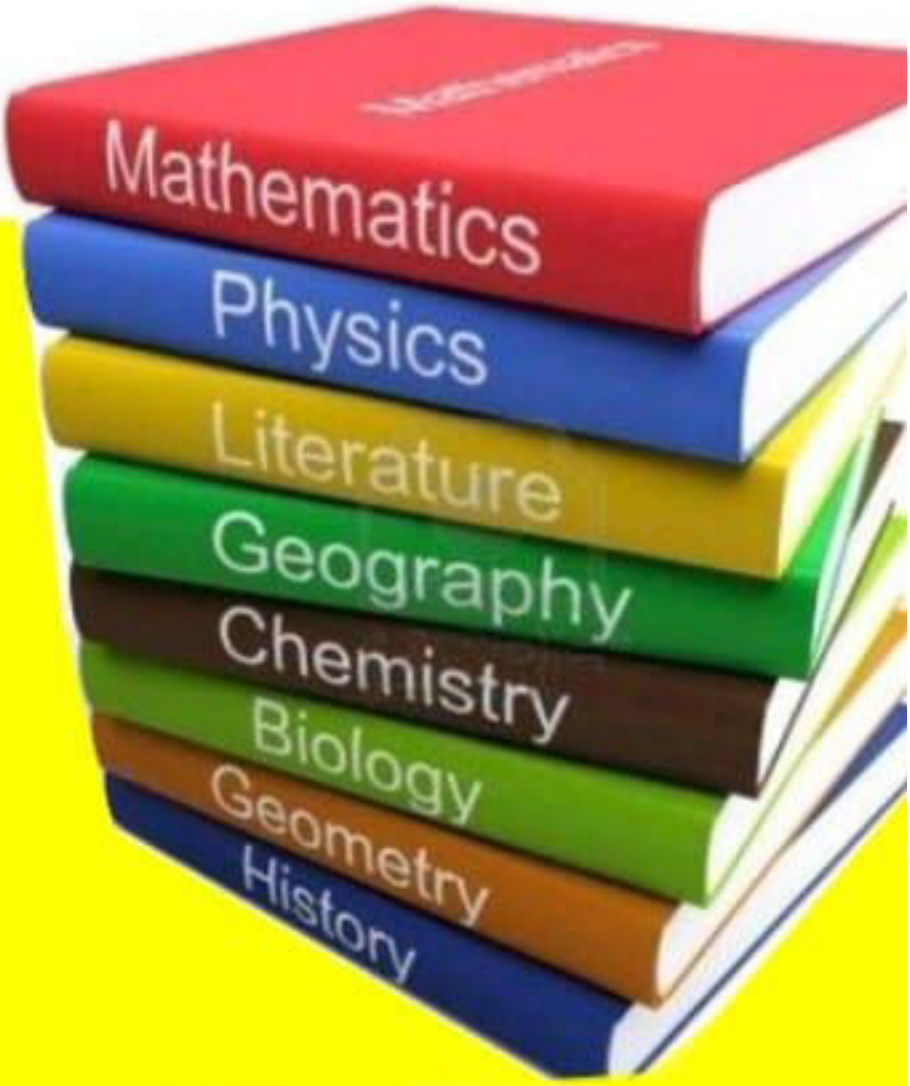
contact mr .oriosa
tell: 0743241064

set books
*plays



ical quizs & ans

schemes of work
revison notes (form 1-4)

ksce past papers
kcse predictions

WINGS OF EXCEL

FORM 4 END TERM

ALL SUBJECTS TESTED

Questions are for free

END-TERM EXAM
TERM ONE FORM FOUR
AGRICULTURE PAPER 1
TIME: 2 HOURS
NAME…….. ADM…….. CLASS……...

SECTION A: (30 MARKS)

Answer ALL the questions in this section in the spaces provided

1. What is the meaning of seed dressing? (1mk)

2. Give four advantages of row planting. (2mks)

3. List four factors to be considered when choosing site for tomato nursery. (2mks)

4. State three reasons of treating water in the farm. (1 ½ mks)

5. Give three ways through which HIV/AIDS affect agriculture. (1 ½ mks)

6. State four advantages of overhead irrigation. (2mks)

7. State three ways of conveying water in the firm. (2mks)

8. A farmer in Premier was advised to apply 150kg C.A.N*/ha* while top dressing the maize crop. CAN, contains 21% N. Calculate the amount of nitrogen applied per ha. (2mks)

9. Give two reasons why opportunity cost is zero. (lmk)

10. Give three importance of tissue culture in crop production.
(2mks)

11. State four principles which govern agricultural economics. (2mks)

12. Highlight four problems facing the marketing of cabbages. (2mks)

13. State four variable costs in maize production. (2mks)

14. State four constituents of soil. (2mks)

15. Give four types of product -product relationships. (2mks)

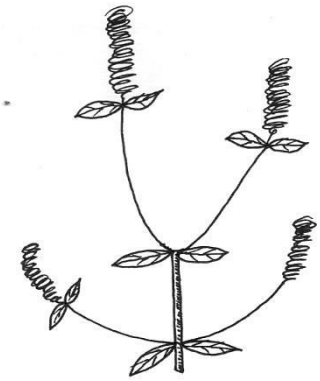
16. Differentiate between topping and top-dressing as used in pastures. (lmk)

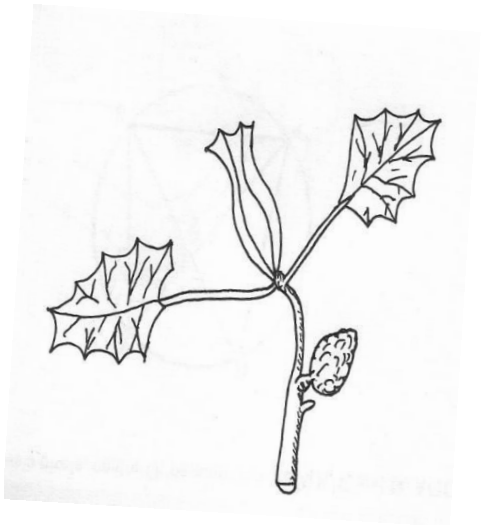
17. State five factors which influence the spacing of crops. (2mks)

SECTION B (20 MKS)

Answer ALL Questions in this section

18. Below are illustrations of common weeds. Study them and answer the questions that follow





B

(a) Identify the weeds (2mks)

A…….

B…….

(b) State the harmful effects of the weed B above (1mk)

……

(c) Give **four** advantages of leasehold tenure systems (2mks)

……

……

……

……

19. Describe the procedure which should be followed when spraying a crop of onions using a fungicide in powder form, water and a knapsack sprayer (5mks)

……

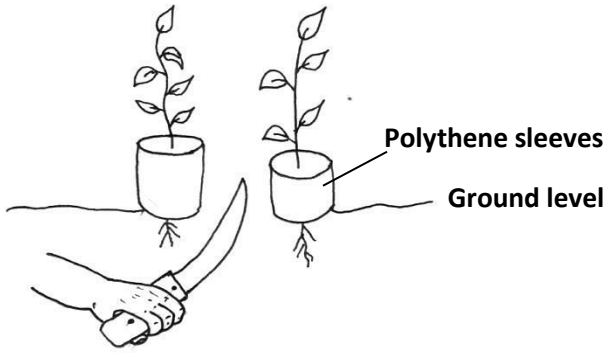
……

……

……

……

20. The diagram below illustrates a nursery practice carried out on tree seedlings before transplanting. Study it carefully and then answer the questions below



(a) Identify the practice being carried out on the diagram (1mk)

……

(b) Give **three** reasons why the practice is encouraged when raising tree seedlings (3mks)

……

……

……

(c) Give **two** reasons why the polythene sleeves are used in the nursery bed as shown in the diagram (2mks)

……

……

21. (a) Calculate the elasticity of demand when 20 bags of potatoes are demanded at a price of Kshs.1000 while 22 bags were demanded at Kshs.800. (4mks)

(b) Identify the type of elasticity of demand resulting from the situation above (1mk)

……

SECTION C (40MKS)

Answer any two Questions in this section

22. (a) Describe harvesting of pyrethrum under the following sub-headings

(i) Procedure

(4mks)

(ii) Precautions

(6mks)

(b) Describe the safety measures observed when handling farm herbicides

(10mks)

23. Describe the production of Rhodes grass (Chloris gayana) under the following sub-headings

(a) Land preparation (5mks)

(b) Pasture establishment (8mks)

(c) Maintenance (7mks)

24. (a) State **four** major questions a farm manager needs to ask and answer while preparing a partial budget (4mks)

(b) Under what conditions is partial budget an appropriate tool for planning (4mks)

(c) Mzee mkulima has 5 hectare of arable land which is under maize. He wishes to know whether replacing 0.3 ha of maize with beans the following season would be worthwhile. The fertilizer rate would have to be increased from 2 bags per hectare for maize to 2.5 bags per hectare, for beans and an extra 40 man days of casual labour per hectare would be necessary as a result of the change. Average yield of maize and beans are 56 and 90

bags per hectare respectively. The prices are ksh 1200 per bag of maize and ksh 300 per bag of beans. Seed costs are ksh 1350 per 10 kg of maize ksh 200 per 50 kg beans DAP fertilizer costs ksh 1400 per 50 kg bag. Labour is paid at ksh 150 per man day . he would require ten bag of beans seed and 1 bag of maize seed to caver 0.3 of ha.

Draw up a partial budget and indicate the effects of the change (12mks)

TERM ONE FORM FOUR
AGRICULTURE PAPER 2
TIME: 2 HOURS
NAME…….. ADM…….. CLASS……...

SECTION A: (30 MARKS)

Answer ALL questions in this section in the spaces provided.

1. State FOUR categories of produce stores found in a farm (2mks)

2. Give TWO reasons for tooth clipping in piglets (1mk)

3. State TWO uses of a rake (1mk)

4. State TWO diseases that may affect bees in a colony (1mk)

5. Differentiate between a heifer and a cow (1mk)

6. Name FOUR species of livestock that are affected by tapeworms (2mks)

7. Name FOUR viral diseases that affect poultry (2mks)

8. State FOUR disadvantages of natural incubation in poultry production (2mks)

9. Name TWO causes of bad flavors in milk production (1mk)

10. Give TWO causes of death in cows during or after parturition (1mk)

11. Differentiate between roughages and concentrates as used in livestock nutrition (1mk)

12. List THREE zoonotic diseases that can occur on the farm (1½ mks)

13. State FOUR uses of harrows on the farm (2mks)

14. State FOUR signs of heat in pigs (2mks)

15. Name FOUR plant species that can be used to establish live fences (2mks)

16. Give TWO benefits of scattering grains in a deep litter poultry house (1mk)

17. List THREE types of lubrication systems in farm machines (1½ mks)

18. List THREE sheep breeds reared for meat production in Kenya (1½ mks)

19. List THREE farm tools used during castration of farm animals (1½ mks)

20. Give FOUR disorders associated with calcium deficiency in livestock (2mks)

SECTION B: (20 MARKS)

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

21. The diagram **below** represents conditions of the tyre.

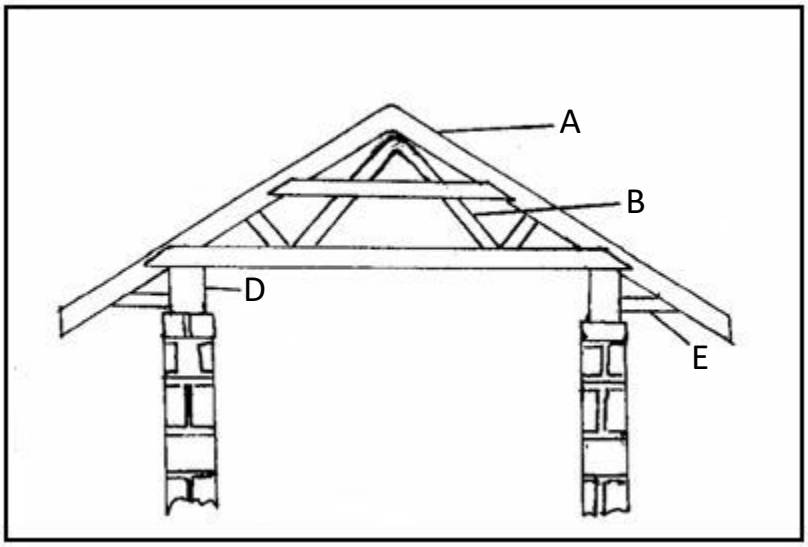


(a) Which diagram represents the correct pressure in a tractor tyre? (1 mark)

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

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

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



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

(b) Name the parts labeled.(4 marks)

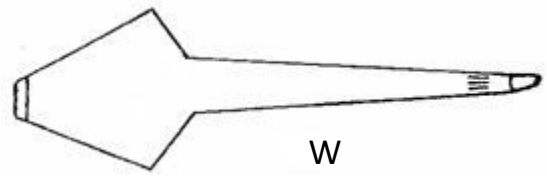
A

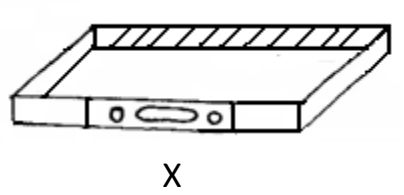
B

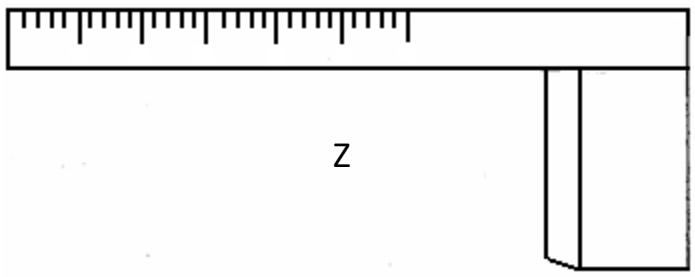
E

D

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







(a) Identify the tools.(3 marks)

W

X

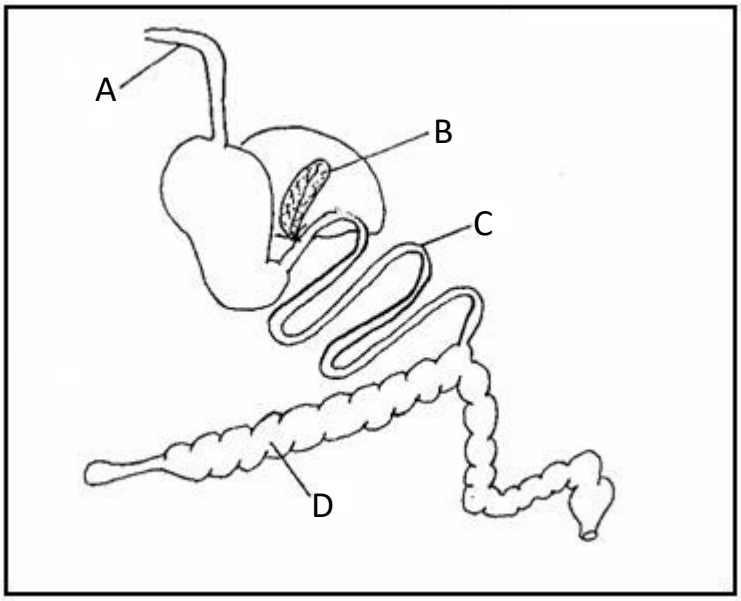
Z

(b) What are the functions of tools? (2 marks)

Z

X

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



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

(ii) Label the following parts.(2 marks)

A

B

(iii) Give the functions of each of the parts named :(2 marks)

C

D

SECTION C

Answer any two questions in this section in the spaces provided

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

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

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

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

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

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

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

NAME:……ADM:…….CLASS:……

BIOLOGY PAPER 1
FORM 4
END TERM 1, 2022
TIME: 2HRS
INSTRUCTION: Answer all questions in the spaces provided after the question.

1. (a) Explain why a person discharges urine more frequency when environmental temperatures are lower than when they are high. (2mks)

   (b) Name the nitrogenous waste product excreted by a fresh water fish. (1mk)

2. Explain how the xylem vessels are adapted to their functions. (3mks)

3. State three evidences of organic evolution (3mks)

4. In an experiment, it was found that when maggots are exposed to light, they move to the dark areas.
   a) Name the type of response exhibited by the maggots. (1mk)

   b) State the survival value of the response in (a) above. (1mk)

5. (a) What is meant by oxygen debt. (2mks)

(b) State one factor that affects basal metabolic rate. (1mk)

6. Explain what would happen to red blood cells when they are placed in hypotonic solution. (3mks)

7. State the organelle that perform the following functions. (3mks)
   (i) Synthesis of ribosomes

   (ii) Transport of lipids

   (iii) Package and transport of gloco-proteins

8. What are structural units of lipids. (2mks)

9. (a) State the major factor in the 'Global warming" experienced in the world today. (1mk)

(b) Suggest the ways of reducing the global warming (2mks)

10. State the role of the following in Homeostasis. (2mks)
    i) ADH:……

    ii) Aldosterone…….

11. Explain why cells of an endosperm are triploid and not haploid. (2mks)

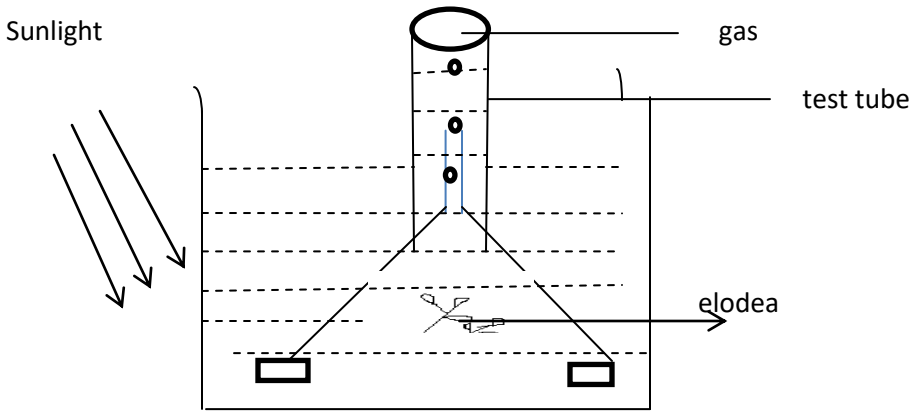
12. State four ways in which respiratory surfaces are suited to their functions (4mks)

13. State three structural modifications of nephrons found in desert mammals. (3mks)

14. How would you find out from a sample of urine whether a person is suffering from diabetes mellitus. (3mks)

15. What are the advantages of fruit and seed disposal (2mks)

16. The diagram below represents a set-up that was used to investigate a certain process in a plant.



a) What was the aim of the experiment? (1mk)

b) Name the gas collected in the gas jar. (1mk)

c) What is the confirmation test for the gas in (b) above? (1mk)

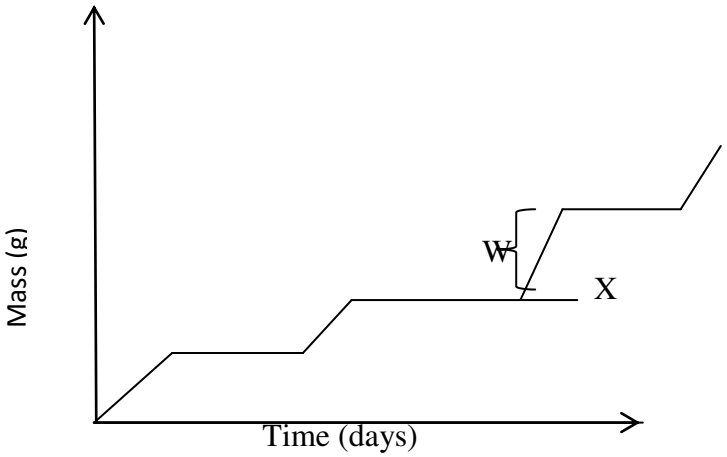
d) State two factors that would affect the process. (2mks)

17. Name the antigens that determine human blood group. (2mks)

18. a) Explain why pepsin in stomach of man is secreted in inactive form (1mk)

b) Which gland secretes pepsinogen? (1mk)

19. The graph below represents its growth of animals in a certain phylum.



a) Name the type of growth pattern shown on the graph. (1mk)

b) Identify the process represented by x. (1mk)

c) Name the hormone responsible for the process in (b) above. (1mk)

20. A student smeared Vaseline jelly on the lower epidermis of a leaf of a potted green plant which had been kept in the dark for 24hrs. She then transferred the plant to the light for six hours starch test on the leaf of the plant were negative. Account for the observation. (3mks)

21. State the three different types of blood cells. (3mks)

22. The following cell are found in living organisms.
    a) Identify the parts labeled V and U. (2mks)
    b) State the function of part labeled S. (1mk)

    c) State one cell organelle which is most abundant in the structure and explain its role. (2mks)

23. a)) Explain briefly Lamarck's theory of evolution. (2mks)

    b)State a reason why Lamarck's theory of evolution has been disapproved by scientists. (1mk)

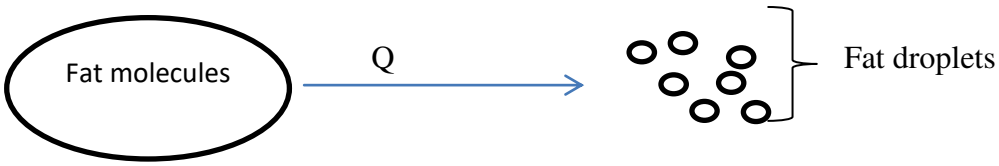
24. Below is an equation showing the aerobic breakdown of fat.
    $2C_{51}H_{98}O_6 + 145O_2 \xrightarrow{\text{Energy + }\blacktriangleright} 102CO_2 + 98H_2O$.

    Calculate the respiratory quotient of the breakdown above. (2mks)

25. (a) What are vestigial structures? (1mk)
    b) Give two examples of vestigial structures found in man. (2mks)

26. Give two limitations of fossil records as evidence of evolution. (2mks)

27. The diagram below illustrates a physiological process that occurs in the alimentary canal of man.



a) Name the process Q above. (1mk)

b) Explain the biological importance of the above process. (1mk)

c) Name the substance that helps the process name in (a) above (1mk)

28. List 3 features that make man the most dominant species on earth. (3mks)

NAME::……CLASS:……..ADMISSION NO:……

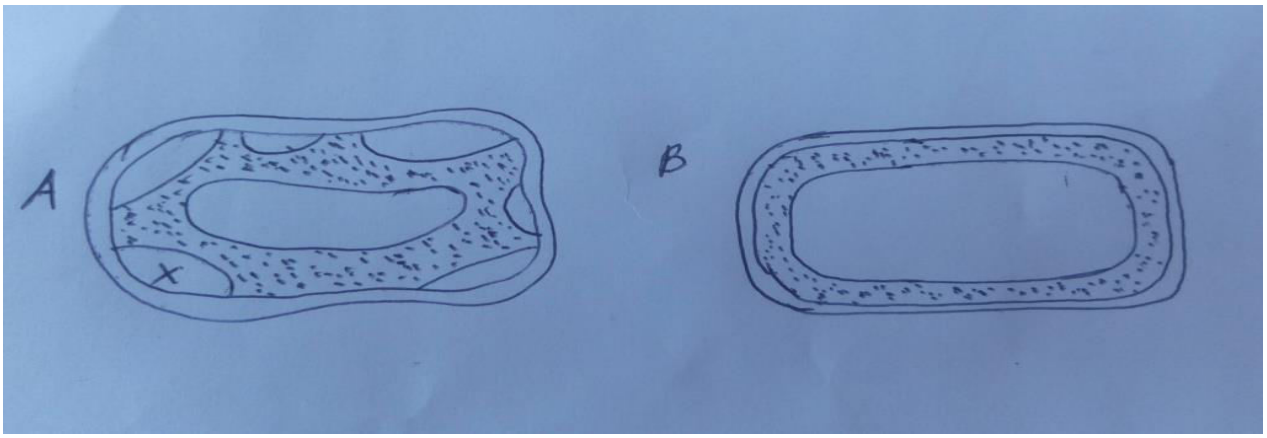
BIOLOGY PP2
FORM 4
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

a) **This paper consists of two sections A and B.**
b) **Answer All the questions in Section A in the spaces provided**
c) **In section B answer question 6. (compulsory) and either question 7 or 8 in the spaces provided after question &.**
d) **Candidates should answer the questions in English.**

SECTION A(40 MARKS)

1. The diagrams below represents two plants cell A and B placed in two different solutions. Study the diagrams and answer questions that follow.



a) Identify the nature of solution into which each cell was placed. (2mks)
A

B

b) Name the physiological process responsible for the observed results. (1mk)

c) Give the correct biological term used to describe cell A. (1mk)

d) Describe what would happen if a red blood cell was placed in the solution in which cell B was placed. (2mks)

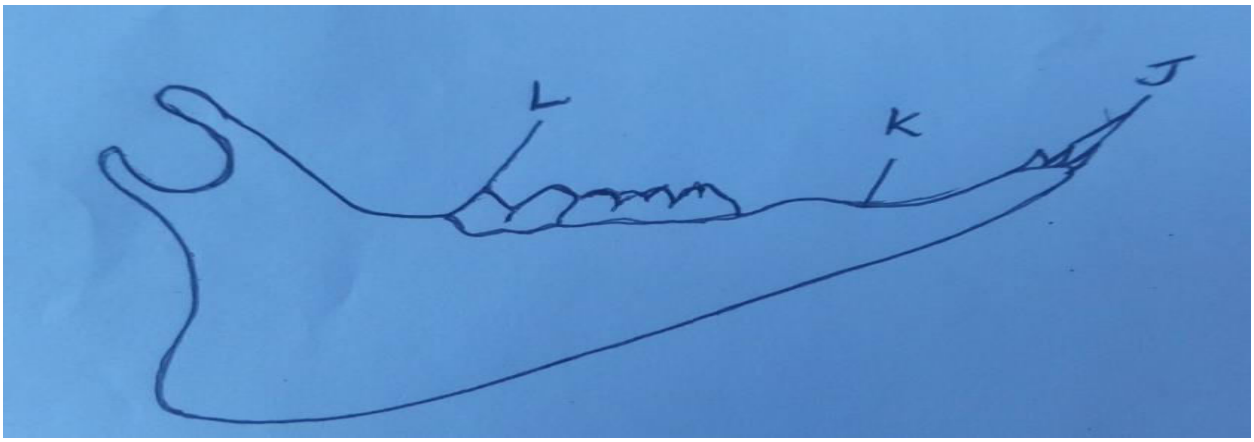
e) Explain why freshwater amoeba do not burst when placed in distilled water. (2mks)

f) Explain the fate of glucose after assimilation. (2mks)

2. (a) Distinguish between the terms homodont and heterodont. (2mks)

(b) What is the function of carnassial teeth? (1mk)

(c) The diagram below represents the lower jaw of a mammal.



