MANGU HIGH SCHOOL TRIAL 4

2025 MOCK EXAMS *(ALL SUBJECTS TESTED)*

MANGU HIGH SCHOOL TRIAL 4
2025 MOCK EXAMS

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

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

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NAME: …… INDEX NO: ……

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MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

FORM 4

AGRICULTURE

PAPER 1

TIME 2 HOURS

INSTRUCTIONS TO CANDIDATES

- **This paper consists of three sections: A,B and C**
- **Answer all the question in section A and B**
- **Answer any two questions in section C**
- **All answers should be written in the spaces provided**

SECTION A (30 Marks)

Answer ALL questions in the spaces provided

1. State four advantages of using farm yard manure. (2mks)

2. State four merits of minimum tillage in crop production. (2mks)

3. Mention four practices carried out to maintain grass pastures. (2mks)

4. State four disadvantages of nomadic pastoralism. (2mks)

5. Mention four cultural methods of used control in crop production. (2mks)

6. State four ways of overcoming extremes of temperature in crop production. (2mks)

7. List five precautions observed in harvesting tea to ensure high quality produce. ($2^1/_2$mks)

8. List three ways in which primary cultivation can be achieved. ($1^1/_2$mks)

9. An agriculture student was advised to apply complete fertilizer 40:30:10 in a (20x10) M plot and at the rate of 40kg per hectare.
   (i) Calculate the percentage of P_2O_5 in the complete fertilizer. (2mks)

   (ii) Calculate the amount of fertilizer the student would require for the plot. (2mks)

10. State four divisions of livestock farming. (2mks)

11. List four methods commonly used for applying nitrogenous fertilizers. (2mks)

12. Name four factors influencing soil formation. (2mks)

13. A farmer owns one hectare on which he can grow maize whose yield is 15 bags/hectare but has chosen to grow sorghum whose yield is 20 bags/hectare. If maize is sold at Shs. 1200 per bag while sorghum is sold at Shs. 700 per bag. Calculate the opportunity cost. (2mks)

14. State four characteristics of plants used for preparation of green manure. (2mks)

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SECTION B (20MKS)

15. Students in an agriculture class set out to investigate the constituents of soil sample from school. They carried out a series of tests on various portions of the sample. They then prepared a table a shows below:

Description	Quantity
Mass of an empty evaporating disk	10g
Fresh soil on evaporating disk	35g
Mass of dried soil at 105oC on evaporating disk	28g
Vol. of water in the tin	250cm^3
Vol. of water and soil after stirring	410cm^3
Mass of empty silica disk	15g
Mass of silica disk and soil after ignition	45g
Mass of silica disk and dried soil before ignition	65g
Volume of water and soil before stirring	500cm^3

a) Calculate the percentage of soil water in the sample. (1mk)

b) Why was soil heated at 105^oC? (1mk)

c) Calculate the percentage of soil air in the sample? (1mk)

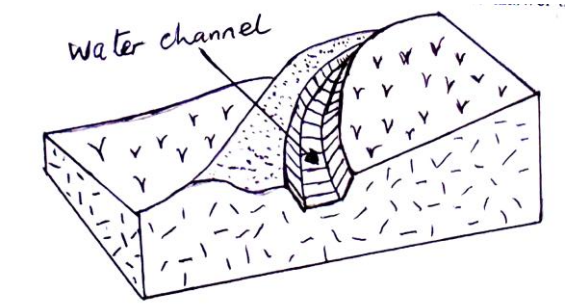
d) Calculate the percentage of soil organic matter in the sample. (1mk)

e) Name one other soil constituent not tested above. (1mk)

16. The diagram below shows a construction on farm. Use it to answer the questions that follow

a) Identify the above structure. (1mk)

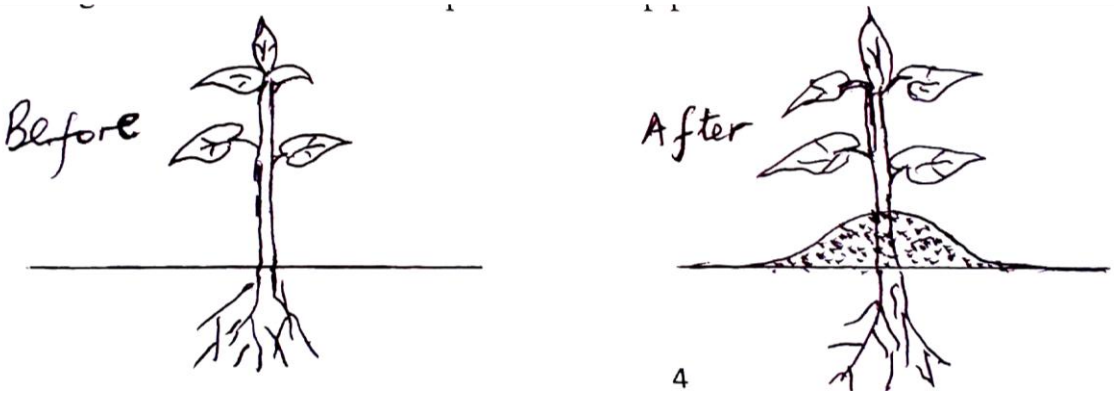
b) State four areas where water in the channel is directed to: (4mks)



17. The diagram below shows a field practice in crop production.

a) Identify the practice. (1mk)

b) State two advantages of the practice named in (a) above to Irish potatoes. (2mks)



c) Name two other crops that require the above practice. (2mks)

18. Use the diagram below to answer the questions.

(a) Identify the sorghum variety shown above. (1mk)

(b) State two bird pests that commonly attack the crop. (2mks)

(c) Name two other varieties commonly grown by farmers. (2mks)

SECTION C (40MKS)

19. a)State **five** importance of budgeting in a farming enterprise (5mks)
    b) State **six** ways through which farmers adjust to risks and uncertainties (6mks)
    c) State **four** ways in which labour productivity can be improved in the farm (4 mks)
    d) State **five** importance of a title deed to a farmer (5 mks)
20. a) Describe the production of maize for grain production under the following sub-heading
    i) Four varieties common in Kenya (2mks)
    ii) Seedbed preparation (3mks)
    iii) Field practices (5mks)
    b) State and explain five cultural methods used to control weeds (5mks)
    c) State five effects of late defoliation of forage crops (5mks)
21. Study the table below showing quantities of fertilizers used and yield of maize obtained over a period of years and answer the questions that follow.

Land (in ha)	DAP fertilizers (in 20kg units)	Yield (90kg bags)	Marginal production(MP) (in 90 kg bags)	Average production(AP) (in 90 kg bags)
1	0	2		
1	1	10		
1	2	24		
1	3	42		
1	4	56		
1	5	62		
1	6	60		
1	7	56		

(a) i) Fill in the marginal and average product columns in the table (4mks)
    ii) Using the graph paper provided draw the production function curve (6mks)
    iii) Show the three zones of production on the graph (3mks)
b) Highlight seven effects of land fragmentation (7mks)

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FORM 4

AGRICULTURE

PAPER 2

TIME 2 HOURS

INSTRUCTIONS TO CANDIDATES

- **This paper consists of three sections: A,B and C**
- **Answer all the question in section A and B**
- **Answer any two questions in section C**
- **All answers should be written in the spaces provided**

SECTION A (30 Marks)

Answer ALL questions in the spaces provided

1 Name the pig breed which has the following characteristics: long, large, and white body, broad and dished face, upright ears. (½ mk)

2. Name any two characteristics of good quality whole milk. (1mk)

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3. State three advantages of artificial calf rearing. (3mks)

4. State four qualities of clean milk. (2mks)

5. Outline four ways of controlling egg eating in poultry. (2mks)

6. (a) Name the cause of milk fever. (½ mk)

(b) Give one control measure of milk fever. (½ mk)

7. State **three** field conditions under which a disc plough should be used instead of a mouldboard plough.
$(1\frac{1}{2} mks)$

8. (a) State two disadvantages of using metal frames in construction of farm building. (1mk)

(b) Give three reasons for seasoning timber. (1 ½ mks)

9. State four qualities of colostrum which make it suitable for feeding newly born calf. (2mks)

10. Name two dual purpose breeds of cattle (1mk)

11. Outline four reasons for swarming of bees. (2mks)

12. State four reasons for steaming up in animal production. (2 mks)

13. Give two causes of high mortality rate in piglets. (1mk)

14. (a) what is a notifiable disease? (1mk)

(b) Name four examples of notifiable diseases in livestock. (2mks)

15. Give **three** reasons why drenching alone is not an effective method of controlling intestinal parasites in livestock. $(1\frac{1}{2}mk)$

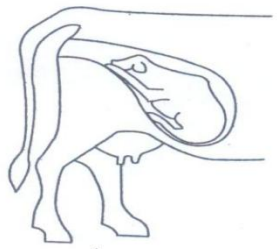
16. State four qualities of eggs preferred by consumers in the market (2 mks)

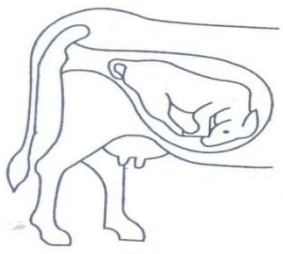
17. Give four light breeds of chicken in poultry rearing. (2mks)

SECTION B (20 Marks)

Answer all questions in this section in the spaces provided after every question

18. The illustration below show different presentation of foetus at the time of birth. Study the illustrations and answer questions that follow.





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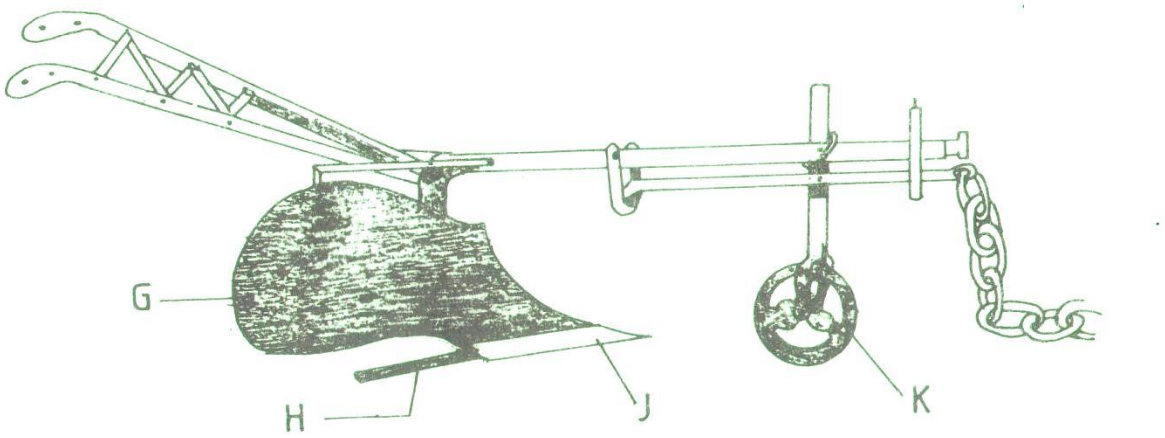
(a) What diagram represents the normal position of a calf at birth (1mk)

(b) What term is used to refer to position shown in diagram **K**? (1mk)

(c) State three signs of parturition in cattle. (3mks)

19. The diagram below shows a farm implement. Study it and answer the questions that follow:-

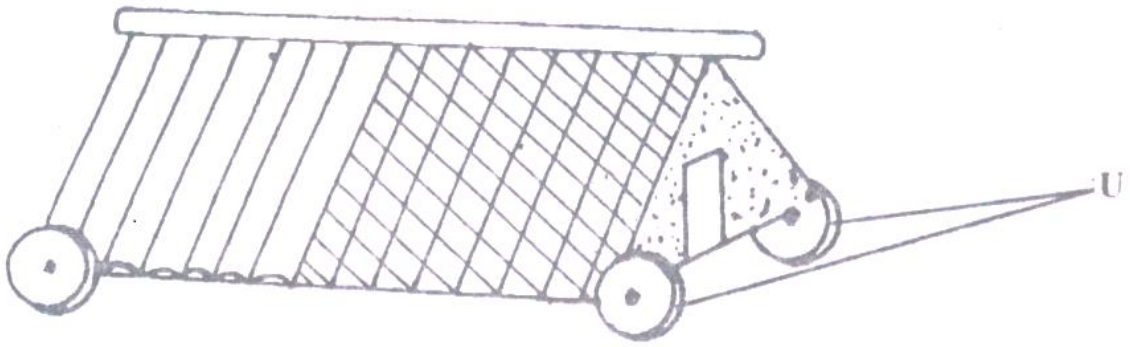


(a) Identify the farm implement illustrated above. (1mk)

(b) Name the parts labeled **G,H and J** (3mks)

(c)State **two** maintenance practices that should be carried out in the implement above (1mk)

20. The diagram below represents a poultry keeping structure.

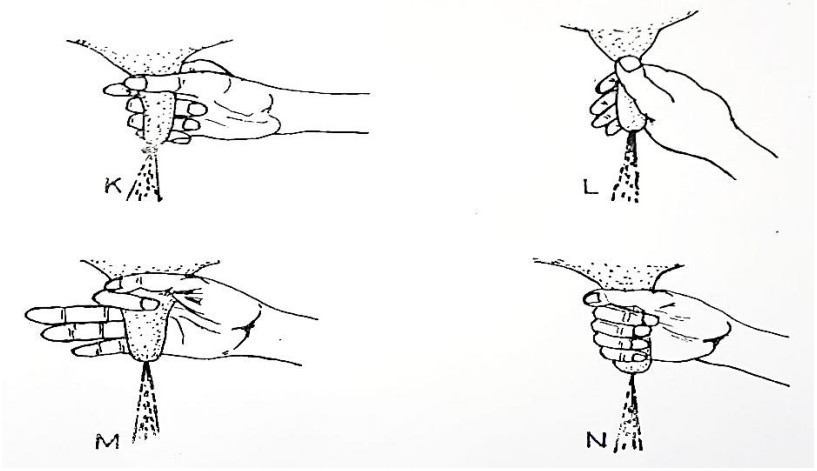


(i) Identify the structure. (½ mk)

ii) Identify the part labeled **U.** (½ mk)

iii) State the maintenance carried out on the structure illustrated above. (1mk)

21. The diagrams K, L, M and N below show four possible ways of drawing milk from the teat of a cow during milking.



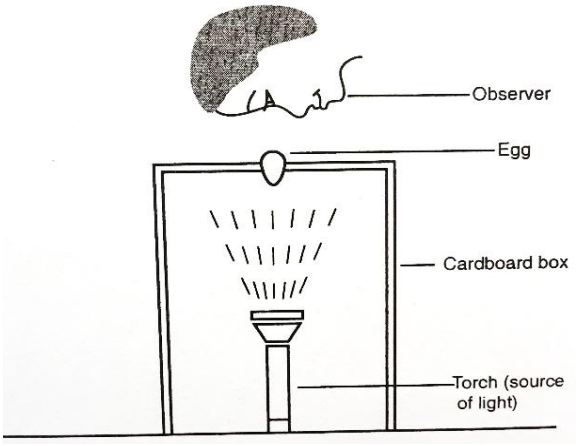
a) Which diagram shows the proper way of drawing milk? (1mk)

b) How long should it take to milk a cow from the start to the end of milking? (1mk)

c) How would a milkman ensure that no milk remains in the udder at the end of milking? (1mk)

d) Give **two** practices carried out on milk immediately after milking. (2mks)

22.Below is an illustration of an activity carried out by a poultry farmer keeping layers



a) Identify the activity carried out using the set-up. (1mk)

b) State **two** abnormalities in eggs that can be detected using the set-up above. (1mk)

c) How can a farmer improve the following?

i. Hardness of egg shells. (½ mk)

ii. Yellowness of the egg yolk. (½ mk)

SECTION C (40 Marks)

Answer any two questions from this section in the spaces provided after each question.

23 a) Describe the artificial rearing of layer chicks from day old up to the end of brooding. (10mks)

b)Describe the characteristics of a poor layer, which should be considered during culling (4mks)

c) Discuss management practices that would ensure maximum harvest of fish from the pond. (4mks)

d) Give four methods used in preserving fish. (2mks)

24.a) State the functions of any **six** parts of a plunge dip. (6mks)

b) State and explain **four** factors considered when selecting a breeding stock. (4mks)

c) Explain **five** mechanical methods of controlling ticks. (10mks)

25 a) State **five** advantages of embryo transplant. (5mks)

b) Describe coccidiosis disease under the following sub- headings.

i. Animals attacked (2mks)
ii. Causal organism (1mk)
iii. Symptoms (4mks)
iv. Control measures (3mks)

d) A ration containing 20% DCP for growing chicks is to be obtained by mixing ground maize containing 10% DCP and fishmeal containing 50% DCP. Calculate the amount of each feedstuff in kilograms required to prepare 200kg of the feed (5mks)

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MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

BIOLOGY

PAPER 1 (Theory)

TIME: 2 HOURS

FORM 4

JULY/AUGUST 2025

INSTRUCTIONS TO CANDIDATES

- Write your name and Adm. number in the spaces provided.
- Answer ALL the questions in the spaces provided

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Question	Maximum score	Candidates score
1-16	80	

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

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SECTION A

1. State the functions of each of the following organelles**.** **(2 marks)**

i. Ribosomes

ii. Golgi apparatus:

2. Give reasons for caring out the following procedures when preparing temporary wet mounts of a plant tissue

3. why would carboxyhaemoglobin lead to death 2mks

4. a)Name one salivary gland in humans 1mk

b) State two functions of saliva

2mks

5. State three characteristics of the class crustacean 3mks

6. State three characteristics that ensure cross-pollination takes place in flowering plants 3mks

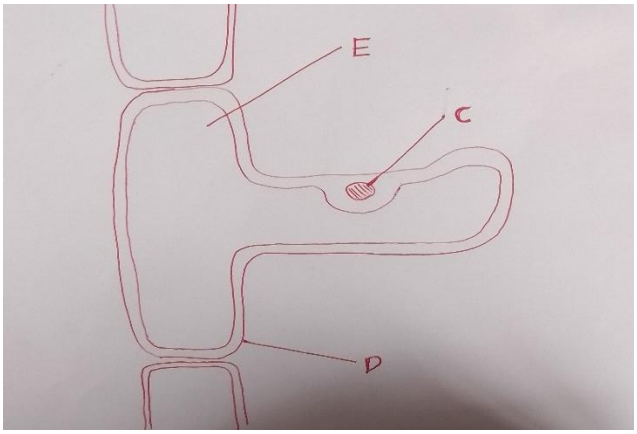
7. State the importance of negative phototaxis to termite 1mk-

8. Name two tissues in plants that provide mechanical support 2mks

9. State three structural differences between biceps and muscles of the gut 3mks

Biceps	Gut muscles

10. The diagram below shows a specified plant cell…….



(a) (i) name the cell 1mk

(ii) Name the parts labeled Dand E 2MKS

(b) State the function of the part labeled C 1MK

11.(a) What is diffusion 2mks

(b) How do the following factors affect the rate of diffusion?

(i) Diffusion gradient

(ii) Surface area to volume ratio

(iii) Temperature

12. (a) state the role of light in the process of photosynthesis 1mk

(b) Name one end product of dark reaction in photosynthesis 1mk

13. (a) The action of ptyalin stops at the stomach. Explain 1mk

(b) State a factor that denatures enzymes 1mk

(c) Name the feactures that increase the surface area of small intestines 1mk

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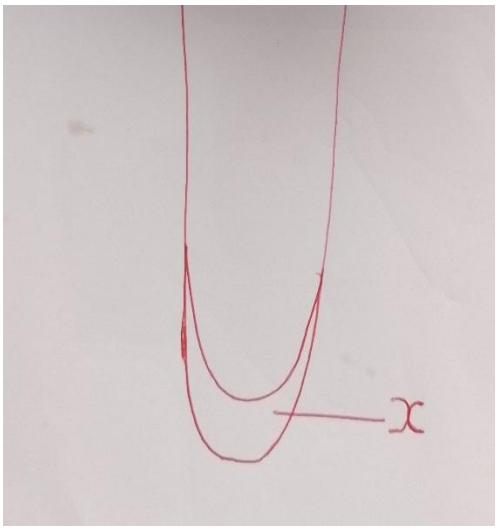
14. The diagram below represents region of a root cap



(a) Name two regions above X in ascending order 2mks

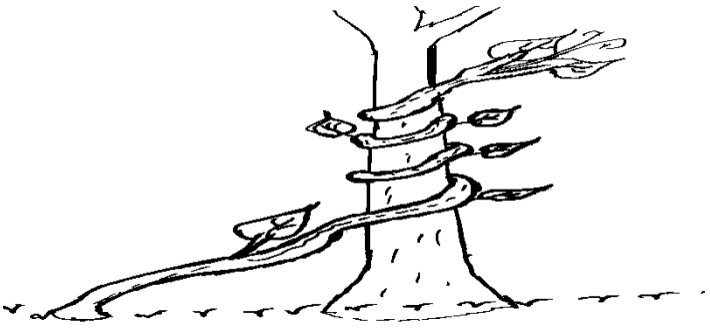
(b) State the function of the part labeled X 1MK

15. State three ways in which blood capillaries are structurally adapted to their functions 3mks

16. How are lenticels adapted for gaseous exchange 2mks

17. Apart from hearing state another function of the human ear 1mk

18. The diagram below illustrates a response by a certain plant ……



(a) Name the type of response 1mk

(b) Explain how the response illustrated above occurs 3mks

19. Apart from the lungs name two gaseous exchange surfaces in a frog 2mks

20. State two functions of the muscles found in the alimentary canal of mammals 2mks

21..Name a disease caused by lack of each of the following in human diet

(i)Vitamin D

(ii)Iodine

22.(a) State two factors that affect enzymatic activities 2mks

(b) Explain how one of the factors stated in (a) above affects enzymatic activities 1mk

23. State the importance of each of the following in living organisms

(a) nutrition 1mk

b) excretion 1mk

24. State two ways in which chloroplasts are adapted to their functions

25. State two disadvantages of self-pollination 2mks

26. (a) Name two types of muscles in mammals 2mks

(b) State the location of each of the following muscles in (a) above 2mks

27.state two advantages of internal fertilization 2mks

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MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

BIOLOGY PAPER 2
JULY/AUGUST 2025

INSTRUCTIONS TO CANDIDATES

This paper consists of two sections A and B. All the questions in section A are compulsory. In the section B, answer question 6 (compulsory) and either question 7 or 8 in the spaces provided after question 8.

