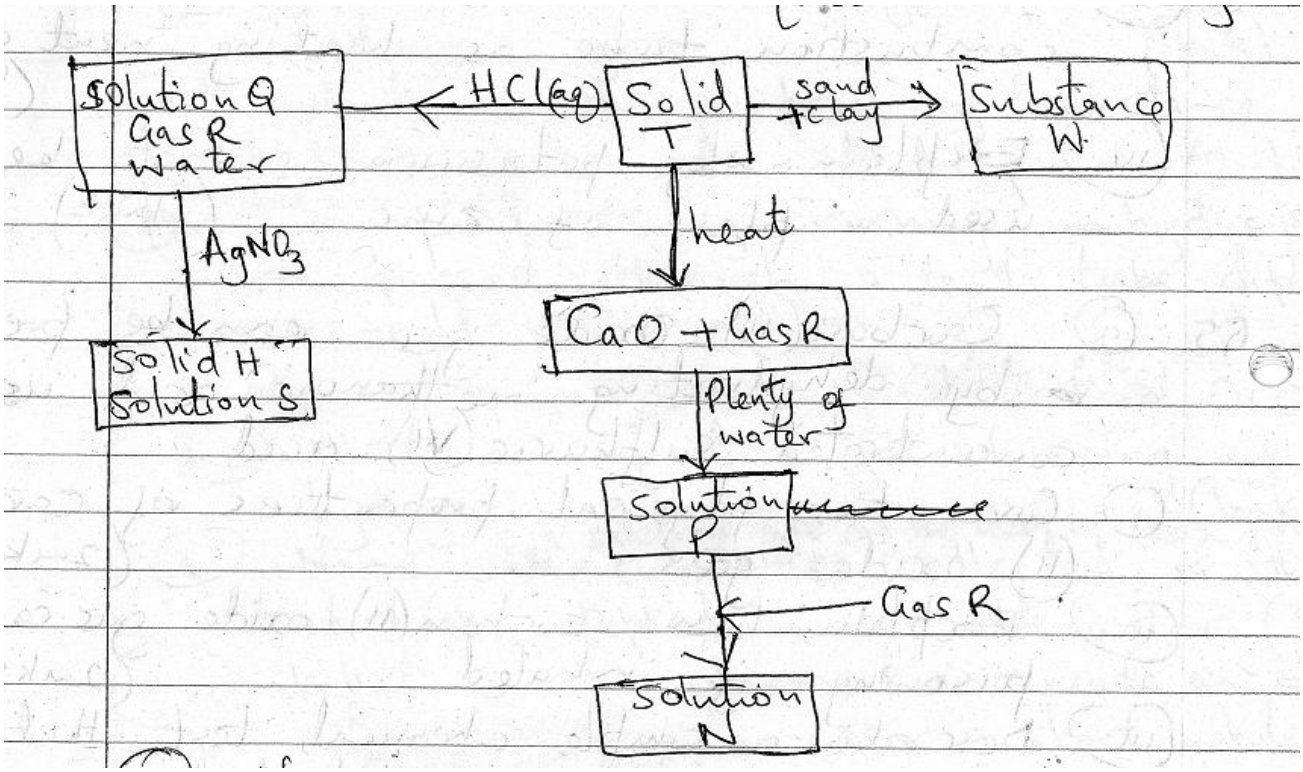
……

……

……

……

Q6 The flow chart below shows some reactions undergone by some salts. Use it to answer the questions that follows.



(a) Name

(i) Gas R

(ii) Solution N

(iii) Solid H

(3mks

(b) Write equations for the following reactions.

(i) Addition of $AgNO_3$ to solution Q

(ii) Heating solid T

(iii) Formation of solution P

(3mks)

(c) Give one use for the substances below

(i) Gas R

(ii) Substance W

(iii) Silver bromide

(3mks)

(d)(i) Name the method used to prepare salts H and S (1mk)

(ii) Name another salt that can be prepared using the method in d(i) above. (1mk)

(e) Ammonium ferrous sulphate hexahydrate an example of a double salt. Write its formula. (1mk)

(f) Give one example of a salt contained in fertilizers. (1mk)

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FORM 3 TERM 3 OPENER EXAM

NAME……ADM …….

C.R.E PP1

TIME: 2½ HOURS

ANSWER ONLY FIVE QUESTIONS

1. a) Explain the benefits of learning CRE in secondary schools in Kenya (8mks)
   b) Identify the similarities between the Biblical and Traditional African stories of creation (6mks)
   c) State six ways in which Human Beings act as co-creators with God (6mks)

2. a) Identify seven reasons why God called Abraham (7mks)
   b) Give the similarities between Jewish and the African practice of circumcision (8mks)
   c) Give reasons why children disobey the fifth commandment; obey your parents (5mks)

3. a) Outline the characteristics of the local Canaanite religion (8mks)
   b) Give reasons why Elijah held the Mt. Carmel contest (6mks)
   c) Give seven ways in which Christians enhance the true worship of God today (6mks)

4. a) Describe the call of prophet Amos (6mks)
   b) Explain Amos' teaching on the day of the Lord (8mks)
   c) How do Christians prepare themselves for the second coming of Jesus Christ? (6mks)

5. a) Give reasons why Jeremiah was reluctant to accept God's call (Jeremiah 1) (8mks)
   b) Outline the things which God instructed Jeremiah not to do after his call (6mks)
   c) What lessons can Christians learn from the call of Jeremiah? (6mks)

6. a) Outline the role of God in African Traditional societies (7mks)
   b) Explain how people in Traditional African community prevented calamities (7mks)
   c) List the factors to be considered when naming a baby in Traditional African society (6mks)

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FORM 3 TERM 3 OPENER EXAM

NAME: ……ADM No:……

Date: …… **Signature:……**

CRE PAPER 2

TIME: 2 ½ hours

1. a) Outline Isaiah's prophecy concerning the Messiah according to Isaiah 61:1-2 (6mks)

b) State **six** similarities between the Magnificat and the Benedictus. (6mks)

c) In what ways do Christians express their gratitude to God? (8mks)

2. a) Describe the incident when Jesus healed the paralytic in Luke 5:17-25 (8mks)

b) List down six methods that Jesus used to spread the gospel (6mks)

c) How is the church in Kenya helping the sick (6mks)

3a) Outline **six** teachings of Jesus on the sermon on the plain on how human beings should relate to one another. (6 marks)

(b) Describe the incident in which Jesus forgave the sinful woman (7 marks)

(c) List **seven** reasons why Christians should ask for forgiveness from God. (7 marks)

4. a) Identify six groups of people who can be described as unfortunate in St. Luke's Gospel (6mks)

b) Relate the parable of the prodigal son in Luke 15:11-32

c) Give lessons Christians learn from the parables of the lost according to Luke's Gospel 6mks)

5. (a) Describe the incident in which Jesus had the last supper with His disciples (Luke 22:14-38). (7 marks)

(b) Give reasons why Jesus used bread and wine during the last supper. (6 marks)

(c) Outline the seven importance of celebrating the Holy Communion in the church today.

(7 marks)

6.(a) Give **six** ways in which the Holy Spirit manifested Himself on the day of Pentecost. (6mks)

b) Explain the new testament teaching on the people of God. (8mks)

c) How can Christians in Kenya prevent divisions in the Church today. (6mk

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FORM 3 TERM 3 OPENER EXAM

NAME…….. ADMNO……..

SCHOOL :…….……

101/1

ENGLISH (FUNCTIONAL SKILLS)

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:-

- Write your **name and Admission number** in the spaces provided above.
- Answer **all** questions in this question paper.
- Answers to **all** questions **must** be written in the spaces provided in this booklet.

For Examiner's Use Only:

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

1. FUNCTIONAL WRITING

- Assuming you are through with your secondary school Education and you are waiting to join university. Write a letter of application to the Area Chief for the position of an enumerator in the coming August National Census. Remember to include the following ; Age, Gender, K.C.S.E results, quote the reference number of the advert and any other relevant information

(20MARKS)

2. CLOZE TEST

Read the passage below and fill in the blank spaces with an appropriate word. (10 mks)

Most parents innocently believe _____(1) parental guidance with regard to television watching means making sure that your child does not sit too close to the set. They believe that sitting close to the TV _____(2) hurt their eyes. Unfortunately, the harmful effects of electronic media go much deeper _____(3) just the physiological damage of x-rays on the brain and eyes. This is especially so with children under the _____(4)

of seven, whose senses are only _____(5) beginning to develop. Electronic media has been discovered to hamper young children's _____(6) to create their own inner pictures - which is the foundation of all creativity. Imitation is the key _____(7) this early age. A child can only to be truly human from human beings themselves; not from electronic gadgets, _____(8) do faithfully represent humanness. Studies show consistently how watching TV slants creative play in young children. Nightmares _____(9) ensue from the violent scenes watched. Television anaesthetizes our higher brain function _____(10) disrupts the balance and interaction between left and right hemispheres.

3. Read the narrative below and answer the questions that follow.

THE STUPID MONKEYS

Once upon a time, a tribe of monkeys made their home in the pleasure garden of the king. During certain holiday when the drum was beaten to call the people together, the King's gardener, on hearing the drum, said to himself, "Even though it is holiday, the garden must be watered. Accordingly, I will ask the monkeys to water the garden for me so that I can be off to enjoy myself and have a holiday with the rest." So he called the monkeys and asked them to water the garden. When the monkeys had promised to water all the young trees faithfully, the gardener gave them water skins and the wooden pot with which to perform the task.

After the gardener had gone, the monkeys took up the water skins and the watering pot and began to water the young trees. But the leader of the monkeys stopped them. "Wait," he said," we must be careful not to waste water. Before you water them, you must first pull up each tree and look at the size of the roots. Then you must give plenty of water to those which have long, deep root. For when this water is finished, we shall have hard work to get any more.

"To be sure," said the other monkeys," that is what we must do." So, they pulled up all the trees just as their leader had told them to do and all the young trees died.

QUESTIONS

a) How would you capture the attention of the audience before telling the above story? (2 mks)

b) What two oral devices would you use in narrating this story effectively?
(4 mks)

c) What two things would indicate that your audience is following the story?
(4 mks)

d) Study the following situations and write down what you would say in each case.
(6 marks)

i) When walking along a corridor, you accidentally bump into somebody out of your own clumsiness.

ii) You are engaging in a conversation and you catch yourself interrupting the other person.

iii) You want to introduce a point during a discussion which contradicts what the other person has said.

e) Identify the silent letters in the following words.
(4 mks)

i) Boutique _____

ii) Plumber _____

iii) Bough _____

iv) Bouquet _____

f)You have been asked to prepare and present an oral report on the consequences of drug abuse

(1)How would you prepare for the presentation
(2marks)

(2)Explain how you would make use of verbal skills to make your presentation effective
(2marks

g) Read the following telephone conversation and then answer the questions that follow (6marks)

Secretary: (phone rings) Hello, Masomo secondary school

How may I help you?

Caller: I want to speak to my mother

Secretary: May I know who your mother is please?

Caller : (Impatient and irritated) I have said I want to speak to my mother.

Secretary: Excuse me. I'm sorry I don't know who your mother is.

Could you please tell me her name?

Caller: (shouting) You have been working in that institution for the last ten years and you don't know Mrs.Marita?

Secretary: (Politely) Oh ! Mrs. Marita? She has just stepped out shortly. May I take a message for her please?

Caller: (Bangs the receiver)

a. Identify any three instances that show the caller's lack of telephone etiquette. (3marks)

b. How can you tell that the secretary observes professional conversational skills in the above telephone conversation? (3 marks)

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FORM 3 TERM 3 OPENER EXAM

NAME: ……ADM No:……

Date: …… Class……Signature:……

101/2

ENGLISH

Paper 2

(COMPREHENSION, LITERARY APPRECIATION AND GRAMMAR.)

TIME: 2 ½ hours

Instructions to Students

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

(b) Sign and write the date of exam in the spaces provided.

(c) Answer all the questions in this paper.

(d) All your answers must be written in the space provided.

(e) Students must answer all questions in English

For Examiners use only

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

Check to ascertain that all pages are printed.

1. Read the passage below and then answer the questions that follow.

A lot of students think that learning is only in class. If students use two extra steps, most students will not forget what they learned in class. To achieve effective learning, students needed to follow two extra steps in the three strategic learning processes.

The key to success is by following these three strategies. Review is essential to student success. Unless content is reviewed by students shortly after it is learned, it will soon be forgotten. To avoid forgetting what you learned, it is recommended to review daily.

It is also recommended to reduce large volumes of notes into point form and to paraphrase what you have learned. Other helpful tips include creating concept maps and diagrams; creating fact, concept or vocabulary cards and using visualization to better connect to what you learned. These are all important tools to helping students better understand and memorize lesson content.