(i) Name the mode of nutrition of the mammal whose jaw is shown above. (1mk)

(ii) State one structural and one functional differences between the teeth labeled J and L. (2mks)

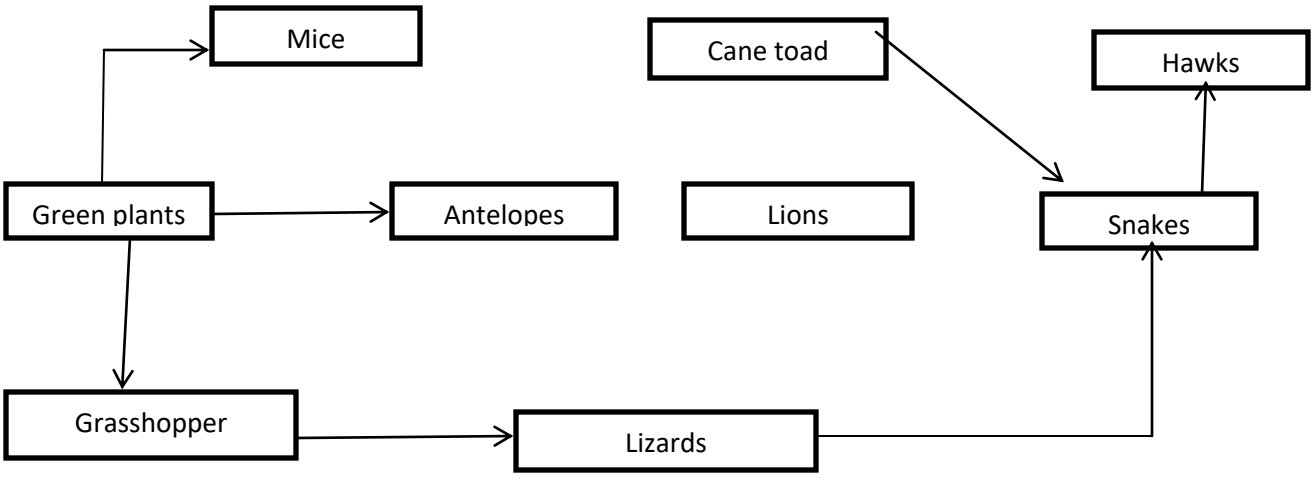
(iii) Name the toothless gap labeled K. (1mk)

(iv) State the function of the gap. (1mk)

(v) Name the substance that is responsible for hardening of teeth. (1mk)

(v) What do you understand by the term 'dental formula'. (1mk)

3. The diagram below represents a food web in a terrestrial ecosystem.



a) Which organism has the highest number of preys? (1mk)

b) Construct food chains with snakes as tertiary consumers. (2mks)

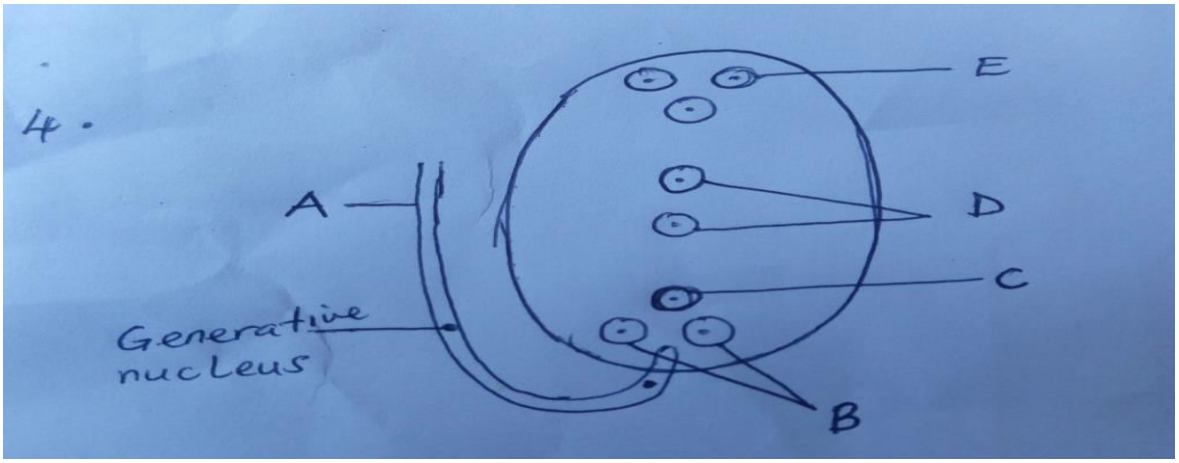
c) State the trophic level occupied by hawks in the food chains constructed in (b) above (1mk)

d) Describe how capture-recapture method can be used in estimating the population of fishes in a lake. (4mks)

e) Name the process through which:
(i) Producers convert chemical energy into heat energy lost to the environment. (1mk)

(ii) Living organisms convert chemical energy into heat energy lost to the environments. (1mk)

4. The figure below shows the embryo sac before fertilization.



a) Identify the structures labeled A and B (2MKS)

b) Identify the structures labeled in the diagram that will develop into the following after fertilization.
(i) Embryo (1mks)

(ii) Endosperm (1mk)

c) State the ploidy of each of the following nuclei after fertilization
i) C (1mk)

ii) D (1mk)

d) Briefly outline the process of 'double fertilization' in flowering plants. (2mks)

e) Name two substances which are found in the intercellular air spaces in a green leaf during a hot sunny day. (2mks)

5. In an investigation, snapdragon plants with broad leaves (B) were crossed with narrow leaves (N). The F1 progeny had intermediate leaf breadth.
(i) Give a reason for intermediate leaf breadth in F1 generation (1mk)

(ii) If the plants in the F1 Generation were selfed, state the genotypic and phonotypic ratio of the F2 generation. (show your working) (5mks)

(iii) Hemophilia is more common in males than females. Explain this phenomenon. (2mks)

(iv) Explain why an under dose insecticide spraying of mosquitoes may cause a serious problem on this mode of killing mosquitoes using the same spray in future. (2mks)

SECTION B(40 MARKS)

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

6. Two sets of a pea seeds were germinated, set A was placed in normal day light conditions in the laboratory which set B was placed in a dark cupboard. Starting a few days later the shoots lengths were measured twice daily and their mean length recorded as shown in the table below.

Time in hours	0	12	24	36	48	60	72	84
Set A (length (mm)	12	14	20	23	28	31	47	54
Set B length (mm)	17	23	28	35	48	62	80	94

(a) Using suitable scale draw the graphs of the mean lengths in set A and B against time (7mks)

(b) From the graph, state the man shoot length of each set of seedling at the 66^{th} hour. (2mks)

© Account for the difference of curve B and A. (3mks)

(d) Explain what would happen to set up B if it were allowed to continue to grow under conditions of darkness. (4mks)

(e) State 3 external conditions which should be constant for both set ups. (3mks)

(f) Why is oxygen important in the process of active transport? (1mk)

7. (a) state five difference between aerobic and anaerobic respiration. (5mks)

(b) Discuss the application of anaerobic respiration in industry and at home. (15mks)

8 (a) state two functions of the mammalian skin. (2mks)

(b) Describe the structure and function of the mammalian skin. (8mks)

NAME: …… ADM NO: …… CLASS: ……
231/3
BIOLOGY
PRACTICAL
FORM FOUR
END OF TERM 1 2022 EXAMS
TIME: 1 3/4 HOURS
MAX 40 MKS.

ANSWER ALLTHE QUESTION IN THE SPACES PROVIDED.

Answer all the questions in the spaces provided.

1. You are provided with substance L. Carry out food tests on the substance using the reagents provided .Record your procedure , observations and conclusions in the table below.(9mks)

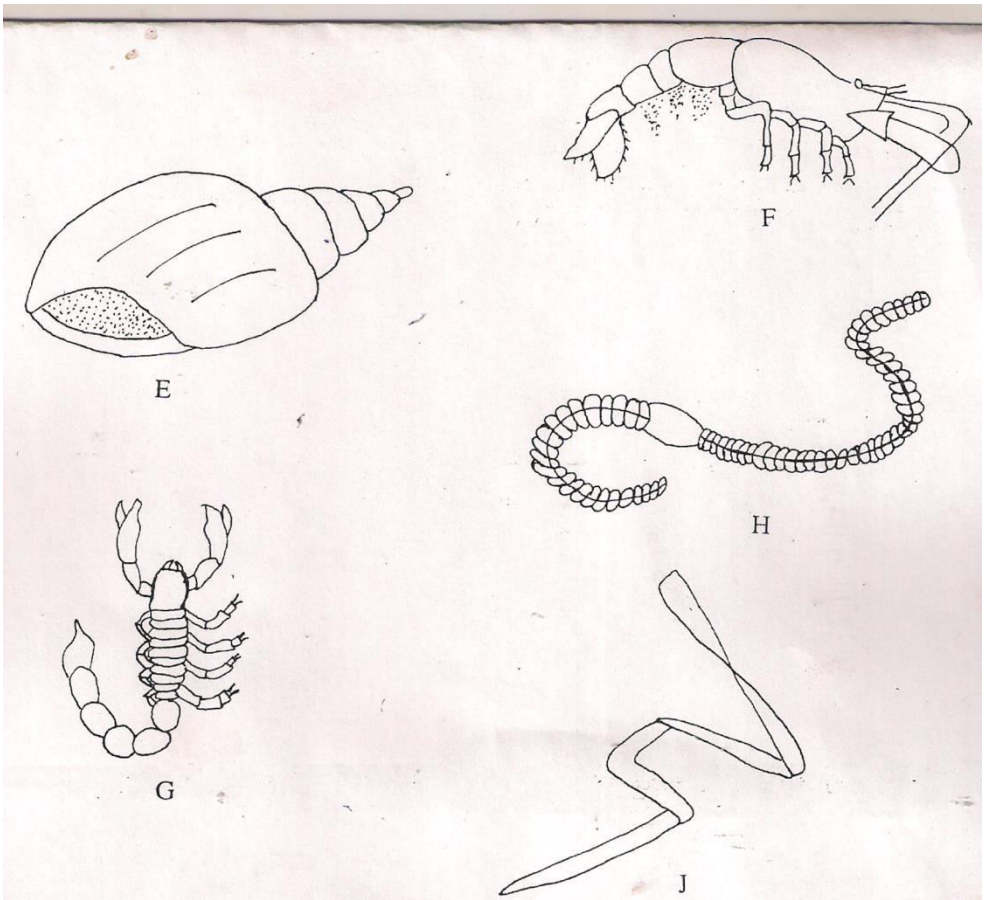
Food substance	Procedure	Observation	Conclusions

2. During a visit to a museum, students were shown ten specimens of organisms on display.The teacher provided a dichotomous key (shown in a separate page) to enable them to place each species on display into its taxonomic group. Five of the specimens that were on display are shown in the diagrams provided.

Dichotomous Key.

1.(a) Animal with a flattened body….. ……..go to 9.
(b)Animal without a flattened body…… go to 2.
2.(a)Animal with body in a shell …….Mollusca.
(b)Animal with body in shell…….. go to 3.
3.(a)Animal with segmented body….. ……go to 4.
(b)Animal with body not segmented…….Nematoda.
4.(a)Animal with jointed appendages go to 6.
(b) Animal without jointed appendages to 5.
5.(a)Animal with long and cyndrical body……..annelida.
(b)Animal with short stout body…….. Trenada.
6.(a) Animal with antennae……...go to7.
(b) Animal without antennae ….. …….go to 8.
7.(a)Animal with one pair of antennae…… Insecta.
(b) Animal with more than one pair of antennae…….. crustacean.
8.(a)Animal with pincer –like mouthparts…….. Arachida.
(b) Animal with sucking mouth parts…….….Acarina.
9.(a)Animal with long ribbon-like body …….……cestoda.
(b) Animal with circular body…….. rinoidea).

Use the dichotomous key to identify the taxonomic group of each of the five specimens shown in the drawings.



a. In each case, show in sequence the steps (ef 1a,2a,5a, 7b) in the key that you followed to arrive at the identify of each specimen.(5mks)

Animal	Steps followed	Identity
E	……..	
	……..	
F	……..…..	
	……..	
G	…….	
	……..	
H	…….	
	……	
J	……	
	…….	

b)i)Nam the phylum and the class to which specimen M belongs(2mks)

Phylum:

Class:

ii) Name the observation features that enabled you to place it in the class above.(3mks)

(c)With the help of a hand lens, examine the body of specimen M.

i)State with a reason in each case he observable features that enable the specimen to be a disease vector.(2mks

(ii) Name one disease transmitted by specimen M.(1mk)

iii) State two methods that can be used to prevent specimen M from spreading diseases.(2mks)

2. You are provided with specimens labeled S_1S_2 and S_3

a. Using a scarpel blade split S_1longitudinally and draw a well labeled diagram to show the internal structures.
State your magnification (4mks)

b. With a reason ,state the class to which the plant from specimen S_1 belongs to.
Class(1mk)

Reason(1mk)

c. Specimen S_2 is a germinated seedling of S_1.In the table below, name three structures and say which structure in S_1developed into the structure in S_2.

Structure in S_1	**Structure in S_2**

d.(i) Using specimens S_1 and S_3 ,name the type of germination in :-
S_1

S_3 (1mk)

ii. Give the difference between the this type of germination in (d) (i) above (2mks)

iii.Account for the type of germination in :-
S_1 2mks

S_3(2mks)

BIOLOGY PAPER 3.

Paper 231/3.(Practical).

CONFIDENTIAL INSTRUCTIONS:

NB/Requirement instruments:

1. **About 10ml of substance L.**
2. **4 clean test tubes on arack.**
3. **A means of heating**
4. **Test tube holder.**
5. **A scalpel.**
6. **A house fly labeled specimen M.**
7. **A dry bean seed labeled S_1.**
8. **A bean seedling labeled S_2.**
9. **A maize seedling labeled S_3.**
10. **1% copper (II)sulphate solution.**
11. **10% sodium hydroxide solution.**
12. **Benedict's solution.**
13. **Iodine solution.**

Note:

i. **To make substance L,mix egg albumen and starch.**

ii. **Specimen S_2 and S_3 should be ready 1 week before the exams and must have the seeds intact.**

NAME: …….ADM NO:……..CLASS: ……

SCHOOL …….

565/1
BUSINESS STUDIES
PAPER 1
JUNE 2022
TIME: 2 HRS

EVALUATION EXAMINATION 2022

INSTRUCTIONS to candidates

(a) Write your name and adm number in the spaces provided above.
(b) Answer ALL the questions.
(c) All answers must be written in the spaces provided.
(d) Candidates should check the question paper to ascertain that all the pages are printed as indicated and no of questions missing.
(e) This paper consist of 8 printed pages.

For Examiners Use Only

Questions	1	2	3	4	5	6	7	8	9	10	11	12
Marks												

Questions	13	14	15	16	17	18	19	20	21	22	23	24	25
Marks													

Total marks

1. Highlight four principles of insurance. (4 mks)

   (i) ……..

   (ii) ……..

   (iii) ……..

   (iv) ……..

2. Outline four reasons how competitive environment affects Business activities. (4 mks)

   (i) ……..

   (ii) ……..

   (iii) ……..

   (iv) ……..

3. State four characteristics of a perfect competition market. (4 mks)

   (i) ……..

   (ii) ……..

   (iii) ……..

   (iv) ……..

4. Outline four differences between a good and a service. (4 mks)

(i)		
(ii)		
(iii)		
(iv)		

5. Match the following statements with the correct source documents. (4 mks)

	Statement	Source document
(i)	A document that serves as an evidence that cash has been received or paid out.	
(ii)	A document that shows the details of all the expenses incurred, the amount of money spent and the purpose of incurring such an expense.	

(iii)	A document sent by the seller to the buyer demanding payment for goods or service delivered.	
(iv)	A document written by a supplier and sent to a buyer informing him / her that his / her account with the supplier has been debited.	

6. This is the Mitegi's demand schedule for Bread in a week.

Price per loaf (shs)	No of loaves demanded
30	1
20	2
15	4
12	6
10	8
5	12
1	20

Required:
Draw the demand curve of Mutegi's Bread for a whole week. (4 mks)

7. Highlight four importance of business studies to a learner. (4 mks)

(i) ……..

(ii) ……..

(iii) ……..

(iv) ……..

8. Using the balance sheet equation. Fill the missing figures in the following table. (4 mks)

	Assts	Capital	Liabilities
(i)	21,920	?	30,341
(ii)	?	2,192	19,840
(iii)	3,773	1,591	?
(iv)	240	150	?

9. Outline four roles played by the stock exchange market as a market for securities. (4 mks)

(i) ……..

……..

(ii) ……..

……..

(iii) ……..

……..

(iv) ……..

……..

10. Highlight four factors which may influence choice of a distribution channel. (4 mks)

(i) ……..

……..

(ii) ……..

……..

(iii) ……..

……..

(iv) ……..

……..

11. Outline four advantages of a bonded warehouse. (4 mks)

(i) ……..

……..

(ii) ……..

……..

(iii) ……..

……..

(iv) ……..

……..

12. Match the following documents with their relevant uses. (4 mks)

	Statement	Documents
(i)	This is a document which briefly describes the goods a seller stocks	
(ii)	A documents sent by the seller to the buyer when an inquiry is specific in mature.	
(iii)	A document sent to a prospective buyer to inform him/her that the order has been received and it is being acted upon.	
(vi)	A document sent by the buyer when goods get damaged on the way and returned to the seller.	

13. Highlight our goals of economic development. (4 mks)

(i) ……..

……..

(ii) ……..

……..

(iii) ……..

……..

(iv) ……..

……..

14. Outline the type of unemployment in an economy and give the cause for each. (4 mks)

(i) Unemployment occurs when people lose jobs and go looking for new ones

……..

(ii) Unemployment that occurs when people are actively looking for jobs at the existing wage rate but cannot get them…..……..

(iii) Unemployment that occurs repeatedly at similar times

……..

(iv) Unemployment that occurs when demand for labour declines due to either changes in the method of production or a decrease in the supply of goods and services.

……..

15. Outline four reasons why there is need for ethical practices in business. (4 mks)

(i) ……..

……..

(ii) ……..

……..

(iii) ……..

……..

(iv) ……..

……..

16. Highlight four problems encountered in measuring national income using the output approach method. (4 mks)

(i) ……..

……..

(ii) ……..

……..

(iii) ……..

……..

(iv) ……..

……..

17. Match the following uses with the appropriate office equipment. (4 mks)

	Uses	Office equipment
(i)	It is a machine that is used for preparing cash receipts	
(ii)	It is a machine used for trimming documents into required shapes and size.	
(iii)	A machine which is used for cutting unwanted documents into tiny pieces to avoid such documents getting into the wrong hands.	
(vi)	A machine which is used to complex calculations.	

18. Explain the meaning of the following terms of sale as used in international trade. (4 mks)

(i) F.O.B. (Free on Board)……..……..

……..

(ii) LOCO or ex-warehouse or ex- works……...……...

……..

(iii) F.O.R. (Free on Rail)…….……..

……..

(iv) In bond ……..……..

……..

19. Highlight four ways how consumers can protect themselves from exploitation from unscrupulous wholesalers / traders. (4 mks)

(i) ……..

……..

(ii) ……..

……..

(iii) ……..

……..

(iv) ……..

……..

20. Outline four criteria used in determining the size of the firm. (4 mks)

(i) ……..

(ii) ……..

(iii) ……..

(iv) ……..

21. Outline four tools that the central bank of Kenya uses to control monetary policy. (4 mks)

(i) ……..

……..

(ii) ……..

……..

(iii) ……..

……..

(iv) ……..

……..

22. Calculate the gross profit given the margin of $^1/_6$ and the cost of goods sold to be 400,000/=. (4 mks)

23. Highlight four advantages of operating a current account. (4 mks)

(i) ……..

……..

(ii) ……..

……..

(iii) ……..

……..

(iv) ……..

……..

24. Outline four factors that influences the choice of product in the market.

(i) ……..

……..

(ii) ……..

……..

(iii) ……..

……..

(iv) ……..

……..

25. List four essential of an effective communication.

(i) ……..

(ii) ……..

(iii) ……..

(iv) ……..

Name…… Index No…….

Sign……...

Date……..

565/2

BUSINESS STUDIES

PAPER 2

JUNE 2022

TIME: **2 ½ HOURS**

INSTRUCTIONS TO CANDIDATES

i) This paper consists of **six** questions
ii) Answer any **five** questions
iii) Answers should be written on the spaces provided after question **six**
iv) All questions carry equal marks
v) This paper consists of **9** printed pages
vi) Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing
vii) Candidates should answer the questions in English

1. (a) Explain **five** circumstances that can cause a business to succeed in their activities. (10marks)

   (b) Explain **five** problems facing the savings and credit cooperative societies in Kenya. (10marks)

2. (a) A prudent tax system must meet certain essential qualities. Explain **five** indicators of a good tax system . (10marks)

   (b) Describe the procedure an insured must take when making an insurance claim. (10marks)

3. (a) Ondari intends to promote his products. Explain **five** factors that he must take into account when deciding on which method to use. (10marks)

   (b) Explain **five** weaknesses of using national income statistics as a measure of social welfare. (10marks)

4. (a) Explain **five** factors that justify the existence of small scale firms in an economy. (10marks)

   (b) Bartenge Enterprises started business on 1st May 2014 with Shs. 250,000 consisting of:
   Cash at bank Shs.200,000, Cash in Hand Shs. 30,000 and Furniture Shs. 20,000.

The following transactions took place during the month of May.
3rd May 2014, Motor Van worth Shs. 85,000 and stock of Shs. 25,000 were bought on credit
6th May 2014, more stock worth shs.10,000 was bought by cash
9th May 2014, withdrew money from bank sh 50,000 for office use
15th May 2014, Sold stock at cost to a customer on credit for shs. 18,500
19th May 2014, received a cheque for the full settlement of a debt owed from the transaction of 15th may 2014
23rd May 2014, paid Shs. 65,000 by cheque for the motor van bought earlier on credit
31st May 2014, paid Shs. 20,000 cash for the stock bought on credit

Required:

Prepare the balance sheet of Bartenge Holdings as at 31st May 2014. (10marks)

5. (a) Explain **five** problems that are faced by a country with a big population of ageing persons. (10marks)

(b) Explain **five**difference between banking and non-banking financial institutions . (10marks)

6. (a) Explain **four** reasons why upward communication should be encouraged in an organization. (8marks)

(b) The following trial balance was extracted from the books of Lule Traders on 30th April 2015

Lule Traders
Trial Balance
As at 30th April 2015

	Dr (Kshs.)	Cr (Kshs.)
Sales		186,000
Purchases	115,560	
Stock 1.5.2014	37,760	
Carriage outwards	3,260	
Carriage inwards	2,340	
Returns	4,400	3,550
Salaries	24,470	
Electricity	6,640	
Rent	5,760	
Sundry expenses	12,020	
Equipment	24,000	
Furniture	6,000	
Debtors	45,770	
Creditors		30,450

Bank 38,760
Cash 1,200
Drawings 20,500
Capital 128,440
348.440 348,440
Stock as at 30.4. 2015 Shs. 49,980

Required:

a) Trading, profit and Loss account for the year ended 30th April 2015 (8mks)
b) Balance sheet as at 30th April 2015 (4mks)

233/3
CHEMISTRY
(CONFIDENTIAL)

Requirements for candidates

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

1. about 100cm^3 of solution F
2. about 50cm^3 of solution G
3. 30cm^3 of solution M
4. 30cm^3 of solution N
5. one burette 0 – 50ml
6. one pipette 25ml
7. two conical flasks
8. 100ml measuring cylinder
9. 200ml or 250ml beaker
10. About 500ml distilled water
11. Phenolphthalein indicator
12. thermometer (0 – 110^{0}C)
13. Source of strong heat (preferably Bunsen burner)
14. clock or stop watch
15. 2 boiling tubes
16. one CLEAN METALLIC spatula
17. 6 clean dry test-tubes
18. one test-tube holder
19. at least 6cm length of universal indicator paper
20. 0.5g of sodium hydrogen carbonate
21. pH chart pH 1 – 14
22. Bromine water supplied with a dropper
23. 0.5g of solid K – oxalic acid.
24. 0.5g of solid P – Sodium sulphite

The students should have access to the following

a. 2.0M NaOH solution with a dropper
b. 1.0M barium nitrate solution with a dropper
c. Bromine water with a dropper
d. Acidfied potassium manganate (vii) with a dropper
e. 2.0M HCl with a dropper

1. Bromine water is prepared by adding 1ml of liquid bromine to 100cm^3 of distilled water and shaking thoroughly in a fume cupboard.

2. Acidified potassium permanganate is prepared by adding 3.16g of solid potassium permanganate to 400cm^3 of 2M sulphuric acid and diluting to one litre of solution using distilled water.

3. Solution M is made by dissolving 12.6g of oxalic acid in 400cm^3 distilled water and making it to 1 litre.

4. Solution N is prepared by dissolving 3.16g of potassium manganate (VII) in 200cm^3 of 2M sulphuric acid and adding more water to make 1 litre

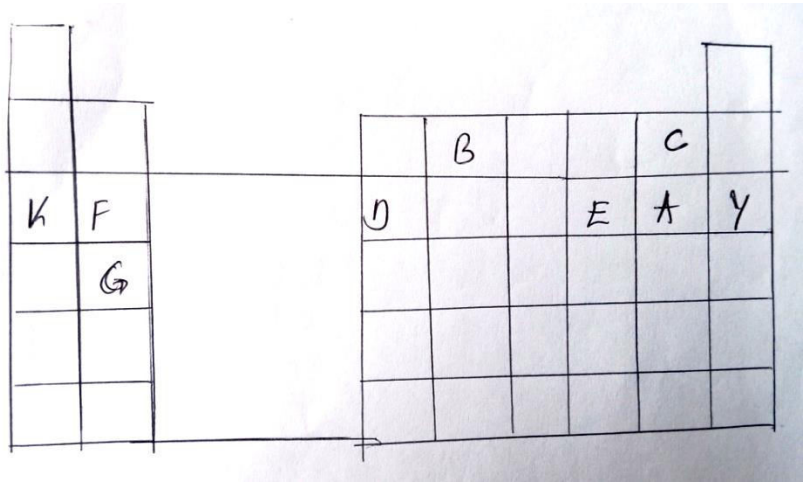
5. Solution F is prepared by dissolving 4g of sodium hydroxide pellets in about 800cm^3 of distilled water and diluting it to one litre solution.