Section	Questions	Max Score	Candidates score
A	1 2 3 4 5	8 8 8 8 8	
B	6	20	
	7	20	
	8	20	
	Total Marks 80		

This paper consists of 11 printed pages

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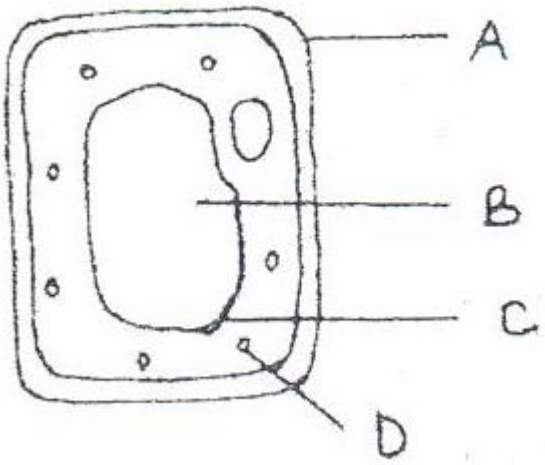
Section A: (40 marks)

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



a) Name the parts labeled

B_____

C_____

D_____

b) What substance makes up part labeled A? (1 mk)

---

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

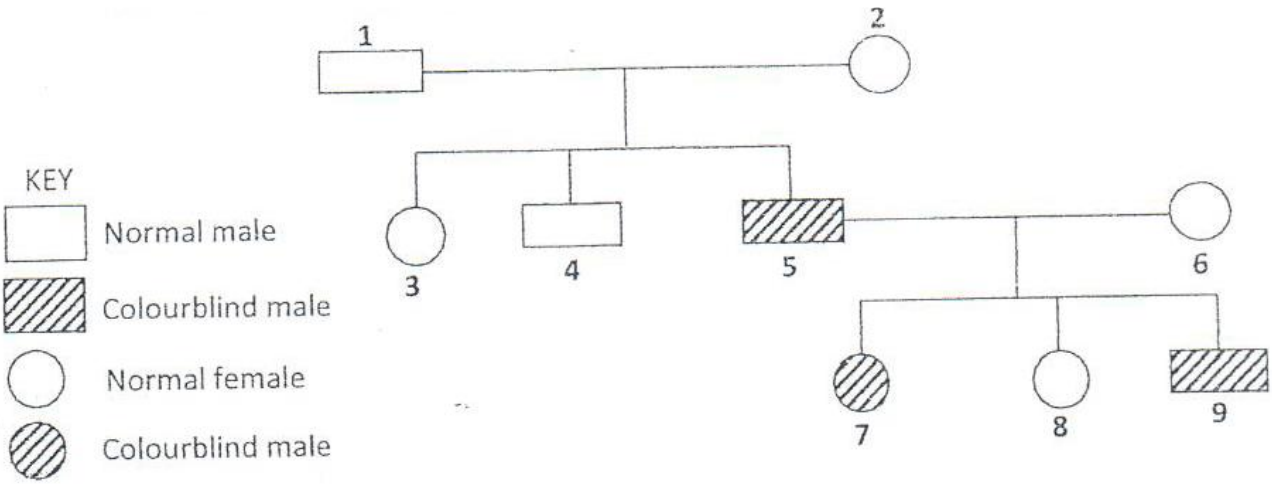
_____

_____

_____

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

2.The figure below is a pedigree showing the inheritance of colorblindness, a disease transmitted through a recessive gene located on the X – chromosome.



(a)Using the symbol N for normal gene and n for colourblind gene, write down the genotypes of parents 1 and 2. (2 mks)

_____

_____

_____

(b) Work out the possible genotypes of the children 3, 4 and 5. (4 mks)

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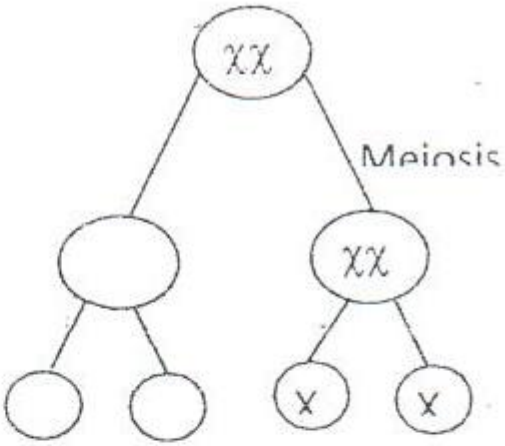
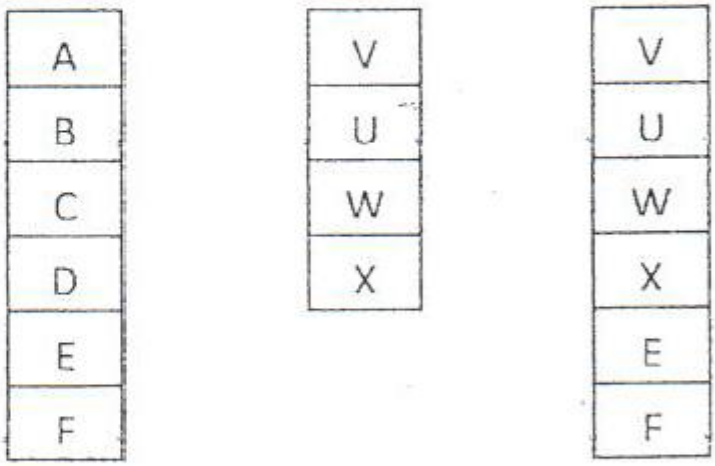
(c)The diagrams below illustrate chromosome mutations.

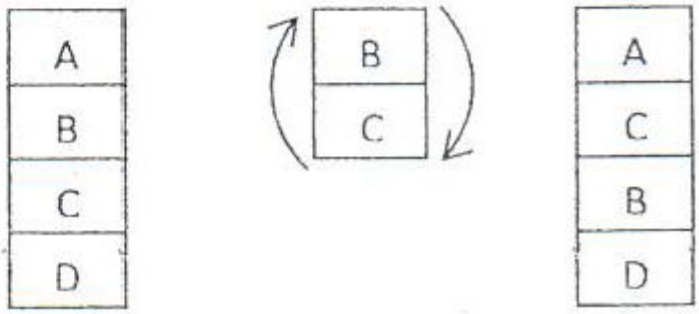
A



B



C



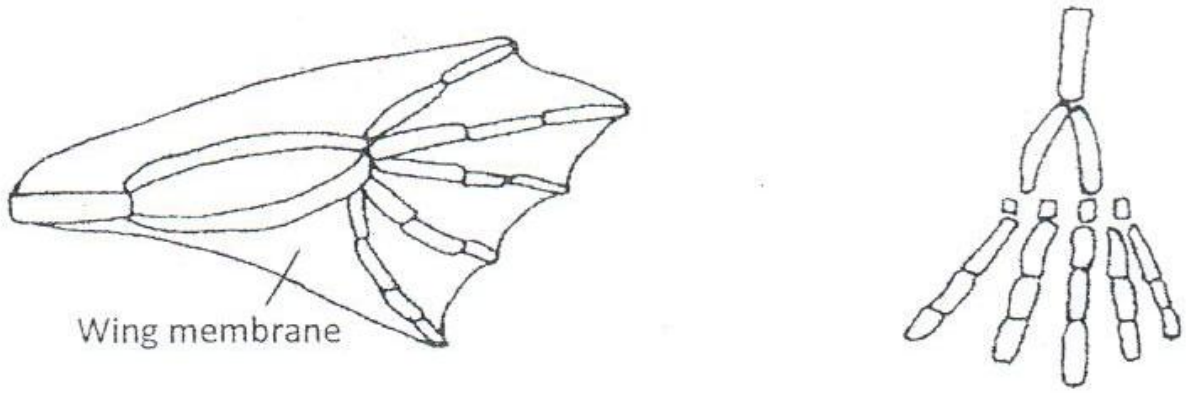
Identify the mutations (3 mks)

A_____

B_____

C_____

3. The diagram below shows structures of the bat wing and human arm



(a) These structures are thought to have same ancestral origin. State one structural similarity and one adaptational difference the two.

(i) Structural similarity (1 mk)

_____

_____

(ii) Adaptational difference (1 mk)

_____

_____

(b) Give two other examples of structures in nature that show the ytpe of evolution as in (a) above). (2 mks)

(c) Distinguish between the terms ‘ chemical evolution’ and ‘organic evolution’ (2 mks)

_____

_____

_____

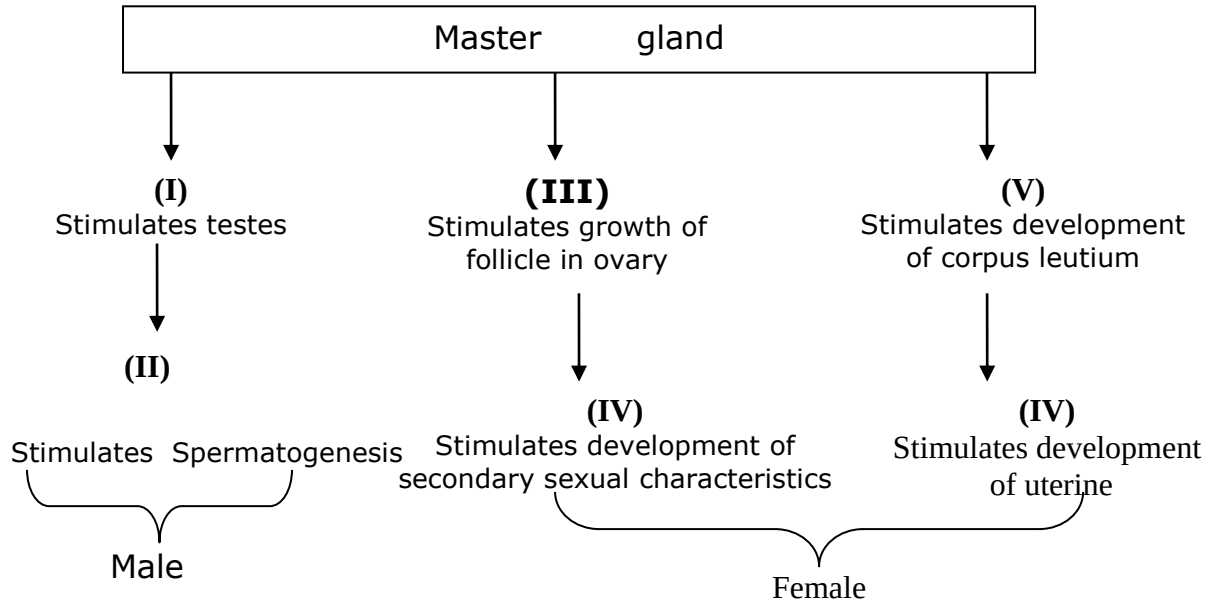
(d) What is the study of fossils called? (1 mk)

_____

_____

_____

4. The diagram below represents some hormones, their sources and functions in a mammal



(a) Identify the gland described as the master gland? (1 mk)

_____

_____

(b) Name the hormones :- (4 mks)

II_____

III_____

V_____

VI_____

c) Describe the consequences of deficiency of hormone II in man. (2 mks)

_____

_____

d) Other than stimulate development of uterine wall, suggest two other functions of hormone VI (2mks)

_____

_____

5. Ascaris lumbricoides is an endoparasite.

(a) Name the genus to which it belongs (1mk)

_____

_____

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(b) State the habitat of the organism (1mk)

_____

_____

(c) State three ways in which the organism is adapted to living in its habitat (3mks)

(d) Mention three ways of preventing spread of the parasite. (3 mks)

SECTION B; (40MARKS)

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

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

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

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

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

_____

_____

_____

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

_____

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

(e) How is the skin adapted for temperature regulation? (6mks)

7. Describe the structural adaptations of the mammalian heart to its function (20mks)

8. Describe how water moves from the soil to the leaves in a tree (20mks)

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NAME: …… INDEX NO: ……

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

231/3
BIOLOGY
PAPER 3
PRACTICAL
1 ¾ HOURS

FORM FOUR
JULY/AUGUST 2025

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the spaces provided.
2. Write the date of the examination in the spaces provided above
3. Answer all questions in the spaces provided
4. You are required to spend the first 15 minutes of the 1 ¾ hours allowed for this paper reading the whole paper carefully before commencing your work.,

FOR EXAMINER'S USE ONLY

Questions	**Maximum score**	**Candidates score**
1	12	
2	14	
3	14	
Total score	**40**	

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1. You are provided with a specimen labeled K and hydrogen peroxide

(a) (i) What part of plant is specimen K? (1mk)

……

……

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

……

……

(b) Cut three equal cubes whose sides are about 1cm from specimen K. place one of the cubes in a boiling tube labeled A; boil the second cube for about 15 minutes and then place it into a boiling tube labeled B; Cut the third cube into small pieces and place the pieces in a boiling tube labeled C

To each boiling tube add 5ms of hydrogen peroxide

(i) Record your observations in the table below (3mks)

Tube	Observations
A	
B	
C	

(ii) Account for your observations in tubes B and C (2mks)

B……

……

……

C (2mks)

……

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……

(c) (i) Write a chemical equation for the reaction that occurs in test tube A (1mk)

……

……

(ii) What is the significance of the reaction to living organisms (1mk)

……

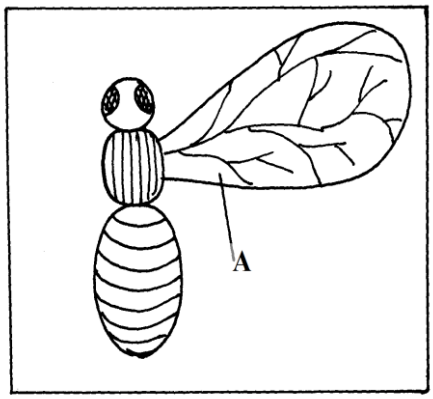
……

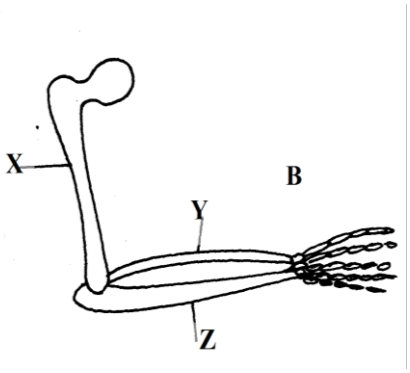
(iii) Name the organ in mammals where the above reaction occurs at the highest rate (1mk)

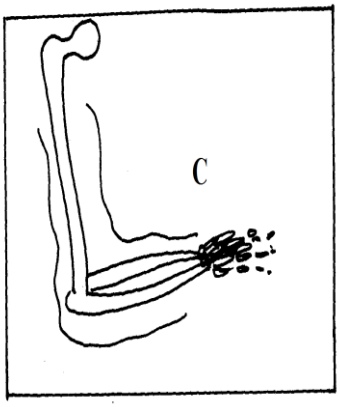
……

……

2. You are provided with photographs A, B and C, use them to answer questions that follow.







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(a)Identify the parts labeled X,Y and Z. (3mks)

X……

Y……

Z……

(b)What common name is given to structure ref?

(i)A and C……..……(1mk)

(ii)B and C……. ……(1mk)

(c)Give a reason for your answer in b (i) and (ii) above. (2mks)

(i)……
……
……

(ii)……
……
……

d) State the type of evolution that leads to emergence of structures named in 2 b (i) and (ii) above. (2mks)

(i) ……

(ii)…….

e)Identify two differences between structures A and C. (2mks)

A	C

f) (i)What is a vestigial structure? (1mk)

……..
……..

(ii)Give two examples of vestigial structures in human being (2mks)

……

……

3. Study photographs **C** and **D** and answer the questions.

PHOTOGRAPH C

PHOTOGRAPH D

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a) With a reason state the agent of pollination of each of the flowers. (4mks)

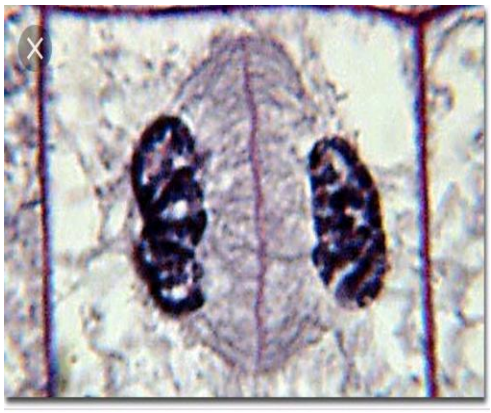
Flower	Agent of pollination	Reason
C		
D		

b) Classify the plants in photograph D using the taxonomic units below and reasons for your answer. (4mks)

Taxonomic unit		Reason
Division		
Class		

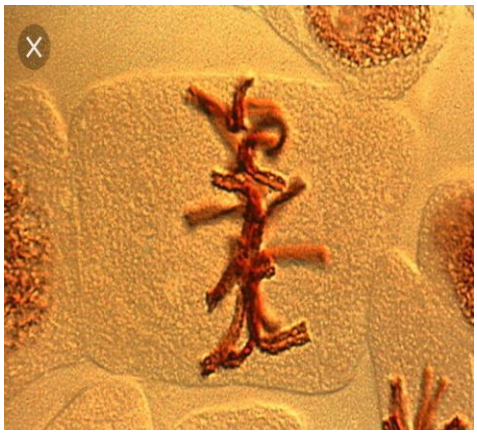
c) The diagrams below shows a type of cell division occurring in organisms above. Identify each of the stages A to D giving reasons for your answer. (4mks)

A

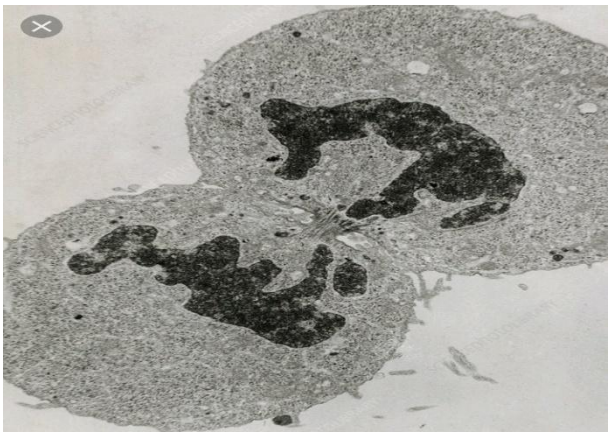


B

C



D



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STAGE	REASON
A	
B	
C	
D	

(d). Giving reason, identify the kingdom to which the cell in stages A and B belongs. (2mks)

Kingdom**……..**

Reason …….

……

NAME: …… INDEX NO: …….

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

565/1

BUSINESS STUDIES

PAPER 1

JULY/AUGUST 2025
TIME: 2 HRS

INSTRUCTIONS TO CANDIDATES

a) Write your **name** and index **number** in the spaces provided

b) Answer all the questions.

c) All answers **must** be written in the spaces provided in this booklet..