The key to achieving academic success cannot be directly **correlated** to one specific area. Rather it requires students to be overall rounded in many different aspects. This includes attending class regularly to keep pace with the class. Falling behind in studies or homework can be **detrimental** to academic success and can induce stress onto students. Participating in class activities and discussions are also vital parts of learning and applying concepts learned. On the other hand, taking good, concise notes will always help in the long run when reviewing for tests and exams. To sum it all up, strategic learning is the password for many academic achievements. Being exposed to knowledge is the first step in the journey, the fact that young scholars can learn and be a part of history is a phenomenal step in furthering their search to success. Reviewing notes, in the way the young individual wishes, by him/herself, or with a good friend, this will help him/her to understand what has been learned in a way s/he understands. Lastly practice is a great way to memorize what has been learned, when practice achieves its full potential, the individual won't only be entitled for a good mark, but also a way to view, understand and think of things. Those three attributes will help scholars become more successful, but it's important to one as it is to the other, and each and every person should find the learning strategies **effectual** for him/herself, and in extremely **exceptional** occasions even invent or innovate new strategies.

Questions

(a) What does the writer fault in the students thinking according to the first paragraph? (2 marks)

(b) Make notes on the **three** strategies that are key to success. (3marks)

(c) Unless content is reviewed by students shortly after it is learned, it will soon be forgotten **Begin*: if……)*** (1 mark)

(d) The key to achieving academic success cannot be directly **correlated** to one specific area. (1mark) ***Add a question tag.***

(e) Identify and explain the tone of the passage. (3 marks)

(f) How, according to the passage, does practice help memorise what has been learned? (3marks)

(g) Name three helpful tips to success. (3mks)

(h) Explain the meaning of the following words and phrases as used in the passage.
(4marks)

i) detrimental-

ii) correlated -

iii) effectual-

iv) exceptional-

2. Read the excerpt below and then answer the questions that follow.

There was, however, a dark spot in the whole affair. Women friends from Nasila who had visited her in the past had asked her very intrusive questions regarding her daughters. At that time she dismissed them as busybodies who enjoyed intrusion into other people's affairs. But it now dawned on her that those could be the mothers of her would be sons-in-law. The words they used to describe the status of her daughters came back to haunt her like demented spirits of a past that was better forgotten; *IntoiyeNemengalana* they had called them contemptuously.

On his part, Parsimei Ole Kaelo sat quietly beside his wife, his mind roaming the distant past in reminiscence. He knew that he had worked his fingers to the bone over the years, preparing for that day when he was no longer going to be employed. He was on his way to opening up his business. Not that he felt any particular excitement or pleasure; he was a man to whom disappointment came more easily and naturally than contentment. And that latter attribute fired his ambition to always strive for the stars. It was characteristic of him that, surrounded by what other men would have considered evidence of a well-earned successful life, he felt nothing but the need to strive even harder to achieve better results.

He had a contentious mind that seemed to question every aspect of his life. Although he was blessed with a shrewd brain and a pugnacious obstinacy that had stood him in good stead in his struggle to rise through the ranks, from a clerk to the coveted position of Commercial Manager of the Agribix Ltd, he still saw only, the greater successes of others. Even on the family front, he felt cheated by nature, for although it had been his prayer to get at least three boys, he had ended up with two girls. But even more obnoxious was the fact that despite all his achievements, it seemed to him that his younger brother, Simiren, who remained in Nasila, had been more appreciated and was considered the cultural head of the Kaelos by the community. That hurt him. But it did not worry him. Since childhood he had been aware,

without self-pity, that no one really liked him. That, too, did not bother him since in his mind, to pursue the easy and worthless admiration of others was a sign of weakness of character.

Nature had not, however, been totally inconsiderate. It rewarded him with a gem in the form of his wife-Jane Milanoi. When he first saw her at a church service at Nasila, he was stunned. She was then hardly eighteen. Her body had now ripened to a sensual womanhood completely at odds with her childlike face. She wore her jet black hair in braids that accentuated her wide eyes. Her breasts were full and heavy, her waist slender, her hips wide and seductively curved. And the dress she wore, a simple red frock, fitted well her tall shapely figure. From the moment he saw her, he had been obsessed. And against all odds and despite all efforts, he was still so obsessed twenty-two years later. His marriage to her had been a great success.

His two daughters occupied separate parts of his heart. Taiyo, his eldest, was his pride. When she was born twenty-years earlier, his heart was enthralled. She was the proof of his fatherhood. When his wife got pregnant the second time, he prayed for a healthy baby boy who would carry the Kaelo's name to the next generation. But that was not to be. Against his expectation, and to his utter disappointment, nature had given him another baby girl. From the moment she was born, mute and helpless, he detested her. The very sight of her enraged him. Her arrival and her continued stay in her father's home, remained unwelcome and detested. And right from her cradle, baby Resian instinctively detected the absence of love from her father. She grew up sullen, bewildered and resentful. As a result, her nature was darkened by melancholy. Self-doubt made her awkward and very difficult to deal with. And that made him detest her even more.

(a) Jane Milanoi expects a lot when she gets to Nasila. Highlight these expectations as described just before this excerpt. (4marks)

.

(b) Discuss **three** themes evident in the excerpt. (6marks)

(c) Discuss **two** character traits of Parsimei Ole Kaelo as brought out in the excerpt. (4marks)

(d) Identify and explain two stylistic devices used in the excerpt. (4marks)

(e) Explain what happens immediately after this excerpt. (4marks)

(f) Ole Kaelo seems not to be happy with Resian. From what happens in the excerpt and soon after this excerpt, what causes this resentment? (2marks)

(g) Self-doubt made her awkward and very difficult to deal with. (1marks)

Rewrite by using 'not easy'

3.Read the song below and then answer the questions that follow.

There is no needle without piercing point
There is no razor without trenchant blade
Death comes to us in many forms
with our feet we walk the goats earth
with our hands we touch God's sky

Some future day in the heat of noon,
I shall be carried shoulder high
Through the village of the dead
When I die, don't bury me under forest trees,
I fear their thorns
Bury me under the great shade trees in the market,
I want to hear the drums beating,
I want to feel the dancer's feet.

(a) With a reason, classify the song above. (2marks)

(b) Why does the singer choose not to be buried under forest trees? (2marks)

(c) Where does the speaker want to be buried? Why? (3marks)

(d) Identify and explain one economic and two social activities evident in the oral song.(6 marks)

(e) Explain the meaning of the following word as used in the poem. (1mk)
Trenchant

(f) Identify and explain two features of style from the above poem.(6mks)

4.GRAMMAR

(a) ***Rewrite the following sentences based on the instruction given after each.*****(2 marks)**

(i) He understood why people had been laughing after he realized the ugliness of his headgear. (***Rewrite using present participle****).*

……

……...……

(ii) The President-elect was sworn in only after the Supreme Court had validated the Presidential result. (***Begin:*** **Not until...**)

……

……

(b). (i)The maid had prepared supper by the time we got home.

(Rewrite to remove gender bias*).* **(1 mark)**

……

……...……

(ii) I have been studying in this school for four years complained the student but I have never scored one hundred per cent in any subject. (*Punctuate correctly)***(1 mark)**

……

……...……...

(iii)Chinua Achebe one of Africa's greatest writers passed on three months ago.

(***Rewrite using parenthesis***). **(1 mark)**

……

……...……...

(c.) ***Use the correct form of the word given in the brackets.*** **(3 marks)**

(i) Sports persons need to arrive in the camp two days early in order to..... (climate)

(ii) Pope Francis I took over the .....after Pope Benedict XVI resigned. (Pope)

(iii) No single female candidate won the .....seat in the just concluded election. (Governor)

(d). ***Fill the blanks with the most suitable prepositions.*** **(3 marks)**

(i) He was sentenced to life imprisonment .....the law.

(ii) Unemployed youth often subscribe .....illegal gangs.

(iii) They attended the party dressed.....smart casual.

(e). ***Using the words in brackets, complete the following sentences with the most appropriate phrasal verbs.*** **(3 marks)**

(i) My parents managed to .....high school although with difficulty. (see)

(ii) I was .....by his childish behaviour during the academic parade. (take)

(iii) The new students could not .....their way to the dormitory. (make)

(f). His decision was a typical case of putting the cart before the ox.

(***Correct the idiomatic expression***). **(1 mark)**

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FORM 3 TERM 3 OPENER EXAM

NAME …….ADMNO……CLASS……

SCHOOL……

PAPER THREE

(CREATIVE COMPOSITIONS AND ESSAYS BASED ON SET TEXTS)

$1\frac{1}{2}$ HOURS

INSTRUCTIONS TO CANDIDATES

1. Write your name and admission number in the spaces provided.
2. Answer two questions only
3. Your answers must be written in English.

1. **Imaginative composition (Compulsory) (20 marks)**
   Either
   (a) Write a story which ends with the following words:
   "……. I wish I had known earlier."

   Or

   (b) Write a story illustrating the saying,
   "Those who live in glass houses should not throw stones."

2. **Essays based on set Text**

Either

(a) "Olarinkoi's behaviour is like that of a predator stalking its prey. "Write an essay that shows the truth of this statement in view of what befalls the Ole Kaelo daughters in Blossoms of the Savannah.
(20 Marks)

Or

(b) "Desperation pushes individuals to do the unexpected. "Write an essay to support this statement using illustrations from A Doll's House by Henrik Ibsen. (20 Marks)

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FORM 3 TERM 3 OPENER EXAM

312/1

GEOGRAPHY

PAPER 1

TIME :2¾ HOURS

NAME---------- ADM NO----------

SECTION A:ANSWER ALL QUESTIONS IN THIS SECTION (25MRKS)

1. a) A part from planets, name two other members of the solar system (2mks)

b)State three characteristics of planets (3mks)

2. a)Name the three main layers of the atmosphere from the earths surface upwards (3mks)

b)State two ways in which the atmosphere is heated up (2mks)

3. a)Distinguish between minerals and rocks (2mks)

b)The table below shows types of sedimentary rocks. Name the resultant rocks that forms after metamorphism (3mks)

	Rock	**Metamorphism equivalent**
i.	Sand stone	----------
ii.	Limestone	----------
iii.	Clay	----------

4. a)Distinguish between vulcanicity and volcanicity (2mks)

c)State three characteristics of basic lava domes (3mks)

5. a)State two sources of underground water (2mks)

b)Give three factors which influence the formation of features in limestone areas (3mks)

SECTION B

ANSWER QUESTIION 6 AND ANY OTHER TWO QUESTIONS FROM THIS SECTION

6. Study the map of Busia (1:50.000) sheet 101/1 provided and answer the following questions

ai)Give the latitudinal and longitudinal position of South East corner of the map (2mks)

ii)Give two methods used to represents relief on the map (2mks)

bi)Calculate the area enclosed by the international boundary and Northing 40 up to the western margin of the map .Give your answers in Km^2 (2mks)

ii)What is the length of the loose surface road c 526 from the junction near Odiado school, grid reference 276318 to the end of the map on the East end ?(2mks)

iii)Give the bearing of the road junction at Matayo from the air photo principal point in the Grid square 3141. (2mks)

c)Draw a square measuring 10cm x 10cm to represent the area from Easting 20 to 25 and Northing 28 to 33.