6. Solution G is prepared by dissolving 9.0g of oxalic acid (ethan-1,2-dioic acid) in 200cm^3 of distilled water and diluting it to 250cm^3 solution.

NAME: …….. ADM NO: …….. CLASS:
233/2
CHEMISTRY
PAPER 2
2022

INSTRUCTIONS TO CANDIDATES:
Answer all the questions in the spaces provided.
Mathematical tables and electronic calculators may be used.
All working must be clearly shown where necessary.

1. The grid below represents part of the periodic table. Study it and answer the questions that follow.



(a) Identity the family name to which element F and G belong. (1 mk)

(b) Name the type of bond formed when a and F belong. (1 mk)

(c) Write the formula of the oxide formed when D reacts with oxygen. (1 mk)

(d) What type of oxide is formed in (c) above. (1 mk)

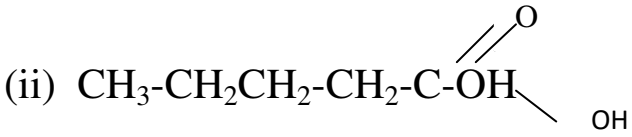
(e) Compare the atomic radii of F and D. Explain. (2 mks)

(f) Element F burns in air to form two products. Write two equations of the two products formed. (3 mks)

(g) Stat e two uses of element K and its compounds. (2 mks)

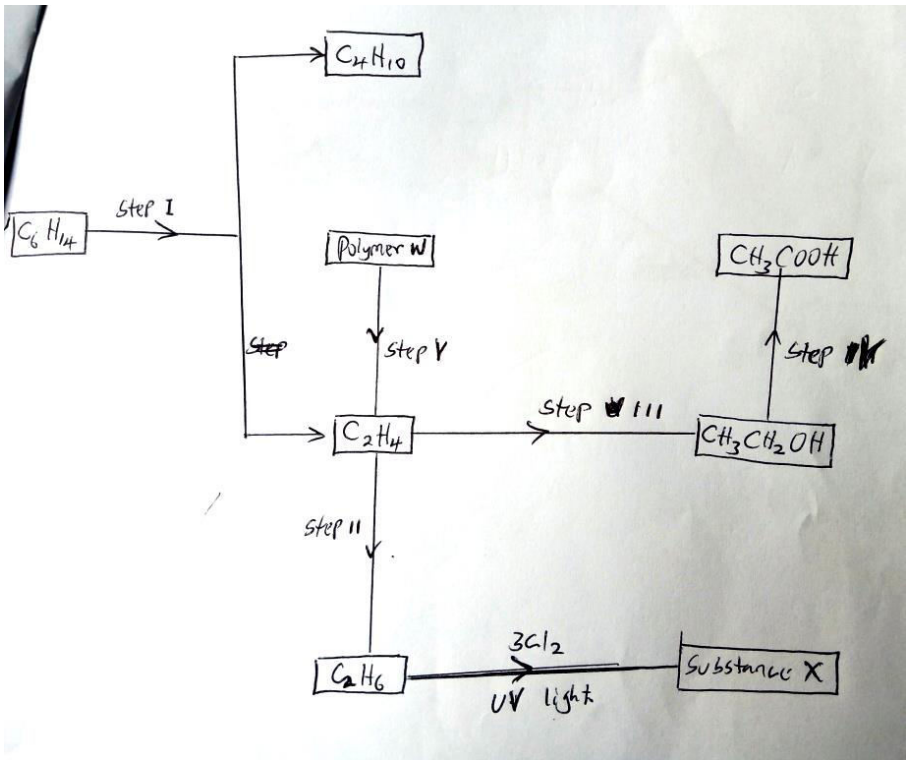
2. (a) Name the following organic compounds.

(i) $CH_3CH_2CH(Br)CH_3$

(ii) 

(iii) $CH_2CHCH_2CH(Br)CH_3$

(b) Study the flow chart below and answer the questions that follow.

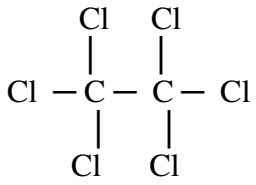


Name:-

(i) The process that occur in steps marked I, II and IV. (1 mk)

(ii) The reagent and conditions in step II. (1½ mks)

(iii) Draw the structural formula of substance X, give the name of the substance.
(2 mks)



(c) The diagram below shows a structure of a cleansing agent.



(i) Name the cleansing agent above. (1 mk)

(ii) State the type of cleansing agent above. (1 mk)

(iii) Name the material added to the cleansing agent in order to improve its cleansing property.

3. (a) $50cm^3$ of 1M copper (II) Sulphate solution was placed in a $100cm^3$ plastic beaker. The temperature of the solution was measured. Excess metal A powder was added to the solution, the mixture stirred and the maximum temperature was repeated using powder of metal B and C. The results obtained are given in the table below.

	A	**B**	**C**
Maximum temperature ^oC	2.63	31.7	22.0
Initial temperature (^oC)	22.0	22.0	22.0

(i) Arrange the metal A, B, C and Copper in order of reactivity starting with the least reactive. Give reasons for the order. (3 marks)

(ii) Other than temperature change, state one other observation that was made when the

most reactive metal was added to the copper (II) Sulphate solution. (1 mk)

(b) The Standard enthalpy change of formation of methanol is -239Kjmol-1

(i) Write the thermal chemical equation for the standard enthalpy change of formation of methanol. (1 mk)

(ii) Use the following data to calculate the enthalpy change for the manufacture of methanol from carbon (II) oxide and hydrogen. (3 mks)

$CO_{(g)} + ½\ O_{2(g)} \longrightarrow CO_2;\quad \Delta H^{o} = -283Kj/mol$

$H_{2(g)} + ½\ O_{2(g)} \longrightarrow H_2O_{(l);} = \Delta H^{o} = -286Kj/mol$

$CH_3OH + {}^{3}/_{2} \longrightarrow CO_{2(g)} + 2H_2O;\ \Delta H^{o} = -715Kj/mol$

(c) Study the information given in the table below and answer the questions that follow.

Bond	Bond energy ($Kjmol^{-1}$
C – H	414
Cl – Cl	244
C – Cl	326

H - Cl 431

Calculate the enthalpy change for the reaction. (3 mks)

4. Carbon IV oxide is produced when solid X is heated strongly. It can also be prepared by adding dilute hydrochloric acid to solid X. The reaction between X and dilute Sulphuric acid, however gradually slows down and stops.

(a) (i) Name solid X. (1 mk)

(ii) Write an ionic equation for the reaction of X and acid. (1 mk)

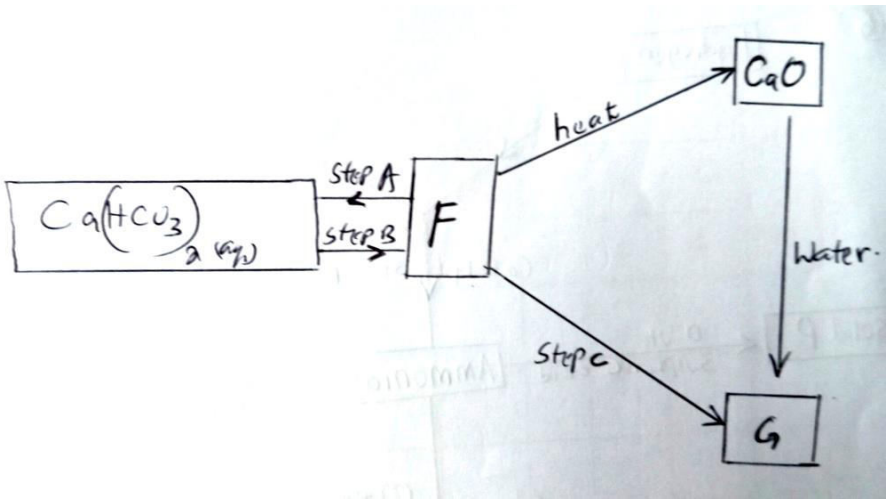
(b) A gas jar full of Carbon (IV) oxide was inverted over burning candle.

(i) State the observations made. (1 mk)

(ii) What two properties of carbon (IV) oxide does this observation illustrate. (2 mks)

(iii) Name a practical everyday use of this property of carbon (IV) oxide. (1 mk)

(c) The flow diagram below shows some reactions of calcium compounds.



(i) Name compound F and G. (2 mks)

(ii) Write equations for reactions in step A, B and C. (3 mks)

5. A piece of sodium metal which had been exposed to air, was found to be covered with a white powder. The piece was dropped into 50g of ethanol and 2400cm^3 of hydrogen gas measured at room temperature and pressure was obtained. The unused ethanol was distilled off and a white solid remained (Na = 23, molar gas volume at room temperature and pressure = 24dm^3)

(i) Name the other substance formed other than hydrogen. (1 mk)

(ii) Calculate the mass of sodium that dissolved in ethanol. (2 mks)

(iii) What mass of ethanol was distilled of assuming there was no loss during the process? (2 mks)

(iv) The ethanol was distilled off at $80^{o}C$, while the white solid remained unaffected at this temperature. What is the difference in structure of ethanol and the white solid. (2 mks)

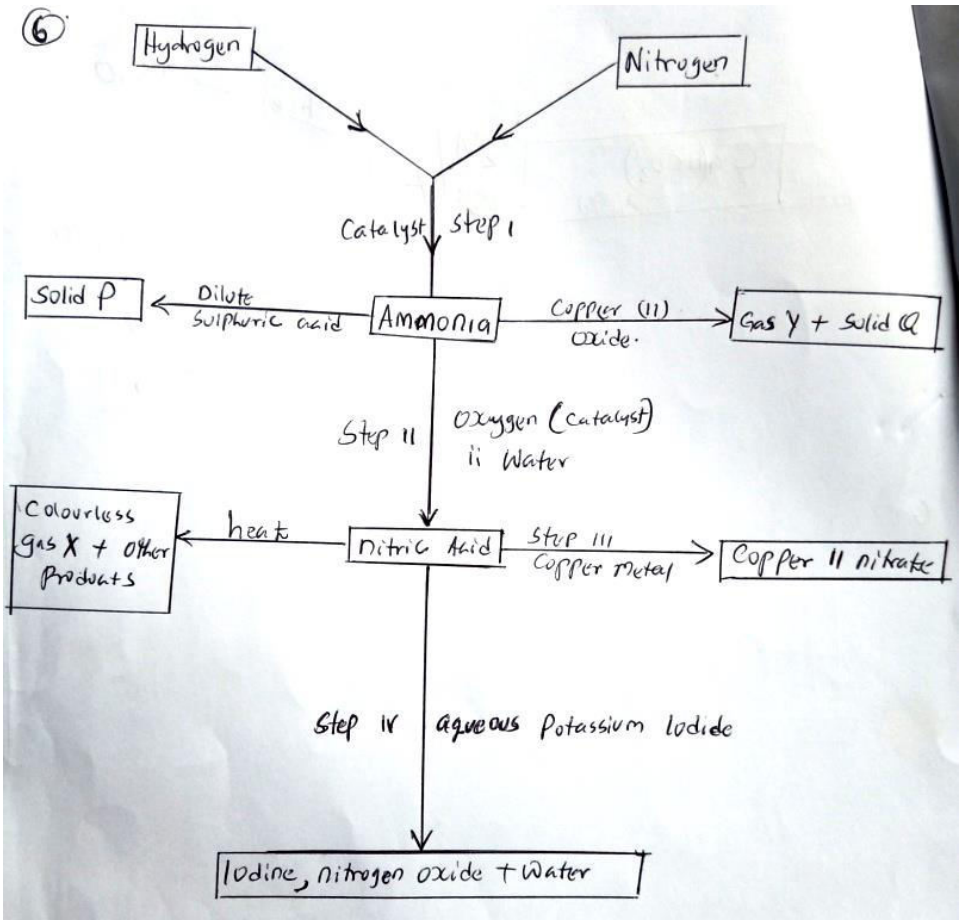
(b) Name another liquid which produces;
(i) Hydrogen with sodium metal. (1 mk)

(ii) What difference would you observe if identical pieces of sodium were dropped separately into small beakers containing ethanol and this other liquid? (2 mks)

(c) (i) Name the white powder coating the original piece of sodium, explain how it was formed. (3 mks)

(ii) Describe one test by which you could identify white powder which originally covered sodium. (2 mks)

6. The scheme below shows various reactions starting with hydrogen and nitrogen. Study it carefully and answer the questions that follow.



(i) Give one condition other than the of a catalyst that would favour the reaction in step I. (1 mk)

(ii) Name the catalysts used in step I and II. (2 mks)

(iii) Name substances P, Q, X and Y . (2 mks)

(iv) Write equations for the reactions that takes kplace in step II. (3 mks)

(v) Name the oxidizing agent for the reaction that takes place in step IV. (1 mk)

(vi) Why is a concentrated nitric acid transported on aluminium container and not copper? (1 mk)

7. Use standard electric potentials for elements A, B, C, D and F given below to answer the questions that follow.

	$E^{\ominus}$ (volts)
$A^{2+}_{(aq)} + 2e^- \rightleftharpoons A_{(s)}$	-2.90
$B^{2+}_{(aq)} + 2e^- \rightleftharpoons B_{(s)}$	-2.38
$C^{+}_{(aq)} + 2e^- \rightleftharpoons \frac{1}{2} C_{(g)}$	-0.00
$D^{2+}_{(aq)} + 2e^- \rightleftharpoons D_{(s)}$	+0.34
$\frac{1}{2} F_{2(g)} + e^- \rightleftharpoons F^-_{(aq)}$	+2.87

(i) Which element is likely to be hydrogen? Give a reason for your answer. (2 mks)

(ii) What is the $E^{\ominus}$ value of the strongest reducing. (1 mk)

(iii) In the space provided, draw a labeled diagram of the electrochemical cell that would be obtained when half-cells of elements B and D are combined. (3 mks)

(iv) Calculate the E^{o} value of the strongest reducing agent. (2 mks)

(b) During the electrolysis of aqueous copper II Sulphate using copper electrodes, al current of 0.2 amperes was passed through the cell for 5 hours.

(i) Write an ionic equation for the reaction that took place at the anode. (1 mk)

(ii) Determine the change in mass of the anode which occurred as a result of the electrolysis process. (C.u = 63.5, 1 Faraday = 96,500 coulombs) (2 mks)

313/1

C.R.E

Paper 1

JUNE 2022

Time: 2½ Hours

EVALUATION EXAMINATION 2022

Kenya Certificate of Secondary Education

Instructions to Candidates

- *The paper consists of **Six** questions*
- *Answer **ANY FIVE** questions in the answer sheets provided*
- *Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*

1 a) Explain **four** similarities between the biblical concept of sin and the African view of evil (8 marks)

b) State **seven** teachings about man from the Genesis stories of creation (7 marks)

c) Give **five** ways in which Christians continue with God's work of creation (6 marks)

2) a) Describe how God tested Abraham's faith in Genesis 22:1-19 (8 marks)

b) With reference to Genesis 17:10-17, outline **five** instructions given by God to Abraham concerning Jewish circumcision (5 marks)

c) Identify **seven** attributes of God learnt by Christians from the ten plaques (8 marks)

3. a) State **seven** functions of the Temple in Jerusalem at the time of King Solomon. (7 marks)

b) Explain ways in which the Israelites moved away from the true worship of Yahweh during Prophet Elijah's time. (6 marks)

c) Identify **seven** ways how the Church is promoting the true worship of God in Kenya today. (7 marks)

4. a) Outline **seven** characteristics of false prophets. (7 marks)

b) Explain **four** visions of Prophet Amos. (8 marks)

c) Mention ways in which God communicates to His people today. (5 marks)

5. a) With reference to Jeremiah's teachings, **explain four** symbolic acts related to hope and restoration (8 marks)

b) Give **seven** vows made by the Israelites during the time of the renewal of the covenant (Nehemiah 10v 28-39) (7 marks)

c) Give **five** problems that Christian leaders face in their work today (5 marks)

6. a) Explain four roles performed by ancestors in traditional African communities (8 marks)

b) Outline **five** requirements for a sacrifice to be offered (5 marks)

c) Give the changes that have taken place in the traditional African understanding of property (7 marks)

Name……Index No……

Candidate's Signature……..……Date……

313/2

CHRISTIAN RELIGIOUS EDUCATION

PAPER 2

JUNE 2022

2 ½ hours

KENYA CERTIFICATE OF SECONDARY EDUCATION

Instructions to Candidates

Answer **any five** questions in the foolscaps provided

1 a) outline Isaiah's prophecy about the messiah on the suffering servant in Isaiah 53. (8mks).

b) Describe the message of angel Gabriel to Mary according to Luke 1:26-38 (6mks)

c) Outline **six** lessons on family relationships drawn from the incident when Jesus accompanied his parents to the temple at the age of twelve (6mks)

2 a) with reference to Luke 5:17-26, describe the healing of the paralytic man (8mks).

b) State **seven** teachings of Jesus on true discipleship from the sermon on the plain (7mks).

c) Give reasons why modern Christians should accept to suffer in Christ's name (5mks).

3a) state **six** teachings on the growth of God's kingdom from the parable of the mustard seed and the yeast (6mks).

b) Explain **four** significance of the triumphant entry to Jerusalem to the ministry of Jesus (8mks).

c) Identify **six** ways in which Christians prepare themselves for the coming of God's kingdom (6mks).

4a) Describe the New Testament teachings on unity of believers based on the image of the bride (8mks).

b) Identify **six** signs which confirmed the coming of the Holy Spirit on the

day of Pentecost (6mks).

c) Outline Saint Paul's teaching on how the gifts of the Holy Spirit should be used in the church (6mks).

5.a) Explain the traditional African understanding of marriage. (7mks)

b) List **six** forms of abuse that children go through in child labour.(6mks)

c) Give **seven** criteria that Christians use to evaluate the use of leisure. (7mks)

6.a) Identify **eight** reasons why people engage in corrupt practices in Kenya today. (8mks)

b) In which ways are people punished in Kenya for causing social disorders?(6mks)

c) How can Christians today help to improve the environment?(6mks)

Name……Index No……

Candidate's Signature……..……Date……

313/2

CHRISTIAN RELIGIOUS EDUCATION

PAPER 2

JUNE 2022

2 ½ hours

KENYA CERTIFICATE OF SECONDARY EDUCATION

Instructions to Candidates

Answer **any five** questions in the foolscaps provided

1 a) outline Isaiah's prophecy about the messiah on the suffering servant in Isaiah 53. (8mks).

b) Describe the message of angel Gabriel to Mary according to Luke 1:26-38 (6mks)

c) Outline **six** lessons on family relationships drawn from the incident when Jesus accompanied his parents to the temple at the age of twelve (6mks)

2 a) with reference to Luke 5:17-26, describe the healing of the paralytic man (8mks).

b) State **seven** teachings of Jesus on true discipleship from the sermon on the plain (7mks).

c) Give reasons why modern Christians should accept to suffer in Christ's name (5mks).

3a) state **six** teachings on the growth of God's kingdom from the parable of the mustard seed and the yeast (6mks).

b) Explain **four** significance of the triumphant entry to Jerusalem to the ministry of Jesus (8mks).

c) Identify **six** ways in which Christians prepare themselves for the coming of God's kingdom (6mks).

4a) Describe the New Testament teachings on unity of believers based on the image of the bride (8mks).

b) Identify **six** signs which confirmed the coming of the Holy Spirit on the

day of Pentecost (6mks).

c) Outline Saint Paul's teaching on how the gifts of the Holy Spirit should be used in the church (6mks).

5.a) Explain the traditional African understanding of marriage. (7mks)

b) List **six** forms of abuse that children go through in child labour.(6mks)

c) Give **seven** criteria that Christians use to evaluate the use of leisure. (7mks)

6.a) Identify **eight** reasons why people engage in corrupt practices in Kenya today. (8mks)

b) In which ways are people punished in Kenya for causing social disorders?(6mks)

c) How can Christians today help to improve the environment?(6mks)

NAME …… ADM NUMBER …… CLASS ……

101/1
ENGLISH
Paper 1
Form 4
END OF TERM 1 EXAMS 2022
(Functional Skills)
TIME: 2 hours

Instructions to candidates

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

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

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

   (13 marks)

   ……
   ……
   ……
   ……
   ……
   ……
   ……
   ……
   ……
   ……
   ……
   ……

……
……
……
……
……

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

……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……

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

Poaching is increasing *(1)* _____ a menance, not just in Kenya, (2) _____ also in other parts of the continent, (3) _____ a grave danger to the survival of various animal species

particularly the elephant. Whereas, there have been *(4)* _____ to raise awareness about the danger posed by the menance, not enough has been done to *(5)*_____ it out and punish offenders. As it is, poaching is becoming a crisis, threatening species like elephants, which are hunted *(6)* _____ for their ivory, rhinos which are targeted because of their horns and other game like lions.

The Kenya Wildlife Service has been doing well to combat *(7)* _____ but it appears that more is needed if the criminals *(8)* _____ to be stopped. If the killers have more sophisticated weaponry, then KWS must *(9)* _____ its game or call *(10)* _____ the military to assist.

Oral Skills (30 marks)

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

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

(EmusaraOssieEnekase)

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

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

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

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

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

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

i. Classify the above genre. (1mk)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

DAUGHTER: It's about my improvement…

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

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

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

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

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

……

……

……

……

……

……

……

……

……

……

……

……

……

……

……

……

……

……

……

……

NAME:……..ADM N0:……CLASS;……

101/2
ENGLISH PAPER 2
FORM FOUR
END TERM ONE 2022 EXAMS

INSTRUCTIONS TO CANDIDATES:
Answer all the questions in the spaces provided.

QUESTION 1: COMPREHENSION. (20MKS)

Read the following passage and then answer the questions that follow.
The question is at least as old as Socrates: If we know what the right thing to do is, why do we not do it? It is an especially acute question when applied to global warming. The science showing that carbon dioxide emissions are already changing the planet's climate, and are likely to have severe effects (melting ice caps, sea-level rise, and species extinction), is compelling and now barely disputed. Almost 90% of Europeans say they recognize climate change as a major issue, and 75% identify fossil fuel emissions as a major cause.

And yet, as was widely discussed at a conference of environmentalists, geologists and writers in May 2006 in Ankelohe, Germany, public understanding has not translated into even the simplest of public actions. Less than 1% of Britons, for example, have switched their home electricity to renewable sources, even though it requires little more than a phone call to one's existing provider. Proportions on the continent are slightly higher, but there is clearly no rush to **go green** or — shudder — stop driving cars.

Why such a disconnect between information and action? Part of the problem is that environmental advocates emit mixed messages. In mid-May 2006, Britain's Guardian published a front-page story showing that five companies in Britain produce more CO_2 pollution in a year than all the country's motorists combined. That is a strong argument for targeting industries, but the average reader could hardly be blamed for thinking, "Why should I bother to cut down my driving?"

Similarly, not enough thought has been devoted to the best role for government. Climate change is too vast a problem for individuals to solve alone, and some big businesses have an incentive not to solve it. That leaves government to take the lead, which is tricky, because over-reliance on government can allow individuals to **fob off** their own responsibilities. What is worse, government power seems to tickle autocratic fantasies. In my experience, environmentalists spend far too much energy advocating hard-line government 'solutions' that do not stand a chance of being enacted. Sure, it might be good for the planet if governments banned the use of sports-utility vehicles or, for that matter, of all fossil fuels. Yet not only is it hard to sell outright prohibitions to voters, but the sad truth is that governments have a woeful record in even the mildest interventions. One of the most
Significant innovations in the last decade has been Europe's carbon-emission trading scheme: some 12 000 companies, responsible for more than half of the EU's emissions, have been assigned quotas. Companies with unused allowances can sell them; the higher the price, the greater the i**ncentive** for firms to cut their use of fossil fuels. The system seemed to work for about a year — but now it turns out that Europe's governments allocated far too many credits, which will likely hinder the program's effectiveness for years.

Perhaps the real reason that well-intentioned consumers do not change is that they do not see any benefit. Climate change may be a frightening, irreversible **calamity**, but its worst effects will not be felt next week or next year. The planet looks the same regardless of whether we use environmentally friendly technology or we do

not care how much CO_2 we emit. But sure as the sun rises and sets every day, if we do not cut down on carbon emissions, then we may not have a planet to hand over to the next generation.
(Adapted from Times, June 5, 2006)

a) According to the passage, what are the effects of global warming? (4 marks)

b) What, according to the passage, is the main cause of global warming? (3 marks)

c) How does Britain encourage people to use renewable electricity? (3 marks)

d)Paraphrase the following sentence: That is a strong argument for targeting industries, but the average reader could hardly be blamed for thinking, 'Why should I bother to cut down my driving?' (4 marks)

e)What message does the writer communicate in this passage? (2 marks)

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

(i) fob off
(ii) incentive
(iii) calamity
(iv) go-green

2. Read the following excerpt and answer the questions that follow

"Yes, Papaai," Resian said **apprehensively**. "I am here. Taiyo tells me you are calling me?"
"Yes, yes," her father replied. "Please take a seat."
"Yes, *Papaai,*" Resian repeated as she sat on a chair far away from her father.
"Come nearer…child," her father said pleasantly.
"Why do you **sit a mile away**? Come nearer."
Resian moved her chair hardly an inch from where it was and then she looked up into her father's face with eager expectation.
"If I do remember well," her father began in a low even tone, "you will be nineteen in September this year, am I right"
"You are quite right, *Papaai.*" Resian answered eyeing him curiously. His face was unusually kind. His eyes held hers as he smiled broadly. That's it!' she thought triumphantly. "That must be it!
"You and I have not discussed important issues for a long time," he said with a friendly chuckle that was intended to bring her closer to him. "I thought today would be the best day to break the news. Your future is very important to me, my dear child."
Resian thought the concern in her father's voice, rang false. She hesitated, but could not **hold herself** any more. The anxiety was too great.
"Papaai, is it Yeiyo or Taiyo who spoke to you?" she asked sensationally, thinking she was stating the obvious. But seeing her father's face cloud, she added quickly.
"Who between them spoke to you about our enrolment at the Egerton University?"
"What are you talking about, child? Her father, who seemed dumbfounded, asked after a long and uncomfortable silence.
"Both Yeiyo and Taiyo promised to talk to you about it, and I thought she had."
"What, in the name of God are you talking about, child?" he repeated, this time **agitated** and shaking his head vigorously. "No, I have never spoken to anybody about any of you enrolling at the university. Never! When I said I wanted us to discuss your future, that isn't what I meant at all. Of course not!"Resian looked at her father's face enquiringly.