FOR EXAMINERS USE ONLY

QUESTION	1	2	3	4	5	6	7	8	9	10	11	12
MARKS												

QUESTION	13	14	15	16	17	18	19	20	21	22	23	24	25
MARKS													

TOTAL MARKS

1. Mention four ways in which the government participates in training businessmen in the country. (4 marks)

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2. State four factors that limit the satisfaction of human wants. (4 marks)

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3. Give four reasons why government draw their development plan. (4 marks)

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4. Highlight four uses of national income statistics. (4 marks)

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5. Explain four internal economies of scale that a firm can enjoy as its production increases. (4 mark)

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6. Land is one of the factors of production. Outline circumstances under which it may discourage the location of firms

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7. Give four reasons why a manufacturing firm may offer after sale serviceto its consumers. (4 marks)

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8. Tigen traders had the following balances as at 31stDecember 2012. shs

Opening stock	800,000
Closing stock	1,000,000
Sales	3,250,000
Turnover	3 times

Calculate;

a) Cost of goods sold (2 marks)

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b) Gross /profits (2 marks)

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9. List four activities carried at in the process of distribution. (4 marks)

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10. The government of a developing country intends to formulate an elaborate policy to address the widespread unemployment. Identify four areas of concern that the policy should look into. (4 marks)

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11. Outline four monetary measures taken by the Central Bank to solve the problem of demand pull inflation. (4 marks)

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12. Highlight four measures the state is putting in places to bring sanity in the matatu transport sector in Kenya. (4 marks)

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13. Onyango intends to insure his motor vehicle with UAP insurance company. Outline the procedure he would follow to take the policy. (4 marks)

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14. Indicate with a tick (√) in the relevant column whether each of the following business transactions

Will increase or decrease the capital account balance. (4 marks)

	Transaction	**Increase**	**Decrease**
A	Cash donations of sh. 80,000 deposited into the business bank account.		
B	Withdraw sh. 2000 from bank for personal use.		
C	Made profit of sh. 3000		
D	The business made a loss of sh. 4000 on sale of stock		

15. List any four business considerations taken into account when carrying out business opportunity evaluation. (4 marks)

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16. Outline four canons of taxation. (4 marks)

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17. Highlight circumstances under which the following chain of distribution are used: (4 marks)

a) Manufacturer ⟶ consumer

.....

b) Manufactur ⟶ Retailer ⟶ Consumer

.....

c) Producer ⟶ marketing Board ⟶ Consumer

.....

d)Manufacturer ⟶ Agent ⟶ Consumer

……

18. State four reasons why an entrepreneur would prefer a landscape type of office. (4 marks)

……
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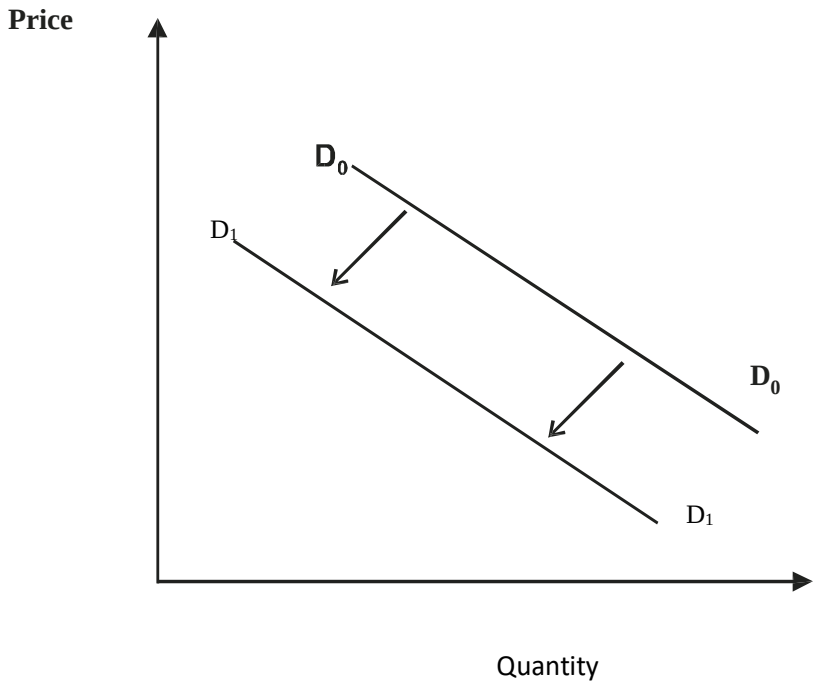
19. Highlight four factors that may have led to the shift in the demand curve from $D_0D_0$to D_1D_1.



20.State four reasons why John would prefer to obtain a loan from his Sacco but not from a commercial bank. (4 marks)

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21. Kilunya traders had the following transactions during the month of March2010: March 3: Sold goods to Waweru sh. 800, Ken Sh600 and Okwanya sh. 700

March 4: Bought goodsfrom Uwezo sh. 15,000, Openo sh. 2000.

March 6: Sold goods to Mayi sh. 1200, Shirosh1500, Pakash 900

March 9: Sold goods to Luanda sh. 400

Required:

Enter the above transactions in the sales journal. (4 marks)

22. Outline four circumstances under which a public ware house would be ineffective. (4 marks)

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23. The following information was provided by Kisumu Traders for the year ended 31st December2013. sh

Stock	1500
Creditors	3000
Debtors	2000
Machinery	20,000
Bank overdraft	500
Cash	4000

Required

Prepare Kisumu Traders Balance Sheet in the order of liquidity. (4 marks)

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24. Outline four factors that a citizen would consider while holding money for day to day expenses. (4 marks)

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……

25. Identify the accounts to be debited and accounts be credited from the following transactions.

	Transactions	A/C Debited	A/C credited
A	Bought stock on credit from Muthini		
B	Paid insurance premium by cheque		
C	Bought a van by cash		
D	Returned goods to supplier,		

NAME: …… INDEX NO: ……

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

565/2
BUSINESS STUDIES
PAPER 2
JULY/AUGUST 2025

TIME: 2½HRS

INSTRUCTIONS TOCANDIDATES

- Write your name and index number in the spaces provided
- This paper consists of SIX questions.
- Answer any **FIVE** questions.
- **All** questions carry equal marks.
- Write your answers in the booklet provided.

FOR EXAMINER'S USE ONL Y

Question	1	2	3	4	5	6	Total
Marks							

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1. a) Explain five reasons why human beings make choices on the wants to be satisfied . (10 marks)

b)Horizon is an importer of assortedgoods from differentcountries. Explain**five** advantages he may enjoy while his goods are stored in a bonded warehouse. (10 marks)

2. a) Explain **five** problems that can be encountered in an office as a result of computerization of Operations. (10 marks)

b)Describe **f ive** services rendered byretailers to consumers. (10 marks)

3. a) With the aid of a well labelled diagram explain the effect on the equilibrium price and equilibrium quantitywhen the supply of vehicles increases. (10 marks)

b)Outline **five** measures that the government of Kenya has put in placeto protect consumers from unscrupulous business practices. (10 marks)

4. a) Explain **five** problems experienced when computing national income using the expenditure approach. (10 marks)

b)Fahari traders had the following balances on 1st January2023.

	Kshs
Equipment	5600
Bank	25,000
Debtors	28,000
Creditors	66,600

Later in the month, the following transactions took place.

January6th-Purchased goods worth sh 9500 and paid by cheque

January7th-Paid creditors, sh 10,600 bycheque.

January23rd –Received a cheque of sh. 22,000 for goods sold

January28th-Withdrew sh5000 from the bank to pay salaries.

Required:

Open the relevant ledger accounts and extract a trial balance. (10 marks)

5. a) Highlight **five** effects of production activities on the environment and community health. (10 marks)

b)Explain any **five** roles played by commercial banks to the business community. (10 marks)

6. a) Explain four methods that can be used by a country to solve the problems of deficit balance of payment (8 marks)

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b)The following information was extracted from the books of Ramogi Traders as at 31st December, 2022.

	Kshs
Sales	800,000
Purchase	500,000
Returns inwards	90,000
Returns inwards	26,000
Creditors	150,000
Rent	60,000
Delivery van	160,000
Carriage outwards	3,000
Debtors	120,000
Carriage inwards	40,000
Bank	60,000
Stock (Jan 2022)	100,000
Interest expenses	10,000
General expenses	7,000
Stock (31st Dec2022)	120,000
Bank overdraft	4,000
Capital	170,000

Required:

i) Prepare aTrading, Profit and Loss account for the year ended 31st December, 2022. (8 marks)

ii) Prepare balance sheet as at 31st December, 2022.

NAME: …… INDEX NO: ……

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

CHEMISTRY(233/1)
FORM FOUR(4)
Time: 2 Hours

INSTRUCTIONS TO CANDIDATES

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

FOR EXAMINER'S USE ONLY

QUESTIONS	MAX SCORE	CANDIDATE'S SCORE
1 – 25	**80**	

*This paper consists of **11** printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.*

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1. (a) What is the meaning of the term homologous series? (1 mark)

……..……

(b) Describe the procedure of preparing a soapless detergent from dodecene (4 marks)

……

……

……

2. State three factors that affect the rate of a chemical reaction. (3 marks)

……

……

……

3. In an industrial process, ammonia is produced by reacting nitrogen gas and hydrogen gas in the presence of a catalyst.

(a) Sate Le Chatelier's principle. (1 mark)

……

……

(b) Write the equation for the formation of ammonia gas. (1 mark)

……

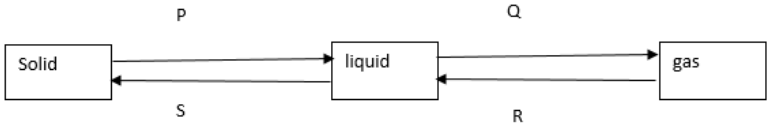
……

(c) State how an increase in temperature affects the position of equilibrium. (1 mark)

……

……

4. The diagram below shows the relationship between the physical states of matter. Study it and answer the questions that follow.



(a) Identify energy changes represented by the letters:

P ……and Q …… (2 marks)

(b) Explain why there is no change in temperature during each of the processes shown in the diagram. (2 marks)

……

……

5. State two methods that can be used to determine the purity of a substance. (2 marks)

……

……

6. The volume of a fixed mass of a gas at a pressure of 550mmHg and 45^{o}C is 220 cm^{3}. What would be the volume of the gas if the pressure and temperature are raised to 700mmHg and 40^{o}C respectively? (3 marks)

7. Study the information below and use it to answer the questions that follow.

bond	Bond energy kJ/mol
H-H	435
C-H	413
C-C	346
C=C	611
C≡ C	835

(i) Calculate the energy released during the hydrogenation of prop-1-ene to propane. (3 marks)

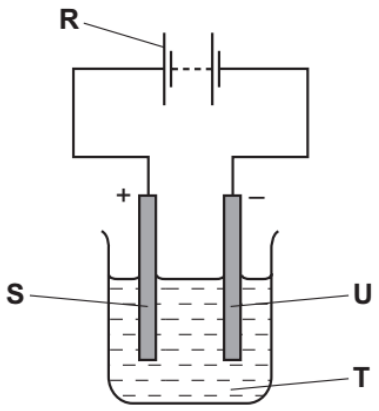
……

……

……

……..,……

8. The diagram below shows the apparatus used for the electrolysis of molten sodium bromide.



(a) Which letter **R, S, T** or **U** on the diagram represents the cathode? (1 mark)

……

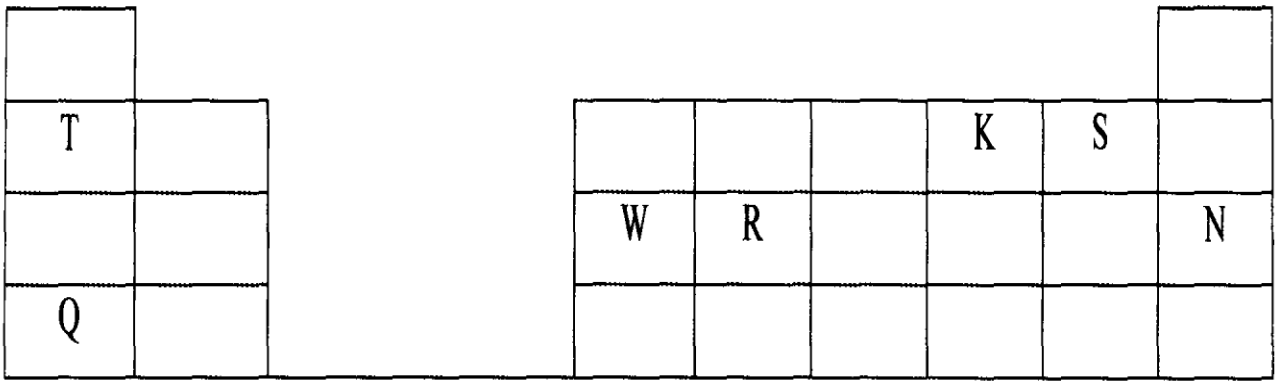
(b) State and explain the observation made at the anode. (2 marks)

……

……

(c) Which **condition** is missing in the set-up? ……(1 mark)

9. The grid below is part of the periodic table. The elements are not represented by their actual symbols. Use the information to answer the questions that follow.



a) (i) Which is the most reactive non — metal? Explain. (2marks)

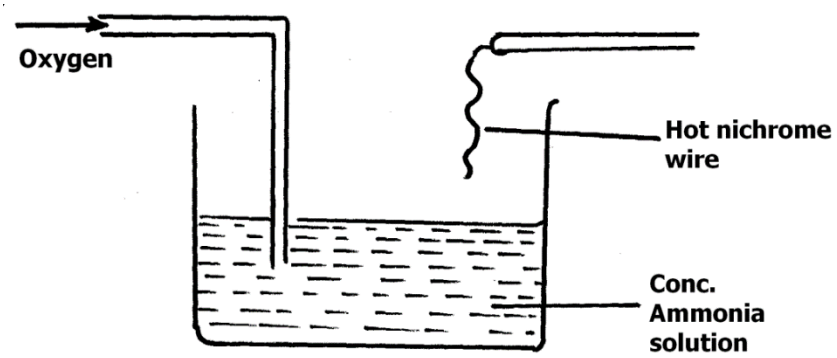
……

……

(ii) Write an equation for the reaction between elements Q and K (1 mark)

……

10. The apparatus below was set – up to show the catalytic oxidation of ammonia. Study the diagram and answer the questions that follow.



a) State what would be observed in the experiment above. Explain. (2 marks)

……

……

b) Write the equation for the reaction that takes place during oxidation of ammonia. (1mark)

……

……

11. A heavy metal **X** was dissolved in dilute nitric acid to form a solution of compound **X(**$NO_3)_2$.

Portions of the resulting solution were treated as follows:

a. To the first portion a solution of dilute hydrochloric acid is added, where a white precipitate **(S)** is formed, which dissolves on warming.
b. The second portion is treated with two drops of 2M Sodium hydroxide solution where a white precipitate **T** is formed. The white precipitate dissolved in excess sodium hydroxide to form a colourless solution.
c. A solution of potassium iodide is added to the third portion where a yellow precipitate **(U)** is formed.
d. When the resulting solution is evaporated to dryness and heated strongly a yellow solid **(V)** is formed and a brown gas (**W)** and a colourless gas **(X)** are formed.

i. Identify the substances X, S, T, U, V, W (3 marks)

.....

.....

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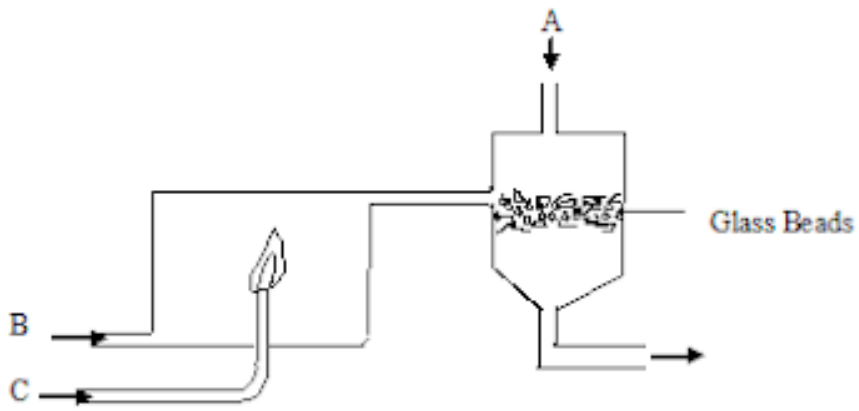
ii. Write an ionic equation of the reaction that occurs in part (iii) (1 mark)

……

……

12. The diagram below shows industrial manufacture of hydrochloric acid.



a) Name the substance: (3 marks)

A.....

B.....

C…….

b) State the function of the glass beads in the above process. (1 mark)

……..

13. (a) What do you understand by the term recycling? (1 mark)

……

……

(b) Describe how a mixture of iron filings and sulphur. (2 marks)

……

……

14. An organic compound **P** contains 68.9% carbon, 13.5% hydrogen and 21.6% oxygen. The relative formula mass of **P** is 74. Determine its molecular formula (C=12, H=1, O=16).

(3 marks)

……

……

……

……

15. Calculate the molarity of phosphoric (V) acid (H_3PO_4) that is obtained by dissolving 13g of phosphoric (V) acid in 250 cm^3 of solution. (H=1, P=31, O=16).

(2 marks)

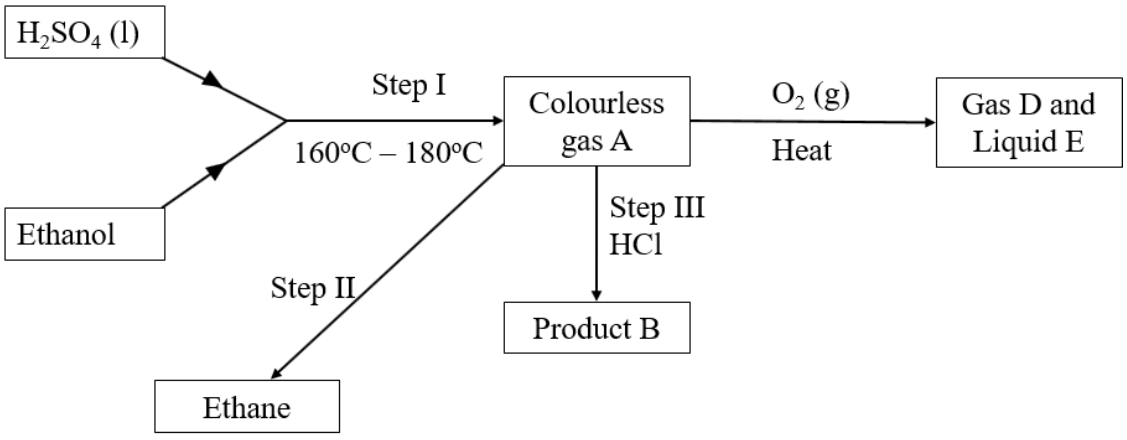
……

……

……

……

16. Study the reaction scheme below and answer the following questions:



(a) Write the equation for step I. (1 mark)

……

(b) What is the name of gas D and Liquid E? (1 mark)

Gas D……..

Liquid E…….

(c) Name the process taking place in step II. (1 mark)

……

17. State the type of bonding in the following substances: (2 marks)

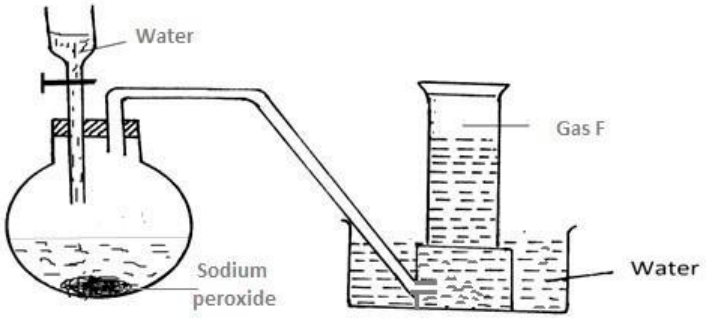
(a) Diamond

……

(b) Copper (I) oxide

……

18. The set-up below was used to collect gas **F** produced by the reaction between sodium peroxide and water



(i) Name gas **F** (1 mark)

…….

(ii) At the end of the experiment, the solution in the round-bottomed flask was found to be a strong base. Explain why this was a strong base. (1 mark)

……

……

(iii) Which property of gas **F** makes it be collected by the method used in the set-up? (1 mark)

……..

(iv) Write the equation for the reaction taking place in the flask. (1 mark)

……

……

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19. (a) Using an equation, explain the observation made when concentrated sulphuric (IV) acid is added to sugar crystals. (2 marks)

……

……

……

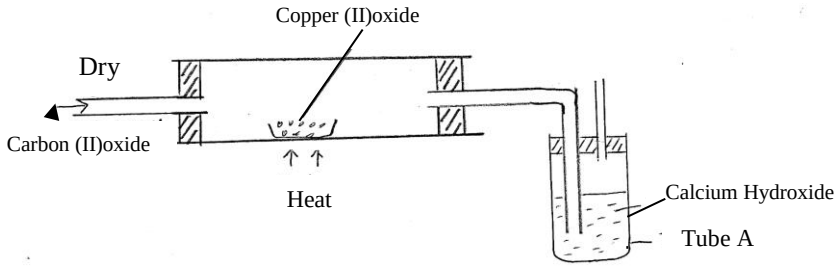
……

(b) What property is displayed by the acid in (a) above. (1mark)

……

……

20. Carbon (II) oxide was passed over heated copper (II) oxide in a combustion tube as shown in the diagram below.



(a) State and explain the observation made in tube A. (2 marks)

……

……

(b) Write a chemical equation for the reaction that took place in the combustion tube. (1 mark)

……

……

21. (a) What is isomerism ? (1 mark)

……

……

(b) Draw and name any **two** isomers of $C_4 H_8$ (2 marks)

22. Liquids **A** and **R** are immiscible. (Density of A – 1.6gcm^{-3} and density of R = 1.9gcm^{-3}).

(a) Draw a diagram to illustrate the most suitable method of separation that would be used to separate the two liquids. (3 mark)

23. Chlorine gas was passed over heated iron wire. On cooling the set-up, a solid X was formed. All the solid X was dissolved in water to form solution X. Sodium hydroxide solution was added to about 2 ml of solution X, little by little until in excess.

(a) Write the equation for the reaction of chlorine and iron. (1 mark)

……..

(b) Calculate the number of volume of chlorine that reacted with 1.4g of iron. (Fe = 56, Cl = 35.5, Molar gas volume = 24dm^3). (3 marks)

(c) State the observation that was made when sodium hydroxide was added to solution X drop by drop until in excess. (1 mark)

……

24. Draw a well-labelled diagram to show how nitrogen (I) oxide can be prepared and collected in the laboratory. (3 marks)

25. Name the two types of bonds within a molecule of ammonia. (2 marks)

……

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NAME: …… INDEX NO: ……

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

233/2
CHEMISTRY
PAPER 2
TIME: 2 HOURS

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

FORM FOUR

INSTRUCTIONS TO THE CANDIDATES:

- Write your **name** and **admission number** in the spaces provided above
- **Sign** and write the **date** of examination in the spaces provided.
- Answer ***all*** the questions in the spaces provided.
- All working **must** be clearly shown where necessary.
- Mathematical tables and electronic calculators can be used.