On it mark and label

i. Swamp

ii. A road C523

iii. River Wakhungu

iv. Thicket

(6mks)

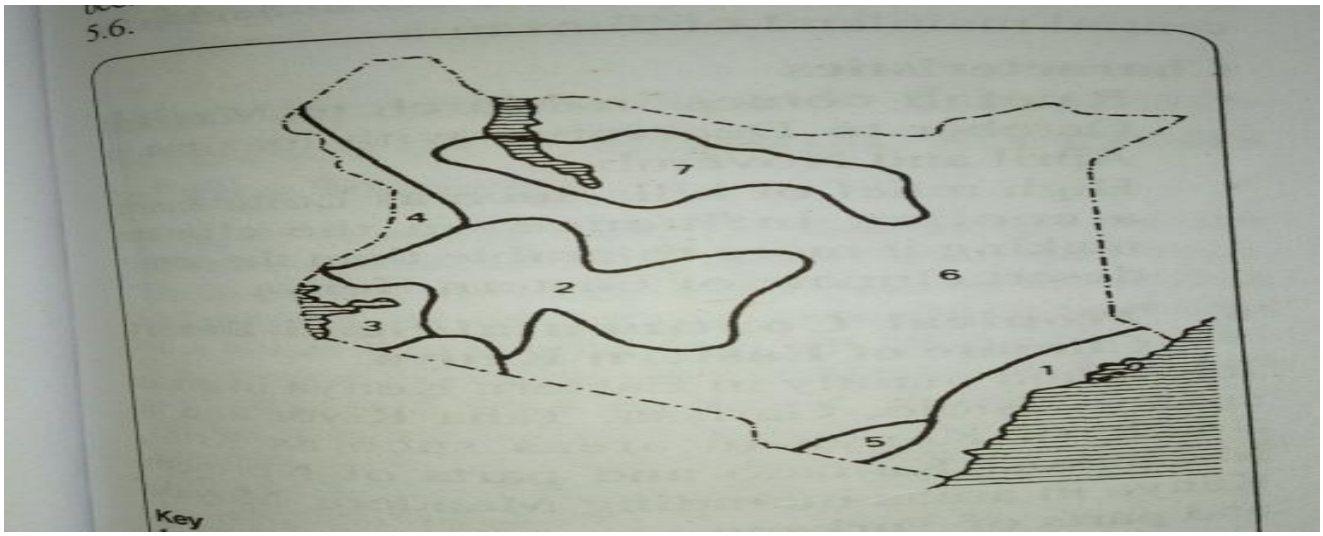
(Di)Describe the drainage of the area covered by the map (5mks)

ii) Citing avidence from the map give two economic activities used in the area covered by the map (4mks)

7. ai)Differentiate between weather and climate (2mks)

ii)State three characteristics of the inter-tropical convergenze zone (I.T.C.Z) (3MKS)

b)The diagram below shows climatic regions of Kenya. Use it to answer questions which follow.



i)Name the climatic regions marked 1,2 and 7 (3mks)

ii)State the climatic characteristics of the region marked 3 (4mks)

c)Explain how the following factors influence climate
i)Altitude (3mks)

ii)Ocean currents (3mks)

D)Students of Wako secondary school carried out field study on a weather station near their school.

i|)Name three instruments that they are likely to identify in a weather station (3mks)

ii)State two reasons why they need a pre-visit before they set out for the study (2mks)

iii)Name two methods they would use to collect the data during the study (2mks)

8. ai)Define the term catchment area (2mks)

ii)State four features which results from river erosion (4mks)

bi)Differentiate between river capture and river rejuvenation (3mks)

ii)Name three features resulting from river rejuvenation (2mks)

c)Explain four ways in which the river transports its load (8mks)

d)Using diagrams describe the following drainage patterns
i)centripetal (2mks)

ii)Radial (2mks)

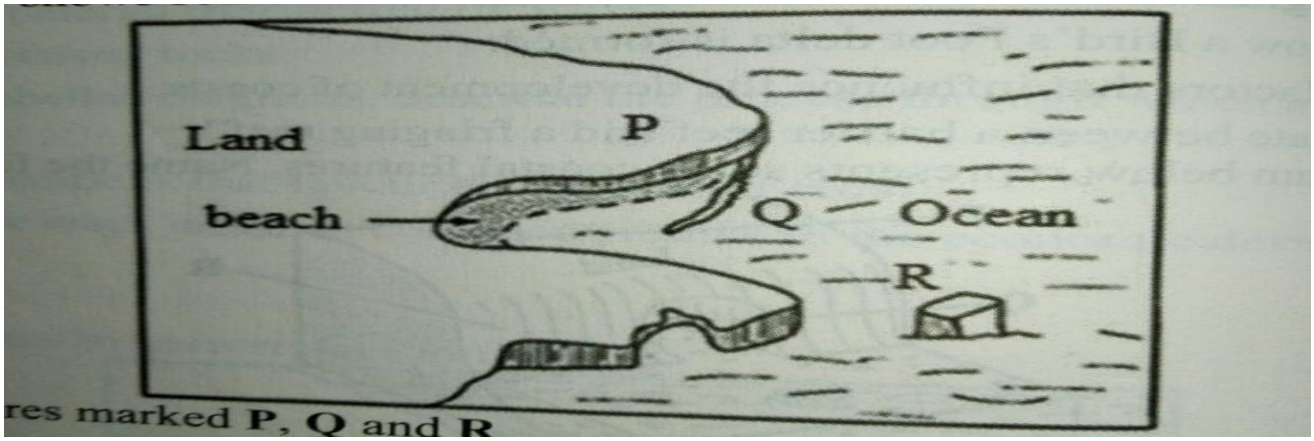
iii)Dendritic (2mks)

9. ai)Define an ocean (2mks)

ii)List three types of tides (3mks)

bi)Name and describe two processes of wave erosion (4mks)

ii)The diagram below shows features resulting from wave action .Use it to answer questions which follows



res marked P, Q and R

b)Name the features marked P,Q and R (3mks)

ci)Describe how a wave cut plat form is formed (5mks)

ii)State two types of submerged highland coast (2mks)

d)Explain the significance of oceans to human activities (6mks)

10.ai)Distinguish between aridity and desertification (2mks)

ii)Identify two types of desert surfaces (2mks)

iii)Give two reasons why wind action is most active in hot deserts than in cold deserts (2mks)

b)Explain the following processes of wind erosion
i)Abrasion (2mks)

ii)Deflation (2mks)

iii)Attrition (2mks)

ci)State two factors that influence the transportation of material by wind in deserts (2mrks)

ii)Using a well labeled diagram explain the formation of a barchans (5mks)

D)Explain three significance of desert features to human activities. (6mks)

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FORM 3 TERM 3 OPENER EXAM

312/2

GEOGRAPHY

PAPER 2

TIME: 2¾ HOURS

INSTRUCTIONS TO CANDIDATES

- *This paper consists of **two** sections; section **A** and section **B.***
- *Answer **all** questions in section **A**. In section **B** answer question **6** and any other **two** questions.*
- *All answers **must** be written in the answer booklet provided.*
- ***Candidates should check to ascertain that all pages are indicated and that no question are missing***

SECTION A

1. a. Define statistics (2mks)

   b. Give three uses of statistics (3mks)

2. a) Identify the two types of photographs (2mks)

   b) State three advantages of using photographs as a technique of recording data (3mks)

3. a) Name two areas where gold is mined in South Africa (2mks)

   b) State three types of minerals (3mks)

4. a) State two factors that influence the distribution and types of natural forests. (2mks)

   b) State three problems facing the growth of softwood forests in canada. (3mks)

5. (a) Differentiate between a reconnaissance and a working schedule? (2mks)

   (b) Give three importances of a working schedule. (3mks)

SECTION B.

Answer question 6 and any other two questions in this section

6. The table below shows the distribution of minerals in a country x in tonnes. Study it carefully and answer the questions that follow.

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a) Draw proportional divided circles to represent the above data using a scale of 1cm represents 4 tonnes.(12mks)

b) Name two other ways in which the above data can be represented. (2mks)

c) State two advantages of using proportional divided circles to represent data. (2mks)

d) Identify 3 methods of mining. (3mks)

e) State two uses of diamond. (2mks)

f) State four economic benefits of mining to the economy of South Africa. (4mks)

7. (a) i) Define agro-forestry. (1mk)

(ii) List two species of indigenous hardwood forest trees in Kenya. (2mks

(b) Give the differences in the exploitation of softwood forests in Kenya and Canada under the following sub-headings;

i) Distribution of forests; (2mks)

ii) Transportation (2mks)

(c) Name four forest reserves found in Kenya. (4mks)

(d) (i) what is forest conservation (2mks)

(ii)State four significance of forestry in Kenya (4mks)

(e) Explain four factors that favour the exploitation of softwood forests in Canada. (8mks)

8. a) list three types of fieldwork (3mks)

b) Students from your school carried out a field study in a market.
i) list down the normal pattern that the fieldwork procedure takes (5mks)

ii) Give five activities the students will require to do before going for the fieldwork (5mks)

iii) State three objectives of the study (3mks)

iv) List three problems they are likely to encounter during the study. (3mks)

v) Prepare a working schedule to be used during the study (4mks)

vi) List two follow-up activities that the students could have been involved in (2mks)

9. a. i. Define the term mining. (2 mks)

ii. State three ways in which minerals occur. (3 mks)

b. i. State and explain 4 factors that influence the occurrence and exploitation of minerals. (8 mks)

ii. Explain any two methods employed in underground mining. (4 mks)

c. i. State 4 effects of mining in the environment. (4 mks)

ii. Highlight 4 problems facing mining in Kenya. (4 mks)

10. a. i. Define the term forest. (2 mks)

ii. Explain five uses of forests and forest products in Kenya. (10 mks)

b. i. Outline any 4 problems facing forestry in Kenya. (4 mks)

ii. Highlight five forest conservation measures commonly used in Kenya. (5 mks)

c. State four characteristics of soft wood forests in Canada. (4mks)

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FORM 3 TERM 3 OPENER EXAM

NAME :……ADM. NO:……CLASS:……

311/1
PAPER 1
TIME: 2 ½ HOURS

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

For Examiner's Use Only

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

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

Total Marks | |

This paper consists of 2 printed pages. Candidates should check the question paper to ensure that all pages are printed as indicated and that no questions are missing.

SECTION A (25 MARKS)
Answer all the questions in this section.

1. Give two reasons for studying government (2mks)
2. Identify the main reason why the Mijikenda lived in Kaya (1mk)

3. Identify two social activities which the Agikuyu acquired as a result of interacting with the southern cushites during their settlement in Kenya (2mks)
4. Give one reason why Seyyid Said took direct control of the settlements along the Kenyan Coast in 1806 (1mk)
5. Identify one way of becoming a citizen of Kenya (1mk)
6. Give two symbols of National Unity (2mks)
7. Name the type of constitution used in Kenya (1mk)
8. Identify one group of people that monitor human rights in Kenya (1mk)
9. Identify two ways in which the Maasai benefited from their collaboration with the British (2mks)
10. State two duties of the British Governor in Kenya during the colonial period (2mks)
11. Give two reasons why Africans moved to towns during the colonial period (2mks)
12. Name one pioneer settler farmer during the colonial period in Kenya(1mk)
13. Give one reason why Africans were denied equal educational opportunities with other races (1mk)
14. What was the main reason for the formation of Ukamba Members Association? (1mk)
15. Name the first African to be nominated to the Legislature council in 1944 (1mk)
16. Name two African political parties whose leaders attended the 2nd Lancaster House Conference in 1962 (2mks)
17. Name two African leaders who were detained in 1952 at the declaration of a state of emergency (2mks)

SECTION B (45 MARKS)

Answer any THREE questions from this section

18. a) State five economic activities of the Borana during the pre-colonial period (5mks)
    b) Describe the political organization of the Luo during the pre-colonial period (10mks)
19. a) State five factors which influenced Akamba to participate in long distance trade in the 19th century (5mks)
    b) Describe five effects of long distance trade on the coastal people (10mks)
20. a) Give five reasons for the construction of the Uganda railway (5mks)
    b) Explain five problems encountered during the construction of the railway (10mks)
21. a) State five demands made by East African Association (EAA) to the British colonial government in Kenya (5mks)
    b) Explain five factors that promoted the rise of African Nationalism in Kenya after 1945 (10mks)

SECTION C (30 MARKS)

Answer any TWO questions from this section

22. a) Give three conditions a person should meet to qualify to be a citizen by birth (3mks)
    b) Explain six social rights of an individual in Kenya (12mks)
23. a) Give three economic factors that promote National Unity in Kenya (3mks)
    b) Explain six factors that undermine National Unity in Kenya (12mks)
24. a) Give three challenges that have faced the constitution review process in Kenya (3mks)
    b) Explain the main features of the Independence constitution of 1962 (12mks)

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FORM 3 TERM 3 OPENER EXAM

Name: ……. Adm. No ……. Class……

HISTORY AND GOVERNMENT PAPER 2

Time 2 ½ Hours

311/2

Instructions

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

b) Answer All the questions in section A, three questions from section B and two questions from section C .

c) Answer to all the questions MUST be written in the answer booklet provided.

d) Candidates should check the question paper to ascertain that no questions are missing.

e) Candidates should answer the questions in English

SECTION (25 marks)

Answer all questions in this section.

1 What is the meaning of pre-history?
(1mk)

2 State one theory that explains how early agriculture developed.
(1mk)

3 Identify two methods of irrigation used in ancient Egypt.
(2mks)

4 Name two types of trade (2mks)

5 Name two continents which participated in the development of the Trans-Atlantic trade.
(2mks)

6 Give two features of the Roman roads by 300AD.
(2mks)

7 State one disadvantage of horn blowing as a means of communication during the colonial period. (1mk)

8 What was the main contribution of Alexander Graham Bell in the field of communication. (1mk)

9 Identify the main source of energy used in the early stages of industrial Revolution in Europe. (1mk)

10 State two ways how Agrarian revolution contributed to industrial revolution in Europe. (2mks)

11 State two ways in which advances in medical science have improved man's expectancy. (2mks)

12 Identify two factors that led to the development of Athens as an urban centre. (2mks)

13 Give two functions of Nairobi as a modern town. (2mks)

14 Name the symbol of unity among the Shona people in the 19th century (1mk)

15 Name the chartered company used by the Germans to administer Tanganyika. (1mk)

16 State one economic problem that was experienced by the British colonialists in Nigeria. (1mk)

17 Identify one political reform introduced by president Fredrick De Klerk that led to the achievement of black majority rule in South Africa. (1mk)

SECTION B (45 MARKS)

Answer any three questions from this section.