1. What has happened before the excerpt? (3mks)

2. What is so ironical in this passage? Explain your answer referring to elsewhere in the novel.

(3mks)

3. “Your future is very important to me, my dear child” From elsewhere in the novel, explain why Ole Kaelo tells his daughter so. (3Mks)

4. Discuss two aspects of character in Resian in this excerpt. (4Mks)

5. What major issue is addressed in this excerpt? (2Mks)

6. Explain what happens after this excerpt. (3Mks)

7. “Who between them spoke to you about our enrolment at the Egertonuniversity?” Rewrite in the indirect speech. (1Mk)

8. A part from irony, discuss any other aspect of style evident in the excerpt. (2Mks)

9. Explain the meaning of the following words and expressions used in the excerpt. (4 Mks)

   (i). Apprehensively

   (ii). Sit a mile away

   (iii). Hold herself

   (iv). Agitated

QUESTION 3: LITERARY APPRECIATED. (20MKS)

03. Read the poem below and then answer the questions that follow.

No coffin, no grave by fared Angira

He was buried without a coffin
Without a grave
The scavengers performed the post-mortem
In the open mortuary
Without sterilized knives
In front of the night club

Stuttering rifles put up
The gun salute of the day
That was a state burial anyway
The car knelt
The red plate wept, wrapped itself in blood its
Master's

The diary revealed to the sea
The rain anchored there at last
Isn't our flag red, black and white?
So he wrapped himself well

Who could signal yellow
When we had to leave politics to the experts
And brood on books
Brood on hunger
And schoolgirls
Grumble under the black pot
Sleep under torn mosquito net
And let lice lick our intestines
The lord of the bar, money speaks madam
Woman magnet, money speaks madam
We only cover the stinking darkness of the cave of our mouths
And ask our father who is in hell to judge him
The quick and the good.

Well, his diary, submarine of the Third World
War
Showed he wished

To be buried in a gold-laden coffin
Like a VIP
under the jacaranda tree beside his palace
A shelter for his grave
And much beer for the funeral party

Anyway one noisy pupil suggested we bring
Tractors and plough the land.

(*From Poems from East Africa, D. Cook andD. Rubadiri (Eds,): East African EducationalPublishers)*

(a) Briefly explain what this poem is about. (3 marks)

(b) Explain the use of onomatopoeia in the poem. (2 marks)

(c) Identify and explain the tone of the poem. (4 marks)

d) Comment on the central theme of the poem. (3 marks)

(e)Explain the meaning of the following lines:

(i) who could signal yellow (4 marks)

(ii) submarine of the Third World War

(f)How else can people bring change in society without assassinating politicians? (2mks)

(g)Explain the meaning of the following word as used in the poem

i. Anchored (1mk)

ii. Brood (1mk)

QUESTION 4: GRAMMAR **(15 MARKS)**

A. **Complete the following sentences by choosing the appropriate expressions to fill the gaps**. (3mks)

(1) Although Nduati is a great friend of mine. I _____ him on a few important issues. (differ to, differ with)

(2) As good citizens, we must all pay our taxes _____ the policy. (in accordance to, in accordance with)

(3) She chose her career _____ (independent of, independent to) her mother.

B. ***Rewrite the sentences below according to the instructions given after each***. (3mks)

(1) My father would not allow us to attend night parties under any circumstances.
(Begin: Under no circumstances ……..)

(2) Strangers should not be allowed into the compound without the security officer's permission. (Begin: On no account……..)

(3) The plane had just taken off when one of the passengers began to scream.
(Begin: Scarcely ……)

C. ***Rewrite the following sentences avoiding repetition.*** (3mks)

(1) Always be frank and open with your friends. When you are frank and open to your friends, you will win your friends trust and confidence.

(2) Some of the questions are difficult, so find the easier questions and do the easier questions first.

(3) Help yourself to some oranges. These oranges are sweet but those oranges are sweeter.

D. Combine each of the following pairs of sentences into one sentence by making one of them a relative clause.

(1) Naliaka joined our school this term. She is very good at grammar.

(2) The elephant is a very big animal. It is also very strong.

(3) The generator had been on the whole night. It broke down in the morning.

E. ***Add an appropriate question tag to each of the following statements.*** (3mks)

(1) They aren't serious.

(2) He bought a new house last month.

(3) They won't shut up.

(4) Let us go.

(5) He hasn't been here before.

(6) You live in an apartment.

NAME: ……ADM NO…….CLASS: …….

ENGLISH
PAPER 3 2022
TIME: 2 ½ HOURS

Blossoms of the Savannah (Compulsory)

1. Gender inequality is tantamount to violation of human rights.
   Write an essay in support of the asse4tion drawing your illustrations from the Novel the Blossoms of the Savannah. (20 mks)

2. Write a composition starting "When I left home that bright Sunday afternoon, I did not realize the events of the next few days would completely change my life.

   OR

3. Write a composition to justify this statement: "The source of corruption in our country is the legislature'

NAME……CLASS…….ADM:.....

DATE……. SIGNATURE……...

312/1
GEOGRAPHY Paper 1
JUNE 2022
Time: 2¾ hours

Kenya Certificate of Secondary Education
312/1
GEOGRAPHY Paper 1

INSTRUCTIONS TO CANDIDATES

- *This paper has **two** sections: **A** and **B***
- *Answer **ALL** the questions in **section A.***
- *In section **B,** answer **questions 6** and any other **TWO** questions.*
- *All the answers must be written on the foolscaps provided after page 4.*
- *Candidates must answer the questions **in English**.*

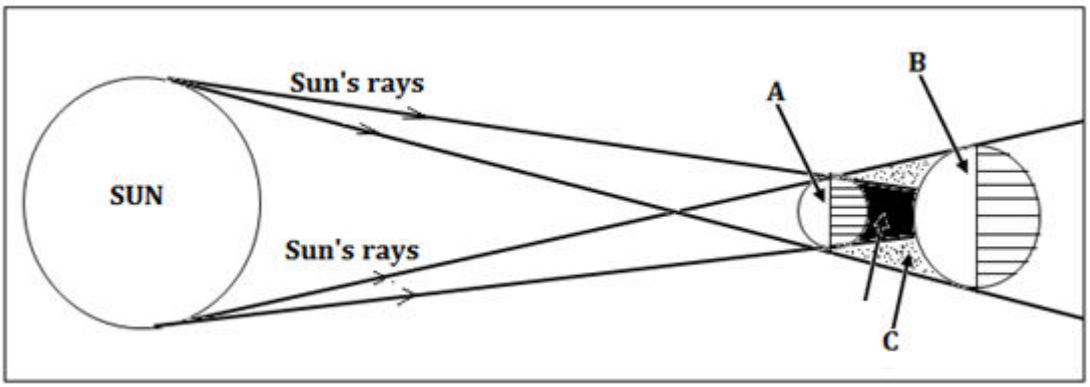
FOR EXAMINER'S USE ONLY

Section	Questions	Maximum Score	Candidate's Score
A	1 - 5	25	
B	6	25	
		25	
		25	
		Total Score	

This paper consists of 4 printed pages. Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions/pages are missing.

SECTION A

1. The diagram below shows a type of an eclipse.



(a) Name the parts marked A, B, and C. (3 marks)

(b) Apart from the occurrence of eclipses, state **three** other effects of the movement of the earth round the sun. (3 marks)

2. (a) What are metamorphic rocks? (2 marks)

(b) Give **two** examples of organically formed sedimentary rocks. (2 marks)

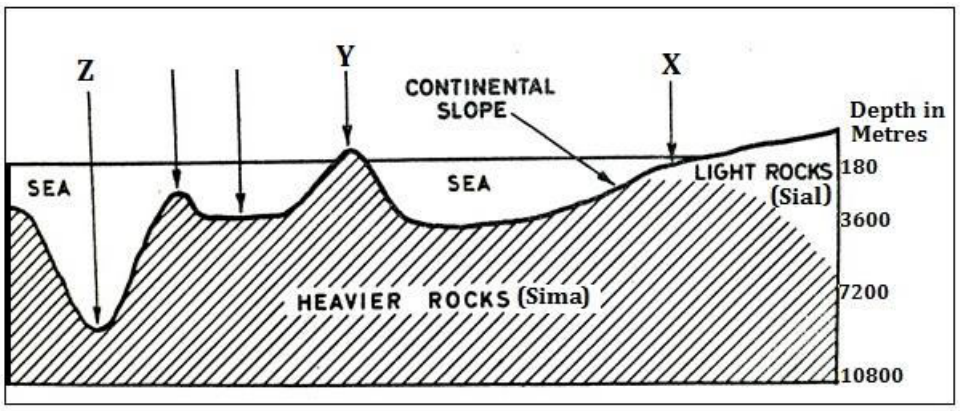
3. (a) List **three** landmasses that formed from Gondwanaland according to continental drift theory. (3 marks)

(b) Give **two** types of tectonic plate boundaries. (2 marks)

4. (a) What is an earthquake? (2 marks)

(b) State **three** natural causes of earthquakes. (3 marks)

5. The diagram below shows some features that form ocean relief.



(a) Identify the features marked X, Y and Z. (3 marks)

(b) List **two** main forms of horizontal movements of ocean water. (2 marks)

SECTION B

6. Study the map of Kijabe (1:50,000 sheet 134/3) provided and use it to answer the following questions.

(a) (i) Determine the six figure grid reference of an air photo principal point near the South Western corner of the map. (2 marks)

(ii) Give **two** types of scale on the map extract (2 marks)

(iii) Give the position of the South Eastern corner of the area covered by the map by latitude and longitude. (2 marks)

(b) (i) Citing evidence from the map, give **three** settlement patterns in the area covered by the map. (3 marks)

(ii) Identify **two** relief features at grid square 3099. (2 marks)

(iii) Explain how relief has influenced the distribution of settlements in the area covered by the map. (4 marks)

(c) Citing evidence from the map, give **five** economic activities carried out in the area covered by the map. (5 marks)

(d) Describe the distribution of natural vegetation in the area covered by the map. (5 marks)

7. (a) (i) Differentiate between weather and weather climate. (2 marks)

(ii) Give **three** types of rainfall. (3 marks)

(b) Explain how the following factors affect the climate of a place:

(i) Cold ocean currents. (4 marks)

(ii) Inter Tropical Convergence Zone. (2 marks)

(c) With the aid of a well labelled diagram, describe how sea breeze occurs. (8 marks)

(d) Suppose you were to carry out a field study at a weather station:

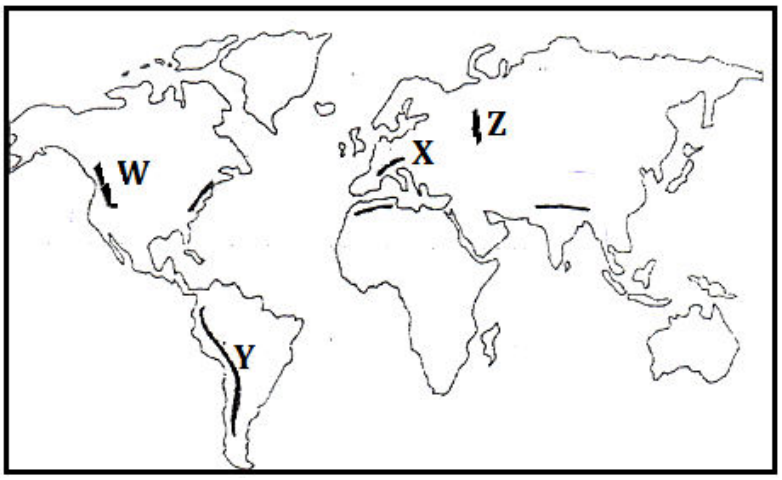
(i) Give **three** methods that they would use to collect data (3 marks)

(ii) State **three** follow up activities for the field study. (3 marks)

8. (a) (i) Define the term folding. (2 marks)

(ii) Name **three** types of folds. (3 marks)

(b) The world map below shows the distribution of some fold mountains. Use it to answer question (i)



(i) Identify the fold mountains marked W, X, Y and Z (4 marks)

(ii) With the aid of well labelled diagrams, how Fold Mountains were formed. (10 marks)

(c) Explain **three** negative effects of Fold Mountains (6 marks)

9. (a) (i) What is a karst scenery? (2 marks)

(ii) State **five** characteristics of karst landscapes. (5 marks)

(b) Give **four** sources of ground water. (4 marks)

(c) Explain how the following factors influence the occurrence of ground water:

(i) Nature of rocks. (2 marks)

(ii) Slope of land. (2 marks)

(iii) Vegetation cover. (2 marks)

(d) Explain **four** conditions that favour the development of an artesian well. (8 marks)

10. (a) (i) What is glaciation? (2 marks)

(ii) Outline **four** factors which determine the rate at which ice moves. (4 marks)

(b) Apart from a cirque, name **four** other glacial erosional features. (4 marks)

(c) Using well-labelled diagrams, describe how a cirque is formed. (8 marks)

(d) Students of Nanyuki High School carried out a field study on glaciation on Mt. Kenya

(i) Give **three** reasons why they conducted a reconnaissance. (3 marks)

(ii) State **two** factors they must have considered when selecting the data collection methods. (2 marks)

(iii) Give **two** activities they may have been involved in during the study. (2 marks)

NAME…….……CLASS…….ADM:.....

DATE…….……. SIGNATURE……...

312/1
GEOGRAPHY Paper
Time: 2¾ hours

Kenya Certificate of Secondary Education
312/1
GEOGRAPHY Paper 2

INSTRUCTIONS TO CANDIDATES

- *This paper has **two** sections: **A** and **B***
- *Answer **ALL** the questions in **section A.***
- *In section **B,** answer **questions 6** and any other **TWO** questions.*
- *All the answers must be written on the foolscaps provided after page 4.*
- *Candidates must answer the questions **in English**.*

FOR EXAMINER'S USE ONLY

Section	Questions	Maximum Score	Candidate's Score
A	1 - 5	25	
B	6	25	
		25	
		25	
		Total Score	

This paper consists of 4 printed pages. Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions/pages are missing.

SECTION A

2. (a) What is management of forests? (2 marks)

(b) State three reasons why agroforestry is encouraged in Kenya. (3 marks)

2. (a) Name **two** categories of agricultural processing industries in Kenya. (2 marks)

(b) State **three** similarities between the cottage industry of India and the Jua Kali industry in Kenya. (3 marks)

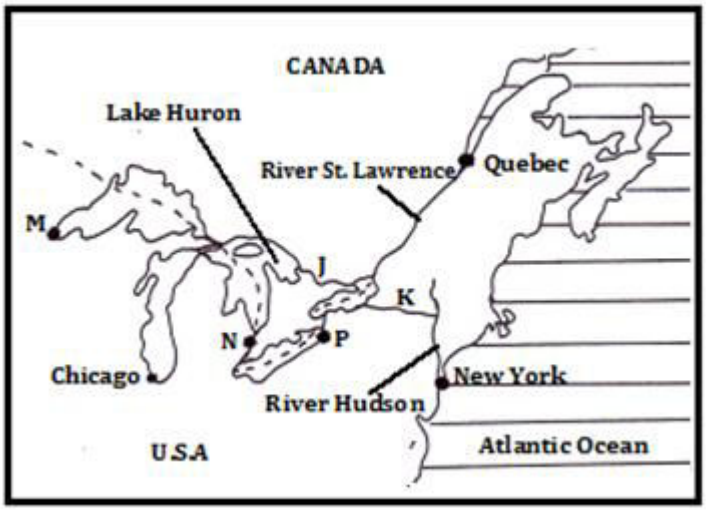
3. (a) Differentiate between settlement and urbanization. (2 marks)

(b) State **four** characteristics of central business district of a town. (4 marks)

4. (a) Name **two** types of environment. (2 marks)

(b) State **three** consequences of water pollution. (3 marks)

5. The map below shows the Great Lakes and St. Lawrence Seaway. Use it to answer question (a) and (b).



(a) Name the canals marked **J** and **K**. (2 marks)

(b) Name the towns marked **M** and **N**. (2 marks)

SECTION B

6. Study the table below and use it to answer questions (a) and (b)

Value of leading imports to Kenya from 2015 to 2019 (Ksh million)

MPORT	2016	2017	2018	2019
Industrial machinery	253,500	238,400	252,400	257,600
Petroleum products	183,800	234,900	295,100	307,500
Iron and Steel	75,500	83,600	97,700	104,100

(a) (i) What is the difference between the value of petroleum products imports between year 2018 and year 2016? (2 marks)

(ii) Calculate the percentage increase between the value of industrial machinery imported between year 2017 and the year 2019. (2 marks)

(b) (i) Apart from comparative bar graphs, give **three** other statistical methods that can be used to present the data in the table. (3 marks)

(ii) Using a vertical scale of 1cm to represent Ksh 30 Billion, draw a comparative bar graph to present the data in the table. Use the graph paper provided. (9 marks)

(c) State **three** advantages of using comparative bar graphs to present statistical data. (3 marks)

(d) Explain **three** reasons for low volume of trade between the countries in Africa. (6 marks)

7. (a) (i) Define the term mining? (2 marks)

(ii) Give four methods of underground mining. (4 marks)

(b) Explain how the following factors influence mining:

(i) Level of technology (4 marks)

(ii) Quality of the ore (2 marks)

(c) Explain **four** benefits of trona mining at Lake Magadi to Kenya. (8 marks)

(d) State **five** negative effects of mining on the environment. (5 marks)

8. (a) (i) State **three** physical factors that favour tea growing in Kericho County. (3 marks

(ii) Describe the stages involved in tea processing at the factory. (7 marks)

(b) Outline **three** ways in which tea is marketed in Kenya. (3 marks)

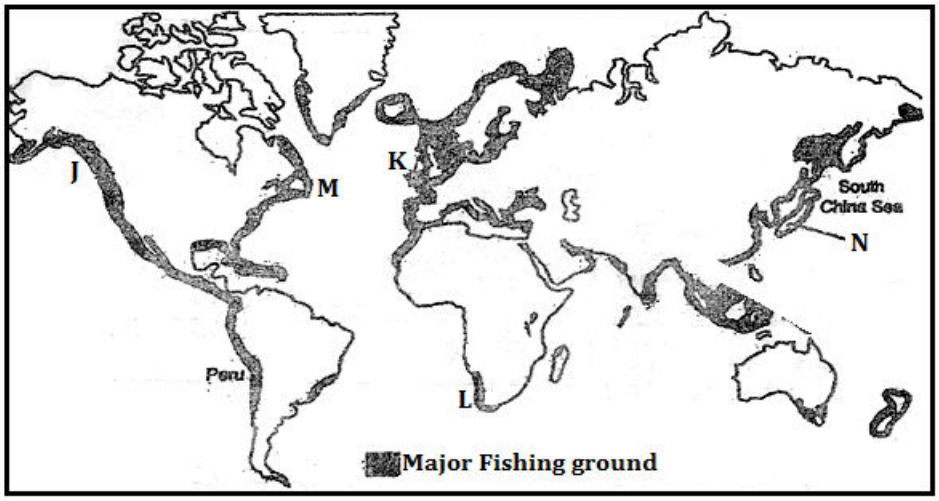
(c) Explain **thre**e physical problems facing small scale tea farmers in Kenya. (6 marks)

(d) Your Geography class carried out a field study on a tea plantation.

(i) Give **three** reasons why it is important to prepare a route map of the area. (3 marks)

(ii) State **three** methods that the class would have used to present data. (3 marks)

9. The map below shows the major fishing grounds of the world. Use it to answer question (a) (i), (ii) and (iii)



(a) (i) Name the fishing ground marked J,K,L and M (4 marks)

(ii) Name **the two** ocean currents that converge at region M (2 marks)

(iii) Explain **three** physical factors that have favoured fishing in country N. (6 marks)

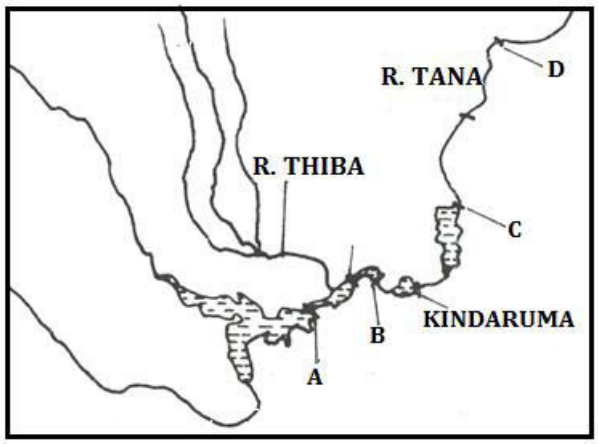
(b) (i) Describe how trawling as a method of fishing is carried out. (5 marks)

(ii) Explain **four** measures being undertaken in Kenya to reduce overfishing of the natural water fisheries (8 marks)

10. (a) (i) Name **three** non-renewable sources of energy. (3 marks)

(ii) State **four** advantages of solar energy. (4 marks)

(b) The diagram below shows the Kenya's hydroelectric power stations along River Tana.



(i) Name the H.E.P stations marked **A, B** and **C**. (3 marks)

(ii) The proposed H.E.P dam site marked **D**. (1 mark)

(iii) Explain **four** challenges hindering hydroelectric power generation in Kenya (8 marks)

(d) (i) What is an energy crisis. (2 marks)

(ii) Explain the effects of an energy crisis in the following sectors.

- Agriculture (2 marks)
- Industries (2 marks)

311/1

HISTORY AND GOVERNMENT

PAPER 1

TIME: 2½ hours

Instructions to Candidates

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

*(b) Answer **all** questions in section **A, three** from Section **B** and **two** from Section **C.***

(c) Answers to all the questions must be written legibly in the answer booklet provided.

*(d) **This paper consists of three printed pages***

*(e) **Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing***

(f) Candidates should answer the questions in English

Section A (25 marks)

Answer all questions in this section in the answer booklet provided

1. Give the source of information on history and government which deals with scientific analysis of man's material culture. (1 mark)
2. Which was the most common political authority in pre-colonial Kenya? (1 mark)
3. Identify ***two*** duties of Orkoiyot among the Nandi during the pre-colonial period (2 marks)
4. What was the ***main*** negative effect of plantation agriculture on the people of Kenya coast. (1 mark)
5. State ***two*** terms of Anglo-Germany Treaty of 1890. (2 marks)
6. What was the ***main*** importance of the Devonshire white paper of 1923? (1 mark)
7. State ***two*** economic benefits of the Kenya Uganda railway during the colonial period. (1 mark)
8. State ***two*** immediate events that led the Governor to declare a state of emergency in the colony in October 1952. (1marks)
9. Name the first African to be nominated to the legislative council in Kenya. (1mark)

10. State ***two*** features of political associations that were formed in Kenya between 1920-1939. (2marks)

11. Identify ***two*** education bodies that appeared among the Agikuyu during the colonial period. (2marks)

12. Give ***two*** objectives of Kenya African Democratic Union (KADU). (2marks)

13. Name any ***two*** women warriors who were involved in the Mau Mau movement. (2marks)

14. Identify ***one*** political challenge faced by Daniel arap Moi as the president of Kenya. (1mark)

15. Identify the parliamentary symbol of authority. (1mark)

16. Mention ***two*** units that make up the national police units in Kenya. (2marks)

17. State the ***main*** function of the attorney General in Kenya. (1mark)

Section B (45 marks)

Answer any three questions from this section in the answer booklet provided

18. (a) Give ***five*** reasons for the migration of the highland Nilotes into Kenya during the pre-colonial period. (5 marks)

    (b) Describe the social organization of the Borana during the pre-colonial period. (10 marks)

19. (a) State ***five*** characteristics of the early coastal city states. (5 marks)

    (b) Explain ***five*** effects of missionary activities in Kenya. (10 marks)

20. (a) State ***five*** problems faced by the European settlers in Kenya. (5 marks)

    (b) Explain ***five*** results of the Maasai collaboration with the British. (10 marks)

21. (a) Give ***five*** challenges faced by independent churches and schools during the colonial period. (5 marks)

    (b) Describe the role played by Ronald Ngala in the struggle for independence in Kenya. (10 marks)

Section C (30 marks)

Answer any two questions from this section in the answer booklet provided

22. (a) State ***three*** survival rights of a child in Kenya. (3 marks)

    (b) Explain ***six*** responsibilities of a Kenyan citizen. (12 marks)

23. (a) Give ***three*** reasons why elections are important in Kenya. (3 marks)

    (b) Describe the law making process in Kenya. (12 marks)

24. (a) Give ***three*** factors which may undermine the effectiveness of the traffic police in Kenya. (3 marks)

    (b) Explain ***six*** functions of the Kenya Defense Forces. (12 marks)

311/2

HISTORY AND GOVERNMENT

PAPER 2

JUNE 2022

TIME: 2½ hours

Section A (25 marks)

1. Give the name of the tools made by early man during the New Stone Age period (1 mark)

2. State ***two*** distinct characteristics of Homo Erectus. (2 marks)

3. Identify ***one*** form of writing during the early civilizations resulting from early agriculture. (1 mark)

4. State ***two*** factors that promoted large-scale farming in Britain during the Agrarian Revolution. (2 marks)

5. State ***two*** ways in which poor transport system has contributed to food shortages in Africa. (2 marks)

6. Identify ***two*** political benefits of Trans-Saharan-trade to the people of Western Sudan. (2 marks)

7. State ***two*** characteristics of Macadam roads. (2 marks)

8. Give one early source of energy. (1 mark)

9. State ***two*** political results of industrial Revolution in Europe. (2 marks)

10. State ***one*** contribution of Joseph Lister in the field of medicine in the nineteenth century. (1 mark)

11. Identify ***two*** factors that facilitated colonization of Africa in the nineteenth century. (2 marks)

12. Give ***one*** reason why the Shona supported the British forces against the Ndebele during the Anglo-Ndebele war of 1893. (1 mark)

13. State ***one*** reason why Kabaka Mwanga of Buganda collaborated with the British. (1 mark)

14. Give ***two*** political developments in South Africa which facilitated establishment of a multi-racial government. (2 marks)

15. Give the name given to Germany and her supporters during the First World War. (1 mark)

16. Give the **main** reason why the League of Nations was established in 1919. (1 mark)

Section B (45 marks)

ANSWER 3 QUESTIONS

18. (a) State ***five*** reasons why man turned from hunting and gathering to agriculture. (5 marks)

(b) Explain ***five*** effects of Agrarian revolution in United States of America (USA). (10 marks)

19. (a) Identify ***five*** ways in which iron working spread in Africa. (5 marks)

(b) Explain ***five*** factors that led to emergence of Japan as an industrial power. (10 marks)

20. (a) Give ***five*** causes of the Maji Maji rebellion of 1905 to 1907 in Tanganyika. (5 marks)

(b) Explain ***five*** reasons why Samori Toure resisted the French for so long. (10 marks)

21. (a) Give ***five*** qualifications for one to be assimilated in Senegal. (5 marks)

(b) Describe ***five*** effects of direct rule in Zimbabwe. (10 marks)

SECTION C (30 MARKS)
ANSWER 2 QUESTIONS

22. (a) State ***three*** economic activities of the Baganda during the pre-colonial period. (3 marks)

(b) Describe the social organization of Asante Kingdom in the eighteenth Century. (12 marks)

23. (a) Identify ***three*** roles of the church in promoting African Nationalism in South Africa. (3 marks)

(b) Explain ***six*** problems encountered by African Nationalists in South Africa. (12 marks)

24. (a) State ***three*** functions of the Assembly of the League of Nations. (3 marks)

(b) Describe ***six*** achievements of the League of Nations. (12 marks)

JINA:…….. NAMBARI:…….....