For Examiners Use Only

Question	Maximum score	Candidate's score
1	13	
2	9	
3	12	
4	13	
5	10	
6	10	
7	13	
Total	**80**	

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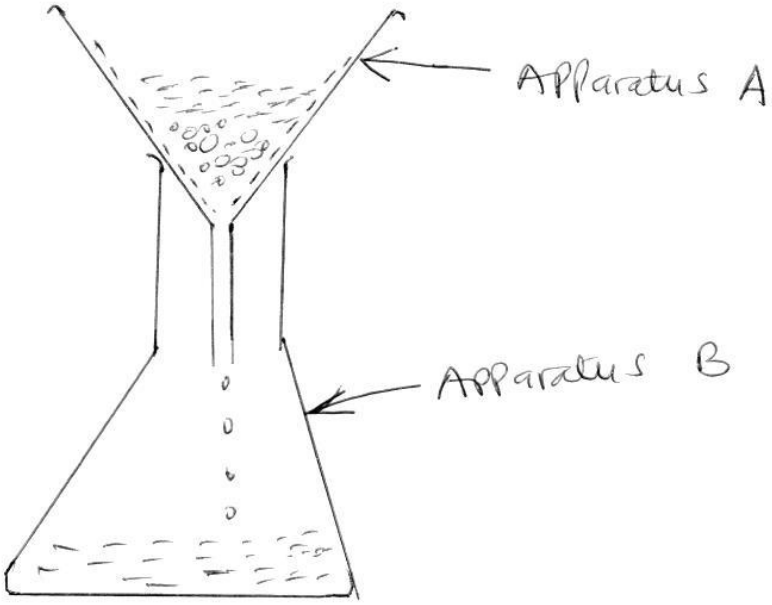
1 [a] The diagram below shows a set-up used to separate solid K and liquid R



[i] What name is given to the method of separation shown above [1mk]

……

……

[ii] What physical property of solid K makes it possible to separate from the mixture as shown above [1mk]

……

……

[iii] State one example of a mixture that can be separated as shown above [2mks]

……

……

……

[iv] Name one other method that can be used to separate the mixture of K and L [1mk]

……

……

……

[vi] Identify apparatus A and B [2mks]

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[vi] State two other possible uses of apparatus A, other than the one shown on the diagram [2mks]

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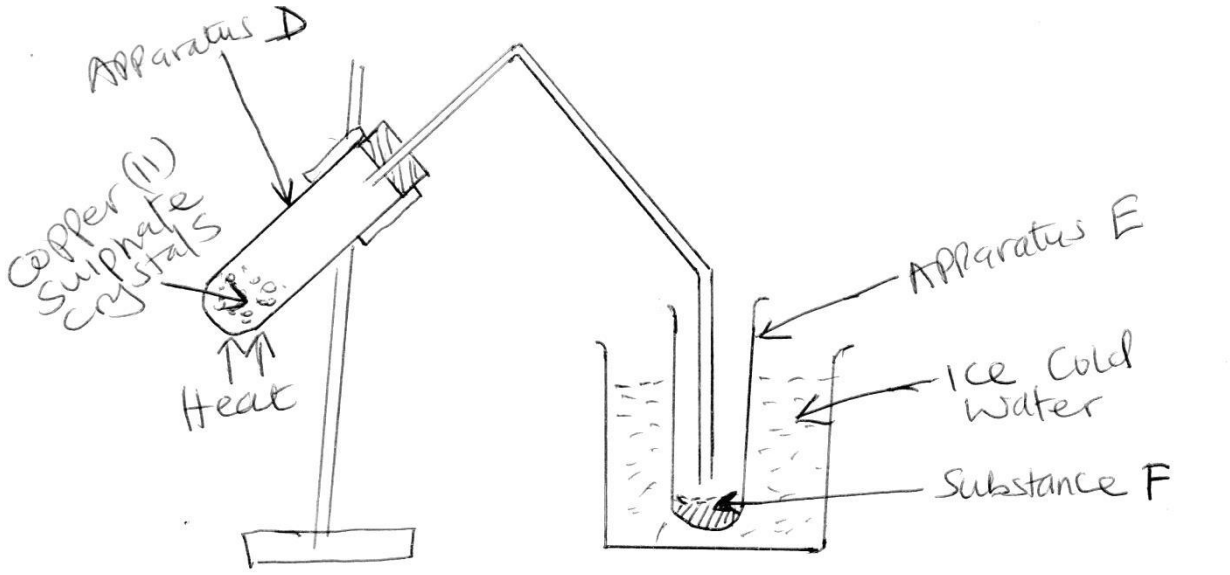
[b] The diagram below shows part of a set-up used to investigate the effect of heating copper(II) sulphate crystals



[i] State two likely observations made in apparatus D [2mks]

……

……

……

[ii] Identify substance F [1mk]

……

……

[iii] Was the change undergone by the copper {II} sulphate crystals temporary chemical change or permanent chemical change? Explain your answer [2mks]

……

……

……

……

2. In an experiment to determine the enthalpy of displacement when zinc is heated with copper (II)Sulphate, excess zinc powder was added to 125cm^3 of 0.75M copper {II} Sulphate solution in a beaker. The temperature of the mixture changed from 24^{0}Cto 29^{0}C. Assuming that the density of the solution was 1g/cm^3 and its specific heat capacity was 4.2KJK^{-1}K

[a] Write a chemical equation of the reaction that occurred [1mk]

……

……

[b] Why was it necessary to use excess zinc powder [1mk]

……

……

[c] State and explain one observation made by the end of the experiment [2mks]

……

……

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[d] Determine the enthalpy change in the reaction that occurred [3mks]

……

……

……

……

[e] Determine the molar enthalpy of displacement of copper (II) ions by zinc [3mks]

……

……

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……

[f] Represent the reaction on an energy level diagram [2mks]

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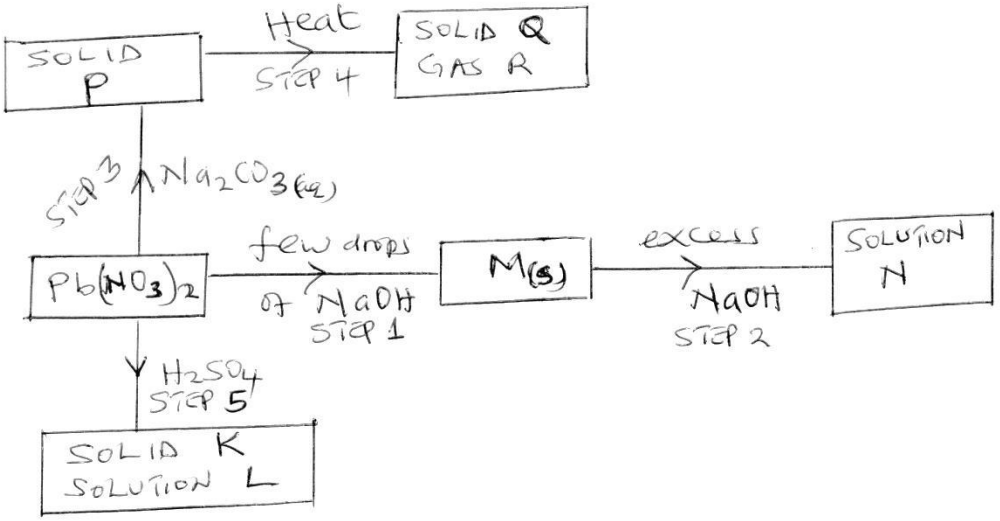
3. (i) Study the diagram below and answer the questions that follow;



[a] Identify the following [4mks]

[i] Substance M

……

[ii] Solid P

……

[iii] Gas R

……

[Iv] Solution L

……

[b] Write the ionic equation of the reaction occurring at step

[i]Step 2 [1mk]

……

[ii]Step 3

……

[c] State the observation made when ammonia solution is added to lead {II} nitrate solution drop wise till excess [2mks]

……

……

……

[ii] The equation below shows a reversible reaction

$H_3O^+_{(aq)} + HSO^{4-}_{(aq)} \rightleftharpoons H_2O_{[l]} + H_2SO_{4[aq]}$

[a] Identify the acid in the fowards reaction [1mk]

……

……

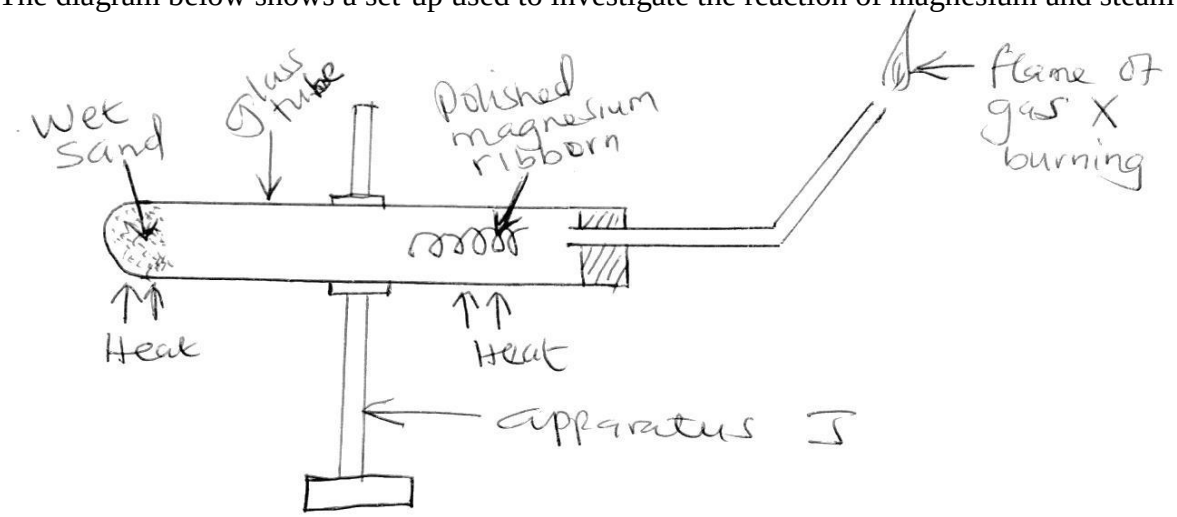
[b] Identify the base in the reverse reaction [1mk]

……

……

……

4. The diagram below shows a set-up used to investigate the reaction of magnesium and steam



[a] Identify gas X [1mk]

……

……

[b] Write a chemical equation of the reaction;

[i] Occurring in the glass tube [1mk]

……

……

[ii] Leading to the flame of the burning gas X [1mk]

……

……

[c] Explain why it was necessary to;

[i] Polish the magnesium ribbon [1mk]

……

……

[ii] Heat the wet sand before heating the magnesium ribbon [1mk]

……

……

[d] Identify apparatus J [1mk]

……

……

[e] How does the mass of the magnesium compare before and after the experiment. Explain. [2mks]

……

……

[f] State two physical properties of gas X [2mks]

……

……

[g] State two uses of gas X [2mks]

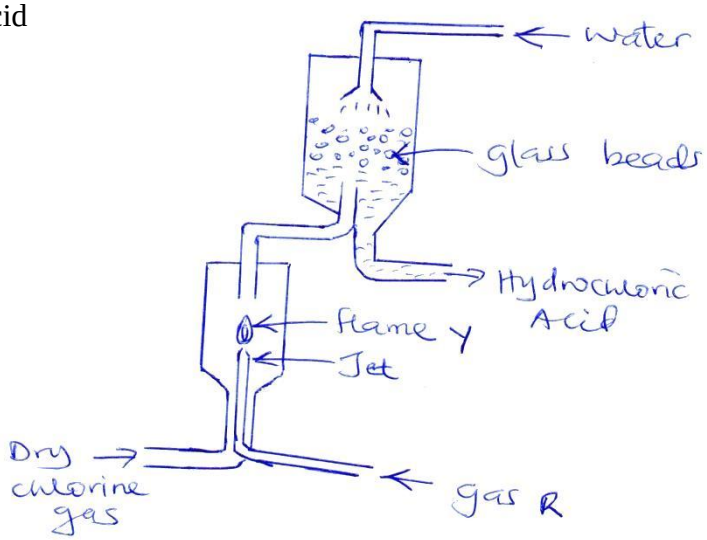
……

……

[h] State the role of the wet sand [1mk]

……

5. The diagram below shows a flow chart representing process used in the industrial manufacture of hydrochloric acid



[a] Identify gas R [1mk]

……

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[b] Write a chemical equation for the reaction between gas R and chlorine gas [1mk]

……

……

……

[c] State one possible role of the glass beads [1mk]

……

……

[d] State one possible source of;
[i] Gas R [1mk]

……

……

[ii] Chlorine gas [1mk]

……

……

[e] Explain why it's necessary to allow only small amount of gas R to burn in excess chlorine gas in the above process [1mk]

……

……

……

[f] State two uses of hydrochloric acid [2mks]

……

……

……

[g] Describe a confirmatory test for hydrogen chloride gas [2mks]

……

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……

6 [a] Name the following hydrocarbon [3mks]

[i] $CH_3CH_2CH_3$

……

[ii] $CH_3CHCHCH_3$

……

[iii] $CH_3CHCHCH_2CH_2Br$

……

[b] Study the reaction below;

$CH_2CH_2 + HBr \longrightarrow$ substance T

[i] Name substance T [1mk]

……

……

[ii] Draw the structural formulae of substance T [1mk]

[iii] Draw the structural formulae and name the compound that would be formed if chlorine gas was used in place of HBr [1mk]

[c] State one domestic use of ethane [1mk]

……

……

[d] State two natural sources of alkanes [2mks]

……

……

……

7. The grid below show a section of the periodic table. The letters are not the actual chemical symbols

A			B		C		D	
	E		F			G	H	J
K	L							

[a] Which letter represents the

[i] Most reactive non metal. Explain your answer [2mks]

……

……

[ii] Most reactive metal. Explain your answer [2mks]

……

……

……

[b] What name is given to the family into which element E belongs [1mk]

……

……

[c] Write the formulae of the compound formed between

[i] F and G [1mk]

……

……

[ii] K and oxygen [1mk]

……

……

[d] How does the atomic radius of F and G compare? Explain [2mks]

……

……

[e] In terms of structure and bonding, explain why the oxide of F has a high melting point [2mks]

……

……

[f] State one possible use of

[i] Element J [1mk]

……

[ii] Element E [1mk]

……

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NAME: …… INDEX NO: …….

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

CHEMISTRY (233/3)
FORM FOUR(4)
Time: 2 ¼ Hours

Kenya Certificate of Secondary

(a)Write your name and index number in the spaces provided above.
(b) Sign and write the date of examination in the spaces provided above
(c) Answer **ALL** the questions in the spaces provided in the question paper
(d) KNEC Mathematical tables and electronic calculators may be used for calculations
(e) All working **MUST** be clearly shown where necessary
(f) This paper consists of 8 printed pages
(g) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing
(h) Candidates should answer the questions in English

For examiners' use only.

FOR EXAMINERS USE ONLY

Question	Maximum score	Candidate's score
1	16	
2	14	
3	10	

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1. You are provided with:

- Anhydrous sodium carbonate, solid Q.
- 0.5M hydrochloric acid, solution R.
- A thermometer

You are required to determine the molar heat of solution of solid Q.

Procedure 1

(a) Place 50 ml of distilled water in a 100ml plastic beaker. Note the temperature of the water and record it in table 1 below.

(b) A Add all solid Q to the water in the plastic beaker and stir gently with eh thermometer and record the highest temperature of the solution in table 1 below. Keep the resulting solution for **procedure 2**.

Table 1. (3 marks)

Highest temperature (T2) ^oC	
Initial temperature (T1) ^oC	
Temperature change (ΔT) ^oC	

i. Calculate the enthalpy change for the reaction. (assume the specific heat capacity of the solution is 4.2 $Jg^{-1}K^{-1}$, density of solution = 1.00 gcm^{-3}) (2 marks)

Procedure 2

(a) Transfer the contents of the beaker into a 250 ml volumetric flask. Rinse both the beaker and the thermometer with distilled water and add to the volumetric flask. Add more water to make up to the mark. Label this **solution Q**.

(b) Fill the burette with **solution R**.

(c) Pipette 25.0 cm^3 of **solution Q** into the flask. Add 2 drops of methyl orange indicator and titrate with **solution R** from the burette.

(d) Repeat the titration two more times to complete **table 2** below.

Table 2	**I**	**II**	**II**
Final burette reading (cm^3)			
Initial burette reading (cm^3)			
Volume of solution **R** used, (cm^3)			

(4 marks)

Calculate the:

(a) Average volume of solution R used. (1 mark)

(b) Number of moles of solution R used. (2 marks)

(c) Write the equation for the reaction between solution Q and solution R. (1 mark)

(d) Number of moles of sodium carbonate solution Q used in the titration. (1 mark)

(e) Number of moles of solid Q used in procedure 1. (2 marks)

(f) Molar heat of solution of anhydrous sodium carbonate. (2 marks)

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2. You are provided with solid D1. Carry out the following tests and write your observations and inferences in the spaces provided.

(a) Place half of solid D1 in a boiling tube. Add about 10cm^3 of distilled water and shake. Divide the mixture into four portions.

Observations	Inferences
(1 mark)	(1 mark)

(b) To the first portion, add sodium hydroxide dropwise until in excess.

Observations	Inferences
(1 mark)	(1 mark)

(c) To the second portion, add aqueous ammonia dropwise until in excess.

Observations	Inferences
(1 mark)	(1 mark)

(d) To the third portion, add 3 drops of barium nitrate followed by 2 cm^3 of 2M nitric (V) acid.

Observations	Inferences
(1 mark)	(1 mark)

(e) To the fourth portion, add 1 cm^3 sodium hydroxide followed by aluminium foil and warm the mixture. Test any gases produced using red litmus paper.

Observations	Inferences
(2 marks)	(1 mark)

(f) Place the remaining solid D1 in a test – tube and heat it strongly. Test any gases produced with a burning splint.

Observations	Inferences
(2 marks)	(1 mark)

3. You are provided with solid M1
Carry out the tests below and write your observations and inferences in the spaces provided

a) Place about half of solid M1 in a metallic spatula and burn it in a non-luminous flame.

Observations	Inferences
(1 mark)	(1 mark)

b. Place the remaining solid M1 in a boiling tube. Add about 6 cm^3 of distilled water and shake the boiling tube. Divide the solution into three portions.

Observations	Inferences
(1 mark)	(1 mark)

c. To the first portion, add 2 drops of bromine water.

Observations	Inferences
(1 mark)	(1 mark)

ii. To the second portion, add all the sodium carbonate. Test for any gases using a burning splint.

Observations	**Inferences**
(1 mark)	(1 mark)

iii. To the third portion, add 3 drops of acidified potassium dichromate (VI)

Observations	**Inferences**
(1 mark)	(1 mark)

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NAME: …… INDEX NO: ……

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

451/1
COMPUTER STUDIES
TIME 2 ½ HOURS
FORM FOUR

INSTRUCTIONS TO CANDIDATES:

- *Write your **name** and **admission** number in the spaces provided above.*
- *This paper consists of **TWO** sections **A** and **B**.*
- *Answer **ALL** the questions in section **A.***
- *Answer question **16** and any other **THREE** questions from section **B**.*
- *All answer should be written in the spaces provided*
- This paper consists of **13** printed pages.
- Students should check the question paper to ascertain that all the pages are printed as indicated and no question is missing.
- Candidates should answer the questions in English.

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

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SECTION A

Answer **All** the questions in this section in the spaces provided

1. State **two** reasons why it is advisable to follows the correct procedure when shutting down the computer at all times. (2 marks)

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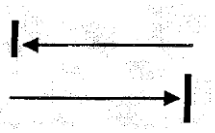
2. Name and give the function of the following key symbols.
   (i) (1 mark)

   Name……..

   Function……..

   ……...

   (ii) (1 mark)



   Name……..

   Function……..

   ……...

3. A computer virus is a destructive program that attaches itself to other files and installs itself without permission on the computer when the files are opened for use. Give **three** ways in which computers can protected against virus attack (3marks)

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4. State **three** characteristics of computer main memory (3 marks)

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5. A printer fails to work as expected when a document is sent to be printed. The user has checked that the on-line light of the printer is on and the printing paper is correctly inserted. Give **two** other possible reasons why the printing process failed. (2 marks)

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6. Describe the following terms as used in computer data security
   a) Firewalls (1 mark)

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   b) Audit trail. (1 mark)

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7. State **four** ways in which computers are used in banks (2 marks)

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8. A student typed a passage in Microsoft word and the last line of the letter flowed to the second page.

a) What name is given to such last line that flowed to the second page (1 mark)

.....

b) State **three** ways in which the student could have the letter to fit one page without changing the paper size (3 marks)

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9. Explain the following terms as used in Microsoft Excel spread sheet package. (3marks)

a) Range

.....

.....

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b) What if analysis

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c) Automatic recalculation

.....

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.....

10. State the data processing mode most appropriate for the following scenarios: (4 marks)

a) To prepare payroll for workers in Central Bank of Kenya

.....

b) For automated production control in a chemical manufacturing industry

.....

c) Managing ATMs transactions for KCB Ltd in different towns in the country

.....

d) Prepare examination report forms at the end of an academic year

.....

11. A school has decided to network its computers so that it can distribute information to all its departments. The school also intends to upload the information to parents. The various services are to be provided by servers. Briefly describe the services provided by (3marks)

a) Print server

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b) File server

.....

.....

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c) Mail server

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.....

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12. Using an illustration, describe the term text direction as used in DTP (2 marks)

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13. i) Define the following terms as used in a database
a). Attribute (1 mark)

.....

.....

.....

b). Database model (1 mark)

.....

.....

.....

ii) State **two** objectives of normalization as used in databases (2 marks)

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14. Differentiate between a system administrator and a database administrator as used in computers
. (2 marks)

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15. State **two** advantages of using automated production in industries (2 marks)

.....

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.....

SECTION B

Answer **question 16** and any other **three questions from this section**

16 a) State the best application area for the following programming language (4marks)

(i) FORTRAN ……

(ii) Mercury …….

(iii) PHP ……

(iv) C ……....

b) State **two** differences between compiler and interpreter (2marks)

Compiler	**Interpreter**

c) Study the following pseudocode then answer the questions that follow:

```
Start
   R =2
   While R<=6 Do
        Y=2 + (R^R) + 4
        Print Y
        R = R + 2
   End while
Stop
```

(i) Work out the output from the pseudocode (4marks)

……

……

……

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……

……

(ii) Translate the above pseudocode to a flowchart (5 marks)

17. a) Differentiate between the following:

(i) Intranet and Extranet (2 marks)

……

……

……..……..