18(a) State five causes of Agrarian Revolution in Britain. (5mks)

(b) Explain five effects of Agrarian revolution in North America (10mks)

19(a) State three roles of the Tuaregs in the Trans-saharan trade. (3mks)

(b) Explain six effects of the Trans-saharan trade on the people of west Africa (12mks)

20(a) State five benefits of development of railway transport in Europe in the 19th century. (5mks)

(b) Explain five effects of telecommunication today.
(10mks)

21(a) State five causes of the majimaji rebellion of 1905 to 1907 in Tanganyika. (5mks)

(b) Explain five effects of the Buganda collaboration.
(10mks)

SECTION C (30 MARKS)

Answer any two questions from this section.

22(a) Give three functions of the lukiko in the kingdom of Buganda during the pre-colonial period. (3mks)

(b) Explain six factors that led to the growth of the Asante empire by the 19th century. (12mks)

23(a) Name three communes in Senegal where the assimilation policy was applied intensively. (3mks)

(b) Explain six effects of the use of indirect rule by the British in Northern Nigeria. (12mks)

24(a) State three internal factors that promoted African Nationalism in the 20th century. (3mks)

(b) Explain six reasons that made Ghana to achieve independence earlier than other African countries.
(12mks)

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FORM 3 TERM 3 OPENER EXAM

JINA ……NAMBARI……

102/1

KISWAHILI KIDATO CHA TATU

INSHA

MUDA:SAA 1¾

MAAGIZO

a. Andika insha mbili.Insha ya kwanza ni ya lazima.

b. Chagua insha nyingine moja kati ya hizo tatu zilizobakia

c. Kila insha isipungue maneno 400

d. Kila insha ina alama 20

1. Wewe ni katibu wa kamati iliyoteuliwa na rais kuchunguza madhara ya pombe haramu na mbinu za kuangamiza pombe hiyo. Andika ripoti rasmi

2. Vijana wanakumbwa na changamoto si haba.
Thibitisha

3. Andika insha itakayothibitisha ukweli wa methali
‘’Mwiba wa kujichoma hauambiwi pole.

4. Andika kisa kitakachokamilika kwa maneno yafuatayo…… waliwasili saa tatu baadaye.Uharibifu wa mali na maisha ulikuwa umeshatendek

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FORM 3 TERM 3 OPENER EXAM

JINA…… NAMBARI……...
DARASA……

102/2.

KISWAHILI KARATASI YA PILI.

MUDA: SAA 2 ½ .

KWA MATUMIZI YA MTAHINI

SEHEMU.	**UPEO**	**ALAMA.**
UFAHAMU.	15	
UFUPISHO.	15	
MATUMIZI. YA LUGHA	40	
ISIMU JAMII.	10	
JUMLA	100	

UFAHAMU.

Soma taarifa ifuatayo kisha ujibu maswali.

Changamoto kubwa inayowakabili watu wengi katika mataifa yanayoendelea ni suala la chakula. Suala hili linaweza kuangaliwa katika sawia mbili tofauti. Kuna tatizo linalofungamana na uhaba wa chakula chenyewe. Uhaba huu unaweza kutokana na utegemezi mkubwa kwa zaraa kama nyenzo kuu ya uzalishaji wa chakula.

Zaraa katika mataifa mengi hususan yanayoendelea, hutegemea mvua. Kupatikana kwa mvua huathiriwa na mabadiliko ya tabianchi ulimwenguni. Matendo na amali za watu kama ukataji wa miti na uchafuzi wa mazingira huwa na athari hasi kwenye tabianchi hiyo. Mabadiliko ya tabianchi huweza kuvyaza ukame kutokana na **ngambi ya mvua.**

Kibinimethali hutokea wakati mafuriko yanapotokea na labda kuyasomba mazao mashambani na kusababisha baa la njaa. Hali hizi mbili husababisha matatizo makubwa ya chakula na kuathiri pakubwa suala zima la usalama wa chakula. Ili kuzuia uwezekano wa kuwepo kwa shida hii, pana haja ya kuwepo kwa mikakati na sera za kuhakikisha kuna usalama wa chakula. Kwa mfano, pana haja kukuza kilimo cha umwagiliaji ili kuepuka **adha** inayosababishwa na ukosefu wa mvua. Kwa upande mwingine, sharti zichukuliwe hatua mufti za kuzuia na kupambana na athari za gharika.

Changamoto nyingine inahusiana na usalama wa chakula chenyewe. Chakula kilichosibikwa na vijasumu au kwa njia nyingine ile huweza kumdhuru anayehusika. Msibiko wa chakula unatokana na vyanzo tofauti. Mathalan, uandalizi wa chakula kilichochafuliwa na choo, kutozingatia mbeko za usafi, uandaji wa chakula na kukiweka katika hali ya uvuguvugu kabla ya kukipakua-hali inayochochea ukuaji wa viini na ulaji wa chakula kisichoandaliwa vyema.

Ili kuepuka uwezekano wa kuathirika, pana haja ya kuzingatia usafi wa chakula na uandalizi unaofaa. Fauka ya hayo, vyombo vya uandalizi viwe safi, kanuni za usafi zifuatwe, upikaji na uandaaji uwe kamilifu. Hali hii isipozingatiwa, siha za raia wenyewe zitaathirika pakubwa.

Maswali.

(a) Taja aina **mbili** za kuangalia suala la chakula katika mataifa yanayoendelea. (alama 2)

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(b) Taja hatua **mbili** zinazoweza kuchukuliwa kupambana na tatizo la chakula. (alama 2).

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(c) Eleza jinsi **nne** tofauti namna chakula kinavyoweza kuwa si salama? (alama 4).

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(d) Kwa nini inahalisi kukipakua chakula baada ya kukiandaa tu? (alama 1).

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(e) Ni mapendekezo gani anayoyatoa mwandishi kuhakikisha kuwa chakula kinafaa? (alama 4).

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(f) Eleza maana ya maneno haya jinsi yalivyotumiwa: (alama 2).

(i) Ngambi ya mvua…….

(ii) Adha……..

MUHTASARI.

Uwazaji tunduizi ni tendo ambalo huhusisha matumizi ya akili. Uwazaji huu umekitwa kwenye matumizi ya michakato kama makini, upangiliaji, uteuzi na tathmini. Hata hivyo, uwazaji huu si mchakato mwepesi bali ni mchakato changamano.

Mchakato wa uwazaji tunduizi unahusisha stadi na mikabala tofauti. Mathalan, kuweza kutambua na kubainisha misimamo ya watu wengine, hoja wanazozua na uamuzi waliofikia, kutathmini au kupima ushahidi uliopo ili kubainisha mitazamo tofauti. Vilevile, uwazaji tunduizi hushirikisha kupima hoja za upinzani na ushahidi uliopo kwa njia ya haki pamoja na kutambua yaliyofichwa au ukweli uliofunikwa na taswira ya juu juu. Hali kadhalika, uwazaji tunduizi hujumuisha kutambua mbinu zinazotumiwa kufikia misimamo fulani kwa mvuto zaidi na kwa matumizi ya mbinu za kishawishi. Aidha, uwazaji huu huhitaji kutathmini masuala kwa mtindo ulio wazi, kufikia uamuzi kama hoja zinazotumiwa zina

mashiko au zinakubalika kuwa nzuri. Zaidi ya hayo, uwazaji tunduizi unahusisha kuwasilisha mtazamo kwa njia yenye uwazaji mzuri inayoshawishi.

Uwazaji tunduizi una manufaa anuwai. Mosi, unasaidia kujenga makini ya utendaji. Pili, hupevusha uwezo wa usomaji kwa kuufanya usomaji huo uwe na malengo wazi Fauka ya hayo, unamsaidia mtumiaji kutambua hoja kuu katika matini au ujumbe fulani bila ya kuzongwazongwa na hoja duni za pembeni. Uwazaji huu unasaidia kuuchonga uwezo na kuikabili au kuiitikia hali fulani na kukuza stadi za uchanganuzi. Mwanadamu huwa mtu tofauti na bora anapoujenga na kuimarisha uwazaji tunduizi wake.

Maswali.

(a) Bila kubadilisha maana aliyokusudia mwandishi, fupisha aya mbili za mwanzo.

(Maneno 70-80) (alama 10; alama 2 za utiririko)

Matayarisho:

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(b) Andika kwa muhtasari mambo muhimu katika aya ya tatu.

(Maneno 35-40) (alama 5; alama 1 ya utiririko)

Matayarisho:

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MATUMIZI YA LUGHA (ALAMA 40)

(a) Andika sauti zenye sifa zifuatazo: (alama 2)

(i) Kipasuo ghuna cha mdomoni.

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(ii) Irabu ya kati chini.

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(iii) Kikwamizo sighuna cha kaakaagumu.

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(iv) Nazali ya ufizi.

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(b) Bainisha silabi zilizowekewa shadda maneno yafuatayo: (alama 1).

(i) Miambakofi

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(ii) Yatazoleka.

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(c) Nomino zifuatazo zimo katika ngeli gani (alama 1).

(i) Ugwe…….

(ii) Limau……

(d) Tambua kiambishi awali na tamati katika neno: (alama 2).

Alalaye

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(e) Ainisha vivumishi katika sentensi hii (alama 2).

Mzee mwenyewe ni mkongwe na amepewa zawadi kwa kuwa shamba lake lilitoa mazao mengi.

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(f) Bainisha mofimu katika neno (alama 3).

Atamnywea.

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(g) Ainisha vitenzi katika sentensi (alama 3).

Ndege <u>yu</u> taabani, hata hivyo <u>anajaribu</u> <u>kujinasua.</u>

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(h) Eleza maana ya kirai (alama 2).

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(i) Ainisha virai vilivyopigiwa mstari (alama 1).

Zana hizi zimeundwa na mafundi wenye ustadi mkubwa.

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(j) Tunga sentensi yenye kikundi tenzi chenye muundo ufuatalo. (alama 2).

Kitenzi kisaidizi, kitenzi kikuu, nomino.

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(k) Tunga sentensi mbili kuonyesha matumizi tofauti ya kiambishi ‘li’ (alama 2).

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(l) Andika sentensi ifuatayo katika hali yakinishi (alama 2).

Askari wasipopiga doria wala kushirikiana na raia hawatakuwa wametuhakikishia usalama (alama 2).

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(m) Andika sentensi ifuatayo katika hali ya udogo (alama 2).

Madebe hayo yatasafirishwa pamoja na nyundo hizi.

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(n) Huku ukizingatia dhamira, taja aina tatu za sentensi kisha utoe mfano mmoja mmoja. (alama 3).

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(o) Nyambua vitenzi vifuatavyo katika kauli zilizo kwenye mabano (alama 1).

(i) La (tendeana)……
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(ii) Vaa (tendwa)……
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(p) Bainisha kiima na chagizo katika sentensi yafuatayo. (alama 2).

Watahiniwa hao walisoma maswali yote kwa makini.

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(q) Bainisha shamirisho kipozi, kitondo na ala katika sentensi ifuatayo (alama 3).

Kipkemboi alimbebea mwalimu mzigo kwa gari.

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(r) Andika visawe vya maneno yaliyopigiwa mstari (alama 2).

Sahibu yake alishikwa na kisunzi.

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(s) Ainisha vishazi katika sentensi ifuatayo (alama 2).

Ingawa mshahara wake si mkubwa anaikimu familia yake.

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(t) Eleza matumizi ya hali za " ka " na " hu" katika sentensi zifuatazo (alama 2).

(i) Balozi huja hapa kila mara.

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(ii) Mpishi alipika,akapakua na akagawa chakula.

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ISIMU JAMII (ALAMA 10).

Eleza sifa kumi za sajili ya lugha kati ya wataalamu wawili.