NAMBARI YA USAJILI:……...SAHIHI:……

102/1
KISWAHILI
INSHA
KARATASI YA 1

MUDA : 1 ¾

102/1
KISWAHILI
INSHA
KARATASI YA 1
MUDA: 1 ¾

Maagizo

(a) Andika insha **mbili.** Insha ya kwanza ni ya **lazima.**

(**b)** Kisha chagua insha nyingine kutoka tatu zilizobakia.

(c) Kila insha isipungue maneno **400.**

(d) Kila insha ina alama **20.**

(e) Watahiniwa lazima waangalie kama kurasa zote za karatasi hii zimepigwa chapa sawasawa na kuwa maswali yote yamo.

MASWALI

1. Wewe ni mhariri wa gazeti la Msemakweli. Andika tahariri kuhusu athari za baa la njaa na hatua zinazochukuliwa na serikali katika kukabiliana na tatizo hili.

2. Matumizi ya afyuni katika taasisi za masomo nchini ni suala muhali kutatuliwa. Jadili.

3. Andika kisa kinachothibitisha ukweli wa methali: Mtaka yote hukosa yote.

4. Tunga kisa kinachoanza kwa maneno haya:

Ilinichukua muda mrefu kusadiki niliyoyapata...

Jina:……nambari:……..darasa:……

MTIHANI WA MWISHO WA MUHULA
KISWAHILI
KIDATO CHA NNE
KARATSI YA PILI 102/2
LUGHA
MACHI 2020
MUDA: 2 ½

<u>MAAGIZO</u>.

a. **Andika jina lako na nambari yako katika nafasi ulizoachiwa hapo juu.**
b. **Jibu maswali yote kwa nafasi wazi ulizoachiwa.**
c. **Watahiniwa wanaweza wakaadhibiwa iwapo hawatazingatia maagizo.**
d. **Majibu yaandikwe kwa lugha ya Kiswahili**

Kwa mtahini pekee.

Swali	**Upeo**	**Alama**
1.		
2.		
3.		
4.		

1. UFAHAMU

Soma taarifa ifuatayo kisha ujibu maswali.

Ilikuwa jumamosi. Nilifika nyumbani kwangu saa moja jioni. Tangu nistaafu miaka miwili awali sikupenda kuchelewa Taarifa ya habari.

Mwezi mmoja ukawa umepita tangu nipewe pesa za kiinua mgongo. Mwezi mmoja mzima nilikuwa katika shughuli za kulipa deni hapa na kulipa karo huku. Kuwekeza kwenye mradi ule na kununua hili. Sasa shilingi lake mbili tu zilikuwa zimesalia katika benki. Watu wengi walinishawishi nijaribu kilimo cha mahindi. Bei ilikuwa imeanza kuimarika. Katika taarifa ya habari jioni hiyo, Waziri wa Kilimo alitangaza bei mpya. Shilingi 1,500 kwa kila gunia. name nilikuwa naanza kuumakimikia mradi huu.

Baada ya tarifa, nilikoga, nikala na nikaenda kulala. Kwa sababu ya uchovu, usingizi ulinichulua mara moha. Usingizi niliota. Katika ndoto niliutekeleza mradi wangu. Msimu huo wa kilimo nilitenga ekari kumu za shamba langu. Wataalamu walinishauri kuwa wakati mzuri wa kulima ni wa kiangazi. Mwezi wa Januari ulipoanza tu nilitafuta trekta na kulima. Malipo yalikuwa shilingi 1,200 kila ekari. Katikati ya mwezi wa Machi, nilitafuta trekta la kutifua shamba tena kwa gharama ya shilingi 15,000 ekari zote kumi. Kufuatia ushauri wa manyakanga wa kilimo, nilipa shilling elfu kumi na tatu kupiga shamba lote haro.

Mwishoni mwa mwezi huo, nilienda mjini kutafuta pembejeo. Kwanza, nililipa shilling 20,500 kwa magunia 15 ya mbolea. Kisha nilinunu amagunia manne ya mbegu ya mahindi yenye uzani wa kilo 25 kwa shilling 3,300 kila gunia. Mwzi wa Aprili ulipotimia tu, niliamua kupanda. Ili nipate mazao bora, nilipanda kwa tandazi. Gharama ilikuwa shilling 1,000 kila ekari. Mvua ilinesha vizuri na baada ya siku saba mahindi yalianza kuota. Ilifurahisha kuhesabu mistari ya kijani iliyonyooka. Hali hii iliwezekana tu baada ya kuajiri vijana wa kuwafukuza korongo na vidiri ili wasifukue mebgu mchangani.

Baada ya mwezi mmoja, hatua ya kupalilia ilifika. Nilitafuta vibarua wa kupalilia. Malipo yalikuwa shilingi 700 kila ekari. Kumbe kupalilal kulichochea mtifuko wa mahindi. Punde yakawa yananifikia magotini. Hii ikawa ishara kuwa yanahitaji kumwagiwa mbolea ya kunawirisha iitwayo ‘amonia’. Gharama yake ikawa shilling 1,300 kila gunia. Hivyo, nikalipa shilingi 19,500 kwa magunia kumi na matano.

Mahindi yalibadilika kimiujiza. Ghafla tu yalirefuka na kunenepa maisha. Yalibadilika rangi yakapiga weusi. Shamba liligeuka likawa kama msitu wa rangi ya kijani iliyokolea. Wapita njia waliajabia mimea na juhudi zangu. Shamba langu sasa likawa kielelezo. Maafisa wa kilimo wakawa kila siwanawaleta wakulima wengine kujifunza siri ya ufanzi wanfu. Hapo nikaanza kuhesabu mavuno nitakayopata kukadiria faida. Nilipuuza kabisa ushauri wa wahenga kuwa ‘Usikate majani, mnyama hajauawa.’

Bila taarifa wala tahadhari mvua ikatoweka. Hayakupita majuma mawili mahinda yakaanza kubadilika. Juma moja baadaye mahindi yalinyauka. Badala ya mahind, shamba ilkageuka la vitunguu vilivyochomwa na jua. Makasio yangu ya faida yaliyeyuka jinsi yfanyavyo moshi.
Lakini ‘Muumba ndiye Muumbua’. Siku moja mawingu yalitanda na mvua ikanyesha.Muda si muda mahind yalianaza kunawiri. Kumbe tukio lililonivunja moyo lilikuwa laja. Siku moja mvua

kubwa ilinyesha. Asubuhi nilipotoka nje nilipigwa na butwaa. Barafu ilitapakaa pote. Shamba lilikuwa limetapakaa barafu huku majani ya mahindi yamechanika kama nyuzi. Niliugua. Baada ya wiki moja, nilipata nafuu. Nilipotazama upande wa shamba nikaona dalili za majani mapya ya mahindi yakianza kuchomoza. Maumbile ni kitu cha ajabu kweli. Muda sio mferu mahindi yalirudi hali yake tena, kisha yakakomaa. Haraka za kutafuta watu wa kuyakata na kuyakusanya zilianza. Gharama ya shughuli kii ikawa shilingi 5,000. Kuvuna, kusafirisha kutoka shamba na kukoboa kwa mashine magunia 200 yakachukua shilingi 20,500. Kufikia hapo nilikuwa nimetumia takribani shilingi 192,700. Gharama nyingine zilikuwa za usafiri, gharama ya dharura na usimamizi, usumbufu wangu binafsi, gharama ya magunia na kadhalika. Mahindi yalipokuwa tayari kwenye magunia nilifunga safari kwenda mjini kutafuta soko. Niliposhuka tu niliona gazeti. habari motomoto siku hiyo ilikuwa: “MAHIND GUNIA 900/-” Niligutuka usingizini.

Maswali

(a) Andika kichwa mwafaka kwa kifungu hiki cha habari. (al 1)

……..

(b) Msimulizi alikuwa na kiasi gani cha pesa katika benki baada ya mradi kukamilika? (al 1)

……..

(c) Taja matatizo matatu yaliyotisha mradi wa msimulizi wa kukuza mahindi. (al 3)

……..

……..

……..

……..

(d) Eleza maana ya methali zifuatazo: (al 4)

(i) Usikate majani, mnyama hajauawa

……..

……..

……..

(ii) Muumba ndiye muumbua

……..

……..

……..

(e) Eleza mambo mawili yaliyosababisha msimulizi asipate faida alivyotarajia. (al 2)

……..

……..

……..

……..

(f) Kwa nini msimulizi alisem maumbile ni kitu cha ajabu? (al 2)

……..

……..

……..

(g) Eleza maana ya: (al 2)

(i) kiinua mgongo

……..

(ii) manyakanga wa kilimo

……..

2 <u>UFUPISHO (alama 15)</u>

Jamii ya leo inatawaliwa na kuendeshwa na kanuni ya maarifa. Inawezekana kusema kuwauchumi wa jamii za leo na zijazo utategemea maarifa zaidi kuliko utakavyotegemea uwezo wowote mwingine. Utambuzi wa uwezo mkubwa wa maarifa katika maisha ya binadamu ndio msingi wa watu kusema 'maarifa ni nguvu.'

Maarifa huelezwa kwa tamathali hii kutokana na uwezo wa: kuyadhibiti,kuyaendesha, kuyatawalana kuyaongoza maisha ya binadamu popote pale walipo. Mtu ameyakosa maarifa fulani huwa ameikosa nguvu hiyo muhimu na maisha yake huathirika pakubwa. Kwa msingi huu, maarifa yanawezakuangaliwa kama utajiri mkubwa ambao binadamu anaweza kuutumia kwa faida yake au kwa faida ya wanajamii wenzake. Ukweli huu ndio unaoelezwa na methali ya Kiswahili: 'Elimu ni mali.' Elimu ni chimbuko la maarifa muhimu maishani.

Msingi wa utajiri na maendeleo ya binadamu popote alipo basi ni maarifa. Je, maarifa kwa upande wake yana sifa gani? Maarifa yenyewe hayana upinzani. Maarifa uliyo nayo huweza kuwa na watu wengine pasiwe na upinzani baina yenu kwa kuwa kila mmoja ana maarifa sawa. Kila mmoja ana uhuru wa kuyatumia maarifa hayo kama chanzo cha kuyazalisha mengine. Utumiaji wa maarifa yenyewe hauyamalizi maarifa hayo. Maarifa hayawezi kugusika ingawa mtu anaweza kuyanyumbua maarifa yenyewe kwa kuyatumia kwa namna tofauti.

Maarifa huingiliana na maarifa mengine. Maarifa aliyo nayo mtu huweza kuhusishwa na maarifa aliyo nayo mtu mwingine ili kuvyaza au kuzuka na maarifa tofauti. Maarifa yanaweza kuchukuliwa kutoka sehemu moja hadi nyingine kwa namna ambavyo mtu huweza kufanya bidhaa nyingine ile. Kwa mfano, ni muhali mtu kulalamika kuwa hawezi kutembea kutoka sehemu moja hadi nyingine kwa sababu ana mzigo wa maarifa kichwani.

Sifa nyingine muhimu ya maarifa ni kuwa yanaweza kuwasilishwa kwa njia au mitindo mingine ya kidhahania. Ikiwa unataka kukihamisha chombo fulani kutoka sehemu moja hadi nyingine, lazima uwazie ukubwa wake, uzito wake na labda hata umbali wa panapohusika. Maarifa huweza kubadilishwa au kugeuzwa na kuwa ishara

ambazo huyafanya kuwasilishswa kwa njia nyepesi kuliko kwa mfano ikiwa mtu atayawasilisha katika muundo wa, kwa mfano,kitabu.
Maarifa yana sifa ya uhusianaji. Kipengele fulani cha maarifa huwa na maana kinapowekwa sambabmba au kugotanishwa na kipengele kingine cha maarifa. Huo huwa muktadha mzuri wa kueleweka au kuwa na maana kwa mfano, neno 'mwerevu' huweza kuwa na maana kwa kuwekwa katika muktadha wa 'mjinga', ' mjanja', 'hodari' na kadhalika.

Maarifa huweza kunifadhiwa katika nafasi ndogo sana. Suala hili linaeleweka kwa njia nyepesi tunapoangalia maarifa katika muktadha wa teknolojia. Data zinazowahusu mamilioni ya watu,ambazo zingehitaji maelfu ya maktaba na lukuki ya vitabu, huweza kuhifadhiwa kwenye kifaa kidogo kinachoweza kutiwa mfukoni.
Maarifa hayawezi kuthibitiwa au kuzuiliwa mahali fulani yasisambae. Maarifa huenea haraka sana. Maarifa ni kitu kinachoepuka pingu za watu wanaopenda kuwadhibiti binadamu wenzao. Hata pale ambapomfumo wa kijamii au wa kisiasa unafanya juu chini kuwadhibiti raia au watu wenyewe,ni muhali kuyadhibiti maarifa yenyewe. Inawezekana kuzidhibiti njia fulani za uenezaji wa maarifa lakini maarifa hayo yatapata upenyu wa kusambaa. Ni kweli kuwa maarifa ni nguvu inayozishinda nguvu zote.

(a) Fupisha aya ya pili na tatu (maneno 55-60)(alama 5, 1 ya utiririko)

Matayarisho

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Nakala safi

.....

.....

.....

.....

.....

.....

.....

.....

(b) Eleza sifa kuu za maarifa kama zinavyojitokeza kuanzia aya ya nne hadi aya ya nane.

(maneno 100-110) (alama 10, 2 za utiririko)

Matayarisho

…….....

……

……

……

……

……

……

……

……

……

……

Nakala safi

……

……

……

……

……

……

……

……

……

……

……

……

……

……

……

<u>Matumizi ya lugha (alama 40)</u>

a. Taja na utofautishe irabu za mbele. (alama 2)

b. Tunga sentensi Moja kubainisha maana mbili za neno kikosi. (alama 2)

c. Andika katika wingi. (alama 1)
Jino langu bovu linaloniuma linanitatiza.

d. Tumia kielezi cha wakati badala ya kielezi kilichotumika katika sentensi ifuatayo.
(alama 2)

Watalii walitutembelea mjini Nakuru.

e. Geuza sentensi zifuatazo kulingana na maagizo. (alama 2)
   i. Maimuna anapika wali. (wakati uliopo hali isiyodhihirika)

   ii. Wao walisoma riwaya hiyo. (wakati ujao hali timilifu)

f. Unda neno lenye muundo ufuatao. (alama 2)
   i. Nafsi ya kwanza umoja.

   ii. Hali timilifu

   iii. Mtendewa

   iv. Mzizi

   v. Kauli ya kutendea

   vi. Kauli ya kutenda/ kiishio

g. Tumia nomino zifuatazo za kawaida kuunda nomino za jamii. (alama 2)
   i. Nzige

   ii. Zabibu

h. Tunga sentensi kuonyesha matumizi yafuatayo ya neno KAMA. (alama 2)
   i. Kihusishi

   ii. Kitenzi

i. Eleza matumizi ya neno <u>wale</u> katika sentensi hii. (alama 3)
   Wale walioiba ni mabanati wale ambao waliambiwa wale kabla ya kitendo hicho.

j. Changanua kwa mstari. (alama 4)
   Yohana na Otieno hucheza kandanda.

k. Andika sifa tatu zinazobainisha sentensi changamano. (alama 3)

l. Onyesha matumizi ya viwakifishi vifuatavyo katika sentensi. (alama 2)
   i. Kibainshi

   ii. Parandesi

m. Tumia neno –baya kama: (alama 3)
   i. Kiwakilishi

   ii. Kivumishi

   iii. Kielezi katika sentensi

n. Onyesha miundo miwili ya nomino za ngeli ya A- WA. (alama 2)

o. Bainisha maana mbili ya sentensi hii. (alama 2)
   Umu alimwandisha mkewe.

p. Unda nomino nne kutokana na kitenzi. (alama 4)
   <u>Fa</u>

q. Geuza katika usemi halisi. (alama 2)
   Askari jela alimuuliza Kendi kama alidhnani hapo ni kwao. Alimwamuru aende kwake mara moja.

4. **ISIMU JAMII** **(alama 10)**

(Mdundo wa muziki) kina mama mpo…..! Kina siste nanyi… are you there? Kampuni ya platinium imewaletea mafuta mpya ya silk. Mafuta hayo yana vitamin C, Sunscreen na yana marashi ya kupendeza. Ukiyatumia kwa wiki moja tu, ngozi yako itakua laini na nyororo kama ya kitoto kichanga. Nayo macho ya wote, Waaa! Yatakuwa kwako 24/7. Jinunulie! Jinunulie! Mafuta ya silk. Mafuta ya wanawake wa kisasa.

a. Taja sajili iliyotumiwa hapa. (alama 1)

b. Taja sifa nne za sajili hii. (alama 4)

c. Kwa nini Wakenya wengi hupenda kuchanganya na kubadili msimbo? (alama 5)

JINA: …… NAMBARI: …… KIDATO: ……
102/3
KISWAHILI
FASIHI
KIDATO CHA NNE
MUDA: SAA 2 ½

MAAGIZO:
1. Jibu maswali manne pekee.
2. Swali la kwanza ni la lazima.
3. Maswali hayo mengine matatu yachaguliwe kutoka sehemu nne zilizobaki; yaani Riwaya, Tamthilia, Hadithi fupi na shairi.
4. Usijibu maswali mawili kutoka sehemu moja.

SEHEMU A: (FASIHI SIMULIZI)

1. (a) Watu watatu walikuwa wakivuka mto. Mmoja alivuka pasi kukanyaga maji wala kuyaona. Wa pili aliyaona maji akayavuka bila kuyakanyaga. Wa watatu aliyaona akayakanyaga huku akiyavuka.

   (i) Bainisha kipera cha makala hayo. (alama 1)

   (ii) Eleza umuhimu wa kipera ulichotaja(i) hapo juu. (alama 4)

   (b) Fafanua muundo wa mawaidha yanayotolewa katika miktadha rasmi. (alama 3)

   (c) Fafanua sifa za mawaidha. (alama 12)

SEHEMU B: (TAMTHILIA) KIGOGO(PAULINA KEA)

2. …… kila mtu sagamoyo hafanyi kazi yakek – hata hao chatu! Kwa hivyo wataka niache raha zangu, nijishike kichwa nilie?
   (a) Eleza muktadha wa dondooo hili. (alama 4)

   (b) Taja na ufafanue mbinu mbili za lugha zilizotumika katika dondoo hili. (alama 4)

   (c) Kwa kutolea mifano mwafaka, angazia nafasi chanya alizopewa mwanamke katika tamthilia ya Kigogo. (alama 12)

3. Mgala muue na haki umpe. Thibitisha ukweli wa methali hii ukimrejelea mhusika Husda. (alama 20)

SEHEMU C: (CHOZI LA HERI) Assumpta K. Matei

4. "Nyamaza wewe! Nyinyi ndio mlioturudhisha nyuma miaka yote hii ……."

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

   (ii) Fafanua baadhi ya malalamishi ya msemaji wa kauli hii. (alama 6)

   (b) Fafanua dhuluma dhidi ya watoto katika Riwaya ya Chozi la Heri. (alama 10)

5. Fafanua nafasi ya vijana katika jamii kwa mujibu wa Riwaya ya Chozi la Heri. (alama 20)

SEHEMU D: (HADITHI FUPI)

6. MAPENZI KIFAURONGO: Kenna Wasike

"Hadi sasa mimi ni kama rubani aliyeharibikiwa na ndege angani."
Onyesha ukweli wa dondoo hili. (alama 20)

7. Ndoto ya Mshaka: Ali Abdulla Ali

Mwandishi wa hadithi hii anatupa taswira ya jamii iliyozongwa na masaibu yanayotamausha. Tetea ukweli wa kauli hii. (alama 20)

SEHEMU E: (SHAIRI)

Soma shairi lifuatalo kisha ujibu maswali.

Weusi likosa nini?

1. Sie watu weusi, lipataje weusi?
2. Kila kitu kibaya, hupewa sifa mbyaya.
3. Sifa hii 'eusi', yaleta wasiwasi.
4. Rangi hii hakika, ni wapi ilitoka?
5. Ibada za Weusi, harusi kuzitusi.
6. Kama mtu mweusi, Lusifa ni mweusi
7. Ibada ya Weupe, hupokewa peupe
8. Adamu naye Hawa, weupe walipewa
9. Yesu Mwana wa Mungu, alikuwa Mzungu
10. Malaika wa Mungu daima ni Wazungu
11. Mweusi ti hatendi, silaumiwe pindi
12. Mweusi duniani, likosa kitu gani?
13. Mweusi jilaumu, measi yako damu.
14. Mweusi umeiga, hata ya kutoiga
15. Asojali mkuu, atavunjika guu
16. Baa mejikatia, nani takulilia?

MASWALI:

(a) Hili ni shairi la aina gani? Toa sababu yako. (alama 2)
(b) Eleza umbo la shairi hili. (alama 4)
(c) Toa mifano miwili ya matumizi ya mbinu ya inkisari katika shairi hili na uyaandike katika

(d) Eleza maudhui ya shairi hili. (alama 2)
(e) Ni nini dhamira ya mtungaji wa shairi hili? (alama 2)
(f) Kwa kutoa mifano matatu, eleza matumizi ya lugha mkato. (alama 6)

NAME:……...……

SCHOOL:……..

A.D.M NO:…….. DATE:……

SIGNATURE:……

121/1

MATHEMATICS

PAPER 1

FORM THREE
MATHEMATICS P1

INSTRUCTIONS TO CANDIDATES:

- *Write **your name** and **admission number** in the spaces provided above*
- *This paper contains **two sections;** Section **I** and section **II.***
- *Answer **all** the questions in section **I** and only **five** questions from section **II.***
- *All workings and answers **must** be written on the question paper in the spaces provided below each question.*
- *Marks may be given for correct working even if the answer is wrong.*
- *Calculators and KNEC mathematical tables may be used EXCEPT where stated otherwise*
- *Show all the steps in your calculations, giving your answers at each stage in the spaces below each question*

For Examiner's Use Only;

Section I

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

Section II

Questions	17	18	19	20	21	22	23	24	**TOTAL**
Marks									

GRAND TOTAL

1. Without using mathematical tables or calculators, evaluate the following leaving your answer as a fraction in its simplest form. (3mks)

$$\sqrt[3]{\frac{0.119 \times 0.256}{0.068 \times 7}}$$

2. Two boys and a girl shared some money .The elder boy got $\frac{4}{9}$ of it, the younger boy got $\frac{2}{5}$ of the reminder and the girl got the rest. Find the percentage share of the younger boy to the girl's share. (4mks)

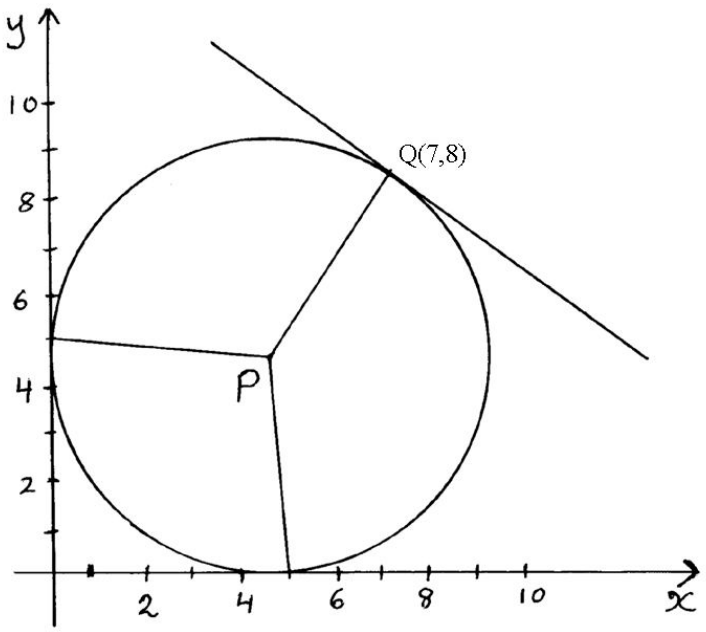
3. From a point A, the angle of elevation of top of a watch tower is 20^0.From another point which is 25m from the base of the tower, the angle of elevation of the top of the tower is 26^0.Giving your answer to three decimal places, determine the height of the tower and hence calculate the distance between the points A and B if they are both on the same side of the tower and lie on a straight line with the base of the tower. (3mks)

4. If X is a positive integer, find all possible values of x given that $1 < \frac{2}{5}x^2 < 7$. (3mks)

5. A train whose length is 60 metres is travelling at 40km/h in the same direction as a bus whose length is 20m.If the speed of bus is 80km/h and moving parallel to the train, calculate the time it takes the truck to overtake the train completely in seconds. (3mks)

6. A positive two digit number is such that the product of the digits is 20.When the digits are reversed , the number so formed is greater than the original number by 9.Find the number.