……

(ii) Modulation and demodulation (2 marks)

……

……

……..……..

……

(iii) Dial-up and direct ISP connection (2 marks)

……

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b) Explain the importance of the following

(i) Web portal (1mark)

……

……

……..…….

(ii) Hyperlink (1mark)

……

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……..……..

(iii) Blog (1mark)

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……..

c) Name the parts in the following addresses:

(i) tkariuki@equitybank.co.ke (2marks)

……

……

…….

(ii) www.starshines.sc.ke (2marks)

……

……..

……...

d) Explain the concept of teleworking (2marks)

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……..……..

18.a) Fill the gaps in the following table (6marks)

Category of software	**Use**	**Example**
DTP		
		AutoCAD
	Used for statistical analysis of values	

b) Name the disk management activity described below (5 marks)

(i) Creates logical drives in a disk …….

(ii) Deletes idle files to create more disk space …….

(iii) Aligns tracks and sectors in a disk …….

(iv) Allows contents of a file to occupy contiguous sectors for faster access..……..

(v) Creation of copies of important files on another drive…….

c) Explain what the following commands will accomplish once executed

(i) C: \> Copy S* E: (2marks)

……

……

……..

(ii) D:\>Deltree Subjects (2marks)

……

……

……...

19. a) Using examples of a school setup, explain the following changeover strategies (9 marks)

i) Straight change over

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.....

ii) Parallel change over

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.....

.....

iii) Phased change over

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.....

.....

b) Give **two** implications of a poorly implemented system change over strategy (2 marks)

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c) Explain any **two** characteristics of a system (4 marks)

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20. a) Give **three** ways of representing signed binary numbers in a computer (3 marks)

.....

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.....

b) Perform the following binary arithmetic and leave your answer in denary form (6 marks)

i) $1101.101_2+1011.01_2+111.11_2$

.....

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ii) $10001.1001_2-1011.111_2$

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c) Convert the following:

i) -34_{10} to twos complement

(3 marks)

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.....

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ii) $7\ ^{4}/_{5\ 10}$ to binary

(3 marks)

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Prefer Calling Amobi Group of Examiners @ 0743 333 000 or 0706 851 439 For Marking Schemes

NAME: …… INDEX NO: …….

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

451/2
COMPUTER STUDIES
PAPER 2
(PRACTICAL)
MARCH/APRIL
TIME: 2½ HOURS
451/2
Computer Studies
Paper 2

INSTRUCTIONS TO CANDIDATES

- Type your ***name*** and ***admission no*** at the top right hand corner of each print out.
- Write your ***adm no and name*** on the **CD**
- Write the name and ***version*** of the software used for each question attempted in the answer sheet.
- Passwords should ***not*** be used while saving in the disks.
- Answer ***all*** questions.
- All questions carry equal marks.
- All answers ***must*** be saved on your CD.
- Make printouts of the answers on the answer sheets provided.
- Hand in ***all*** the printouts and the CD.
- Candidates may be penalized for not following instructions given in this paper.
- Arrange your print outs and staple them together.

This paper consists of 5 printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing

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Q1. a)Type the following passage exactly as it appears and save it as 21CLD (25 marks)

21st Century Learning Design

Introduction

Students around the world need advanced skills to succeed in the globalised, knowledge-based world of today. 21st Century Learning Design, or 21CLD, professional development helps teachers redesign their existing lessons and learning activities to build students' 21st century skills.

21CLD online

The 21CLD curriculum - developed to enhance 21st century skills in student learning - builds on the 21CLD research methodology, providing a collaborative, practice-based process that helps educators transform how they design enriching learning activities for their students.

The 21CLD curriculum is based on rubrics,	which have been developed and tested	internationally for the Innovative	Teaching and Learning (ITL)

The 21CLD curriculum describes six rubrics. These are:

1. Collaboration
2. Skilled communication
3. Knowledge construction
4. Self-regulation
5. Real-world problem-solving and innovation
6. Use of ICT for learning

21CLD elements

The core elements of the 21CLD curriculum include:

- A focus on redesigning learning to develop 21st century skills and deepen understanding of 21CLD curricular goals.
- Facilitating educators to use new learning designs within their own teaching and to analyse the impact on student learning.

21CLD course structure

The 21CLD curriculum consists of the following 8 online courses: The 21CLD introductory course explains the background to the 21st century skills; The 21CLD rubric[i] is used to analyse learning unit examples; The final course brings together all of the 21st century learning design elements

21CLD OneNote

This OneNote provides all of the resources and reading materials to accompany the 21CLD courses. Under each tab, you will find the 21CLD rubrics, decision trees and anchor lessons used throughout the online course.

[i] A **rubric** for **assessment**, usually in the form of a matrix or grid, is a tool used to interpret and grade students' work against criteria and standards.

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b) Insert a table of contents at the beginning of the document showing the topics covered in the 21CLD course as shown below. Save your work as 21CLD TABLE OF CONTENTS
(3 marks)

Contents

21st Century Learning Design 1

Introduction 1

21CLD online 1

21CLD elements 1

21CLD course structure 1

21CLD OneNote 1

c) Assessment was done on the application of the 21CLD and results recorded in a table. Design the table exactly as it appears. Save your work as RESULTS (5 marks)

NAME	CLASS	ADMNO	CAT1/30	CAT2/30	EXAM/100	AVERAGE
Mercy Jayden	4 Blue	5068	26	13	70	
Catherine Johns	4 Yellow	5897	14	10	30	
Crystal Evans	4 Purple	5589	19	20	74	
					GRAND TOTAL	
			Lowest CAT1			
				Highest CAT2		

Insert a function to display the:

i) AVERAGE for all the students (2 marks)

ii) GRAND TOTAL (1 mark)

iii) Lowest score in CAT1 (1 mark)

iv) The Highest score in CAT2 (1 mark)

d) Insert the following expression (2 marks)

$$e^x = 1 + \frac{x}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \cdots, \ -\infty < x < \infty$$

e) Double space the names in the table (2 marks)

f) Search and replace the word “Skills” and replace with “Competence” (2 marks)

g) Insert a header “Competence Based Curriculum” (2 marks)

h) Print the documents on both sides of the paper (4marks)

2. The following tables represent data for a video store named Sinai Video store. Study them and answer the questions that follow:

Table 1: MEMBERS

Member No	First name	Last name	Address	Phone	Town	Monthly fee
SVS-0001	Raphael	Mudibo	P.O.Box 343	(020)22112	Nairobi	Kshs 50
SVS-0002	Mary	Musembi	P.O Box 121	(050)34342	Gilgil	Kshs 50
SVS-0003	Bernard	Angaine	P.O Box 441	(038)24242	Naivasha	Kshs 50
SVS-0004	Gabriel	Laisula	P.O Box 134	(020)11445	Nairobi	Kshs 50
SVS-0005	Nelly	Mwangi	P.O Box 989	(038)25423	Naivasha	Kshs 50
SVS-0006	Janet	Mbori	P.O Box 323	(025)45343	Kisii	Kshs 100
SVS-0007	Bruce	Nyaga	P.O Box 544	(050)31322	Gilgil	Kshs 150
SVS-0008	Andrew	Bosibori	P.O Box 331	(025)21423	Kisii	Kshs 50
SVS-0009	Abubakar	Said	P.O Box 900	(028)23432	Isiolo	Kshs 100
SVS-0010	Samantha	Wellings	P.OBox 232	(025)53293	Kisii	Kshs 150

Table 2: RENTAL

Date collected	Member No	Disk No	Due Date	Rental Amount
1-May-2018	SVS-0004	001	5-May-2018	Kshs 20
12-May-2018	SVS-0001	003	16-May-2018	Kshs 20
15-June-2018	SVS-0005	002	19-June-2018	Kshs 20
20-June-2018	SVS-0004	005	24-June-2018	Kshs 50
30-June-2018	SVS-0005	006	04-July-2018	Kshs 50
12-July-2018	SVS-0005	004	16-July-2018	Kshs 25
25-October - 2018	SVS-0001	007	29-October - 2018	Kshs 50

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Table 3: Movie

Disk No	Title	Category	Main Actor	Production Year	Rating
001	A Thief in the Night	Thriller	Hoss Baxton	1984	A
002	Nursery Rhymes	Educational	Kerry Kean	1994	A
003	Cartoon 17	General	Jimmy Grant	1994	C
004	Trading places	Comedy	Kim Fields	1995	B
005	When Hatred Came	Thriller	Shalom King	1987	A
006	The Gods must be crazy	Comedy	Mfasa Limpula	1986	B
007	The Gods must be crazy 2	Comedy	Mfasa Limpula	1988	B
008	The Gods must be crazy 3	Comedy	Mfasa Limpula	1991	B
009	The Island	Action	Marie Payton	1992	A
010	Prepare For War	Action	Rebecca	1990	A

a) Create a database for the following tables. Name it as **Sinai Video Store** (2marks)

b) Create three Tables for each of the above Tables adding appropriate primary key and other field properties for each (6marks)

c) Create relevant relationships among the Tables (2marks)

d) Create forms for each table and give them appropriate names (3marks)

e) Using the forms created above, enter data into each Table (9marks)

f) Using a query, add a field named **New Monthly Charges** that calculates the new monthly fee given that there is a 8% increase from current fee. Save it as **New Fee Query** (6marks)

g) Create a query that displays all the movies produced **after the year 1990**. Save it as **Latest Movies** (5marks)

h) Generate a query that calculates the Total income each Movie has made. Save the Query as **Total gain** (6marks)

i) Create a report that:

(i) Groups each of the movies according to category (2marks)

(ii) Calculates the income each movie category has made (2marks)

(iii) Calculates the total income from all movies (2marks)

(iv) Has the heading **Total Income Report** with font size 20 (2marks)

(v) Save the report as Total Income Report (1mark)

Print **New Fee Query**, **Latest Movies query, Total Gain query** and **Total Income Report**

NAME: …… INDEX NO: …….

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

CHRISTIAN RELIGIOUS EDUCATION PAPER 1 FORM 4

TIME 2 ½ HRS

ANSWER ANY FIVE QUESTIONS

1(a) Identify **eight** activities performed by God in the second account of creation Gen 2:4b-25 (8mks)

(b) Outline the responsibilities given to human being in the Genesis stories of creation (6mks)

(c) How does the church solve the problem of evil in the society today (6mks)

2 (a) Mention **seven** ways in which god rewarded Abraham's faith (7mks)

(b) Outline ways in which Moses showed his obedience to god.(7marks)

(C) Outline **six** commandments that show how Christians should relate with one another.(6mks)

3a. Outline the activities of king jeroboam which made the Israelites in northern king from God (7) mark

b. Identify the failures of king David (6 mks)

c. Why are Kenyans attracted to the church today (7mks)

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4 (a) Explain **four** differences between prophets in the Old Testament and traditional Africancommunities. (8 marks)

(b) Give reasons why God was going to pass judgment in Israel and other nations. (6 marks)

(c) What is the relevance of prophets Amos' teaching on judgments to Christian today (6 mks)

5 (a) Outline instances when Jeremiah encountered suffering. (8 mks)

(b) Give reasons why it was important to rebuild the walls of Jerusalem.(7mks)

(c) What lessons can Christians learn from Jeremiah's letter to the exiles?(5mks)

6(a) What are the requirements that one should have to become an elder in Traditional African Society (6 mks)

(b) Outline **seven** responsibilities of priest in Traditional African Community(7mks)

(c) What are the challenges faced by the old people today?(7mks)

NAME: …… INDEX NO: …….

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

CHRISTIAN RELIGIOUS EDUCATION PAPER 2 FORM 4

TIME 2 ½ HRS

ANSWER ANY FIVE QUESTIONS

1. *(a)* Outline Jeremiah's prophecy about the coming of the messiah (8 marks)

   (b) State the events that took place when John the Baptist was born (7 marks)

   (c) State ***five*** ways through which Christians in Kenya express their joy for the birth of Jesus (5 marks)

2. (a) Explain why Jesus used parables in His teachings (6 marks)

   (b) Describe the rising of Jairus' daughter Lk 8:40 – 45 (7 marks)

   (c) What lessons do Christians learn from the healing of Centurion's servant (7 marks)

3. (a) Outline ***Six*** teachings of Jesus about a committed follower from the story of the Good Samaritan (6 marks)

   (b) Outline ***seven*** teachings of Jesus on wealth from the story of the Rich man and Lazarus. Luke 16:19-31 (7 marks

   (c) What is the relevance of the resurrection of Jesus to Christian today? (7 marks)

4. (a) Outline the teachings of St. Paul on the unity of believers as expressed in the concept of the Bride

   2 Corinthians 11:2, Revelation 21:1-12) (7 marks)

   (b) What activities of the church show that the Holy Spirit is working among Christians (7 marks)

   (c) State ways in which the gifts of the Holy Spirit have been abused in the church today (6 marks)

5. (a) Outline ***seven*** Christian teachings about work (7 marks)

   (b) Explain why Christians should <u>not</u> resort to strike action as a way of presenting grievances (7 marks)

   (c) Outline causes of misuse of leisure in modern society (6 marks)

6. (a) Explain the Christian teachings on wealth . (7 marks)

   (b) Describe ***seven*** negative effects of the introduction of money economy in the traditional African communities. (7 marks)

   (c) Explain ***six*** ways in which unfair distribution of wealth can lead to social disorder in Kenya today. (6 marks)

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NAME: …… INDEX NO: ……

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

ENGLISH (101)
PAPER 1
FORM 4

INSTRUCTIONS TO CANDIDATES

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

For examiners use only

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

This paper consists of 5 printed pages. Candidate should check to ascertain that all pages are printed as indicated and that no questions are missing.

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1. FUNCTIONAL WRITING (20mks)

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

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

1.Ways of raising the remaining 5,000 shillings.

2.Fixing dates for rehearsals for the contest.

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

2. CLOZE TEST (10 MARKS)

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

Personal hygiene is very important in everybody's (1) ……. Many people do not understand how to take care of (2)…… properly. Personal hygiene is the (3) ……. of keeping your body clean and healthy. To (4)……..with, personal hygiene is important. It is really important (5)……..take care of yourself, and take (6) …… of your body.

(7)…… excellent personal hygiene can make you (8)…… more confident, and increase you self- esteem because you feel (9)……. happy and clean. Having good personal hygiene can help a student feel (10)…… in life for when you feel healthy you are happy.

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

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

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

Questions.

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

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

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

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

a) O little laughing blooms that lift and bless!

b) O little buds all burgeoning with spring.

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

a) Bud

b) Blew

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

i. The <u>generous</u> man gave the poor girl school fees.

ii. The generous man gave the <u>poor</u> girl school fees.

iii. The generous man gave the poor girl school <u>fees</u>.

(c) ***<u>Indicate the silent letter in the words below.</u>*** (3mks)

i. Mortgage

ii. Leopard

iii. Paradigm

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

i. Beautiful

ii. Agree

(e) ***<u>Pick the off one out according to the pronunciation of the underline vowels below.</u>***

(4mks)

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

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

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

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NAME: …… INDEX NO: ……

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

ENGLISH (101)
FORM 4

101/2 ENGLISH Paper 2

(Comprehension, Literary Appreciation and Grammar)

JULY/AUGUST - 2025 – Time: 2½ hours

Instructions to Candidates

a) Write your name, school and Admission Number in the spaces provided above.
b) Write your class, date of examination and sign in the spaces provided above.
c) Answer ALL questions in the spaces provided in the question paper.
*d) All answers must be written in the **Blue ink**.*
*e) This paper consists of **12** printed pages.*
f) Candidate should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
g) Candidates must answer the questions in English.

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1. COMPREHENSION	20	
2. EXCERPT	25	
3. ORAL LITERATURE.	20	
4. GRAMMAR	15	
TOTAL	**80**	

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

It is so easy to overestimate the importance of one defining moment and underestimate the value of making small improvements on a daily basis. Too often, we convince ourselves that massive success requires massive action. Whether it is losing weight, building a business, writing a book, winning a championship, or achieving any other goal, we put pressure on ourselves to make some earth-shattering improvement that everyone will talk about.

Meanwhile, improving by 1 per cent isn't particularly notable – sometimes it isn't even noticeable—but it can be far more meaningful, especially in the long run. The difference a tiny improvement can make over time is **astounding**. Here's how the math works out: if you can get 1 per cent better each day for one year, you'll end up thirty-seven times better by the time you're done. Conversely, if you get 1 per cent worse each day for one year, you'll decline nearly down to zero. What starts as a small win or a minor setback accumulates into something much more.

Habits are the compound interest of self-improvement. The same way that money multiplies through compound interest, the effects of your habits multiply as you repeat them. They seem to make little difference on any given day and yet the impact they deliver over the months and years can be **enormous**. It is only when looking back two, five, or perhaps ten years later that the value of good habits and the cost of bad ones becomes strikingly apparent.

This can be a difficult concept to appreciate in daily life. We often dismiss small changes because they don't seem to matter very much in the moment. If you save a little money now, you're still not a millionaire. If you go to the gym three days in a row, you're still out of shape. If you study English for an hour tonight, you still haven't learned the language. We make a few changes, but the results never seem to come quickly and so we slide back into our previous routines.

Unfortunately, the slow pace of transformation also makes it easy to let a bad habit slide. If you eat an unhealthy meal today, the scale doesn't move much. If you work late tonight and ignore your family, they will forgive you. If you procrastinate and put your project off until tomorrow, there will usually be time to finish it later. A single decision is easy to dismiss.

But when we repeat 1 per cent errors, day after day, by replicating poor decisions, duplicating tiny mistakes, and rationalizing little excuses, our small choices compound into toxic results. It's the accumulation of many missteps—a 1 per cent decline here and there—that eventually leads to a problem.

Similarly, a slight change in your daily habits can guide your life to a very different destination. Making a choice that is 1 per cent better or 1 per cent worse seems insignificant in the moment, but over the span of moments that make up a lifetime these choices determine the difference between who you are and who you could be. Success is the product of daily habits- not once-in-a-lifetime transformations.

That said, it doesn't matter how successful or unsuccessful you are right now. What matters is whether your habits are putting you on the path toward success. You should be far more concerned with your current trajectory than with your current results. If you're a millionaire but you spend more than you earn each month, then you're on a bad trajectory. If your spending habits don't change, it's not going to end well. Conversely, if you're broke, but you save a little bit every month, then you're on the path toward financial freedom- even if you're moving slower than you'd like.

Your outcomes are a lagging measure of your habits. Your net worth is a lagging measure of your financial habits. Your weight is a lagging measure of your eating habits. Your knowledge is a lagging measure of your learning habits. Your **clutter** is a lagging measure of your cleaning habits. You get what you repeat. Habits are a double-edged sword.

Adapted from *Atomic Habits* by James Clear

Questions.

a) What does the writer mean by the first statement of the first paragraph? (2 marks)

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b) What are we told about habits in the second paragraph of the passage? (2 marks)

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c) Show the relationship between habits and compound interest? (2 marks)

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d) Cite examples from the passage to show that habits are a double-edged sword. (2 marks)

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e) In a summary of not more than **60** words, explain why the author says the concept of habits being compound interest is difficult to appreciate in daily life. (5 marks)

Rough copy

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Fair copy

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f) "You should be far more concerned with your current trajectory than with your current results."
(Rewrite beginning: Your ….) (1 mark)

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g) Explain the following imagery: "Habits are the compound interest of self-improvement."
(3 marks)

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h) Explain the meaning of the following words as used in the passage. (3 marks)

i) astounding ……

ii) enormous ……

iii) clutter …….....

h) EXCERPT FROM 'THE SAMARITAN' (25MARKS)

Read the excerpt below and answer the questions that follow.

Ted: The first is the indecisive type.

Seymour: Like who?

Ted: They are quite a number. Hon. Ferreira, or Mr. Key, as they still call him, is the best example. This man has never seen a fence on which he can't sit. He can hardly ever commit to any side. We chatted at length, and he kept talking in circles, citing proverbs and idioms here and there.

Ramdaye: I wonder why they called him Mr. Key. I hear he can never make up mind which door to open or in fact, whether to open any door at all!

Seymour: So, what did he say?

Ted: He said that what will be, will be because something certainly will be.

Ramdaye: Is that a proverb?

Ted: I have since been wondering whether it is, but he also said you don't cross the bridge until you get to it.

Seymour: Which bridge now?

Ted: I am not sure which bridge he meant, but I guess he must have been talking about the cases, in case we are sued.

Ramdaye: What an upstart he is! I hear he even has difficulties deciding what and how much to eat!

Seymour: You talked of different categories. What are the other categories?

Ted: The other category comprises the majority. I would best describe them as the headless type

Ramdaye: Headless?

Ted: Yes, they have brains, alright, but they don't use them.

Seymour: How on earth?

Ramdaye: You mean they're like a headless chicken?

Ted: Exactly! They are headless chicken. They follow the leader of their ethnic group who thinks for them. And they wait for that leader to make decisions for them in all matters, including the decision to go to pee. Most members of the People's Party of Mr. Basdeo belong here, and so do the members of Mossi's Liberal Party.

Seymour: I thank God I don't belong to any ethnic group.

Ted: Then, there is what I can best describe as the entrepreneurial type.

Ramdaye : Who are these?

Ted: These are political entrepreneurs, very keen on making money. They vote with their stomach, so to speak. That means they will vote the side that gives more money.

Seymour: Are you saying they demanded money to support the no confidence motion?

Ted: Yes, that was my understanding. I indicated funds would be available. They promised to deal as soon as money changes hands.

a) Explain what happens ***just before*** this excerpt. (2marks)

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b) Identify and illustrate one character trait of: (4marks)

i) Hon Ferreira.