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FORM 3 TERM 3 OPENER EXAM

102/3

KISWAHILI

FASIHI YA KISWAHILI
KIDATO CHA TATU
MUDA: SAA $2^1/2$

MAAGIZO:

- **Jibu maswali MATATU pekee**
- **Swali la KWANZA ni la LAZIMA**
- **Maswali mengine yachaguliwe kutoka sehemu zilizobaki**
- **Usijibu maswali mawili kutoka sehemu moja**
- **Kila swali lina alama ishirini**

SWALI LA KWANZA NI LA LAZIMA

1.SEHEMU YA D: USHAIRI

Angawa mdogo, dagaa, amekomaa
Kaanga kidogo, dagaa, atakufaa
Kalia kinaya, dagaa, h'ondoa njaa

Wa kwako udogo, kijana, sio balaa
Na sio mzigo, kijana, bado wafaa
Toka kwa mtego, kijana, sinyanyapaa

Nasaha kidogo, kijana, ukubwa jaa
Jikaze kimbogo, kijana, acha kukaa
Chimbua mhogo, kijana, usibung'aa

Na wake udogo, dagaa, ndani hukaa,
Kuliko vigogo, dagaa, hajambaa
Hapati kipigo, dagaa, hauna fazaa

Maisha si mwigo, kijana ushike taa
Sihofu magego, kijana, nawe wafaa
Kazana kidogo, kijana, kugaaga

Maswali

(a) Lipe shairi hili anwani mwafaka (alama 1)
(b) Eleza arudhi zilizofuatwa katika kutunga shairi hili (alama 4)
(c) Onyesha jinsi malenga alivyotumia uhuru wake (alama 3)
(d) Tambua bahari katika shairi hili (alama 3)
(e) Andika ubeti wa tatu kwa lugha ya nathari (alama 4)
(f) Tambua mbinu za lugha zilizotumika katika shairi (alama 3)
(g) Eleza toni la shairi hili (alama 2)

FASIHI SIMULIZI

2i) Eleza umuhimu wa Ngano za mtanziko katika jamii (al.5)

(ii) Fafanua umuhimu wa maigizo ya watoto (al.5)

(iii) Sifa tano za rara (al.5)

(iv) Eleza dhima ya misimu kama kipera cha usemi (al.5)

3. [a]Maigizo ni nini? (al.2)

[b] Fafanua sifa nne za maigizo. Al.4)

[c] Eleza vikwazo vya ukuwaji wa fasihi simulizi. Al.10)

[d] eleza tofauti kati ya misemo na misimu. Al.4)

TAMTHILIA YA KIGOGO (PAULINE KEA)

4.`…….wanadai kitu kikumbwa au kitu chote!`

a)Eleza muktadha wa dondoo hili al 4

b)Tambua maudhui yanayodokezwa kwenye dondoo hili al 2

c)Kwa kutumia hoja sita eleza namna maudhui uliotaja hapo juu yanavyojitokeza katika tamthilia ya kigogo al 6

d)Fafanua sifa za msemewa al 4

e)fafanua umuhimu wa msemaji al 4

5: Jadili jinsi dhuluma inavyojitokeza katika Tamthilia ya Kigogo. **(al 20)**

CHOZI LA HERI- A. MATEI

6.“Mbona huna bashasha za kijana wa umri wako.”

a) Eleza muktadha wa maneno haya. la 4)

b)Ni yapi yalifuata baada ya maneno haya. ala 12)

c)Eleza sifa nne za msemewa ala 4)

7.“Riwaya ya Chozi la Heri inaakisi uozo uliomo katika Jamii nyingi barani Afrika”

Thibitisha kauli hii kwa kurenjerea Riwaya al

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FORM 3 TERM 3 OPENER EXAM

NAME……..ADM. NO……CLASS……...

121/1

FORM 3MATHEMATICSPAPER 1

TIME: 2½ HRS.

INSTRUCTION TO STUDENTS:

1. *Write your **name**, **admission number** and **class** in the spaces provided above.*
2. ***Write the date** of examination in spaces provided.*
3. *This paper consists of **two** Sections; Section **I** and Section **II**.*
4. *Answer **ALL** the questions in Section **I** and only **five** questions from Section **II**.*
5. *All answers and working must be written on the question paper in the spaces provided below each question.*
6. *Show all the steps in your calculation, giving your answer at each stage in the spaces provided **below** each question.*
7. *Marks may be given for correct working even if the answer is wrong.*
8. *KNEC Mathematical tables **may be** used, except where stated otherwise.*
9. *Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*
10. ***Candidates should answer the questions in English.***

FOR EXAMINER'S USE ONLY:

SECTION I

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	TOTAL

17	18	19	20	21	22	23	24	TOTAL

SECTION II

GRAND TOTAL

Ensure that all the pages are printed and no question(s) are missing

SECTION 1 (50 marks)

1. Without using a calculator evaluate,

   $\frac{-2(5+3) - 9\div3+5}{-3 \times -5+-2 \times 4}$ (3 marks)

2. Three bells ring at intervals of 9 minutes, 15 minutes and 21 minutes. The bells will next ring together at 11.00 pm. Find the time the bells had last rang together. (3 marks)

3. A construction company employs technicians and artisans. On a certain day 3 technicians and 2 artisans were hired and paid a total of Kshs 9000. On another day the firm hired 4 technicians and 1 artisan and paid a total of Kshs 9500. Calculate the cost of hiring 2 technicians and 5 artisans in a day. (3 Marks)

4. A Kenyan company received US Dollars 100,000.The money was converted into Kenya shillings in a bank which buys and sells foreign currencies as follows:

	Buying(in Kenya shillings)	Selling(in Kenya shillings)
1 US Dollar	77.24	77.44
1 Sterling Pound	121.93	122.27

(a) Calculate the amount of money, in Kenya shillings, the company received. (2 marks)

(b) The company exchanged the Kenya shillings calculated in (a) above, into sterling pounds to buy a car from Britain. Calculate the cost of the car to the nearest sterling pound. (2 marks)

5. The size of an interior angle of a regular polygon is $3x^0$ while its exterior angle is $(x- 20)^0$. Find the number of sides of the polygon . (3 marks)

6. Simplify $\frac{243^{\frac{-2}{5}} \times 125^{\frac{2}{3}}}{9^{\frac{-3}{2}}}$ (3marks)

7. In fourteen years time, a mother will be twice as old as her son. Four years ago, the sum of their ages was 30 years. Find how old the the mother was, when the son was born. (4mks)

8. Given that Sin $(x+ 60^0)$ = Cos $(2x)^0$, find Tan $(x+60)^0$ (3 marks)

9. A cylindrical solid whose radius and height are equal has a surface area of 154 cm^2.Calculate its diameter, correct to 2 decimal places.(Take π =3.142). (3marks)

10. A square brass plate is 2 mm thick and has a mass of 1.05 kg. The density of the brass is 8.4 g/cm^3. Calculate the length of the plate in centimeters. (3 marks)

11. Simplify $\frac{a}{2(a+b)} + \frac{b}{2(a-b)}$ (3 Marks)

12. Chelimo's clock loses 15 seconds every hour. She sets the correct time on the clock at 0700h on a Monday. Determine the time shown on the clock when the correct time was 1900h on Wednesday the same week. (3 mks)

13. The volume of a cube is $1728cm^3$. Calculate, correct to 2 decimal places, the length of the diagonal of a face of the cube. (3 Marks)

14. Given the inequalities $x - 5 \leq 3x - 8 < 2x - 3$.
    a) Solve the inequalities; (2 marks)

    b) Represent the solution on a number line. (1 mk)

15. Given that OA = 2i + 3j and OB = 3i - 2j
Find the magnitude of AB to one decimal place. (3 marks)

16. The production of milk, in litres, of 14 cows on a certain day was recorded as follows
22, 26, 15, 19, 20, 16, 27, 15, 19, 22, 21, 20, 22 and 28.

a) The mode; (1 mk)

b) The median. (2 marks)

SECTION II(50 marks)

CHOOSE ANY FIVE QUESTIONS IN THIS SECTION

17. A farmer had 540 bags of maize each having a mass of 112kg. After drying the maize, the mass decreased in the ratio 15:16.
a) Calculate the total mass lost after the maize was dried. (3 marks)

b) A trader bought and repacked the dried maize in 90 kg bags. He transported the maize in a lorry which could carry a maximum of 120 bags per trip.

i. Determine the number of trips the lorry made. (3 marks)

ii. The buying price of a 90 kg bag of maize was Ksh 1,500. The trader paid Ksh 2,500 per trip to the market. He sold the maize and made a profit of 26 %. Calculate the selling price of each bag of the maize. (4 marks)

18. The floor of a room is in the shape of a rectangle 10.5m long by 6m wide. Square tiles of length 30cm are to be fitted on to the floor.
    a) Calculate the number of tiles needed for the floor. (2mks)

    b) A dealer wishes to buy enough tiles for fifteen such rooms. The tiles are packed in cartons each containing 20 tiles. The cost of each carton is kshs. 800. Calculate:
        i. The total cost of the tiles (3mks)

        ii. If in addition the dealer spends kshs. 2,000 and Kshs. 600 on transport and subsistence respectively, at what price should he sell each carton in order to make a profit of 12.5% (to the nearest Kshs)
        (5mks)

19. The boundaries PQ,QR,RS and SP of a ranch are straight lines such that: Q is 16 km ona bearing of 040^0 from P;R is directly south of Q and east of P and S is 12 km on a bearing of 120^0 from R.
    a) Using a scale of 1 cm to represent 2 km. Show the above information in a scale drawing. (3mks)

b) From the scale drawing determines:

i) The distance in kilometers of P from S. (2Mrks)

ii) The bearing of P from S.(2Mrks)

c) Calculate the area of a ranch PQRS in square kilometers. (3Mrks)

20. A line L passes through (-2, 3) and (-1, 6) and is perpendicular to a line P at (-1, 6).

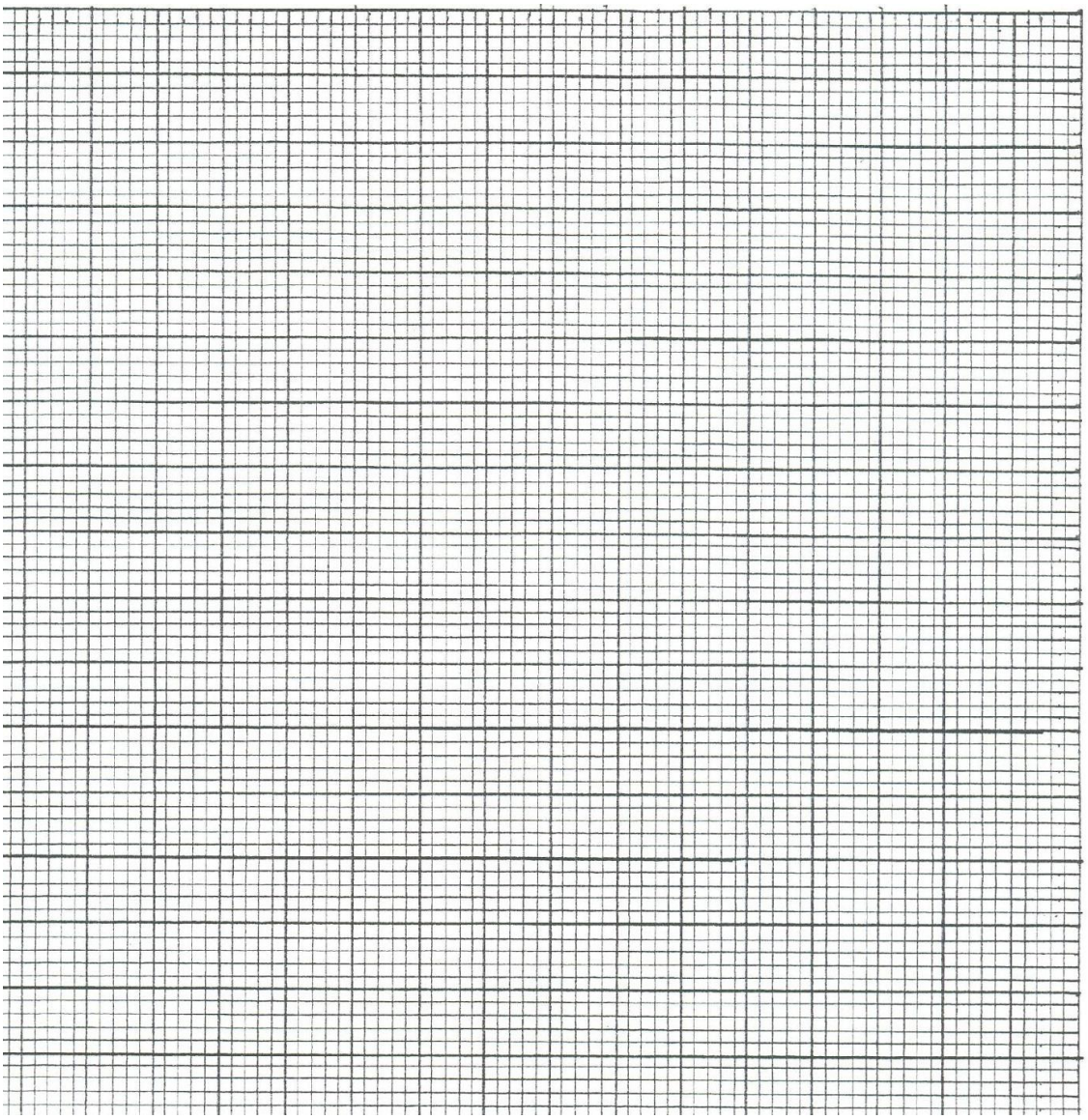
(a) Find the equation of L (2marks)

(b) Find the equation of P in the form $ax + by = c$,where a, b and c are constants. (2marks)

(c) Given that another line Q is parallel to L and passes through point (1, 2) find the x and y intercepts of Q (3marks)

(d) Find the point of the intersection of lines P and Q (3marks)

21. (a) On the grid provided, draw the square whose verticals are A (6, -2), B (7, -2), C (7, -1) and D (6, -1).