7. The diagram below shows a circle with centre P(5,5) and radius 5 units



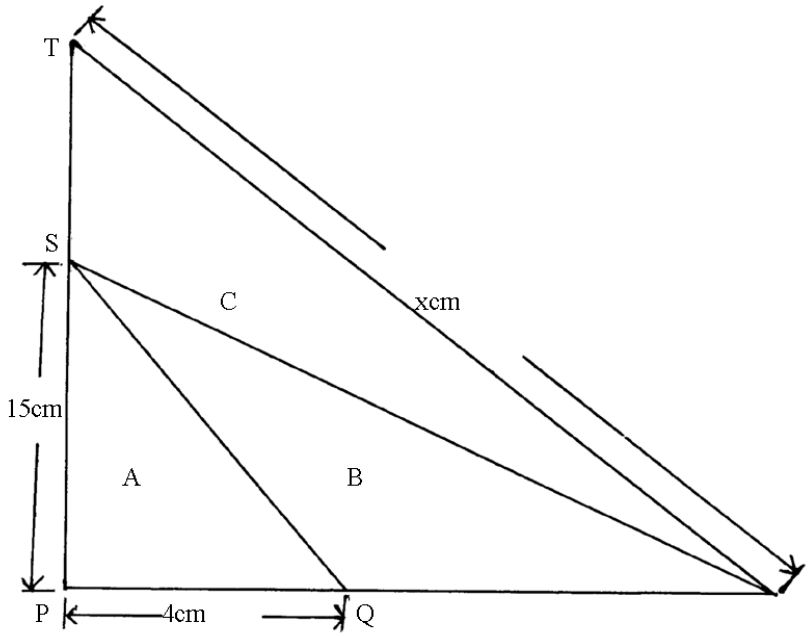
(a) Write down in terms of x and y the equation of the circle in the form $ax^2+by^2+cx+dy+e=0$ where a,b,c,d and e are constants. (1mk)

(b) Determine the gradient of PQ (1mk)

(c) Find the equation of the tangent at Q in the form ax+by=c. (2mks)

8. Find the value of x in the following figure given that area A =Area B=Area C(Give your answer

to 2 decimal places) (4mks)



9.Odhis car Hire company hires out as follows; sh. 2500 per day and sh. 270 per kilometer covered. They offer a discount of 30km free each day of hire.Makori hires a car for 5 days and drives for 480km.Calculate the total cost. (2mks)

10.Omwando borrows sh. 90,000 for 5 years at 6 ½ % simple interest p.a.What amount does he have to pay at the end of that time? (3mks)

11.Solve for t in the equation

$9^{t+1} + 3^{2t} = 30$. (3mks)

12.Given the curve $y = x^2 - 2x + 6$, find the coordinates of the point on the curve at which the gradient is 4. (2mks)

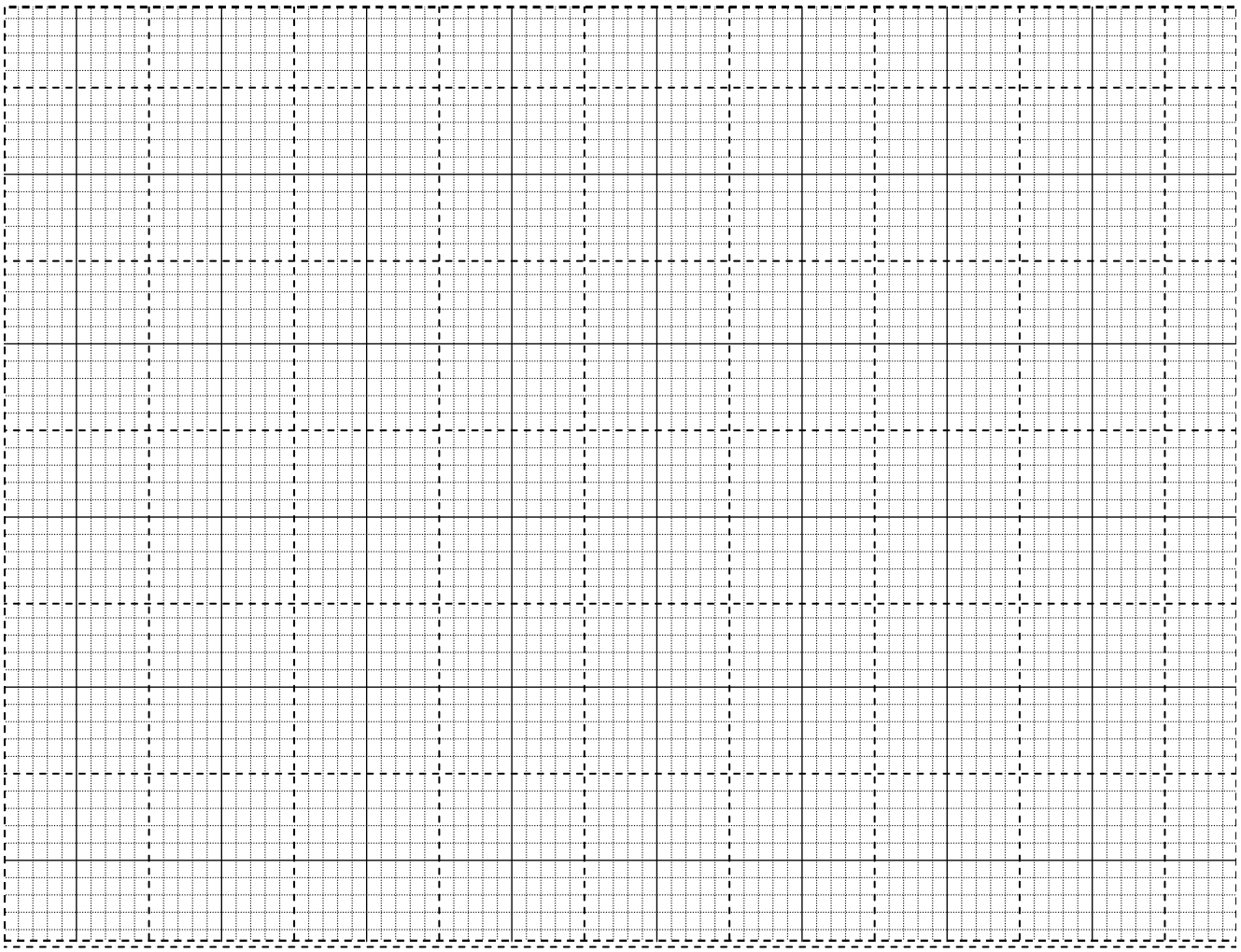
13.Mary has some money in two denominations only. Fifty shilling notes and twenty shilling coins. She has three times as many fifty shilling notes as twenty shilling coins. If altogether she has sh. 3400, find the number of fifty shilling notes and 20 shilling coins.

14.In Ngamongo village, a piece of work can be completed by 45 workers in 10 days .They worked for 4 days after which 15 workers were laid off. How many days would it take the remaining workers to complete the work? (3mks)

15. The table below shows marks obtained by a form three class in a certain school.

Marks (x)	$8 \le X < 9$	$9 \le X < 11$	$11 \le X < 13$	$13 \le X < 16$	$16 \le X < 20$	$20 \le X < 21$
No. of students (y)	2	6	8	3	2	1

Use the table to represent the information on a histogram. (3mks)



16. Find the inverse of the matrix $\begin{pmatrix} 2 & 1 \\ 3 & 2 \end{pmatrix}$ and hence solve the simultaneous equations below. (4mks)

2x+y=21

3x+2y=34

SECTION II (50 MARKS)

ANSWER ANY FIVE QUESTIONS.

17. A bag contains 5 red , 4 white and 3 blue beads. Two beads are selected at random.

    (a) Draw a tree diagram and list the probability space. (3mks)

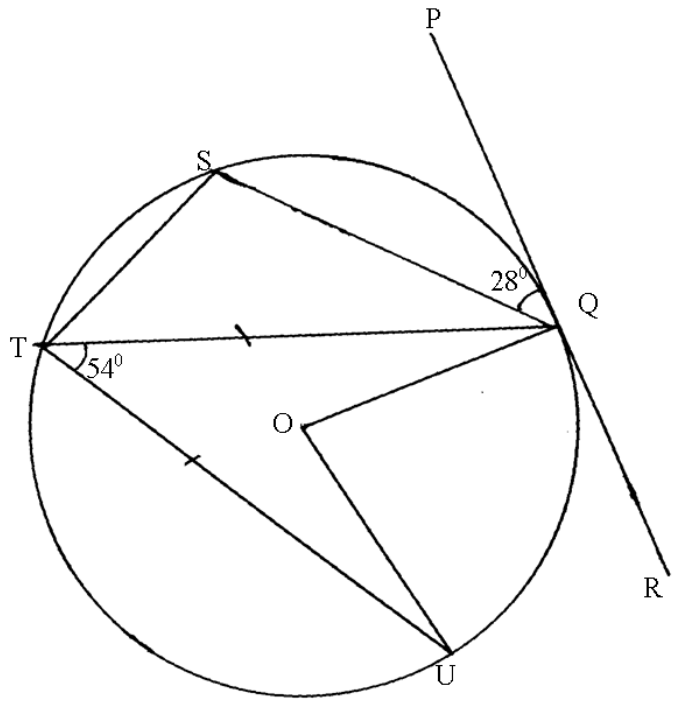
(b) Find the probability that

(i) The last bead selected is red. (2mks)

(ii) The beads selected were of the same colour (2mks)

(iii) At least one of the selected beads is blue. (3mks)

18. In the figure below,O is the centre of the circle.PQR is a tangent to the circle at Q. Angle PQS=28^0,angle UTQ=54^0 and UT =TQ.



Giving reasons , determine the size of

(a) Angle STQ. (2mks)

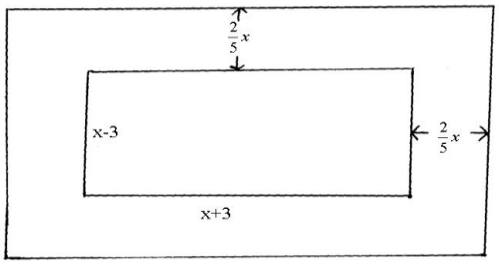
(b) Angle TQU. (2mks)

(c) Angle TQS (2mks)

(d) Reflex angle UOQ . (2mks)

(e) Angle TQR. (2mks)

19.The following figure represent a dancing floor with a carpeted margin all around of $\frac{2}{5}x$ wide leaving a dancing space of (x-3)m by (x+3)m



If the total area of the entire room is $315m^2$

(a) Calculate the value of x. (5mks)

(b) Calculate the area of the carpeted margin. (3mks)

(c) If the carpet cost sh. 750 per m^2,calculate the total cost of the sealed margin. (2mks)

20. John bought 3 brands of tea, A B and C. The cost price of the three brands were sh 25, sh 30, sh 45 per kg respectively. He mixed the three brands in the ratio 5:2:1 respectively: After selling the mixture he made a profit of 20%.

(a) How much profit did he make per kilogram of the mixture? (4 mks)

(b) After one year the cost price of each brand was increased by 10%

(i) For how much did he sell one kilogram of the mixture to make a profit of 15%? (Give your answer to the nearest 5 cents) (3 mks)

(ii) What would have been his percentage profit if he sold one kilogram of the mixture at sh. 45. (3 mks)

21. A car accelerates from rest for 10 seconds until it reaches a velocity of 12 metres per second.It then continues at this velocity for the next 40 seconds after which it brakes and comes to rest until a constant retardation of 1.5 meres per second

(a) Determine

(i) The acceleration over the first 10 seconds (2mks)

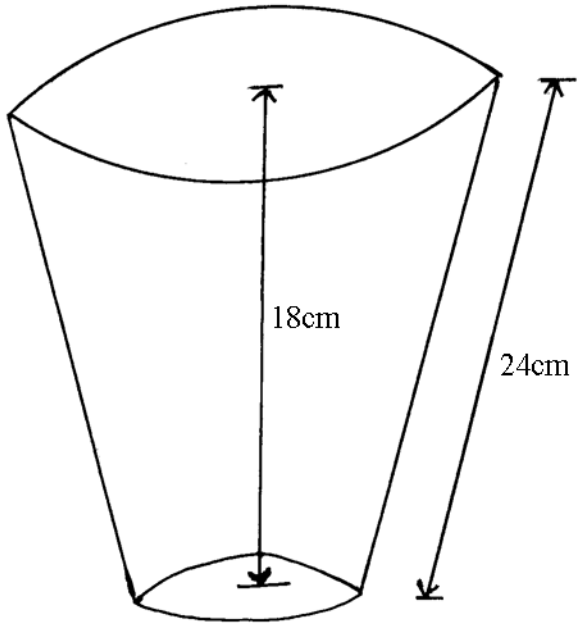
(ii) The time taken during the retardation (2mks)

(b) Draw the velocity time graph for the journey and use it to determine.

(i) The total distance covered by the car (4mks)

(ii) The percentage of the total distance which was covered during the first 15 seconds. (2mks)

22. The diagram below shows a flower vase of depth 18cm.The ratio of the top and bottom diameters is 5:2 (Take $\prod$ =3.142)



Calculate

(a) The volume of the flower vase (7mks)

(b) The curved surface area of the flower vase (3mks)

23. Given that x-y=3 and 3x+y=17, find without solving for X and Y the value of

(a) $2xy-x^2-y^2$ (2mks)

(b) $6xy+y^2+9x^2$ (2mks)

(c) $3x^2-2xy+y^2$ (3mks)

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

24. Three Kenyan warships A,B and C are at sea such that ship B is 450km on a bearing of 030^0 from ship A. ship C is 700km from ship B on a bearing of 120^0.An enemy ship D is sighted 1000km due south of ship B.

(a) Taking a scale of 1cm to represent 100km locate the position of the ships A,B,C and D

(4mks)

(b) Find the compass bearing of :

(i) Ship A from ship D (1mk)

(ii) Ship D from ship C (1mk)

(c) Use the scale drawing to determine

(i) The distance of D from A (1mk)

(ii) The distance of C from D (1mk)

(d) Find the bearing of :

(i) B from C (1mk)

(ii) A from C (1mk)

END

NAME:……...……

SCHOOL:……..

A.D.M NO:…….. DATE:……

SIGNATURE:……

121/2

MATHEMATICS

PAPER 2

FORM THREE

MATHEMATICS P2

INSTRUCTIONS TO CANDIDATES:

- *Write **your name** and **admission number** in the spaces provided above*
- *This paper contains **two sections;** Section **I** and section **II.***
- *Answer **all** the questions in section **I** and only **five** questions from section **II.***
- *All workings and answers **must** be written on the question paper in the spaces provided below each question.*
- *Marks may be given for correct working even if the answer is wrong.*
- *Calculators and KNEC mathematical tables may be used EXCEPT where stated otherwise*
- *Show all the steps in your calculations, giving your answers at each stage in the spaces below each question*

For Examiner's Use Only;

Section I

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

Section II

Questions	17	18	19	20	21	22	23	24	**TOTAL**
Marks									

GRAND

1. Evaluate without using tables or calculators. (3mks)

$$\sqrt{\frac{0.8064 \times 6.048}{1.008 \times 0.1344}}$$

2. Evaluate $\frac{-4 \text{ of } [(-4 + -5 \div 15) + -3 - 4 \div 6)]}{84 \div -7 + 3 - - 5}$ (2mks)

3. Solve for θ without using table given that $0 \leq \theta \leq 90^{o}$ and that $\sin (2\theta - 30^{o}) - \cos 4\theta = 0$ (3mks)

4. Solve for x given that $5^{2x+2} - 20 \times 5^{2x} = 625$ (3mks)

5. The angle of a quadrilateral ABCD in order are 2 (x -10), 4 (x + 5), 5(x+4) and (x-20) in degrees. Find the exterior angles of the quadrilateral. (4mks)

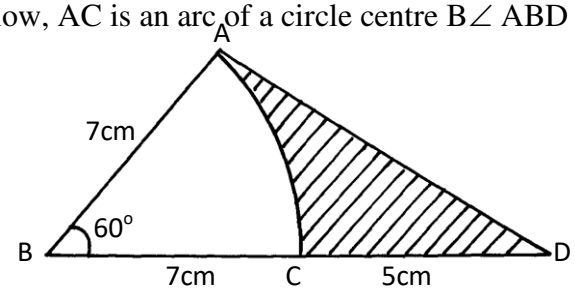
6. A radio costing kshs. 1240 is marked to sell at a price calculated to give a profit of 40 %. What will be its selling price in sale when 25% is taken off the marked price? (3mks)

7. Show that if OA = - i+ 7j, OB = 3i – 5j and OC = 4j, then points AB and C are collinear. (4mks)

8. Four men can dig 2 acres of land in 3 days working 4 hour a day. How many men are required to dig 5 acres of land in 4 days working 3 hours a day at the same rate.
(3mks)

9. The surface area of two similar bottles are 12 cm^2 and 108cm^2 respectively. If the larger one has a volume of 810 cm3. Find the volume of the smaller one.
(3mks)

10. In the figure given below, AC is an arc of a circle centre B$\angle$ ABD = 60^o, AB = BC = 7cm and CD= 5 cm.



Calculate

a) The area of triangle ADB (2mks)

b) The area of the shaded region. (2mks

11. Solve the inequalitites and represent the information on the number line. (3mks)

$-3+2x<3x+2<4(x-5)$

12. Make x the subject of the formula in $3s=2p\sqrt{\frac{x}{3x-5}}$ (3mks)

13. Given x = 13.4cm and y = 4.3 cm. calculate the percentage error in $\frac{x}{y}$ correct to 4 d.p(3mks)

14. A straight line through the point A (2, 1) and B (4,m) is perpendicular to the line whose equation is 3y = 5 – 2x, Determine the value of m. (3mks)

15. Okoth deposited some money at 10% compound interest compounded annually. How long will it take to double the amount to the nearest year? (3mks)

16. Chebet has 5 brown chicken and 3 black ones. She picks two of them for slaughter at random, one after the other. What is the probability that the two are of different colours. (3mks)

SECTION II

Answer only five questions.

17. A bus left Nairobi at 8.00am and traveled towards BUsia at an average speed of 80km/hr. At 8.30 am a car left Busia for Nairobi at an average speed of 120km/hr. Given that the distance between Nairobi and Busia is 400km.

Calculate:

a) The time the car arrived in Nairobi. (2mks)

b) The time the two vehicles met. (4mks)

c) The distance from Nairobi to the meeting point. (2mks)

d) The distance of the bus from Busia when the car arrived in Nairobi. (2mks)

18. A triangle whose vertices are A (1,4) B (2,1) and C (5,2) is given the following transformation:

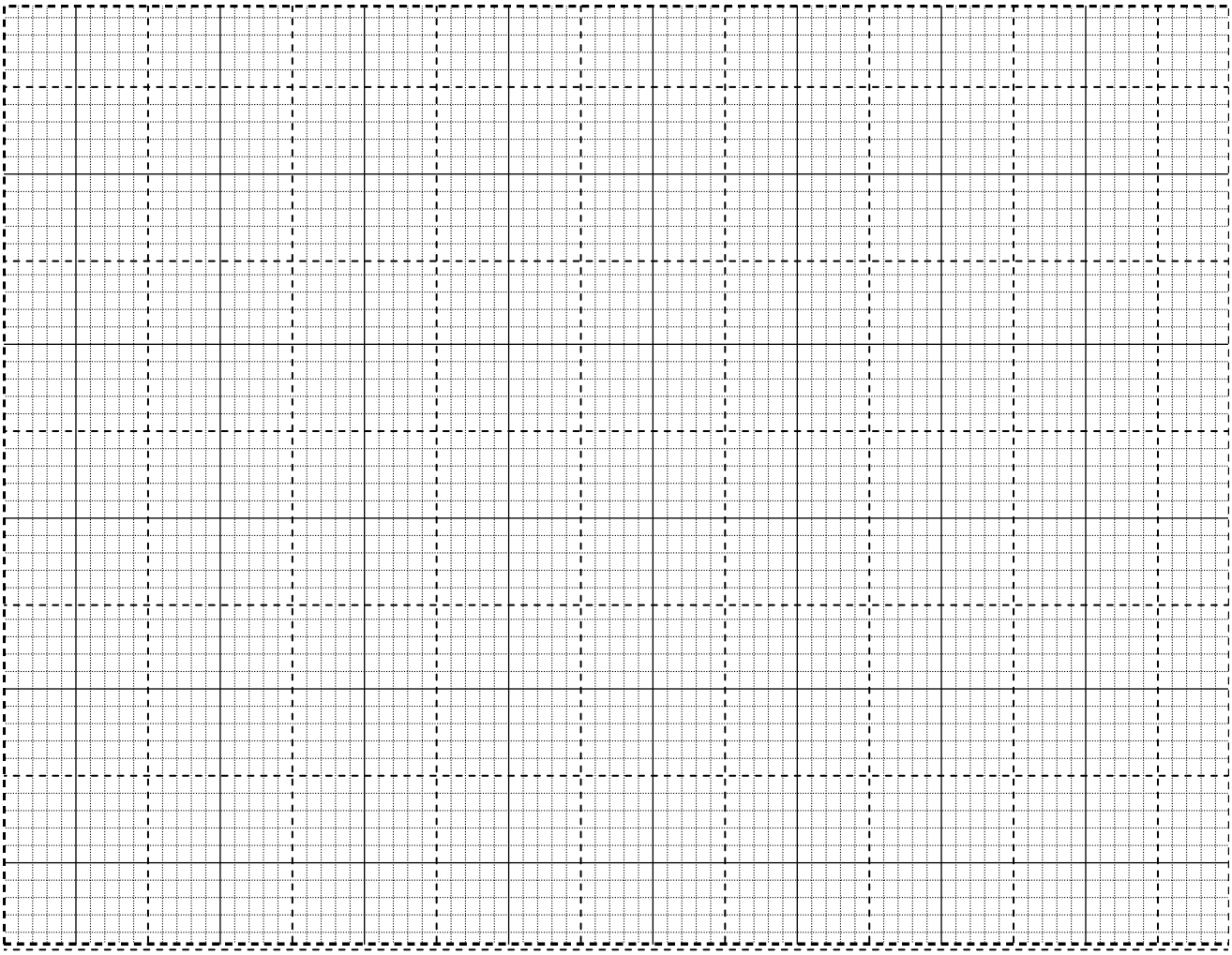
i) Reflection in the line y = -x to $A^1B^1C^1$

ii) $A^1B^1C^1$ is then given rotation of + 90^o about the origin to $A^{11}B^{11}C^{11}$

iii) $A^{11}B^{11}C^{11}$ is then given a translation vector $\begin{pmatrix} -2 \\ \end{pmatrix}$ to $A^{11}B^{11}C^{11}$

iv) $A^{11}B^{11}C^{11}$ is then given an enlargement scale factor – 2 centre (0, 0) to $A^{IV}B^{IV}C^{IV}$.

On the given grid plot a triangle ABC and it's images $A^1B^1C^1$, $A^{11}B^{11}C^{11}$, $A^{111}B^{111}C^{111}$ and $A^{IV}B^{IV}C^{IV}$. And give coordinates of $A^{IV}B^{IV}C^{IV}$. (10mks)



19. A Post OT stand vertically on level ground John moves from O, the foot of the flag post to point R, on the level ground. The points T, O and R from a right angled isosceles triangle whose perimeter is 56m. S is another point on the level ground 35m from O calculate:

a) The angle of elevation of T from S. (6mks)

b) The distance ST. (2mks)

c) Find the maximum possible distance between R and S. (2mks)

20. A salesman received a basic salary of sh. 50,000 a year together with a commission of 6 % on the value of goods sold and a car allowance of sh. 2.50 per km.

a) Find the total amount he received in a year in which he sells goods worth sh. 625,000 and travels 10,000km. (4mks)

b) The next year he travels 12,000km and receives a total of shs. 134,000

i) Calculate the value of goods sold. (4mks)

ii) Calculate the percentage increase in the value of the goods sold. (2mks)

21. Two airports a and B are such that B is 500km due east of A. two plane P and Q take off from A and B respectively and at the same time.

Plane P files at 360km/hr on a bearing of 030^{o}

Plane Q flies at 240km/hr on a bearing of 315^{o}

The two planes land after 90 minutes.