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ii) Hon Ted

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c) Explain the use of language in the excerpt above. (4marks)

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d) From elsewhere in the play, what cases is Hon Ted referring to? (3marks)

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e) What is Hon Ted's attitude towards the 'headless type' category of leaders? (3 marks)

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f) These are political entrepreneurs, very keen on making money. *(Re-write using a relative clause)* (1 mark)

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g) Explain ***two social concerns*** that are addressed in this excerpt (4 marks)

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i) Explain why the leaders in this excerpt are planning a vote of no confidence. (2 marks)

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j) Explain the meaning of the following expressions as used in the excerpt. (2marks)

I. Upstart

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II. Vote with their stomachs.

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i) Read the narrative below and answer the questions that follow.

Long, long time ago animals and birds spoke just like men do. When God had to stop them speaking, he made birds sing, like this chrrip! Chrrip….Lions to roar like this graagh! Graagh! And hyenas to howl like this huuu! Huuuu!

And you blame God? Listen to what naughty hyena who had gone two days without any meal did. He had been wandering up and down the hills when he suddenly stopped, nose in the air, one foot raised.

Do I smell, eh…… smell food? He slowly raised his head to the skies as if to say, "Please God, let me find some food, even one rotting bone will do." Slowly, he followed the smell, sniffing hard, stopping now and again, over grinning wide as the smell became stronger. "Here at last," he said as he came in sight of a calf that seemed dead, flies buzzing over its excrement. "Good no time to waste. Who knows the owner may be around. Oh, no, I see it is secured to a tree with a 'Mukwa' I'll take my time.

Ha, I am tired too, come to think of it. God gave us pretty strong senses of smell, generous old…. Man.

Still I do think some people tend to exaggerate, now who was it saying the other day ‘ati’ God is the giver of everything and that we should be grateful. O.K.

Tell me, did God give this calf? Did you God? I found it myself, smelled my way there, all the way. Nice calf too, rather thin but it will do. I’ll take the head home and make soup with herbs. I especially like ‘muthathii, and I see one over there.

Ok. Here we go, where shall I start, this lovely neck: No, I know, I will start with the

‘mukwa’ then I’ll get on to the soft stuff, the tail, the rump, ‘Mahu’……”

After chewing up half of the ‘mukwa’ the hyena brushed his teeth with the twig of a ‘muthiga’ a tree to stimulate his appetite. He stepped on the calf’s tail, stuffed it in his mouth and ‘snap it went. The calf which was only very sick and tired shot up and bolted away in the twinkling of an eye.

The hyena rubbed his eyes, ambled after the disappearing calf and soon fell down in exhaustion. He looked up again to the heaven, tried to speak but no words came. Hyenas have never been able to speak ever since…

Questions:

a) Categorise this narrative and give a reason for your classification. (2 marks)

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b) Identify and explain two features of oral narratives evident in this story. (4 marks)

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c) Describe two character traits of the hyena as depicted in the narrative. (4 marks)

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d) What do we learn about the community depicted in the narrative above? (2 marks)

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e) What moral lesson do we learn from this narrative? (2 marks)

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f) Identify one instance of irony evident in the narrative above. (3 marks)

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g) Describe the tone in Hyena's utterances (3 marks)

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4. GRAMMAR **(15MARKS)**

a) Rewrite the following sentences according the instructions given after each. Do not change the meaning. ***(4 marks)***

i. You will not take this book under any circumstance. *(Begin: Under…)*

……

……

ii. do not give in to peer pressure the principal advised her students. *(Punctuate correctly)*

……

……...

iii. That was the first time our MPs voted to impeach a deputy president. *(Begin: Never…)*

……

……..…

iv. Were it not for their laziness, they would have done quite well. *(Begin: But….)*

……

……..….

b) Fill in each blank space with the most appropriate form of the word in brackets. ***(3 marks)***

i. The criminal's ……..behaviour in court appalled the judge. *(scandal)*

ii. Justine was suspended from his job. His …….was questionable. *(sober)*

iii. She walked ……..on the wet floor. *(caution)*

c) Fill in each blank space with the most appropriate word(s). ***(3 marks)***

i. Massive immigration is a real hot…….for European countries.

ii. The project had been given funding for another year. But it is not out of ……yet.

iii. I don't like Njue because he tried to stab me……

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d) For each of the following sentences, replace the underlined phrasal verb with one word.

(3marks)

i. It is not good to ***walk out on*** one's family.

……

ii. I do not like ***falling out*** with my siblings.

……

iii. I was ***taken aback*** by her snide remarks.

……

e) Fill in each blank space with the most appropriate preposition. (2 marks)

i. The disgruntled members could not agree ……..a common stand.

ii. It is advisable to pay…….cheque.

THIS IS THE LAST PRINTED PAGE.

NAME: …… INDEX NO: ……

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

ENGLISH (101)
FORM 4

101/3 ENGLISH Paper 3

(Creative Composition and Essay based on Set Text)

JULY/AUGUST 2025– Time: 2 ½ hours

Instructions to Candidates

a) Write your name, Adm number and class in the spaces provided above.
b) Write your school, date of examination and sign in the spaces provided above.
c) Answer three questions.
d) In question 1, choose either (a) or (b)
*e) This paper consists of **16** printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no question is missing.*

For Examiner's Use Only

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

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1. **Imaginative composition.** **(20 marks)**

   Either;

   a) Write a composition with the following beginning;

      As I stepped into the dingy lit room, a sense of unease washed over me …

      Or;

   b) Write an essay discussing how poor parenting has had negative effect on children.

2. **The Compulsory Set Text; Fathers of Nations by Paul Vitta.** **(20 marks)**

   The irresponsible decisions that people make in life have consequences. Drawing illustrations from the novel Fathers of Nations show how valid this assertion is.

3. **The Short Story – A Silent Song and Other Stories by** **(20 marks)**

   The low self-esteem that some children suffer is a result of parents who try to control their lives. Using relevant illustrations from the story Sins of the fathers, show the truth in this statement.

   Or

   The Play – Parliament of Owls by Adipo Sidang **(20 marks)**
   Ineffective leaders use oppressive means to govern the citizens but it leads to misery. Citing illustrations from Adipo Sidang's Parliament of Owls, write an essay to show the validity of this statement.

   Or

   The Novel – Artist of the Floating World by Kazuo Ishiguro **(20 marks)**
   The ambitious nature of artists makes them strive to bring a change in life and even if they fail they still take pride in it. Write a composition using textual evidence from Kazuo Ishiguro's novel Artist of the Floating World to show the truth of this statement

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NAME: …… INDEX NO: ……

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

GEOGRAPHY (312/1)
PAPER 1
FORM FOUR (4)
Time: 2 ¾ Hours

Instructions to candidates

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

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

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

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

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

(f) This paper consists of 14 printed pages.

(g) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

For Examiner's Use Only

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

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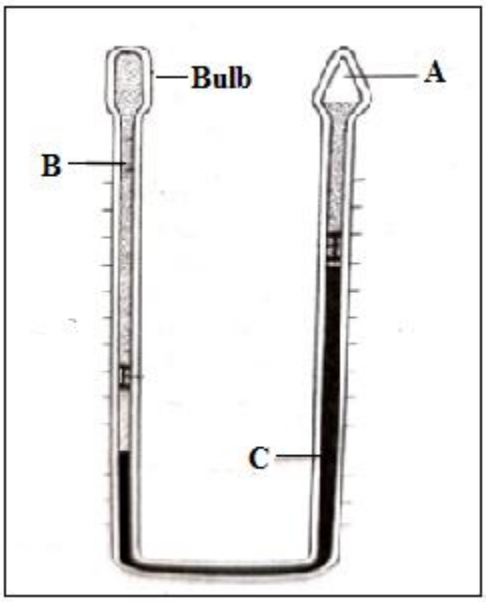
SECTION A

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

1. (a) Name **two** heavenly bodies that form part of solar system. (2 marks)

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

2. The diagram below shows six's thermometer. Use it to answer question (a).



   (a) Identify the parts labeled **A**, **B** and **C**. (3 marks)

   (b) State **two** ways through which latitude influence the temperature of a place. (2 marks)

3. (a) Give **two** types of magma. (2 marks)

   (b) Name **three** lava plateaus found in Kenya. (3 marks)

4. (a) Identify **two** lakes formed through erosion process. (2 marks)

   (b) Give **three** reasons why some lakes are salty. (3 marks)

5. (a) What is weathering? (2 marks)

   (b) State **three** ways through which living organisms cause weathering. (3 marks)

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SECTION B

*Answer **question 6** and any other **two** questions from this section*

6. Study the map of Kisumu East (1:50,000), sheet 116/2 provided and answer the following questions.

(a) (i) Convert the ratio scale of the map to into a statement scale. (2 marks)

(ii) Give six figure grid reference of the trigonometrical station 1154 SKP 21 in the southern part of the area covered by the map. (2 marks)

(iii) What is the bearing of Rabuor market from Air photo Principal point in **GR 0986**?

(2 marks)

(iv) What is the length in kilometres of the section of railway line west of the easting 00 to Kisumu station? (2 marks)

(v) Give **three** drainage features in the area covered by the map. (3 marks)

(b) Describe the relief of the area covered by the map. (4 marks)

(c) Citing evidence from the map, give **two** factors that influence cultivation of sugarcane in the area covered by the map. (4 marks)

(d) Identify **three** social activities carried out within Kisumu municipality. Give evidence.

(6 marks)

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

(ii) A part from fold mountains, give **three** other features formed through folding. (3 marks)

(b) The map below shows the distribution of fold mountains in the world.

(i) Name the mountains marked **D** and **E**. (2 marks)

(ii) Identify the orogenies the mountains marked **F** and **G** were formed. (2 marks)

(c) With the aid of well labeled diagrams, describe the formation of the following types of folds.

(i) Asymmetrical folds. (4 marks)

(ii) Overfolds. (4 marks)

(d) Explain **four** positive influence of folding to human activities. (8 marks)

8. (a) What is derived vegetation? (2 marks)

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

(i) Winds (4 marks)

(ii) Rainfall (4 marks)

(c) (i) A part from forests, give **two** other major vegetation types of the world. (2 marks)

(ii) Describe the characteristics of tropical rainforests. (6 marks)

(d) Your class is planning to carry out a field study on vegetation around the school.

(i) Give **three** sources of information you are likely to use before the study. (3 marks)

(ii) Identify **four** challenges you are likely to encounter during the study. (4 marks)

9. (a) Differentiate between a river confluence and interfluve. (2 marks)

(b) Explain **three** types of river erosion. (6 marks)

(c) (i) A part from waterfalls, give **three** other features of river erosion. (3 marks)

(ii) State **four** ways through which waterfalls may be formed. (4 marks)

(d) Describe how the following features are formed.

(i) Flood plain (5 marks)

(ii) Arcuate delta (5 marks)

10. (a) Give **four** components of the soil. (4 marks)

(b) Explain how the following factors influence soil formation.

(i) Living organisms (4 marks)

(ii) Relief (4 marks)

(c) Explain **four** causes of soil erosion. (8 marks)

(d) State **five** significance of soils. (5 marks)

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NAME: …… INDEX NO: …….

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

GEOGRAPHY (312/2)
PAPER 2
FORM FOUR (4)
Time: 2 ¾ Hours

INSTRUCTIONS:

- Write your name, index number and school
- Answer ALL the questions in section A.
- In Section B answer **question 6** and any other **two**.
- This paper consists of four printed pages. Check to ascertain whether all the pages are printed.

FOR EXAMINERS USE ONLY

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1-5	25	
B	6	25	
		25	
		25	
TOTAL SCORE			

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SECTION A

(Answer all questions in this section)

1. (a) What is horticulture? (2mks)

(b) State three advantages of using green house in horticulture farming (3mks)

2. (a) Name two minerals mined in South Africa (2mks)

(b) Give three problems facing mining industry in South Africa (3mks)

3.a) State **any two** problems facing wildlife conservation (2mks)

b) Give any **three** historical sites at the Kenyan coast that are tourist attractions (3mks)

4. (a) State three factors necessary for a land to be reclaimed (3mks)

(b) Give three uses of polder land in Netherlands (3mks)

5. Give four ways in which Kenya will benefit as a result of oil discovery and exploration in Turkana County (4mks)

SECTION B

(Answer Question 6 and ANY OTHER TWO)

.6. World Wheat production by region.

Region	% of Wheat Production
Asia	35
Europe	22
North America	19
USSR	16
Others	8

a) Draw a Pie Chart to illustrate the information given above. *(5mks)*

b) Name

i) **Two** districts in Kenya where wheat is grown on Commercial Scale. *(2mks)*

ii) **Two** Wheat producing provinces of Canada. *(2mks)*

c) Explain **three** conditions that favour Wheat farming in Kenya. *(6mks)*

d). Explain **five** factors which enable Canada to produce more Wheat than Kenya. *(10mks)*

7.(a) i) Define the term deforestation. *(2mks)*

(ii) State the causes of deforestation? *(4mks)*

(b) Outline the stages involved in the extraction of timber from natural forests. *(4mks)*

(c) Explain **four** characteristic of the tropical rain forest. *(8mks)*

(d) Describe the ecological uses of forests. (7mks)

8.(a) Name **four** ways in which minerals occur. *(4mks)*

(b) State the factors affecting exploitation of minerals. *(5mks)*

(c) i) Name **one** area where gold is mined in South Africa. *(1mk)*

(ii) Describe methods of mining gold in South Africa. *(5mks)*

(d) i) What are the problems of mining in South Africa? *(5mks)*

(ii) In what ways had gold contributed to the economic growth of South Africa. *(5mks)*

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9. (a) i) Define the term Nomadic Pastoralism. *(2mks)*

(ii) Name **two** Nomadic Pastoralists Communities in Africa. *(2mks)*

(b) Give **five** factors that have favoured the development of beef farming in Argentina. *(5mks)*

(c) State **six** problems that face Nomadic Pastoralists in Africa. *(6mks)*

(d) Explain **five** changes that are taking place to improve Nomadic Pastoral area in Kenya.

(10mks)

10. (a) Define the term fisheries. (1mk)

(b) (i) State **three** human conditions necessary for fishing. (3mks)

(ii) Name **two** examples of anadromous fish. (2mks)

(c) Explain how the line-fish method of fishing is used. (4mks)

(d) (i) Explain the reasons why the North East Atlantic is extensive and highly developed.

(10mks)

(ii) State the problems facing fishing in Marine fishing in Kenya. (5mks)

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NAME: …… INDEX NO: ……

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

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

311/1
History & Government
Paper 1
2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

- This paper consists of **three** sections; **A, B** and **C.**
- Answer ALL the questions in section **A, THREE** questions from section **B** and **TWO** questions from section **C.**
- Answers to all the questions **MUST** be written on the answer sheets provided.

FOR EXAMINER'S USE ONLY

	QUESTION	SCORE
SECTION A	1 – 17	
SECTION B	18	
	19	
	20	
	21	
SECTION C	22	
	23	
	24	
TOTAL SCORE		

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

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SECTION A: (25 MARKS)

Answer all the questions in this section in the answer booklet provided.

1. Identify **two** aspects of history. (2mks)
2. Where is the original homeland of River-lake Nilotes of Kenya? (1mk)
3. State **two** units of political administration of the pre-colonial Borana. (2mks)
4. Give the main factor that led to the growth of forms along the Kenyan Coast before 19th Century. (1mk)
5. State **two** advantages of using arbitration as a method of solving Conflicts. (2mks)
6. Name **two** areas acquired by the British as a result of Anglo-German treaty of 1890. (2mks)
7. Give **two** reasons why the Akamba resistance was defeated by the British during colonization. (2mks)
8. State **two** reasons why Africans were reluctant to provide labour in European farms during the colonial period. (2mks)
9. State **one** positive result of Mau mau uprising. (1mk)
10. Name the trade union which organized the workers strike of 1947 in Kenya. (1mk)
11. Give the main reason why Kenya African National union (KANU) refused to from the government after 1961 election. (1mk)
12. Identify the political challenge president Moi faced in 1982. (1mk)
13. State **two** external factors that led to growth of multiparty system in Kenya in the early 1990's. (2mks)
14. Outline **two** reasons why cultural activities are important in Kenya. (2mks)
15. Name **one** class of human right. (1mk)
16. Identify **one** type of government expenditure. (1mk)
17. Who is the chief executive officer in the country?

SECTION B: (45 MARKS)

Answer any three questions from this section.

18. (a) State **five** reasons for the migration of Bantus into Kenya (5mks)
    (b) Describe the effects of migration and settlement of Bantus in Kenya. (12mks)
19. (a) Name **five** Kenyans that were membersof the AEMO. (5mks)
    (b) Describe the contributions of the AEMO in the struggle for independence in Kenya. (10mks)
20. (a)State **five** reasons for the coming of the Portuguese to the Kenyan Coast in the 15th Century. (5mks)
    (b) Explain **five** ways in which Seyyid Said encouraged the development of international trade in Kenya. (10mks)
21. (a) Identify **five** grievances addressed by the Mau mau fighters in Kenya (5mks)
    (b) Discuss **five** role played by Trade Unions in the struggle for independence in Kenya. (10mks)

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SECTION C: (30 MARKS)

Answer any two questions from this section

22. (a) Describe the composition of the national assembly /parliament under the new constitution (3 (3mks)

(b) Identify the main challenges Kenyans encountered in search of a new constitution

(12mks)

23. (a) State five effects of conflicts in the society. (5mks)

(b) Explain **five** non-violent methods of conflict resolution. (12mks)

24. (a) State any three features of the Sessional Paper No. 10 of 1965 (3mks)

(b) Describe **six** roles played by African Socialism in the development of Kenya (12mks)

NAME: …… INDEX NO: ……

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

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

311/2
History & Government
Paper 2
2 ½ HOUR

INSTRUCTIONS TO CANDIDATES

- This paper consists of **three** sections; **A, B** and **C.**
- Answer ALL the questions in section **A, THREE** questions from section **B** and **TWO** questions from section **C.**
- Answers to all the questions **MUST** be written on the answer sheets provided.

FOR EXAMINER'S USE ONLY

	QUESTION	SCORE
SECTION A	1 - 17	
SECTION B	18	
	19	
	20	
	21	
SECTION C	22	
	23	
	24	
TOTAL SCORE		

This paper consists of 2 printed pages. Candidates should check the question paper to ensure that all pages are printed as indicated

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SECTION A: (25 MARKS)

Answer all the questions in this section in the answer booklet provided.

1. State ***one*** advantage of land enclosure system in Britain (1 mark)
2. State ***two*** industries established by early man (2 marks)
3. Name ***one*** reason that influenced early man to domesticate animals (1 mark)
4. Give ***one*** result of the invention of the wheel in Mesopotamia (1 mark)
5. Who were the ***first*** people to use iron in the world? (1 mark)
6. State ***one*** term of the Industrial Conciliation Act of 1934 in Zimbabwe (1 mark)
7. Identify ***two*** terms of the Berlin Conference of 1885-1886 (2 marks)
8. State any ***one*** early source of energy (1 mark)
9. Name any ***two*** countries that were colonized by Portugal in Africa (2 Marks)
10. Identify ***two*** peaceful methods used by the South Africans in their struggle for independence (2marks)
11. Name ***one*** commune in Senegal where the policy of assimilation was successful (1 mark)
12. State ***two*** roles of the Takshiffs during the Trans- Saharan trade (2 marks)
13. Give ***one*** main function of the royal fire in the Mwene mtapa Kingdom (1 mark)
14. Identify ***two*** demands made by Austria- Hungary against the Serbians following the assassination of Arch Duke Ferdinard (2 marks)
15. Give ***two*** reasons why the Schlieffen plan failed (2 marks)
16. Name ***one*** country in Africa that was not colonized by Britain but is a member of the Commonwealth (1 mark)
17. Name the ***organ*** of the African union that is in charge of the operations of the organizations (1mk)

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SECTION B: (45 MARKS)

Answer ***Any Three*** questions from this section.

18. (a) State ***three*** effects of land enclosure system in Britain during the agrarian-revolution. (3mks)

(b) Explain ***six*** disadvantages of open field – system on agriculture before the agrarian revolution. (12mks)

19. (a) Identify ***five*** factors for the growth of the Asante empire. (5mks)

(b) Explain ***five*** social feature of the Baganda Kingdom. (10mks)

20. (a) Name ***three*** countries in North Africa Colonized by the French. (3mks)

(b)Explain ***six*** factors that facilitated European colonization of Africa. (12mks)

21. (a) State ***three*** ways used by Nationalists in Ghana to fight for independence. (3mks)

(b) State ***six*** factors that led to Africa –nationalism in Ghana (12mks)

SECTION C: (30 MARKS)

Answer any two questions from this section

22. (a) State ***three*** benefits of the East African community to the member states up to 1977 (3mks)

(b) Explain ***six*** factors that made pan-Africanism popular in Africa After 1945. (12mks)

23. (a) Give ***three*** political challenges which Tanzania has faced since independence.(3mks)

(b) Explain ***six*** effects of the cold war in the world. (12mks)

24. (a) Identify ***three*** functions of the United Nations Security Council (3mks)

(b) Discuss the challenges facing the United Nations (12mks)

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NAME: …… INDEX NO: …….

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

KIDATO CHA NNE
KARATASI YA 102/1
MUDA: SAA $1\frac{3}{4}$

MAAGIZO: Swali la kwanza ni la lazima

1. LAZIMA
   Wewe ni waziri katika Wizara ya Elimu, umeombwa utoe hotuba mbele ya walimu na wazazi kuhusu changamoto zinazokabili Mfumo wa Elimu wa Umilisi wakati wa siku ya wazazi katika shule ya upili ya Darubini.