(1 mk)

b) On the same grid, draw:

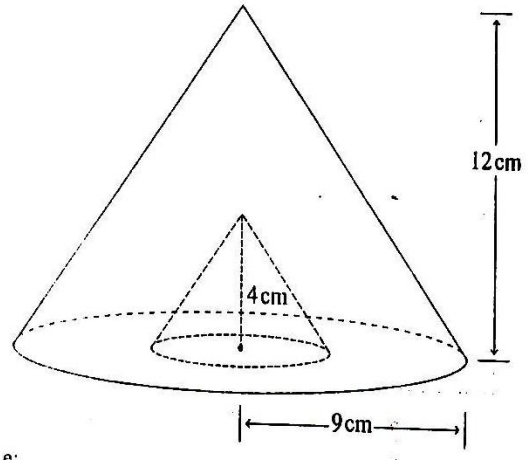
i. A′B′C′D′, the image of ABCD, under an enlargement scale factor 3, centre (9, -4); (3 marks)

ii. A″B″C″D″, the image of A′B′C′D′, under a reflection in the line $x = 0$; (2 marks)

iii. A‴B‴C‴D‴, the the image of A″B″C″D″ under a rotation of + 90^0 about (0,0) (2 marks)

(c) Describe a single transformation that maps A′B′C′D′ onto A‴B‴C‴D‴ (2 marks)

22. The figure below represents a cone of height 12 cm and base radius of 9 cm from which a similar smaller cone is removed, leaving a conical hole of height 4 cm.



a) Calculate:

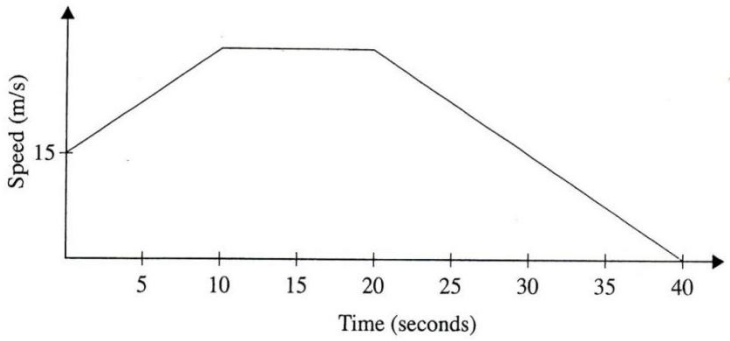
i. The base radius of the conical hole; (2 mks

ii. The volume, in terms of π, of the smaller cone that was removed. (2 mks)

b) Determine the slant height of the original cone. (1 mk)

c) Calculate, in terms of π, the surface area of the remaining solid after the smaller cone is removed. (5mrk)

23. The figure below represents a speed time graph for a cheetah which covered 825min 40 seconds.



(a) State the speed of the cheetah when recording of its motion started (1 mark)

(b) Calculate the maximum speed attained by the cheetah (3marks)

(c) Calculate the acceleration of the cheetah in:

(i) The first 10 seconds (2marks)

(ii) The last 20 seconds (1mark)

(d) Calculate the average speed of the cheetah in first 20 seconds (3marks)

24. A saleswoman is paid a commission of 2% on goods sold worth over Ksh 100,000. She is also paid a monthly salary of Ksh 12,000.In a certain month, she sold 360 handbags at Ksh 500 each.

(a) Calculate the saleswoman's earnings that month. (3 marks)

(b) The following month, the saleswoman's monthly salary was increased by 10%.Her total earnings that month were Ksh 17,600.

Calculate:

a. The total amount of money received from the sales of handbags that month. (5marks)

b. The number of handbags sold that month. (2 marks)

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FORM 3 TERM 3 OPENER EXAM

NAME…….ADM.NO……CLASS……

DATE:……/……./

121/2
FORM 3 MATHEMATICS
PAPER 2
TIME: 2½ HRS.

INSTRUCTION TO STUDENTS:

1. *Write your **name**, **admission number** and **class** in the spaces provided above.*
2. *Write the **date** of examination in spaces provided.*
3. *This paper consists of **two** Sections; Section **I** and Section **II**.*
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10. ***Candidates should answer the questions in English.***

FOR EXAMINER'S USE ONLY:

SECTION I

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	TOTAL

17	18	19	20	21	22	23	24	TOTAL

SECTION II

GRAND TOTAL

Ensure that all the pages are printed and no question(s) are missing.

SECTION 1 (50 Marks)

Answer all the questions in the spaces provided.

1. Simplify completely

$$\frac{2x^2 + x - 3}{4x^2 - 9}$$ (3mks)

2. Water flows from a pipe at the rate of 250 litres per minute. If the pipe used to drain a tank full of water measuring 3.2m by 2.5m by 2m,how many minutes would it take to drain the tank completely.
(3mks)

3. Without using tables, solve for a in the equation. (3mks)

$\log_3 (2a+8) - \log_3 9 = 1 + \log_3 2^2$

4. The base and perpendicular heights of a triangle measured to the nearest centimetre are 6cm and 4cm respectively.

Find ;

a. The absolute error in calculating area of the triangle
(2mks)

b. The percentage error in the area giving the answer to 1 decimal place. (2mks)

5. Use logarithms to evaluate

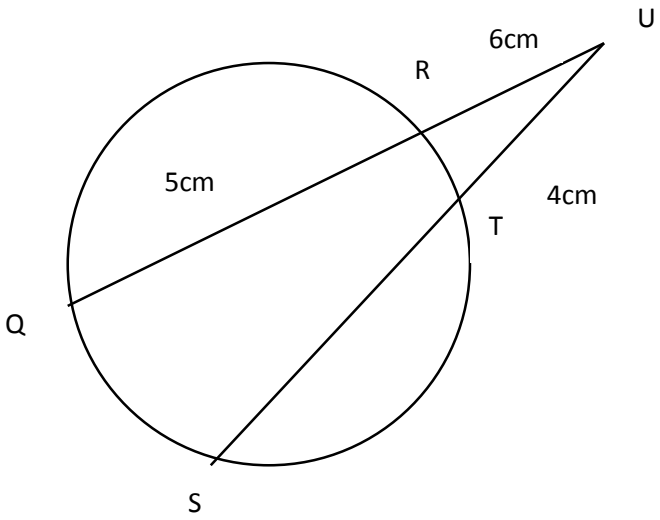
$$\frac{(0.0056)^{1/2}}{1.38\times 27.42}$$

(3 marks)

6. Simplify by rationalizing the denominator (2mks)

$$\frac{3}{2\sqrt{3}-\sqrt{2}}$$

7. Chords QR and ST intersect at U.QR =5cm, RU=6cm and TU=4cm. Find the length SU. (3mks)



8. A scientific calculator is marked at sh 1560 .Under hire purchase a down payment of sh.200 was paid and six monthly installment of sh 250 each. Calculate;
   a. The Hire purchase price
      (2mks)

   b. The extra amount paid out over the cash price.
      (1mk)

9. Make x the subject of the formula. (3mks)

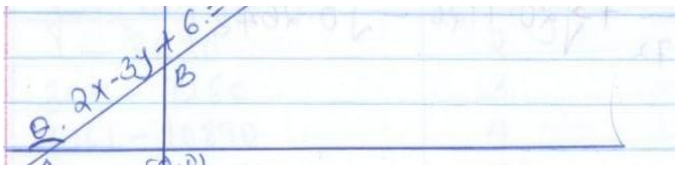
$$p = \frac{a\sqrt{x^2 + b^2}}{y}$$

10. The first term of arithmetic is -7 and the common difference is 4.
    a. List the first 6 terms of the sequence. (2mks)

b. Determine the sum of the first 30 terms of the sequence. (2mks)

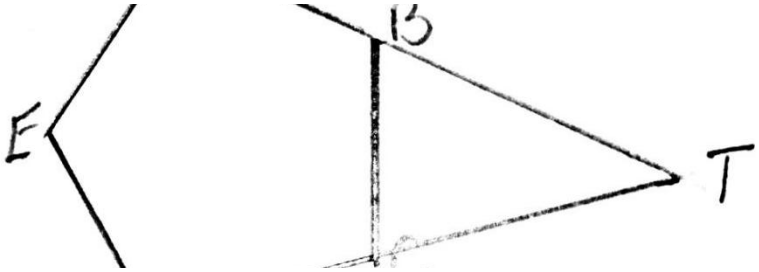
11. A small cone of height 8cm is cut off from a bigger cone to leave frustum of height 16cm.If the volume of the smaller cone is $160cm^3$.Find the volume of the frustum.
(3mks)

12. Find the angle Θ in degrees from the figure below. (3mks)



13. Jane deposited ksh.50,000 in a financial institution in which interest is compound quarterly. If at the end of the second year she received a total of ksh.79,692.40. Calculate the rate of interest per annum.
(3mks)

14. ABCDE is a regular pentagon .Its sides AB and DC are produced to meet at T. Calculate the size of angle BTC.
(3mks)



15. Use reciprocals, cubes and square root . (4mks)

$$\frac{2 + \sqrt[3]{20.7726} - \sqrt{0.2643}}{0.9272}$$

16. Five men working six hours a day take eight days to fill a trench. How long does it take three men working eight hours a day to complete the same trench. (3mks)

SECTION II (50 marks)

ANSWER ONLY FIVE QUESTIONS

17. The table below shows how income tax was charged on income earned in a certain year.

le income per year)(Kenya pounds)	shillings per Kenya pound
) 7260 10890 -14520	

Mr.Gideon is an employee of a certain company and earns a salary of ksh 15,200 per month.He is housed by the company and pays a nominal rent of Ksh.1050 per month.He is married and is entitled to a family relief of ksh.450 per month.

i. Calculate his taxable income in k£ p.a. (2mks)

ii. Calculate his gross tax per month . (4mks)

iii. Calculate his net tax per month (2mks)

iv. Calculate his net salary per month. (2mks)

18. (a) Find the inverse of the matrix (1mk)

A= $\begin{pmatrix} 4 & 3 \\ 3 & 2 \end{pmatrix}$

(b)Rose bought 20bags of oranges and 15 bags of mangoes for a total of ksh.9,500.Chumo bought 30 bags of oranges and 20 bags of mangoes for ksh 13,500.If the price of a bag orange is x and that of mangoes is y.

i. Form two equations to represent the information above. (2mks)

ii. Hence use the matrix A^{-1} above to find the price of one bag of each item. (3mks)

iii.The price of each bag of oranges was increased by 10% and that of oranges reduced by 10%.the businesswomen (Rose and Chumo) bought as many oranges and as many mangoes as they bought earlier. Find by matrix method the total cost of oranges and mangoes that the businesswomen bought after the percentage charges.
(4mks)

19. A radio dealer planned to buy some radios from a wholesale for ksh.340,000 .Before he could buy them prices of each radio was increased by ksh.300.He now discovers that he can only afford to buy 30 radios less than he had planned to buy with some amount of money. Taking x as the intended number of radios.

a)write an expression in terms of x for:

i)original price per radio (1mk)

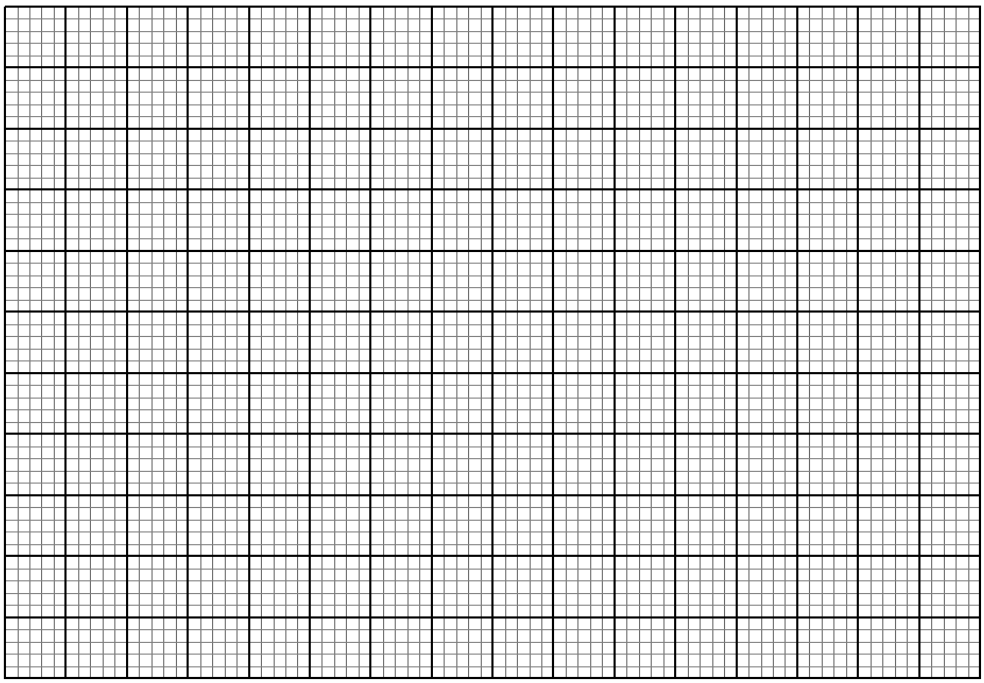
ii)price per radio after the increase (1mk)

b) determine :

i)number of radios he had originally planned to buy (5mks)

ii)percentage increase in the price per radio (3mks)