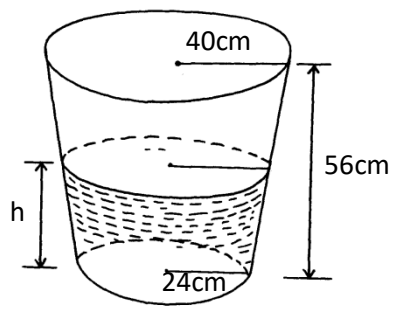
Using a scale of 1: 10,000,000

a) Show the positions of the planes after 90 min. (6mks)

b) Find the distance between the planes after 90 min. (2mks)

c) Find the bearing of plane Q from plane P after 90 minutes (2mks)

22. The figure below shows a container in form a frustrum of an open top radius 40cm and base radiu24 cm.
the depth is 56 cm.



a) Calculate the volume of the container in litres. (4mks)

b) Of the container is ¾ full of water by volume,
Calculate the radius of the meniscus. (6mks)

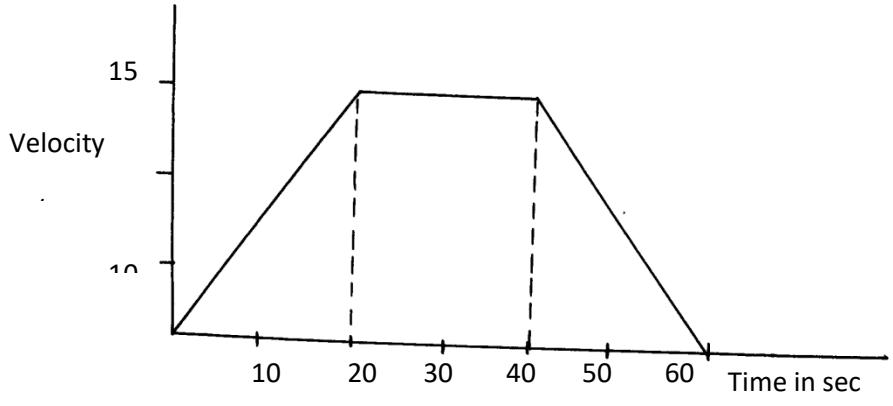
23. Use a ruler and compass only in this question.
a) Construct Δ ABC such that AB = 6cm AC= 8.5 cm and $\angle$ BAC = 120^{o} (3mks)

b) Construct the locus ℓ, of points equidistant from A and B (2mks)

c) Construct the locus ℓzof points equidistant from AB and BC (3mks)

d) Find the points of intersection, P_1 and P_2, of 1_1 and 1_2 and measure P_1P_2 (2mks)

24. The diagram below shows the graph of a moving matatu from one bus stop to another.



a) Find the acceleration of the matatu. (2mks)

b) Find the deceleration of the matatu (2mks)

c) Calculate the distance the matatu while accelerating. (2mks)

d) Calculate the distance the matatu covered while traveling at an acceleration of $0m/s^2$ (2mks)

e) Find the distance between the two bus stops. (2mks)

Name……Class……

Index Number:……

Candidate's Signature……

Date:……

121/2
Mathematics
Paper 2
JUNE 2022
2 ½ Hours

EVALUATION EXAMINATION 2022
Kenya Certificate of Secondary Education
MATHEMATICS
PAPER 2
TIME: 2 ½ HOURS

INSTRUCTIONS TO CANDIDATES:

- *Write your name, index number, admission and class in the spaces provided above.*
- *Sign and write the date of examination in the spaces provided above.*
- *This paper contains **TWO** sections: Section **I** and Section **II**.*
- *Answer **ALL** the questions in Section **I** and **FIVE** questions from section **II**.*
- *All answers and working **MUST**be written on the question paper in the spaces provided below each question.*
- *Marks may be given for correct working even if the answer is wrong.*
- *Non-programmable silent electronic calculators and KNEC Mathematical tables may be used, except where stated otherwise.*

FOR EXAMINERS USE ONLY

SECTION I

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

SECTION II

17	18	19	20	21	22	23	24	Total

Grand Total

1. Use logarithm table to evaluate (4marks)

$$\sqrt[5]{\frac{75.4x4.83^2}{0.00521}}$$

2. Make b the subject of the formula given that a = $\frac{bd}{Nb^2 - d}$ (3 marks)

3. Line PQ is the diameter of a circle such that the coordinates of P and Q are (-2, 2) and (-2,-6) respectively. Find the equation of the circle in the form $ax^2 + ay^2 + bx + cy + d = 0$. (4marks)

4. Use completing the square method to solve the equation

$4 - 3x - 2x^2 = 0$ (3marks)

5. Given that $P=4+\sqrt{2}$ and $Q=2+\sqrt{2}$ and that $\frac{P}{Q}=a+b\sqrt{c}$, where a, b and c are constants, find the values of a, b and c. (3 marks)

6. The table below shows the temperature readings of four different solutions recorded by students to nearest 0.1^0C during a laboratory lesson. Calculate the percentage error in $\frac{P+Q}{S-R}$ to 3 d.p. (3marks)

Quantity	Temperature in ^0C
P	22.5
Q	19.4
R	17.3
S	26.2

7. Use matrix method to solve the simultaneous equations

$2x + y = 10$

$2x + 2y = 14$ (3marks)

8. (a) Expand $(1+2x)^5$ to the fourth term. (1 mark)

(b) Hence evaluate $(1.02)^5$ correct to 3 decimal places. (3 marks)

9. It is known that the value of land appreciate at 7% p.a in a town. John bought a plot in the town at Ksh 500,000. Given that he plans to sell the plot after 6 years, find out how much profit he expects to get. (Give your answer correct to the nearest thousand). (3marks)

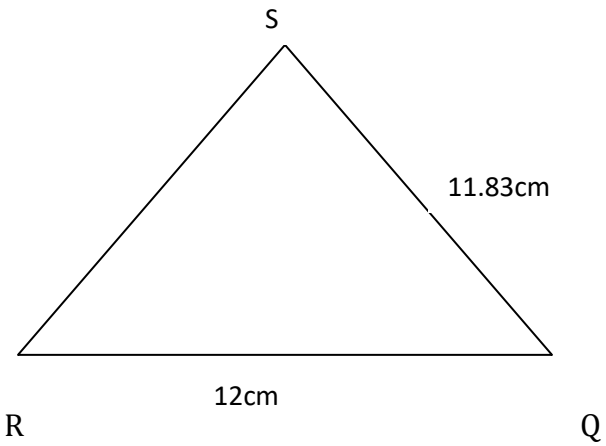
10. The mass of a wire varies jointly with its length and with the square of its diameter. A section of the wire 500m long, with diameter 3mm has a mass of 31.5kg. what is the mass of 1000m of wire of diameter 2mm? (3marks)

11. Mr. Gatua has a salary of sh.80000 per annum. He lives rent free in company house and is entitled to a monthly personal relief of sh.1056. Based on the tax rates given below, calculate his PAYE. (3 marks)

Taxable income (KE p.a.)	Rate
1 - 1500	10%
1501 - 3000	15%
3000 - 4500	25%
Above 4500	35%

12. The third term and sixth term of a geometric series are $3^1/_3$ and $11^1/_4$ respectively. Calculate the common ratio and hence find its first term. (3marks)

13. Use the figure below to answer the question that follows



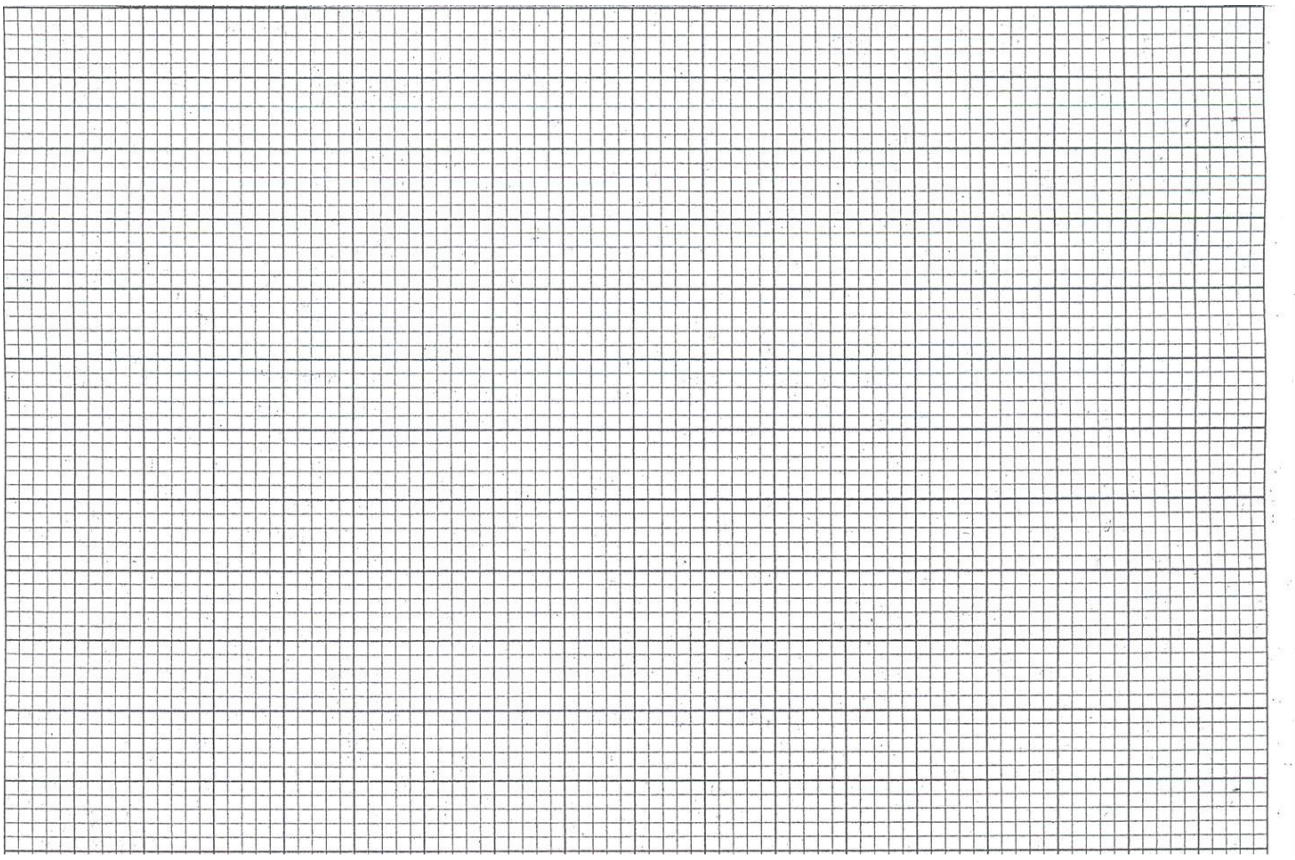
Given that angle RSQ = 50^0, SQ= 11.83 cm and QR=12cm.A circumcirle is drawn on the triangle.Find the radius of the circle (2marks)

14. A Business man bought commodity A and commodity B at shs.60 and sh.72 respectively. In what ratio must he mix so that when he sells at shs.78, he makes a profit of 200%. (3 marks)

15. Points A $(x^0N, 30^0E)$ and B $(x^0N, 50^0E)$ are 1935 kilometres apart. Taking R= 6370 km and $\pi = \frac{22}{7}$, find the value of *x.* (3marks)

16. Find the gradient function of the curve $y= 1/3x^3 - 4x^2 + 9x + 4$hence,find the gradient of the curve at point (1,-4) (3marks)

17. Use a scale of 1:1 in both axes to draw the graphs of $y = x^2 - 6x + 7$ and $y = x - 2$ for the domain $0 \leq x \leq 6$. The point of intersection of the two functions satisfy a certain quadratic equation in x. Obtain the equation in x hence calculate it's solutions. Give answer correct to 2d.p. (10 marks)



18. Points A and B are centres of two equal circles of a radius 2 cm and 10 cm apart.

i. Construct the two circles in the space given below. (1mark)

ii. Construct the transverse common tangents to both circles. (4marks)

iii. Calculate the length of the transverse common tangents (Take $\pi = \frac{22}{7}$) (5marks)

19. Albert, Bonny and Charles competed in a game of chess. Their probabilities of winning the game are $^{2}/_{5}$, $^{3}/_{5}$ and $^{1}/_{10}$ respectively.

(a) Draw a probability tree diagram to show all the possible outcomes.(2 marks)

(b) Calculate the probability that;

(i) No one loses the game. (2 marks)

(ii) Only one of them wins the game. (2 marks)

(iii) At least one of them wins the game. (2 marks)

(iv) At most two of them lost the game. (2marks)

20. Construct rhombus ABCD such that AB=BC= 6cm and $\angle ABC=60^0$.

(a) Measure BD. (1 mark)

(b) On the same diagram, construct the inscribed circle of triangle ACD. (3marks)

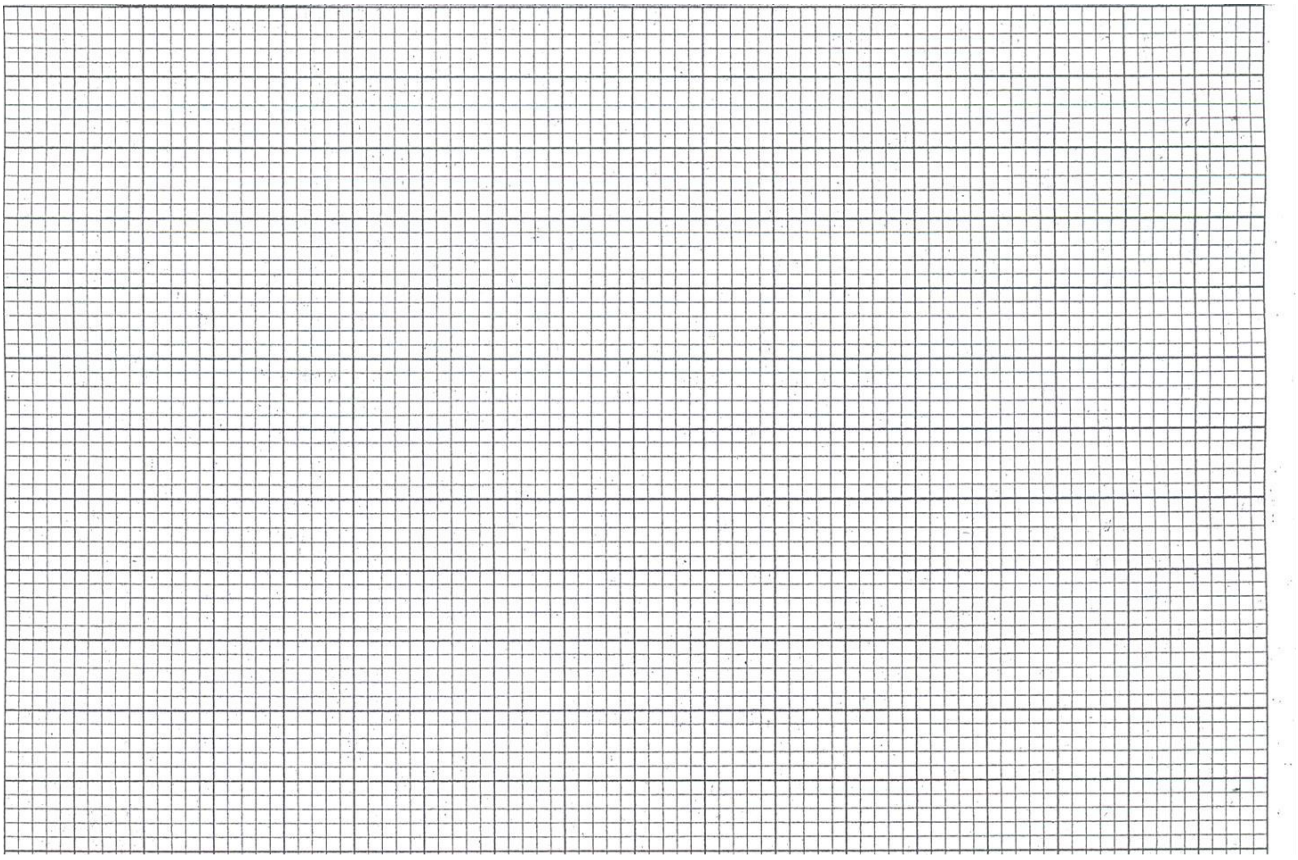
(c) Construct the locus of points equidistant from A and C. (3 marks)

(d) If x is a point on the circle in b above such that AX=XD and $\angle AXD$ is acute, find the locus of X and make it on the diagram. (3 marks)

21. (a) Complete the table below. (2marks)

X	-180^0	-150^0	-120^0	-90^0	-60^0	-30^0	0^0	30^0	60^0	90^0	120^0	150^0	180^0
Y=2cosx		-1.73			1		2		1	0			
Y=cos(x-60)	-0.5			-0.9		0			1				-0.5

(b) On the same axes plot the graphs of $y= \cos(x-60^0)$ and $y = 2\cos x$ (use a scale of 1unit for 30^0 on the x axis and 1 unit for 0.5 units on the y axis) (4mrks)



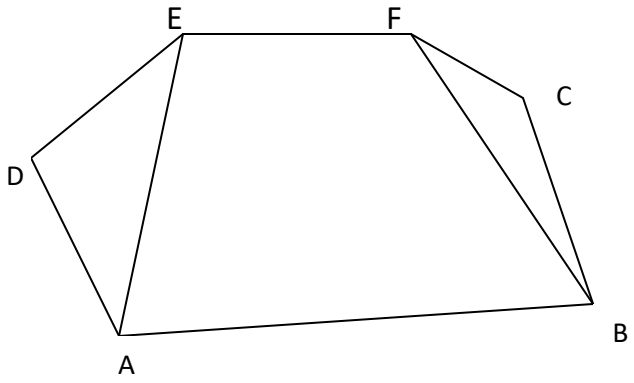
(c) Describe the transformation which maps $y= \cos(x-60^0)$ to $y = 2\cos x$. (2marks)

(d) State the period and amplitude of each of the waves above. (1mark)

	Amplitude	Period
Y=2cosx		
Y=cos(x-60)		

(e) Using the graph above determine the values of x for which
$\cos(x-60^0) - 2\cos x = 0$ (1mark)

22.



The roof of a building is as shown in the figure above with a rectangular base ABCD. AB = 20m and AD = 8m. The ridge EF = 10m and is centrally placed. The faces ADE and BFC are equilateral triangles. Calculate

(i) The height of E above the base ABCD (2 marks)

(ii) The angle between the planes ABCD and ADFE (3 marks)

(iii) The angle between the planes AED and ABCD (2 marks)

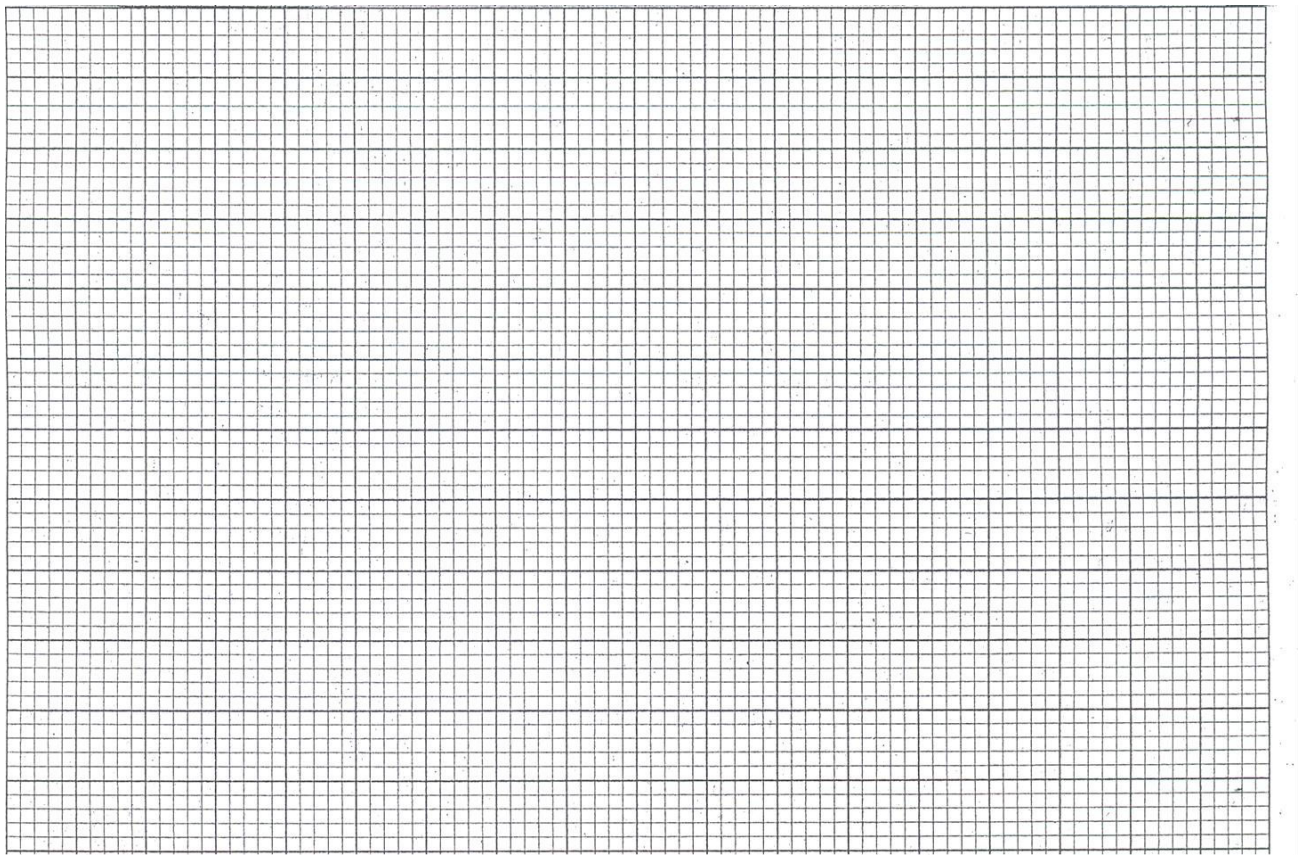
(iv) The acute angle between lines DB and EF (3 marks)

23. Kiprop has at least 50 acres of land on which he plans to plant potatoes and cabbages. Each are of potatoes requires 6 men and each are of cabbages requires 2 men. The farmer has 240men available and he must plant at least 10 acres of potatoes. The profit on potatoes is kshs.1200 per acre. If he plants x acres of potatoes and y acres of cabbages;

(a) Write down 3 in equalities in x and y to describe the information.(2 marks)

(b) Represent these in equalities graphically. (use a scale of 1:10 for both axes) (4 marks)

(c) Use your graph to determine the number of acres for each vegetable which will give maximum profit. (4 marks)



24. (a) Complete the table below for $y = x^2 - 3x + 5$ in the range $2 \leq x \leq 8$ (2marks)

x	2	3	4	5	6	7	8
y	3		9		23	33	

(b) Use the trapezium rule with six strips to estimate the area enclosed by the curve, x-axis and the lines x=2 and x=8. (2marks)

(c) Find the exact area of the region given in (b). (4marks)

(d) Calculate the percentage error in the area. (2marks)

NAME: …… ADM. NO……..…. DATE…..……..
SIGNATURE……

232/1
PHYSICS
PAPER1
2 HOURS

TERM ONE

FORM THREE
PHYSICS P1

INSTRUCTIONS TO CANDIDATES

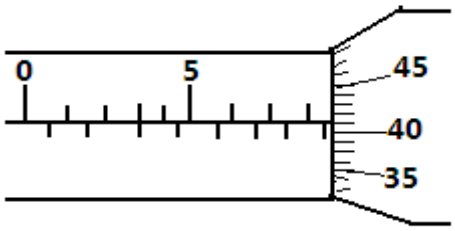
- *Write your name and index number in the spaces provided above*
- *Sign and write the date of the examination in the spaces provided*
- *Attempt **ALL** questions in sections A and B.*
- *All your answers must be written in the spaces provided in this question paper.*
- *All working must be clearly shown*
- *Non programmable silent electronic calculators and KNEC mathematics table may be used except where stated otherwise*

For Examiner's Use Only

Section	Question	Maximum Score	Candidates' Score
A	Q1 – Q13	25	
B	Q16	12	
	Q17	13	
	Q18	16	
	Q19	14	
		80	

SECTION A (25 MARKS) ***(Answer ALL the questions in the spaces provided)***

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



   ……

   ……

2. In a ball and ring experiment, the ball goes through the rings at room temperature. When it is heated it does not go through the ring, but when left on the ring for some time, it goes through. Explain this observation (2mks)

   ……

   ……

   ……

   ……

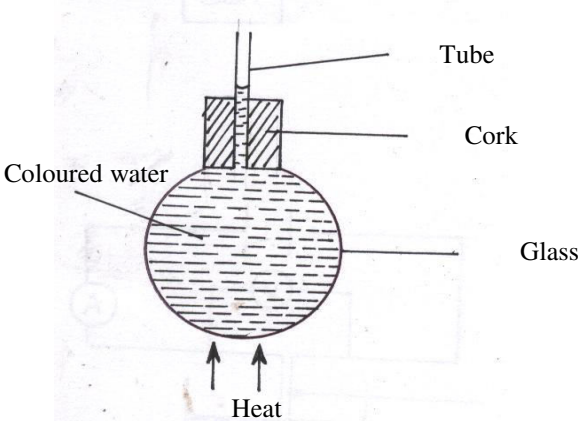
3. In the study of free fall, it is assumed that the force F acting on a given body of mass, m, is gravitational, given by F = ma. State **two** other forces that act on the same body (1mk)

   ……

   ……

   ……

4. In the set up shown below, it is observed that the level of the water initially drops before starting to rise. Explain this observation (2mks)



.....

.....

.....

.....

5. Distinguish between **speed** and **velocity.** (2mks)

.....

.....

.....

6. State how the pressure in a moving fluid varies with speed of the fluid. (1mk)

.....

.....

7. A piece of metal weighs 3N in air and 2N when totally immersed in water.
   Calculate the volume of the metal (3mks)

8. Explain how a person is able to drink a soda using a drinking straw. (2mks)

.....

.....

9. Give a reason why air is not commonly used as the fluid in a hydraulic lift. (1mk)

……

……

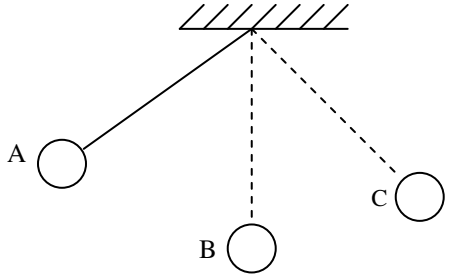
10. State **one** assumption made when estimating the size of an oil molecule in the oil drop experiment. (1mk)

……

……

……

11. The figure below shows a swinging pendulum.



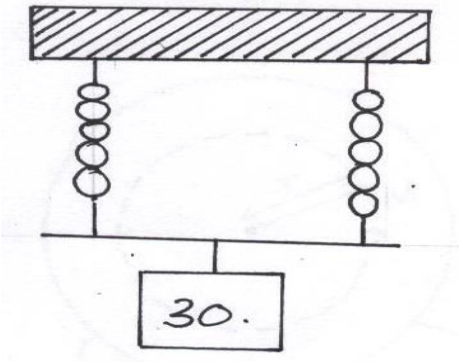
State the energy conservation taking place as the pendulum moves from A to B and B to C (2mks)

……

……

……

12. The identical springs of spring constant 3N/cm are used to support a load of 30N as shown.



Determine the extension on each spring (3mks)

……

.....

.....

.....

.....

.....