2. Mlipuko wa ugonjwa wa Kovid ulichangia kuboresha uchumi wa nchi yetu. Jadili

3. Tunga kisa kitachodhihirisha maana ya methali ifuatayo;
   Mpiga ngumi ukuta huumiza mkonowe.

4. Malizia insha yako kwa maneno haya; ndipo nikasikia mayowe kutoka kwa jiarani. Nilitoka nje mbio. Kumulika kwa jirani, nyumba yake haikuwa inaonekana.

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NAME: …… INDEX NO: …….

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

KIDATO CHA NNE

KARATASI YA PILI

MAAGIZO; JIBU MASWALI YOTE

MUDA: $2\frac{1}{2}$

1. **UFAHAMU (ALAMA 15)**

Soma makala yafuatayo kisha ujibu maswali yanayofuata.

Hapo kitambo, tarakilishi ilijulikana kuwa chombo cha wajuzi au kikundi fulani cha wakwasi waliosomea misimbo kwa miaka wakajipa shahada, stashahada na kuzamia katika vinamisi vya chini sana vya elimu hiyo. Mnamo miaka ya 1980, takwimu zinaonyesha kwamba si zaidi ya asilimia mbili ya ulimwengu iliyokuwa ikitumia tarakilishi. Sababu kuu ilikuwa ugumu wa misimbo na amri ambazo zingewezesha kompyuta kutekeleza majukumu ya kimsingi. Ilikuwa bughudha tupu kujaribu kukumbuka misimbo hiyo au misururu hiyo ya amri. Ndiposa maulana wa ngamizi au kompyuta wakatafakari na kutambua suluhisho la kutumia vieneo.Vieneo ni vibaa vilivyo na amri na vimeunganishwa na "nyuzi". Nduni nzuri zaidi ya mfumo vieneo ni mwambaazana ambao una michoro ya viungo vya tarakilishi kama vile printa,faili na kadhalika. Michoro hii inawakilisha kazi zinazotekelezwa na viumbile hivyo. Kwa mfano,ukibofya kwenye faili ilyofunguliwa, faili mpya itafunguliwa. Hivi ndivyo elimu ya teknohama, yaani habari na mawasiliano ilivyoimarishwa katika mwongo uliotupa kisogo.

Kando na urahisishaji huu ambao umeinua idadi ya watumiaji wa tarakilishikwa asilimia 37ulimwenguni katika mwongo mmoja, matatizo ambayo nchi zinazoendelea hukumbana nayo hayawezi kupuuzwa. Programu za tarakilishi zina bei mara kumi ya bei za tarakilishi.Maadam hali ya uchumi si nzuri, watu wengi hawawezi kutumia mtambo huu kwa sababu hawawezi kununua. Tatizo jingine kuu ni ukosefu wa umeme

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katika sehemu nyingi za nchi zinazoendelea, hasa barani Afrika. Matatizo ya kwanza mawili yameweza kusuluhishwa kwa kiwango fulani. Kwanza, makampuni makubwa yanayounda programu za kompyuta yamejaribu kupunguza bei ya leseni za kompyuta. Zipo nyingi zinazoletwa nchini zikiwa na programu tayari. Licha ya hayo. Makampuni ya kibinafsi yamejitolea katika nchi zilizoendelea ili kutafuta kompyuta zisizoendelea kwa bei rafi. Ingawa huku ni kama kumtupia mbwa tonge la ugali lisilo na mchuzi, lakini mkata hana kinyongo na mtu hujikuna ajipatapo.

Tatizo la mwisho ni ujuzi wenyewe wa tarakilishi. Kulingana na kauli ya pamoja kuhusu teknohama iliyofikiwa Kasablanka mwaka 2004, iwapo bara la Afrika litafikia maendeleo ya teknohama kufikia mwaka wa 2050, lugha za Kiafrika hazifai kupuuzwa katika elimu ya tarakilishi. Kuwafunza watu hawa wote Kiingereza ambayo ndiyo lugha iliyotumika kuunda

vieneo vya tarakilishi, ndipo wajifunze elimu ya teknohama, ni kazi nyingi ambayo itahitaji subira na uvumilivu mwingi; ambao watu wengi hawana. Lililobaki ni kujanibisha programu za kompyuta katika lugha zinazozungumzwa na watu wengi ili wapate fursa ya kutumia tarakilishi bila kushurutishiwa Kiingereza kilichowapiga chenga.

Katika Shule ya Upili ya Starehe, timu ya Kilinus ilizindua toleo jipya la programu ya ‘Jambo Open Office’ ambayo ni mseto wa programu za lugha ya Kiswahili. Toleo hili ni la kipekee kwani hufanya kazi katika mazingira ya Linu:x na Windows. Hili linawezesha mtu kutumia mazingira yoyote ayatakayo, bila haja ya kuyabadilishabadilisha kwa sababu ya programu.Pia,tovuti yoyote inaweza kurambazwa kwa kuturnia kirambizi cha Kiswahili ambacho kinaitwa Mozilla. Microsoft ambayo ndiyo kundi kubwa zaidi la kibiashara ulimwenguni limeamua kujanibisha programu zake pia katika lugha ya Kiswahili, Hausa na Amhara. Hili ni kutimiza kaulimbiu ya mratibu wa’ Jambo Open Office’ Simon Wanda kwamba, teknohama ni ya kila mtu; kila mtu anafaa kuielewa katika lugha apendayo.

Maswali

a) Je, ni tatizo gani lililowakumba watumiaji wa tarakilishi miaka ya 1980? (alama 2)

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b) Taja matatizo yanayozikumba nchi zinazoerndelea katika teknohama. (alama 3)

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c) Jamii ya kimataifa imetumia mbinu gani ili kujaribu kusuluhisha matatizo yanayokumba maendeleo ya teknohama katika bara la.Afrika.? (alama 3)

…….

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…….

d) Kulingana na habari, ni nini maana ya kauli ya pamoja iliyoafikiwa Kasablanka kuhusu teknohama? (alama 2)

…….

…….

…….

e) Ni umuhimu gani mkuu zilizonazo programu za ‘Jambo Open office’? (alama 2)

…….

…….

…….

f)"Teknohama ni ya kila mtu". Kwa kurejelea kifungu, tetea kauli hii. (alama 2)

…….

…….

g)Eleza maana ya teknohama. (alama 1)

…….

…….

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2. UFUPISHO (ALAMA 15)

Soma kifungu kufuatacho kisha ujibu maswali yanayofuata.

Mtoto ni mtoto, awe wa kike au wa kiume. Huu ni msemo ambao mara kadha sisi hukumbana nao pasi na kujua uzito wake unapozama katika uwanja wa jinsia na masuala yanayohusu jinsia. Awali ulielekea kumnusuru mtoto msichana kutokana na utamaduni na ubabedume uliotishia kuangamiza kizazi chote cha ulimwengu wa kike.

Mwana alipozaliwa katika enzi hizo alisherehekewa mithili ya mshindi wa uchaguzi wa urais kule Marekani. Aliletewa si mavazi, mafuta, mahindi ya kuyala usisahau walioandamana kumbebea mzigo ule wote wa misamiati yote ya fanaka, maombi na dua zote ilmuradi alisherehekewa. Ndani ya familia alitukuzwa, alibembelezwa zaidi hasa alipozaliwa wa pekee.Alikuzwa kwa hadithi zote nzuri na zenye hekima ili angalau aje awe mwokozi wa ukoo huo wote. Haikuwa nadra kulisikia jimama likisimama kwenye umati mkubwa na kusema,"Nimejaliwa sio mtoto tu bali mvulana." Ujio wa kwenda shule ulipofika angepelekwa wa kwanza kisha mwenzake wa kike au hata angekosa. Mtoto wa kike angeozwa mapema ili wa kiume aende ng'ambo kusoma. Mvulana alitukuzwa na kila mtu hata wasichana wenyewe.Kazini mwanamume alipewa nafasi ya kwanza, waajiri wengi walipendelea mwajiriwa wa kiume kabla ya kuwazia yule wa kike.

Katika maisha ya sasa, mtoto mvulana anaishi maisha ya upweke ukilinganisha na maisha ya mtoto msichana. Hii ilitokana na juhudi za mashirika ya kijamii kama vile FIDA - shirika linalojihusisha na kumkomboa mtoto wa kike au mhusika mwanamke. Mashirika haya yameendelea kutetea jinsia ya kike kiasi cha kwamba jinsia ya kiume ni dhulumati, hatari na yenye kushikiwa kila wakati. Sasa mtotc wa kiume yu hatarini kutokana na kile anachoona babaye akitendewa kule nje na jamii na hal :a ndani ya nyumba.

Ni jambo la kawaida kuwaona wavulana wakijikinga mvua chini ya mti, mvua isiyoweza kukingwa hata kwa mwavuli huku waki,-hunga mbuzi. ra kondoo wawili. Wakati huo mtoto msichana yuko nyumbani akipumzika baa'da ya kuosha 'ryombo na kujitia nakshi. Mvulana huvaa mavazi chafu na hata yaliyochaka'a hadi kukosa chochote makalioni. Msichana hufikiriwa mwanzo. Baba au mama humfikir.ia mwanzo msi, -hana kabla ya kuwazia mvulana.Msichana hupewa chumba chake kando na cha wazazi ilhali mvulana hujikuta akienda kuomba pa kulala kilomita mbili kwa jirani wa.u. Hali hii hum;weka katarini hasa kutokana na shinikizo la marika linaloweza kuwatumbukiza katika uraibu wa sigara na mihadarati kwa jumla.

Shuleni mtoto mvulana hujipata pabaya anapoenda kosa. Yeye huadhibiwa vikali iwe kichapo au kazi ngumu ya kufanya. Mwenzake hupewa kichapo kidogo au kazi ndogo. Hii inatokana na dhana potovu kuwa miili ya wasichana ni dhaifu. Hali kadhalika mtoto mvulana anapoketi au hata kujihusisha na wasichana ,huchukuliwa kuhafusha maisha ya msichana na hivyo hufukuzwa mbali.

Mtoto mvulana huwa na haki kama mwanadamu yeyote. Haki zake kuhusu haki ya kuishi,kutangamana, elimu, huduma bora za afya, kupendwa, kusii. izwa na hata kuheshimiwa.

Maswali

(a) Mtoto wa kiume yumo hatarini. Jadili kwa kutumia maneno 40 -50.

(alama 7,mti -iriko alama 1)

Matayarisho

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Jibu

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(b) Fupisha aya ya pili kwa maneno 45 -55. (alama 6,mtiririko alama 1)

Matayarisho

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Jibu

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MATUMIZI YA LUGHA (ALAMA 40)

(a) Bainisha virai katika sentensi ifuatayo: (alama 3)

Mwanafunzi mwenye kitabu cheusi ameingia ndani ya darasa.

……

……

(b) Ainisha miundo ya silabi katika neno lifuatalo. (alama 2)

Shwari

……

……

(c) Tunga sentensi yenye kitenzi kishirikishi kilkamilifu. (alama 1)

……

(d) Linganua sauti zifuatazo: (alama 2)

/ny/na/ch/

……

……

(e) Eleza matumizi ya viakifishi katika sentensi ifuatayo. (alama 2)

N'taimba na ghulamu/ mvulana yule aliyejibu maswali.

……

……

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(f) Changanua sentensi ifuatayo kwa njia ya jedwali, (alama 5)

Mwakio alimwona nyoka mvunguni mwa kitancla kilichonunuliwa jana.

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(g) Tunga sentensi ukitumia kitenzi kutokana na nomino karaha. (alama 2)

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……

(h) Andika sentensi ifuatayo kulingana na maagizo uliyopewa. (alama 1)

Kiti hiki kilipotea jana. (Tumia kivumishi kisisitizi)

……

……

(i) Bainisha shamirisho katika sentensi ifuatayo. (alama 2)

Mama aliyepikiwa wali na mwanawe amefurahi.

……

……

(j)Sahihisha sentensi ifuatayo. (alama 1)

Baba alinikelelesha kwa kuweka chakula kitandani.

……

……

(k) Tunga sentensi moja kuonyesha maana mbili za neno *walakini.* (alama 2)

……

……

(l) Andika upya sentensi ifuatayo katika ukubwa wingi. (alama 2)

Mkoba uliojaa mzigo umetupwa.

……

……

(m) Tumia kitenzi'la' kutunga sentensi katika kauli ya kutendwa. (alama1)

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……

(n) Taja sifa tatu za kishazi tegemezi. (alama 3)

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(o) Eleza maana mbili za sentensi ifuatayo. (alama 2)

Askari huyu amekuja kutuliza.

……

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……

(p) Eleza matumizi ya viambishi vilivyopigwa mstari katika sentensi ifuatayo. (alama 2)

Mwizi ata**ku**ibia u**ki**acha mali yako ovyo.

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(q) Tunga sentensi kuonyesha wakati usiodhihirika. (alama 1)

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(r) Tunga sentensi ukitumia neno hadi kama:

(i) Kihusishi cha ujirani (alama 1)

……

……

(ii) Kihusishi cha wakati (alama 1)

……

……

(s) Ainisha viambishi tamati (alama 1)

Tumetosheka

……

……

(t) Tambua na ueleze aina za nomino katika sentensi ifuatayo.

Kikosi cha askari kilisafiri kwenda mpakani. (alama 2)

……

……

(u) Andika kinyume cha sentensi hii.

Mama anayemeza chakula ametia nguo mfukoni. (alama 1)

……

……

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ISIMUJAMII (alama 10)

a) Eleza maana ya usanifishaji wa lugha. (alama 2)

……

……

b) Taja umuhimu wa usanifishaji huu. (alama 2)

……

……

c) Fafanua nadharia tatu zinazoeleza kuhusu chimbuko la Kiswahili. (alama 6)

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NAME: …… INDEX NO: ……

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

KIDATO CHA NNE

KARATASI YA TATU 102/3

MUDA: $2\frac{1}{2}$masaa

Maagizo-

- Swali la kwanza ni la lazima**.**
- Chagua maswali mengine matatu kutoka kwa sehemu zililosalia.
- Usijibu maswali mawili kutoka sehemu moja.
- Majibu yote yaandikwe kwa lugha ya Kiswahili.
- Kila swali ni alama ishirini.

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SEHEMU YA A ;
SWALI LA LAZIMA-FASIHI SIMULIZI

1.
   a) Fafanua maana ya lakabu (alama 2)
   b) Sifa za lakabu ni zipi (alama 5)
   c) Kwa nini lakabu ni muhimu katika jamii? (alama 3)
   d) Jadili manufaa ya utafiti katika fasihi simulizi. (alama 10)

Hadithi fupi

Mapambazuko ya machweo na Hadithi nyingine

2. Eleza nafasi ya vijana na wazee katika hadithi ya Mapambazuko ya machweo. (alama 20)
   Nafasi ya vijana

AU

3. 'Sasa ni saa ngapi? Si wajua mtoto angali anakusubiri? Mtoto analala!'
   a) Eleza muktadha wa dondoo hili (alama 4)
   b) Bainisha mtindo katika dondoo hili (alama 3)
   c) Eleza umuhimu wa msemaji katika kuendeleza maudhui katika hadithi ya Harubu ya maisha. (alama 10)
   d) Kwa hoja tatu, eleza umuhimu wa msimulizi katika kuendeleza hadithi ya mzimu wa kipwerere (alama 3)

TAMTHILIA YA BEMBEA YA MAISHA NA TIMOTHY AREGE

4. "…haikuwa mara moja mnavyofikiria. Ilianza pale chuoni. Wenzangu walinipa mvinyo kunirai kuonja ulevi."
   a) Eleza maudhui manne yanayojidokeza katika dondoo hili. (alama 4)
   b) Eleza athari za mhusika anayerejelewa kujitosa katika suala linalooredheshwa kwenye dondoo. (alama 6)
   c) Kwa kurejelewa mifano tano katika tamthilia ya Bembea ya maisha, eleza tofauti iliopo katika maisha ya ndoa ya zamani na sasa (alama 10)

AU

5. Jadili sababu kumi zilizompeleka mwandishi T. Arege kuandika Tamthilia hii. (alama 20)

RIWAYA YA NGUU ZA JADI NA PROFESA CLARA MOMANYI

6. "Samahani… Nina shida kidogo. Ninaomba usaidizi. Sikuwa nikilipa ushuru katika biashara zangu. Sasa wanataka kuzifunga na kunipeleka kotini."
   a) Eleza muktadha wa dondoo (alama 4)
   b) Bainisha toni katika dondoo hili (alama 2)
   c) Msemaji wa maneno haya na wengine ni adui ya wananchi wa Matuo. Eleza ukweli wa kauli hili. (alama 14)

AU

7. Matumizi mabaya ya mamlaka ni tatizo sugu sana katika mataifa mengi ya Afrika yanayoendelea kiuchumi. Kwa kutolea hoja mwafaka, tetea ukweli wa kauli kwa mujibu wa riwaya ya nguu za jadi. (alama 20)

8. **Soma shairi lifuatalo kisha ujibu maswali**.

Jiulize ni kwa nini, uanzapo kuongea
Sana sana makundini, watu hukuondokea
Ndugu ujitathmini, hakika umepotea
Sisi twakuombea, mwenye damu ya kunguni!

Mwenye damu ya kunguni, nayo lugha ya ajuza
Wengi hawamtamani, maneno yake yaliza
Yeye ana walakini, dosari kuliko pweza
Kama wewe umefunza, sote hutuona duni!

Sote hutuona duni, na hilo tumezowea
Kazi zetu zote guni, yeye tu amebobea
Umewachokoza mbuni, mateke anapokea
Sisi twakuombea, upae hadi hewani!

Upae hadi hewani, ujione kama bingwa
Mewashinda gazetini, wandishi kwako wapingwa
Yeye kwetu mpinzani, metia mipaka tingwa
Twakuombea mtafiti, hesabu hadi mizani!

Hesabu hadi mizani, utunge kwa kukosoa
U hodari hesabuni, nasi tushakuzoea
We nduli kwa majirani, na waja mekutegea
Kurekebisha hujui, ywatanika peupeni!

Ywatanika peupeni, ywajisifu mjuaji
Amezidi zetu mboni, na amevijunjia mji
Twamwachia waamuzi, kesi wasome majaji
Sisi twakuombea, sirekebike kidogo!

a) Eleza ujumbe unaojitokeza katika shairi hili (alama 6)
b) Tambua miundo wa shairi hili (alama 4)
c) Tambua bahari ya shairi hili kwa kuzingatia mpangilio wa maneno. (alama 2)
d) Andika ubeti wa tatu kwa lugha nathani (alama 4)
e) Tambua aina tatu za takriri zinazojitokeza (alama 3)
f) Onyesha toni ya shairi hili (alama 1)

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MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

121/1

MATHEMATICS
FORM 4
TIME: 2 ½ HOURS

Kenya Certificate of Secondary Education 2025

INSTRUCTIONS TO CANDIDATES

1. *Write your name and admission number in the spaces provided at the top of this page.*
2. *This paper consists of two sections:* **Section I and Section II.**
3. *Answer* ***al****l questions in* **section I** and ONLY five questions in Section **II.**
4. *Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.*
5. *Marks may be given for correct working even if the answer is wrong.*
6. ***KNEC*** *Mathematical tables may be used.*

For Examiner's Use Only

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

17	18	19	20	21	22	23	24

Grand Total

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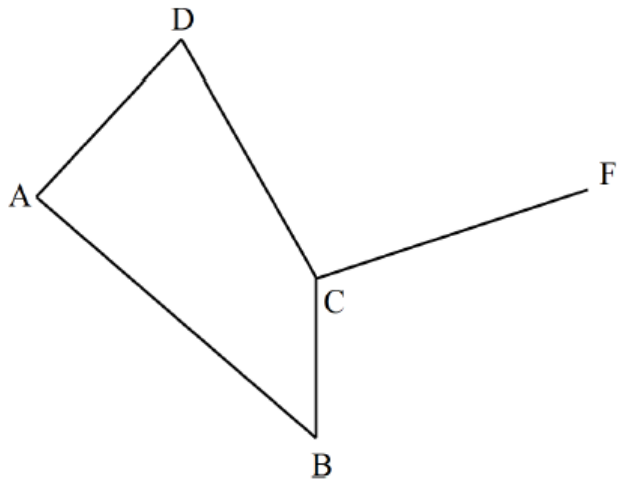
SECTION I (50 Marks)
Answer all the questions in this section

1. A man withdrew some money from a bank. He spent $\frac{3}{10}$ of the money on his daughter's school fees and $\frac{3}{5}$ of the remainder on his son's school fees. If he remained with Ksh 10 500, calculate the amount of money he spent on son's school fees. (3 marks)

2. Solve for x (3 marks)
$$9^{(x+1)} + 3^{(2x+1)} = 108$$

3. The volume of two similar solid spheres are 4752 cm^3 and 1408 cm^3. If the surface area of the smaller sphere is 352 cm^2, find the surface area of the larger sphere. (3 marks)

4. The figure below represents a sketch of the cross – section of a solid ABCDEFGH and its edge CF. Complete the sketch of the solid showing the hidden edges using dotted lines. (3 marks)



5. When a given length of a piece of wire is divided into pieces measuring 20 cm or 24 cm or 26 cm or 28 cm, a piece of wire 7cm always remained. Find the length of wire. (4 marks)

6. Solve the equation $6x^2 - 13x + 6 = 0$ using the completing the square method. (3 marks)

7. Using a ruler and a pair of compasses only, construct a trapezium ABCD in which $AB = 5\ cm$, $AD = 6\ cm, DC = 10\ cm, \angle BAD = 105°$ and AB is parallel to DC. Draw a perpendicular from B to DC hence measure the height of the trapezium. (4 marks)

8. Given that $\tilde{\boldsymbol{a}} = 2p - ¾\ q$ where $p = \begin{pmatrix} -3 \\ 4 \end{pmatrix}$ and $q = \begin{pmatrix} 16 \\ 4 \end{pmatrix}$ Find column vector $\tilde{a}$. (2 marks)

9. Two friends Ojwang and David live 40 km apart. One day Ojwang left his house at 9.00 a.m. and cycled towards David's house at an average speed of 15 km/h. David left his house at 10.30 a.m. on the same day and cycled towards Ojwang's house at an average speed of 25 km/h. Determine;
   i. The time taken before the two friends met. (3 marks)

   ii. The time they met. (1 mark)

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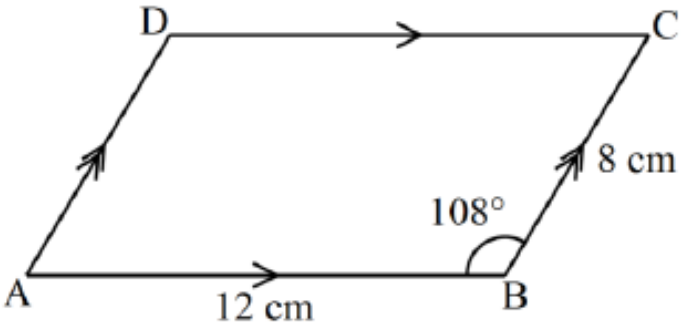
10. In the figure below, ABCD is a parallelogram in which AB = 12 cm, BC = 8 cm and angle ABC = 108°.