20. Draw the graph of the function $y=2x^2+4x-3$ on the grid provided for $-4 \leq x \leq 2$(2mks)
    a.



b. Use the graph to solve the equation $2x^2+4x-3=0$ to 1 decimal place. (2mks)

c. Use graph $y=2x^2 + 4-3$ to solve $0=2x^2+ x-5$. (3mks)

21. Given that BC is a tangent to the circle and that angle ABC $=110^0$and angle ABC$=110^0$ and angle CBD$=50^0$ .Calculate giving reasons ;

i. Angle AED (2mks)

ii. Angle BAD (2mks)

iii. Angle DCB (2mks)

iv. Given that BD = 3cm and DC=5cm.Find the area of triangle BDC. (4mks)

22. The variances p,q and r are such that p varies directly as q and inversely as the square of r.

a. When p=q,q=12 ,and r=12,find p when q=15 and r=5. (4mks)

b. Express q in the terms of p and r. (1mk)

c. If p is increased by 20% and r is reduced by 10%,find:

i. A simplified expression for the change in q in terms of p and r. (3mks)

ii. Percentage change in q. (2mks)

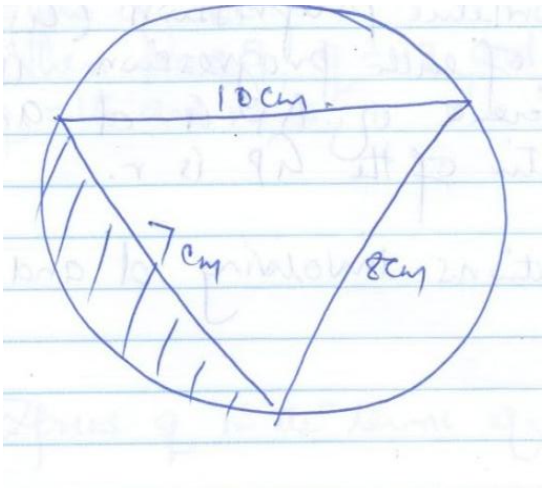
23. The first ,third and sixth terms of an arithmetic progression (AP) corresponds to the first three consecutive terms of an increasing Geometric progression(G.P).The first term of each progression is 16,the common difference of AP is d and the common ratio of the GP is r.
    a. (i) Write two equations involving d and r. (2mks)

(ii) Find the value of d and r (4mks)

b. Find the sum of the first 20 terms ;
    i. The arithmetic progression (AP). (2mks)

    ii. The geometric progression(GP) (2mks)

24. The figure below shows a triangle ABC enclosed in a circle AC=10cm BC=7cm and AB=8cm.



a. Find the size of angle CAB (2mks)

b. Find the radius of the circle (2mks)

c. Hence calculate the area of the shaded region. (6mks)

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FORM 3 TERM 3 OPENER EXAM

NAME…….ADM……CLASS…….

232/1

PHYSICS

PAPER 1

TIME: 2 HRS

INSTRUCTION TO CANDIDATES:

1. Write your name and Admission number in the spaces provided.
2. Answer all the questions in the spaces provided.
3. Mathematical tables and electronic calculators may be used.
4. All workings must be clearly shown where necessary.

FOR EXAMINERS USE ONLY:

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A	1 – 13	25	
	14	13	
B	15	11	
	16	9	
	17	13	
	18	10	
TOTAL		**80**	

SECTION A (25 marks)

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

1. A micrometer screw gauge has a zero error of +0.12mm.Sketch the reading of the micrometer screw gauge when used to measure the size of a ball of diameter 3.44mm. (1 mark)

2. **Figure 1 (a) and 1(b)** shows capillary tubes inserted in water and mercury respectively.

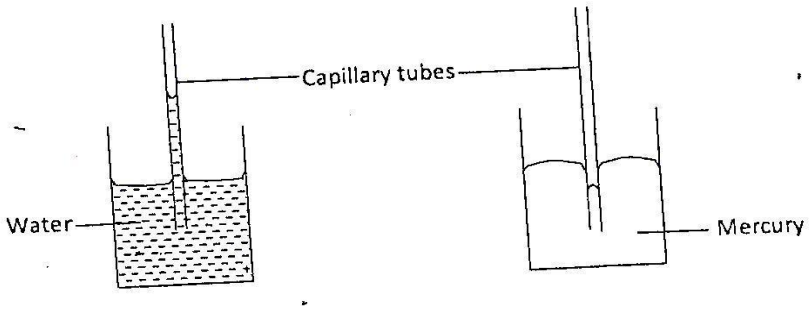


Figure 1(a) **Figure 1(b)**

It is observed that in water the meniscus in the capillary tube is higher than the meniscus in the beaker, while in mercury the meniscus in the capillary tube is lower than the meniscus in the beaker. Explain these observations. (2 marks)

3. A block of mass 500g and measuring 30cm by 25cm by 15cm rests on a flat floor. Determine maximum pressure exerted on the floor. (3 marks)

4. In **figure 2** ammonia gas and an acid gas diffuse and react to form a white deposit on the walls of the glass tube. Explain why the white deposit forms nearer end B than A. (1mark)

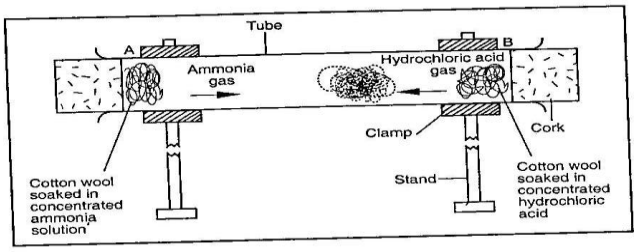


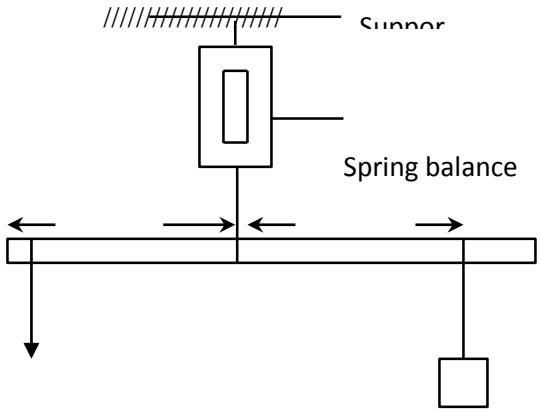
Figure 2

5. A man wants to fit a brass ring tightly onto a steel rod of equal diameter to the inner diameter of the ring. Explain how this can be achieved. (2 marks)

6. State how conduction and radiation is minimized in a thermos flask. (2 marks)

7. A body moving around a circle is accelerating and yet the speed is constant. Explain. (1 mark)

8. **Figure 3** shows a uniform bar of mass 0.8kg supported by a spring balance at its Centre and the bar is at equilibrium.



Determine the:

(a) Value of X (3 marks)

(b) Reading of the spring balance (1mark)

9. **Figure 4** shows a load-extension graph for various loads hung from a single spring.

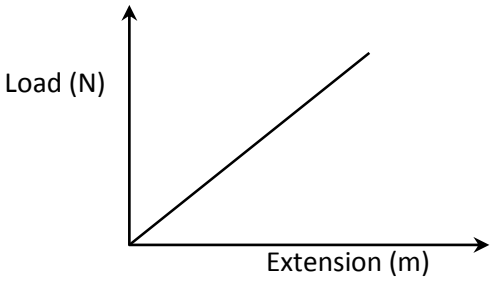


Figure 4

On the same axes, sketch a graph for a spring double the diameter of the first one (1mark)

10. An aeroplane is moving horizontally through still air at uniform speed. State with reason what is observed when the speed of the plane is increased. (2marks)

11. A crane lifts a load of 2000kg through a vertical distance of 4.0 m in 5 seconds. Determine the power developed by the crane. (3 marks)

12. Sketch a displacement time graph for a freely falling body and describe the motion. (2marks)

13. State Newton's first law of motion. (1mark)

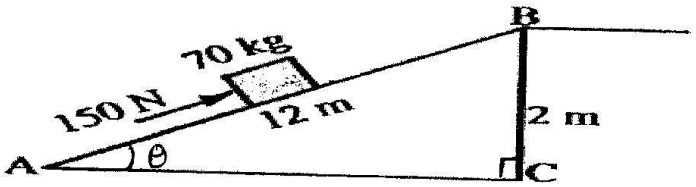
SECTION B (55 marks)

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

14. **Figure 5** shows a crate of mass 70kg being pushed by a man with a force of 150 N along the plane AB.

Figure 5

(a) Show that V.R of the inclined plane is given by $\frac{1}{Sin\theta}$ (3 marks)



(b) Determine the work done:

(i) By the force of the man. (2marks)

(ii) On the mass. (2marks)

(iii) To overcome friction. (1mark)

(c) Determine the efficiency of the inclined plane. (2marks)

(d) Suggest two method of improving the efficiency of an inclined plane. (1mark)

15. a) A bullet of mass 2.0g is fired horizontally into a block of wood of mass 600g. the block is suspended from a string so that it is free to move in a vertical plane. The bullet and block rise together through a vertical distance of 8.6cm as in figure 9 below.

Calculate the speed of the bullet before the impact with the block. (5mks)

b) Figure below 10 shows a car with a dummy driver before and after collision test.

The mass of the dummy driver is 90kg. The impact time reduces the dummy's speed from 45m/s to 0m/s in 1.2 seconds.

i) State the energy transformation during the collision. (1mk)

ii) Calculate the average force on the dummy during impact. (3mks)

iii) Calculate how much of the dummy's energy is transformed during the collision. 2mks)

16. a) i)State two conditions necessary for equilibrium of a body acted upon by a number of forces. (2 marks)

ii) Figure below shows beaker containing a block of ice.

State and explain the change in stability when the ice melts. (3 marks)

b) Figure below shows a drop of fatty acid on a wire of diameter 1.4mm

When the drop of the fatty acid was placed on clean water surface it formed a circular patch of diameter 91cm.

i) Estimate the length of the molecule of the fatty acid. (3 marks)

ii) State two assumption made in part (i) above. (2 mark)

17 (a) State the principle of conservation of linear momentum. (1 mark)

(b) Distinguish between elastic and inelastic collision. (1 mark)

(c) A striker kicks a ball of mass 200g initially at rest with a force of 78N.Given that the foot was in contact with the ball for 0.30s; determine the takeoff velocity of the ball. (3 marks)

(d) A high jumper usually lands on thick soft mattress. Explain how the mattress helps in reducing the force of impact. (2 marks)

(e) A ball is thrown horizontally from the top of a vertical tower of height 75m and strikes the ground at a point 80m from the bottom of the tower. Determine the:

(i) Time taken by the ball to hit the ground. (*Acceleration due to gravity=10m/s^2)* (3 marks)

(ii) Initial horizontal velocity of the ball. (2 marks)

18. a) State Hooke's law. (1mk)

b) Three springs which are identical and have negligible mass are arranged as shown in the diagram below.

The spring constant of each spring is 2N/cm. calculate the total extension due to the 30N weight.
(4mks)

a) A student was provided with a wire, assortment of masses, a test-tube a mounted retort stand a metre rule. Describe how she could use the provided materials to verify Hook's law for a spring.
(5mks)

walimuepublishers@gmail.com

FORM 3 TERM 3 OPENER EXAM

Name…….ADM No……Class……

232/2

PHYSICS

Paper 2

Time: 2 Hours

INSTRUCTIONS TO CANDIDATES

a) Write your name and Index No. in the spaces provided above.
b) Sign and write the date of the examination in the space provided above
c) This paper consists of Two sections; A and B
d) Answer ALL the questions in Section A and B in the spaces provided.
e) All working MUST be Clearly shown
f) Non-programmable silent electronic calculators and KNEC Mathematical tables may be used for calculations

FOR EXAMINER'S USE ONLY

Section	Question	Maximum score	Candidates score
A	1-12	25	
B	13	13	
	14	11	
	15	12	
	16	11	
	17	8	
	TOTAL	**80**	

This paper consists of 13 printed pages.Candidates should check the question paper to ascertain that all pages are Printed as indicated and that no question is missing

SECTION A (25 MKS)

1. Figure 1 shows a pencil lying in front of a plane mirror. The pencil is moved 2cm towards the mirror in the same orientation.