13. In a vacuum flask, the walls enclosing the vacuum are silvered on the inside. State the reason for this. (1mk)

.....

.....

14. State the features that govern the strength of a spiral spring of a given material. (2mks)

.....

.....

.....

15. Sketch velocity-time graph of a body moving down a viscous fluid. (1mk)

SECTION B (55 MARKS)

(Answer ALL the questions in the spaces provided)

16. (a) State the principle of conservation of linear momentum. (1mk)

.....

.....

(b) Calculate the recoil velocity of a gun of mass 0.4kg which fires a bullet of mass 0.0045kg at a velocity of $400ms^{-1}$ (3mks)

(i) State **two** factors which affect frictional force of a body (2mks)

.....

.....

.....

(ii) Suggest **three** ways in which friction can be minimized (3mks)

.....

.....

.....

.....

.....

(iii) State **three** advantages of friction (3mks)

.....

.....

.....

.....

.....

17.

a) Fig. 8 shows a cylindrical can filled with a liquid of density 0.8 gcm^{-3}. A hole of diameter 2.0 cm is drilled at a depth of 2.8 m from the top of the can.

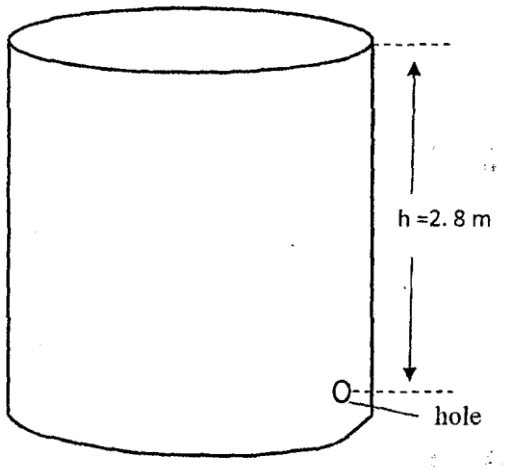


Fig. 8

Determine:

i. The cross-sectional area of the hole. (2mks)

ii. The maximum pressure exerted by the liquid at the hole. (2mks)

iii. The maximum force exerted on a jet of liquid through the hole. (2mks)

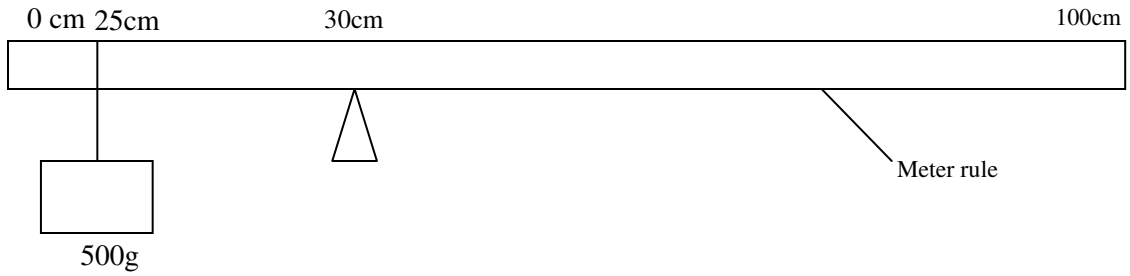
b) State the principle of moments (1mk)

……

……

……

c) A metre rule whose centre of gravity is at the 50cm mark balances at the 35cm mark when a mass of 500g is placed at the 25cm mark as shown in the figure 8 below



i. Determine the mass of the meter rule (3 mks)

ii. With the metre rule remaining on the knife-edge at the 30 cm mark, a mass of 125g is suspended from the 70 cm mark. The mass of 500g is moved until the rule is balanced. Determine the new position of the 500g mass (3 mks)

18.

a) For a body moving with a constant acceleration, a , show that:

i. $V = u + at$ where v and u are the final and initial velocities respectively while t is the time taken (2mks)

ii. $S = ut + \frac{1}{2}at^2$ where S is the distance covered (2mks)

iii. A car of mass 1200kg moving at 90km/h is brought to rest over a distance of 20m. Calculate the breaking force (3mks)

b) An object is projected vertically upwards with a velocity of 200m/s. Calculate:

i. Its velocity after 5 seconds (2mks)

ii. The distance covered in the first 8 seconds (2mks)

iii. The maximum height reached (2mks)

c) The figure below shows a uniform cardboard in the shape of a parallelogram.



Locate the centre of gravity of the cardboard. (1 mk)

d) Two samples of bromine vapour are allowed to diffuse separately under different conditions, one in a vacuum and the other in air. State with reasons the conditions in which bromine diffuse slower. (2 mks)

19.

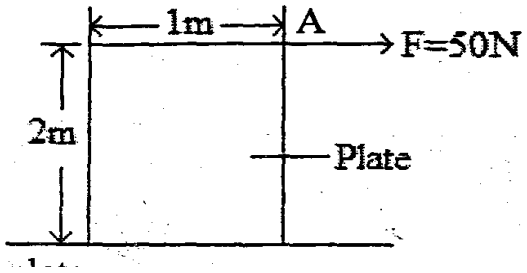
a) State **two** factors affecting stability of body (2mks)

…….

…….

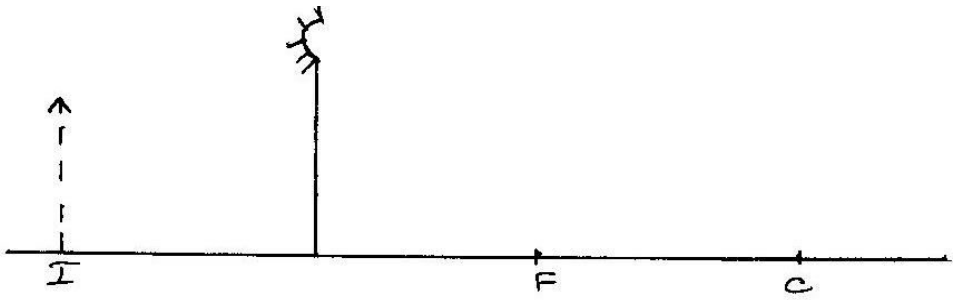
…….

b) The figure below shows a metal plate 2 m long, 1M wide and negligible thickness. A horizontal force of 50 N applied at point 'A' Just makes the plate tilt.

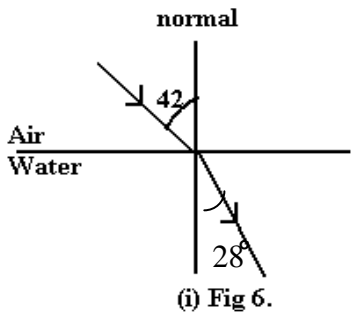


Calculate the weight of the plate. (3mks)

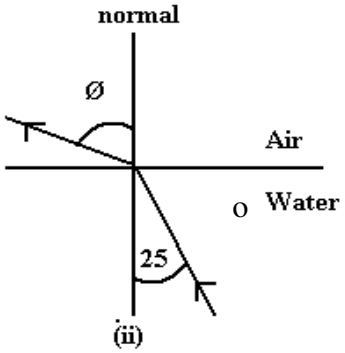
c) Fig 4 shows an image I formed by an object placed in front of a convex mirror. C is the centre of curvature of the mirror. Using ray diagram, <u>locate</u> the object position. (3mks)



d) Fig 6 (i) and (ii) show refraction of light at air-water interface. <u>Determine</u> angle Ø in figure 6(ii) (3mks)

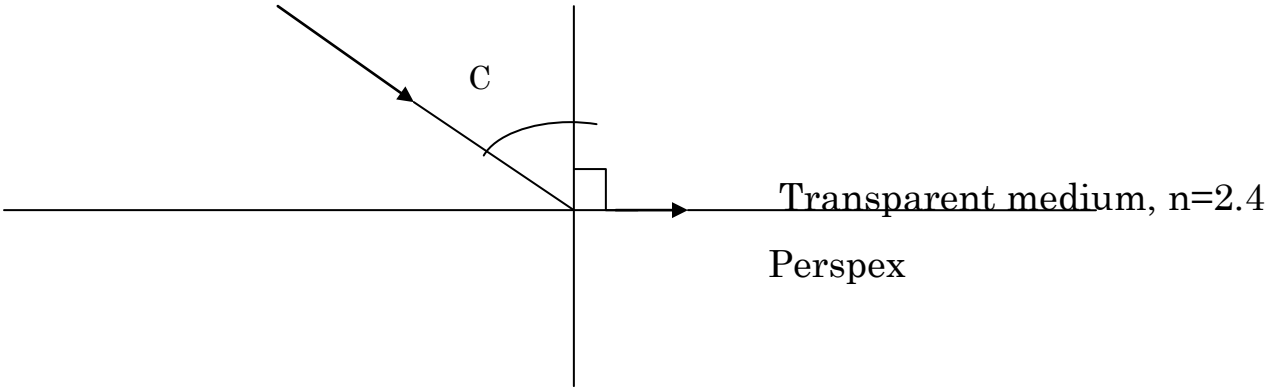


(i) Fig 6.



(ii)

e) A ray of light now travels through a transparent medium into the Perspex as shown in the figure below:



Calculate the critical angle (3mks)

NAME:…… **INDEX NO:……**

SCHOOL:…….. **DATE:…….**

SIGN:……..

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

TERM ONE

FORM THREE

INSTRUCTIONS TO CANDIDATES

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

FOR EXAMINERS USE ONLY.

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

This paper consists of 12 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)

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

.....

.....

.....

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

.....

.....

.....

.....

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

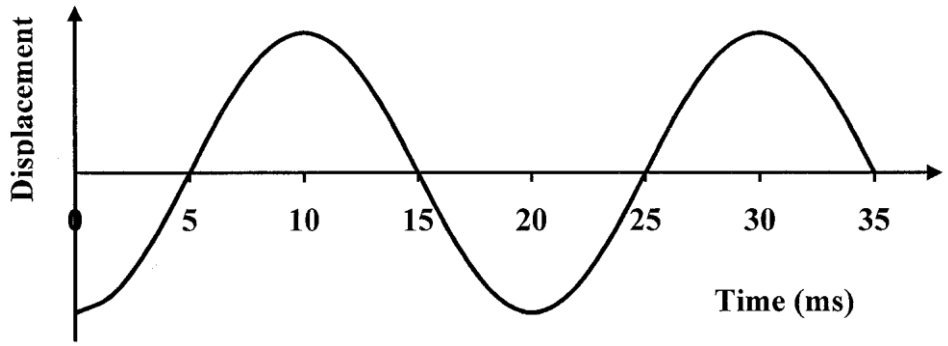


Figure 2

Determine the frequency of the wave. (2mks)

.....

.....

.....

.....

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

……

……

……

……

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

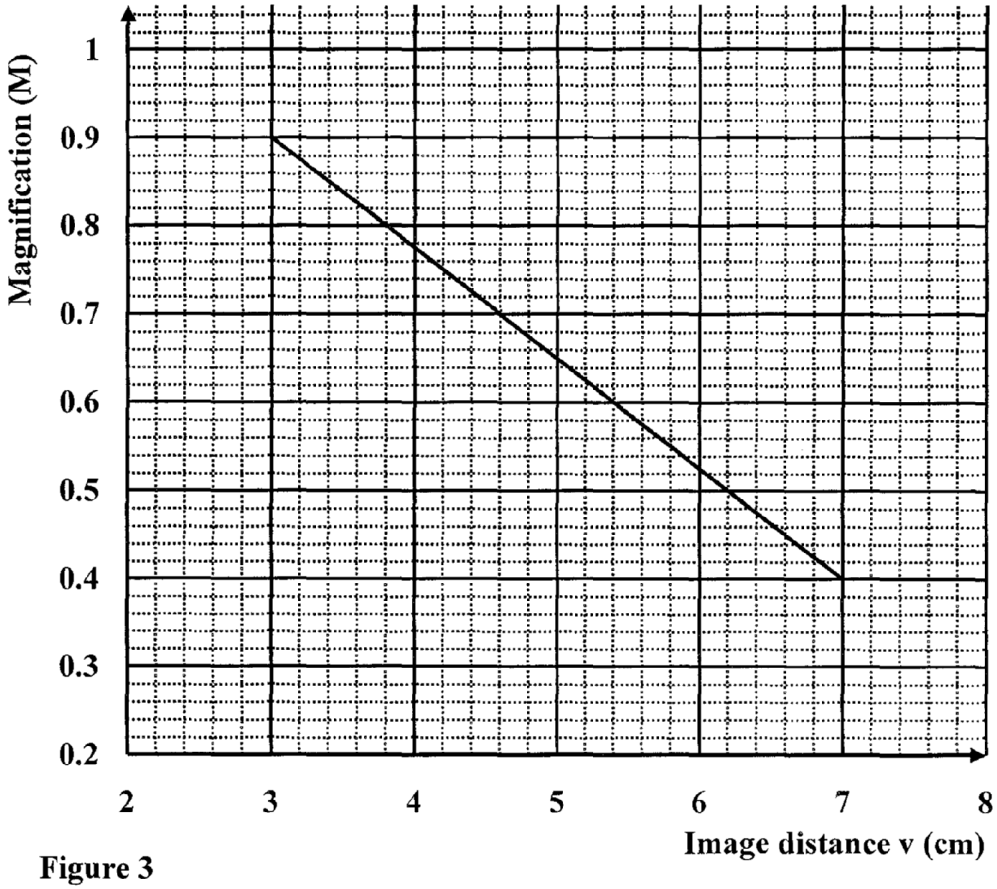


Figure 3

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

.....

.....

.....

.....

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

.....

.....

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

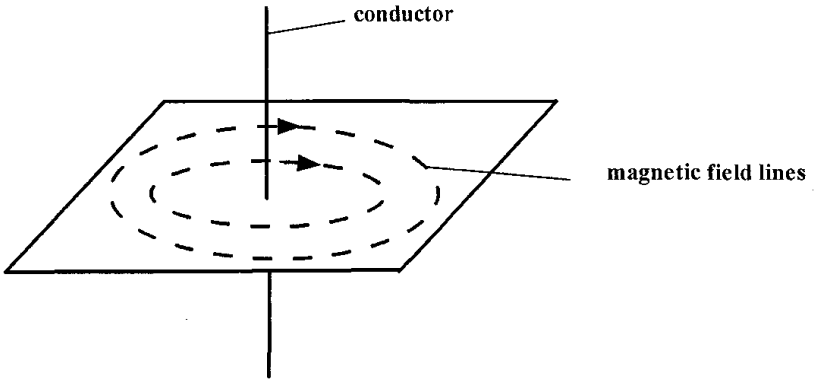


Figure 4

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

.....

.....

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

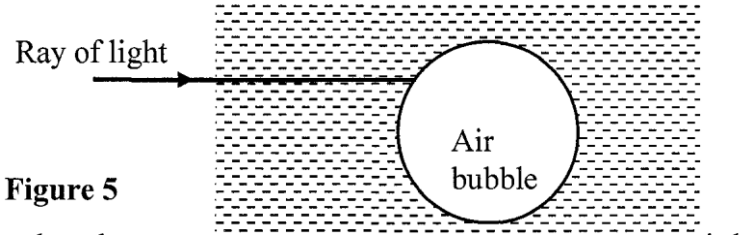


Figure 5

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

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

…….....

.....

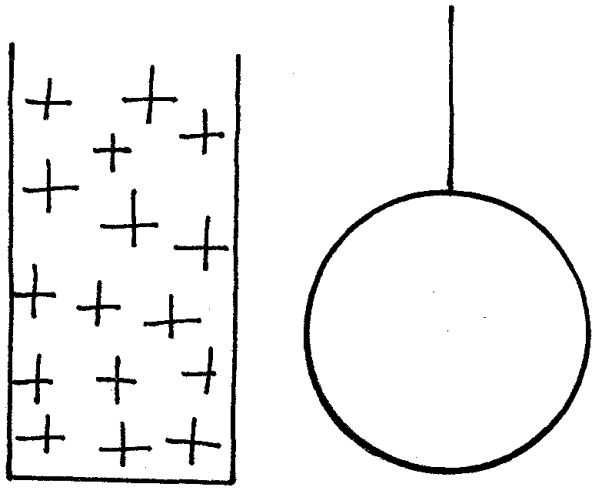
.....

.....

11.

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

Fig. 4



……

……

……

……

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

……

……

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

.....

.....

.....

.....

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

.....

.....

.....

.....

Section B (55 marks)

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

……

……

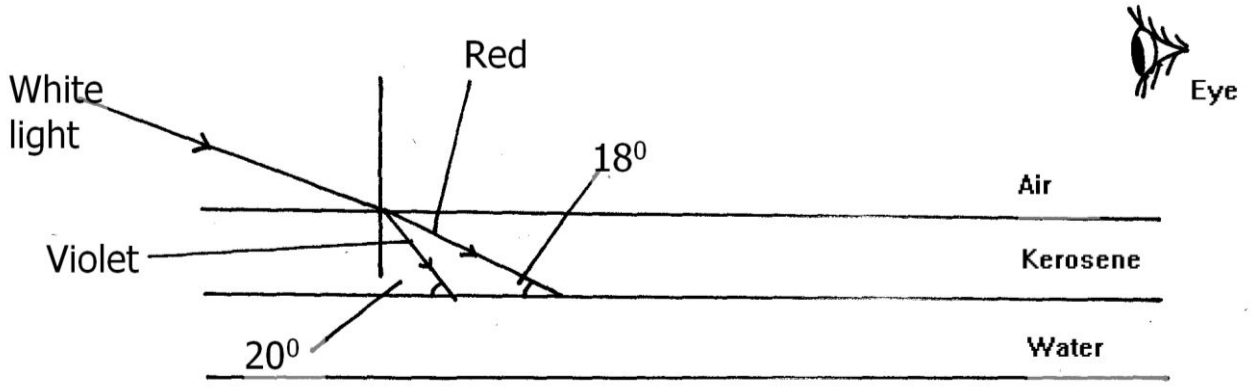
(ii) Give two advantages of totally internally reflecting prisms over plane mirrors. (2mks)

……

……

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

Fig. 7



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

(i) the refractive index for the kerosene – water interface (3mks)

……

……

……

……

……

……

(ii) determine and show on the figure the path of the rays of light between the Kerosene-water surface (3mks)

……

……

……

……

……

……

(iii) Why does the colours of the light separate at the kerosene layer. (1mk)

……

……

(iv) State and explain the observation that the eye above the two surfaces would see (2mks)

……

……

……

……

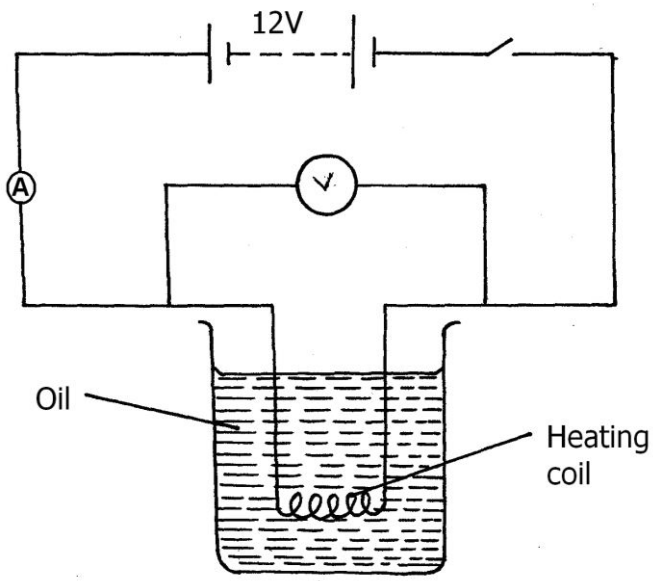
15. (a) State Ohm's law (1mk)

……

……

(b) The figure 8 below shows a circuit with a coil used to warm oil in a beaker.

Fig. 8



(i) Explain how heat is produced in the coil (2mks)

……

……

……

……

(ii) Given that the reading of the ammeter is 2.4A determine the resistance of the coil. (3mks)

……

……

……

……

(iii) How much heat is produced in the coil in a minute? (3mks)

……

……

……

……

(iv) Give two changes that can be made in the set up in order to produce more heat per minute. (2mks)

……

……

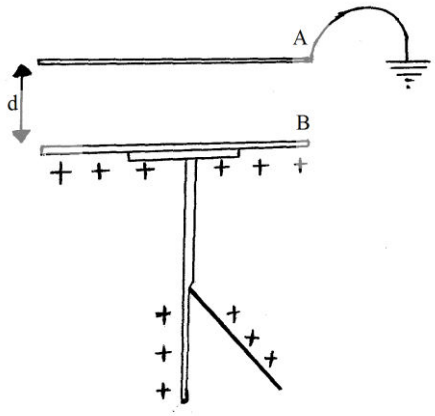
……

16. (a) Define capacitance of a capacitor (1mk)

.....

.....

The figure below shows a charged electroscope two aluminium plates A and B arranged a shown



State and explain the observations made when:

(i) d is reduced (2mks)

.....

.....

(ii) the plate A is more horizontally (2mks)

.....

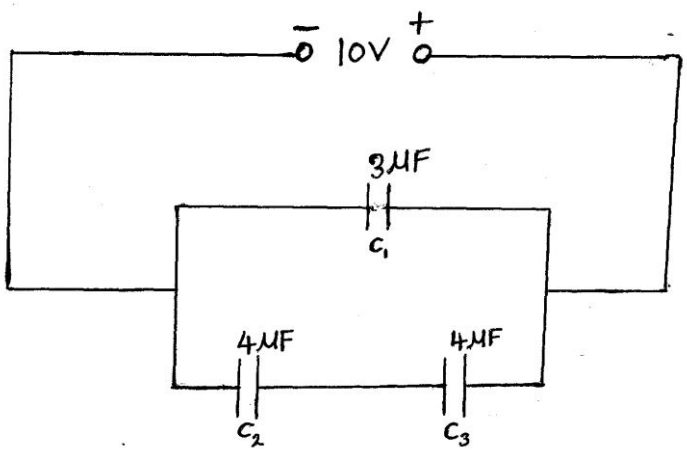
.....

(iii) a sheet of polythene is placed between A and B (2mks)

.....

.....

(b) Three capacitors are connected to a 10V battery as shown below.

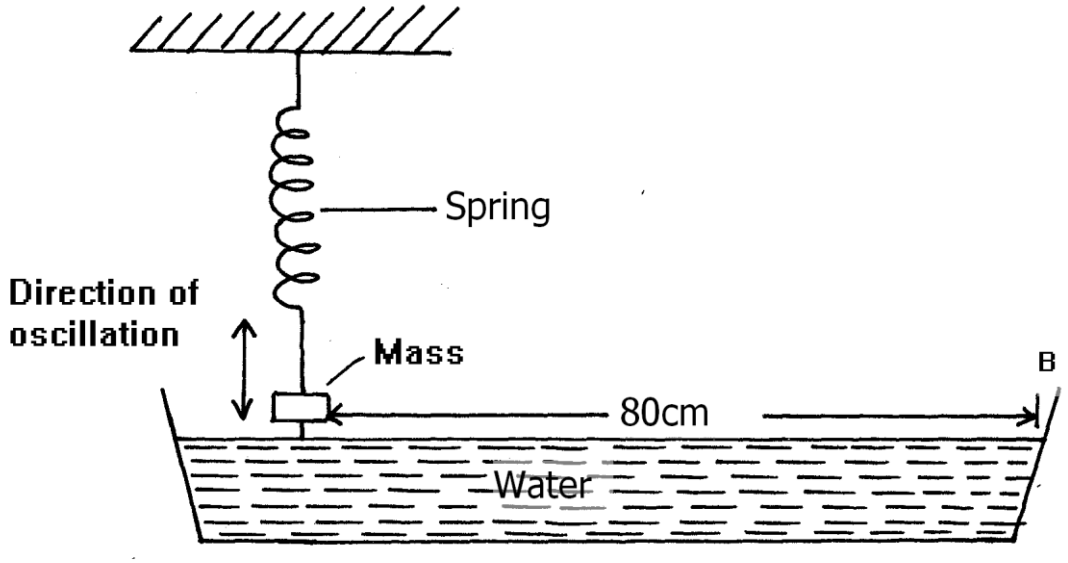


(i) Calculate the combined capacitance (3mks)

(ii) What is the charge on the 3 μ F capacitor (3mks)

17. Students set up a mass attached to spring such that when it oscillates it taps on water surface in a wide shallow tank.

Fig. 6



The students measured time for 20 oscillations and found that the mass takes 36 seconds.

(i) Determine the periodic time of the mass (2mks)

……

……

(ii) Calculate the frequency of the waves produced on the water surface (3mks)

……

……

……

……

(iii) Given that the student counted four ripples between the mass and end B of the tank, Determine the speed of the waves. (3mks)

……

……

……

……

……

……

18.

a. A machine is a device that enables work to be done more easily and conveniently. State any two ways in which a machine makes work easier. (2 marks)

……

……

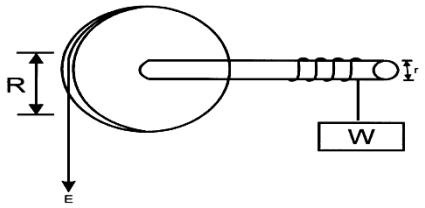
……

……

……

……

b. Figure 7 shows a wheel and axle being used to raise a load W by applying an effort E. The radius of the wheel is R and of the axle is r.



i) Show that the velocity ratio (V.R) of this machine is given by $\frac{R}{r}$ (3 Marks)

……

……

……

……

……

……

ii) Given that r = 5cm and R = 50cm, determine the effort required to raise a load of 200N if the efficiency of the machine is 90%. (3 mks)

……

……

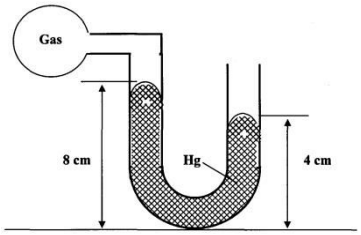
……

……

……

……

c. An airtight flask containing a gas is connected to a mercury manometer. The levels of mercury in the two limbs of the manometer are as shown in the diagram below.



Calculate the pressure of the gas (Density of mercury = 1.36×10^4 kg/m^3 and atmospheric pressure = 1.0×10^5 N/m^2) (3mks)

……

……

……

……

……

……

d. State one way of making the surface tension of a liquid stronger. (1mk)

……

……

……