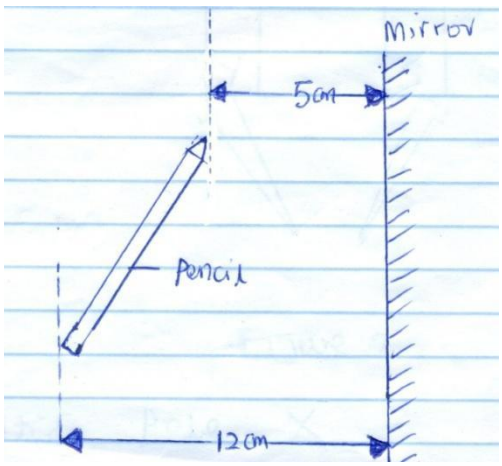


Figure 1

Determine the distance between the new position of the tip of the pencil and its image. (2mks)

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2. (a) State the basic law of magnetism. (1mks)

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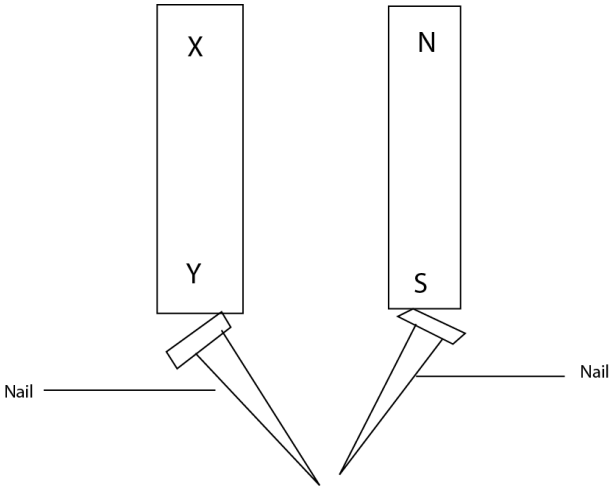
b) Figure 2 shows two bar magnets, one whose poles are labelled and a second one whose poles are labelled X and Y. Iron nails are attracted to the lower ends of the magnets as shown.



(1mk)

Figure 2

Identify pole **X** ……

3. State the reason why convex mirror is preferred over a plane mirror for use as a driving mirrors in cars. (1mk)

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4. Figure 3 shows the displacement-time graph for a certain wave.

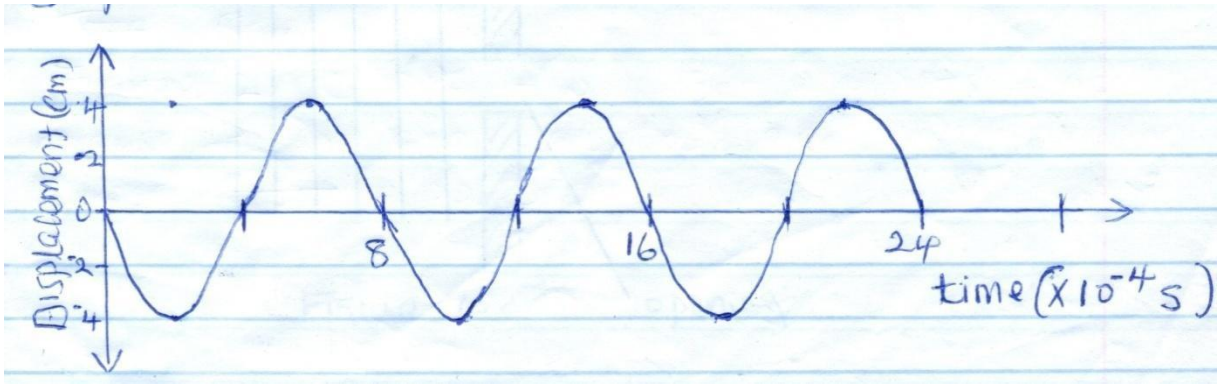

Figure 3

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

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b) On the same diagram, draw a wave with half the amplitude and twice the frequency of the one shown. (1mk)

5. (a)State the main difference between primary chemical cells and secondary chemical cells. (1mk)

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b) State how the design of a dry Lechlanche cell reduces polarization. (1mk)

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6. Figure 4 shows a wave incident on a narrow opening.

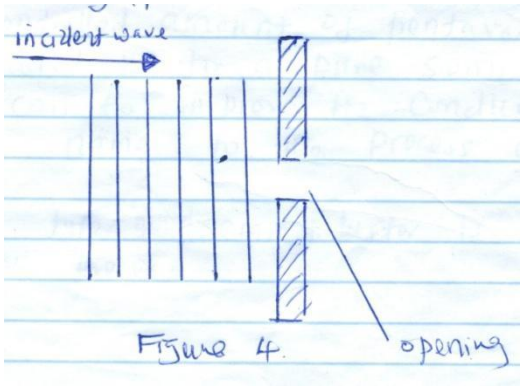

Figure 4

Draw the appearance of the wave after passing through the opening. (1mk)

7. A student stands between two classroom walls and claps. After 0.6 seconds, she hears the first echo and hears the second echo after 0.8 seconds. Determine the distance from the student to the further wall. Take speed of sound in air = 320m/s. (3mks)

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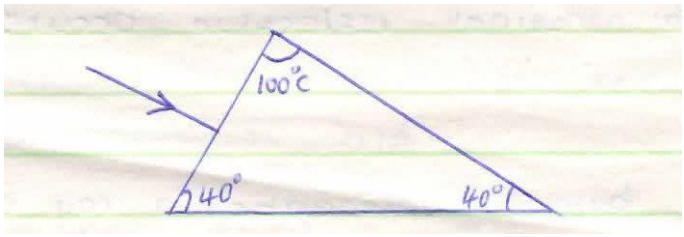
8. In the fig. 4 shown below (not drawn on scale) sketch the path of a ray till it emerges from the prism.

   (1mk)



9. Describe the changes that can be observed during discharging process of lead-acid accumulator. (2mks)

10. Figure 5 shows the cross-section of two bar magnets and a current carrying conductor held between them. The direction of current is into the paper.

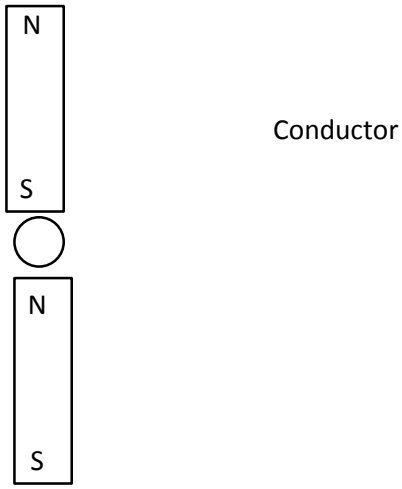


Figure 5

a) indicate with an arrow the direction of force experienced by the conductor. (1mk)
b) State one way in which the force on the conductor above can be reduced. (1mk)
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11. Distinguish between transverse and longitudinal waves. (2mks)

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12. a) State Ohm's law. (1mk)

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b) Figure 6 shows an electrical circuit.

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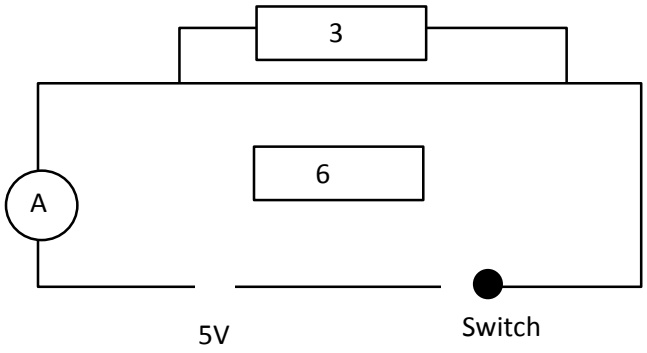

Figure 6

Determine the Ammeter reading in a closed circuit. (3mks)

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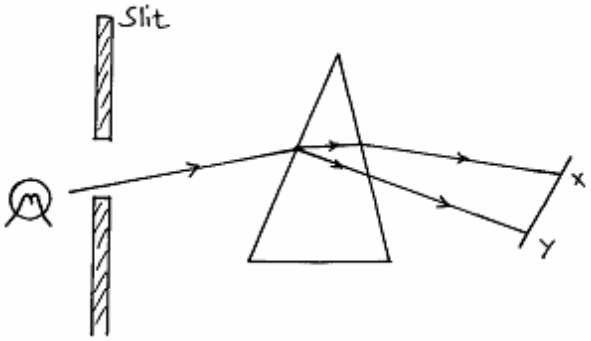
SECTION B (55 MARKS)

13. Figure 7 below shows a narrow beam of white light onto a glass prism.

Figure 8



(i) What is the name of the phenomenon represented in the diagram? (1mk)

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(ii) Name the colour at **X** and **Y**. Give a reason. (3mks)

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(iii) What is the purpose of the slit? (1mk)

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(b) Figure 8 below shows the path of ray of yellow light through a glass prism. The speed of yellow light in the prism is 1.8×10^8m/s.

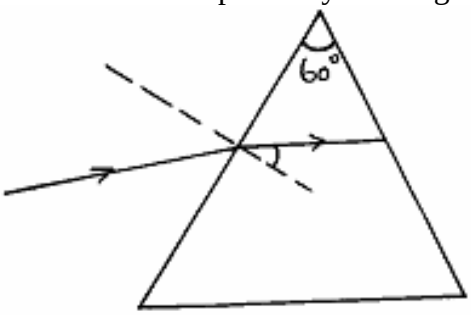

Figure 8

r

(i) Determine the refractive index of the prism material (speed of light in vacuum C = 3.0×10^8m/s). (3mks)

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(ii) Show on the same diagram, the critical angle, c, and hence determine its value. (3mks)

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(iii) Given that r = 31.2°, determine the angle □. (3mks)

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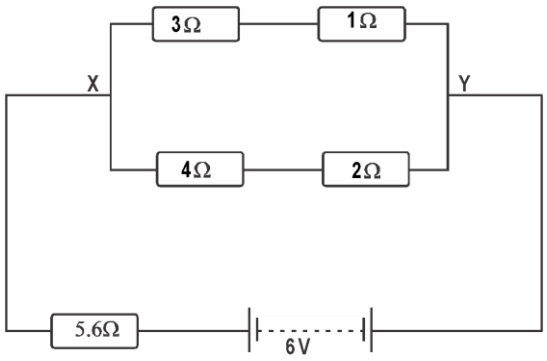
14. (a) The figure below shows resistors in a circuit. The internal resistance of the battery is negligible.



i) Calculate the effective resistance of the circuit. (3 marks)

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ii) Find the total current in the circuit. (3 marks)

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iii)P.d between X and Y (2 marks)

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(b)Define the term "e.m.f" of a cell. (I mark)

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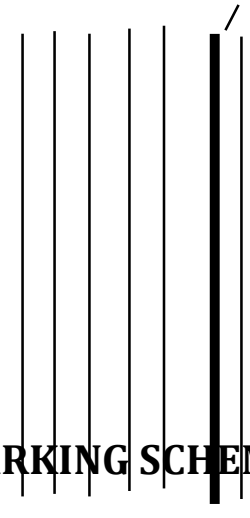
(c)Why is repulsion the surest way for polarity of a magnet. (1 mk)

15. Some plain water waves were produced in a ripple tank. They pass from a region of deep water into aregion of shallow water. The figure shows what the waves look like from above

Boundary



Waves
Move
This way

Deep Water Shallow water

a. State what happens at the boundary to:
   i. The frequency of the waves (1 mark)

   ii. The speed of the waves (1 mark)

   iii. The wave length of the waves (1 mark)

b. The waves have a speed of 0.12m/s [in the deep water. Wave crests are 0.08m apart to the deep water. Calculate the frequency of the sources producing the waves. (3 marks)

c. State two differences between a stationary wave and a progressive wave. (2 marks)

d. The wave shown in the figure below has a velocity of $200ms^{-1}$

Determine:

(i) The period T of the wave. (2mks)

(ii) The frequency of the wave. (2mks)

(iii) The wavelength of the wave. (2mks)

e. State two difference between electromagnetic waves and mechanical waves. (2 mks)

16. **a)**State two factors that affect the strength of an electromagnet. (2 mks)

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b)Figure below shows suspended metre rule in equilibrium balanced by the magnet and weight shown. The iron core is fixed to the bench.

i) State and explain the effect on the metre rule when the switch S is closed. (3 marks)

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ii) State and explain the effect on the metre rule when the terminals of battery are reversed. (2 marks)

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iii) Suggest how J on the set up can be varied to have metre rule tilt anticlockwise faster. (1 mark)

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iv) Explain your suggestion in b(iii) above. (3 marks)

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