Calculate the area of the parallelogram correct to 3 significant figures. (3 marks)

11. Without using mathematical tables or a calculator evaluate. (3 marks)

$$\frac{\tan 30^o \ \tan \ 60^o}{\sin 60^o \cos 30^\circ}$$

12. Given that $M = \begin{pmatrix} 4 & 5 \\ 2 & 3 \end{pmatrix}$ and $N = \begin{pmatrix} -2 & 3 \\ 1 & -1 \end{pmatrix}$, find $M^{-1}N$ (3 marks)

13. Simplify completely; $\frac{(m+5n)^2+(m-5n)^2}{3m^2+75n^2}$ (3 marks)

14. Use logarithms to evaluate. (3 marks)

$$\frac{39.51 \times 614}{0.758}$$

15. Dr. June needs to import a car from Japan that costs US dollars (USD) 5 000 outside Kenya. He intends to buy the car through an agent who deals in Japanese Yen (JPY). The agent charges a 20% commission on the price of the car and a further 80 325 JPY for shipping the car to Kenya. Find the amount in Kenya shillings that Dr. June will need to send to the agent to get the car given that 1 USD = Ksh. 120 and 1USD = 135 JPY (3 marks)

16. In a right angled triangle, the two sides enclosing the right angle measure $(3x - 2)$cm and $(x + 2)$ cm. If the area of the triangle is 17.5 cm^2, find the length of these two sides.

(3 marks)

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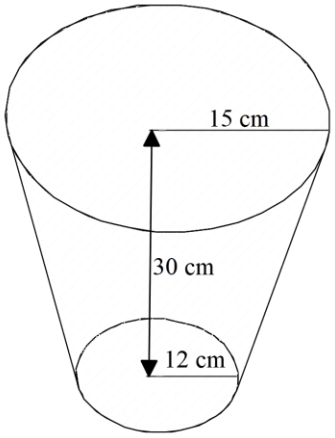
SECTION II (50 Marks)

Answer any Five questions only in this section

17. The diagram below shows a frustum which represents a bucket with an open end diameter of 30 cm and bottom diameter 24 cm.



The bucket is 30cm deep. (Use π = 3.142)

(a) Calculate the capacity of the tank in litres. (5 marks)

(b) The bucket is used to fill an empty cylindrical tank of diameter 1.4m and height 1.2m.

i. Calculate the capacity of the tank in litres. (3 marks)

ii. Determine the number of buckets that must be drawn in order to fill the tank. (2 marks)

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18. Three islands P, Q, R and S are on an ocean such that island Q is 400Km on a bearing of $030°$ from island P. Island R is 520 km and a bearing of $120°$ from island Q. A port S is sighted 750 km due South of island Q.

a) Taking a scale of 1cm to represent 100Km, give a scale drawing showing the relative positions of $P, Q, R \text{ and } S$. (4 marks)

b) Use the scale drawing to find the bearing of:

i. Island R from island P (1 mark)

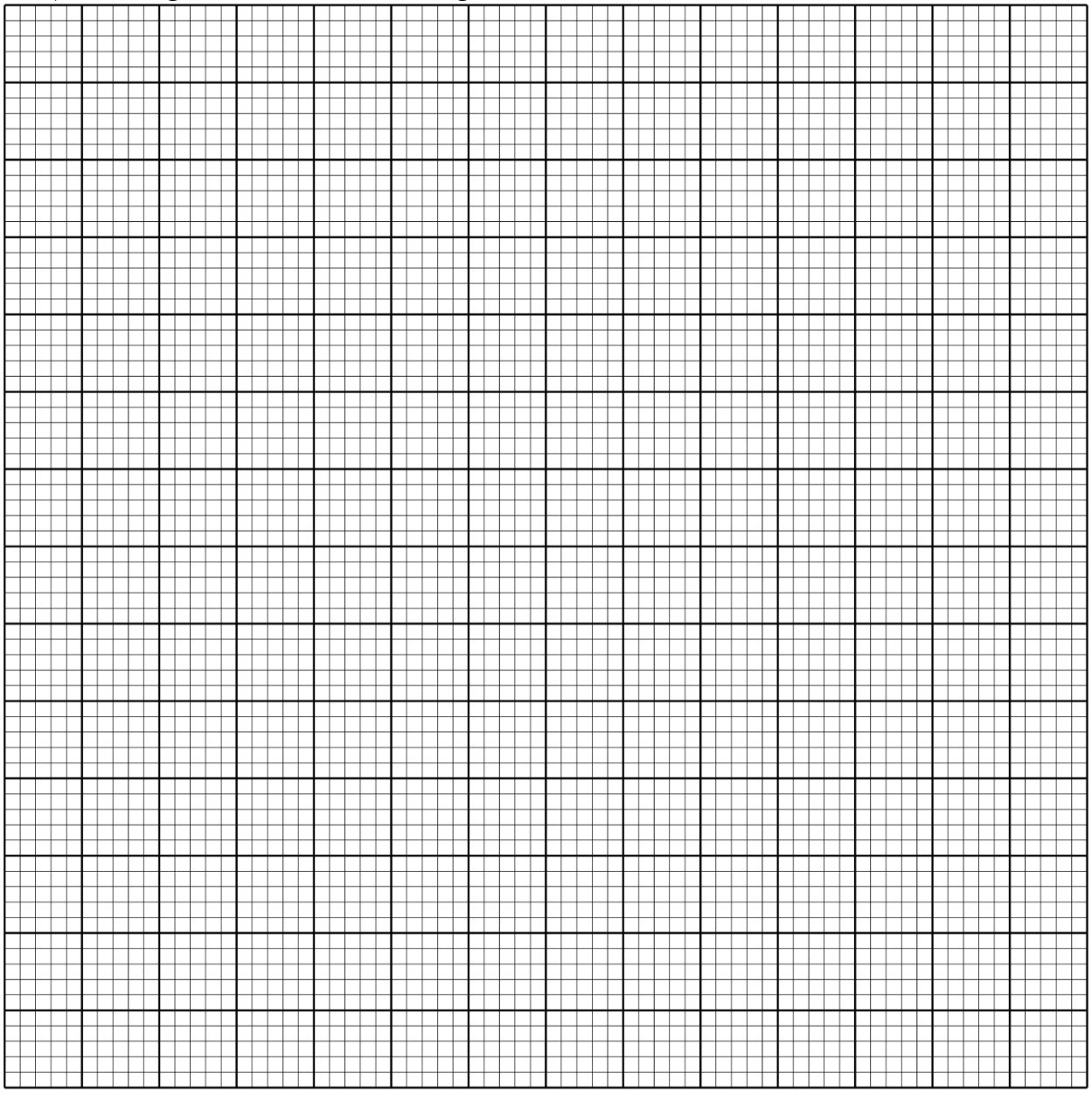
ii. Port S from island R (1 mark)

c) Find the distance between island P and R (2 marks)

d) A warship T is such that it is equidistant from the islands P, S and R. by construction locate the position of T. (2 marks)

19. The vertices of a triangle ABC are A(1,1), B(4,1) and C(6,4)

a) On the grid below, draw the triangles.



i. ABC. (1 mark)

ii. $A'B'C'$, the image of triangle ABC under a negative quarter turn about the origin. (2 marks)

iii. $A''B''C''$, the image of triangle $A'B'C'$, under reflection in the line $y = x$. (2 marks)

b) Triangle $A'''B'''C'''$, with vertices $A'''(-1,-5)$ $B'''(-4,-5) and$ $C'''(-6,-2)$, is the image of , triangle $A''B''C''$, under a transformation **T**.

i. Draw the triangle $A'''B'''C'''$, (1 mark)

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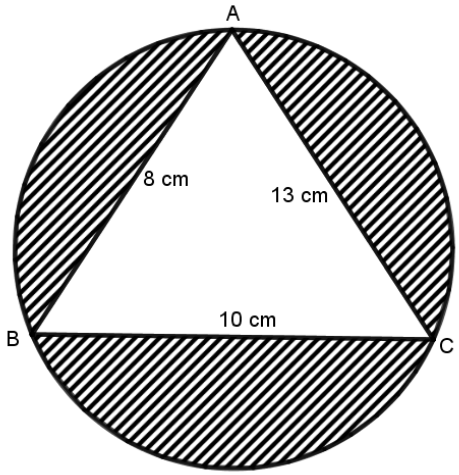
ii. Describe fully the transformation **T**. (2 marks)

c) State **any** pair of triangles which are:

i. Directly congruent. (1 mark)

ii. Oppositely congruent. (1 mark)

20. The figure below shows a triangle inside a circle. $AB = 8\ cm, BC = 10\ cm$ and $AC = 13cm$



Calculate

(a) The area of triangle ABC. (3 marks)

(b) Angle BAC (2 marks)

(c) The radius of the circle. (2 marks)

(d) Area of the shaded region. (3 marks)

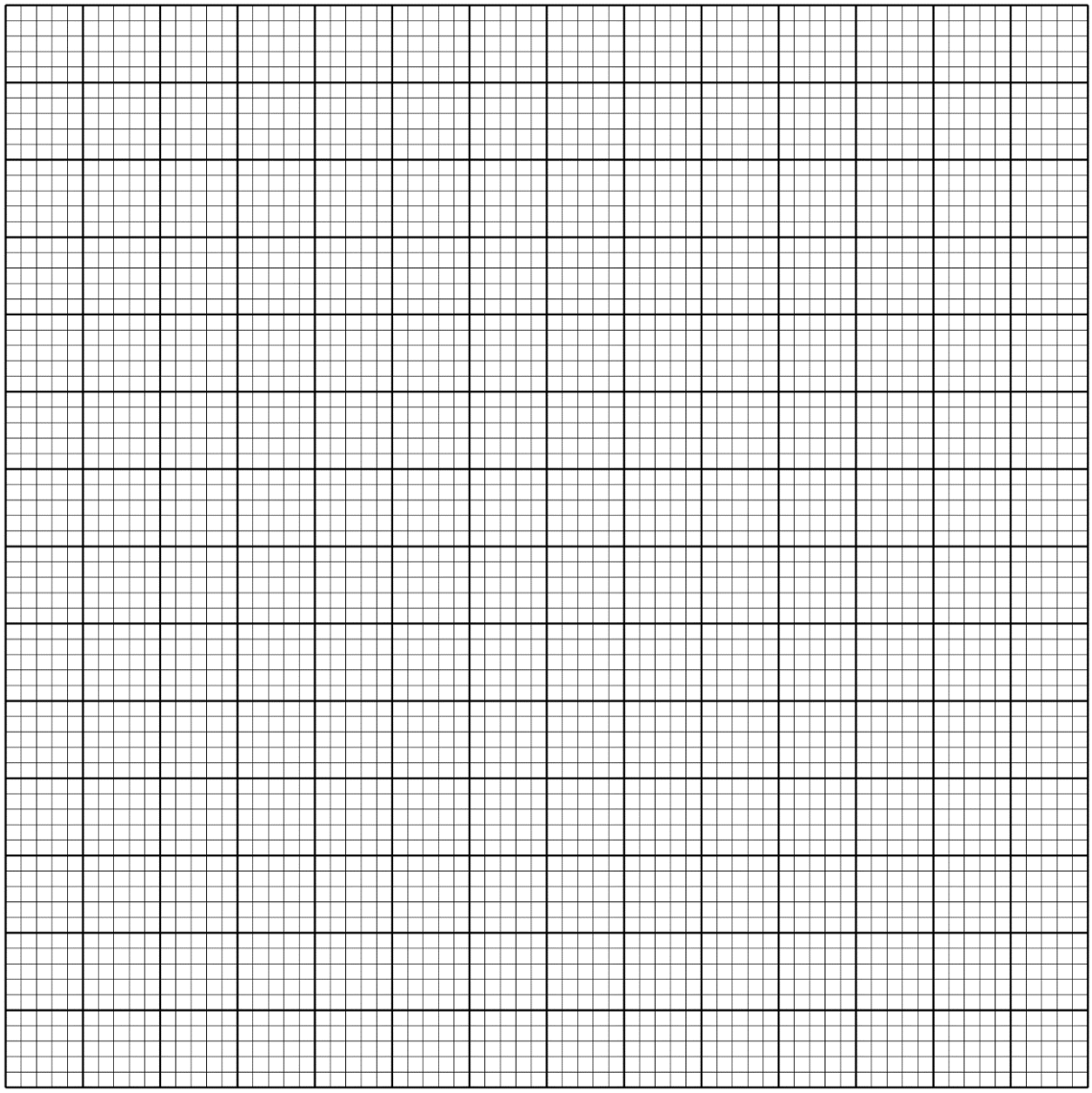
21. (a) Complete the table below for the function $y = x^3 - 5x^2 + 2x + 9$ for $-2 \leq x \leq 5$

(2 marks)

x	-2	-1	0	1	2	3	4	5
y			9					

(b) On the grid provided, draw the graph of $y = x^3 - 5x^2 + 2x + 9$ for $-2 \leq x \leq 5$

(3 marks)



(c) Use the graph in (b) above to find the roots of the following equations:

i. $x^3 - 5x^2 + 2x + 9 = 0$ (2 marks)

ii. $x^3 - 5x^2 + 6x = -5$ (3 marks)

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22. A construction company makes concrete by mixing cement, sand and ballast such that the ratio of cement to sand is 1:2 and that of sand to ballast is 3:4.

a) Determine:

i. The ratio of cement to ballast in the concrete. (2 marks)

ii. The number of bags of ballast required to make a concrete with 27 bags of sand. (2 marks)

b) The cost of a bag of cement, sand and ballast is Ksh 680, Ksh 136 and Ksh 102 respectively. Calculate the cost of one bag of concrete. (2 marks)

c) The construction company requires to transport 30 tonnes of sand to a site using a tractor. The tractor carries a maximum of 3 600 kg of sand and costs Ksh 8 000 per trip. Calculate the least amount of money required to transport the sand to the site. (4 marks)

23. A trader bought 8 cows and 12 goats for a total of Ksh 294,000. If he had bought 1 more cow and 3 more goats he would have spent Ksh 337,500

a) Form two equations to represent the above information. (2 marks)

b) Use matrix method to determine the cost of a cow and that of a goat. (4 marks)

c) The trader sold the animals he had bought making a profit of 40% per cow and 45% per goat. Calculate the total amount of money he received. (2 marks)

d) Determine his profit in Kenya shillings. (2 marks)

24. A straight line l_1 has a gradient $-\frac{1}{2}$ and passes through the point $(-1, 3)$. Another line l_2 passes through the points Q $(1, -3)$ and R $(4, 5)$ Find:

a) (i) The equation of l_1 in the form $y = mx + c$, where m and c are constants. (2 marks)

(ii) Hence find the y intercept of line l_1 (1 mark)

b) (i) The gradient of l_2 (1 mark)

(ii) The equation of l_2 in the form $ax + by = c$, where a, b and c are integral values. (2 marks)

c) The equation of a line passing through a point $(0, 5)$ and perpendicular to l_2. (3 marks)

d) Calculate the acute angle that l_3 makes with the x-axis. (1 mark)

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NAME: …… INDEX NO: ……

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

121
MATHEMATICS
FORM 4 PAPER 2
TIME: 2 ½ HOURS

Kenya Certificate of Secondary Education 2025

INSTRUCTIONS TO CANDIDATES

1. *Write your name and admission number in the spaces provided at the top of this page.*
2. *This paper consists of two sections:* **Section I and Section II.**
3. *Answer **all** questions in* **section I** and any five questions in Section **II.**
4. *Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.*
5. *Marks may be given for correct working even if the answer is wrong.*
6. ***KNEC** Mathematical tables may be used.*

For Examiner's Use Only

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

17	18	19	20	21	22	23	24

Grand Total

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SECTION I (50 Marks)

Answer all questions in this section.

1. Without using mathematical tables or a calculator, evaluate:
   $2\log 5 - \frac{1}{2}\log 16 + 2\log 40$. (3 marks)

2. a) Expand and simplify the binomial expression $(2 + x)^5$ upto the term in x^3. (2 marks)

   b) Use your expression to estimate the value of $(1.97)^5$ (2 marks)

3. Find the interest on Ksh. 200,000 for 2 years at 14% per annum compounded semi-annually. (3 marks)

4. At point A, Grace observed the top of a flag post at an angle of 30°. After walking 25 m towards the foot of the flag post, she stopped at point B where she observed it again at angle of 60°. Find the height of the flag post. (3 marks)

5. Simplify $\frac{\sqrt{5}}{\sqrt{7}-\sqrt{2}}$ (2 marks)

6. (a) Find the range of values of x which satisfies the following inequalities simultaneously (3 marks)

$$4x - 9 \leq x + 6$$
$$4 + x \geq 8 - 3x$$

(b) Represent the range of values of x in (a) above on a number line. (1 mark)

7. Make t the subject of the formula; $s = ut + \frac{1}{2}at^2$ (3 marks)

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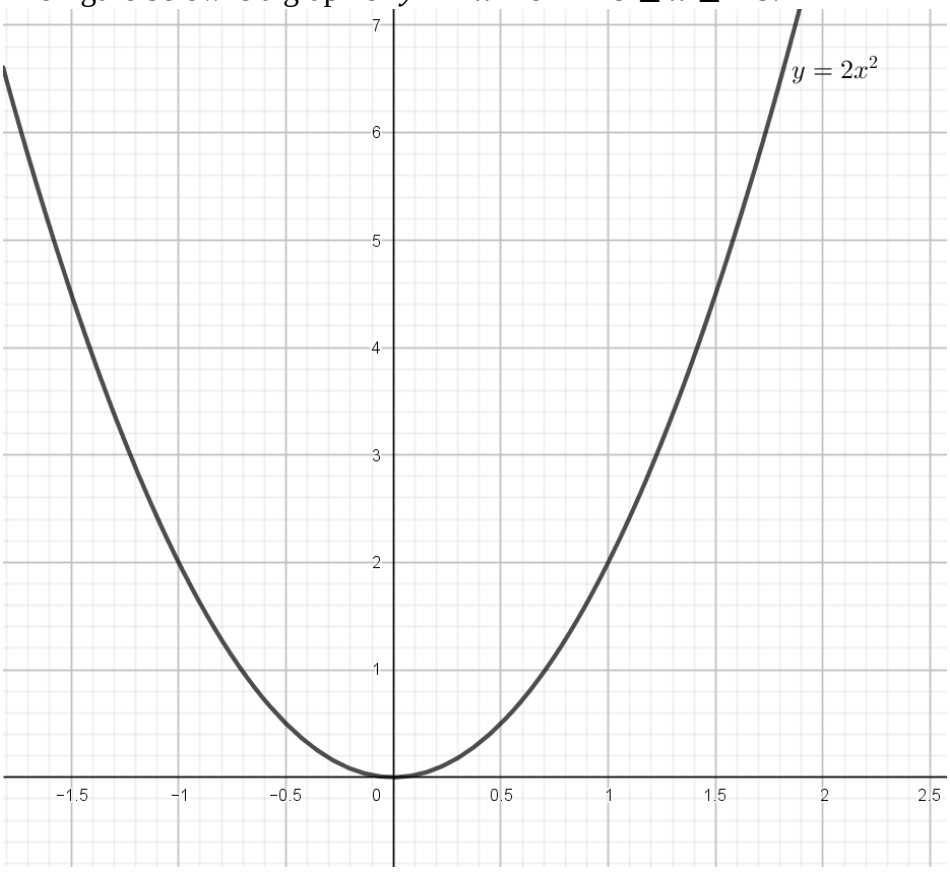
8. A trader mixes 350 kg of beans type A costing Sh. 84 per Kg with 140 kg of beans type B costing Sh. 105 per Kg. Calculate the selling price per kg of the mixture if the trader makes a profit of 25% (3 marks)

9. The figure below is a graph of $y = 2x^2$ for $-1.5 \leq x \leq 2.5$.



Use the graph to find the gradient at:

(i) $x = 1.5$ (2 marks)

(ii) $x = -0.8$ (2 marks)

10. Given the function $y = 2\cos(x + 30°)$ for $0° \leq x \leq 540°$, state:
    i. The period (1 mark)

    ii. The phase angle (1 mark)

11. Determine the interquartile range for the following set of numbers (2 marks)
    10,15,14,17,12,13

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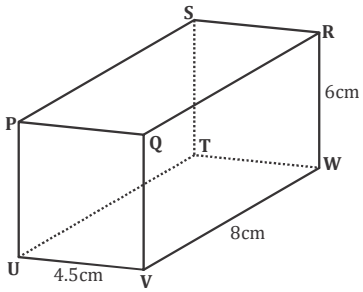
12. The diagram below represents a cuboid PQRSTUVW in which UV = 4.5cm, VW = 8cm and WR = 6cm

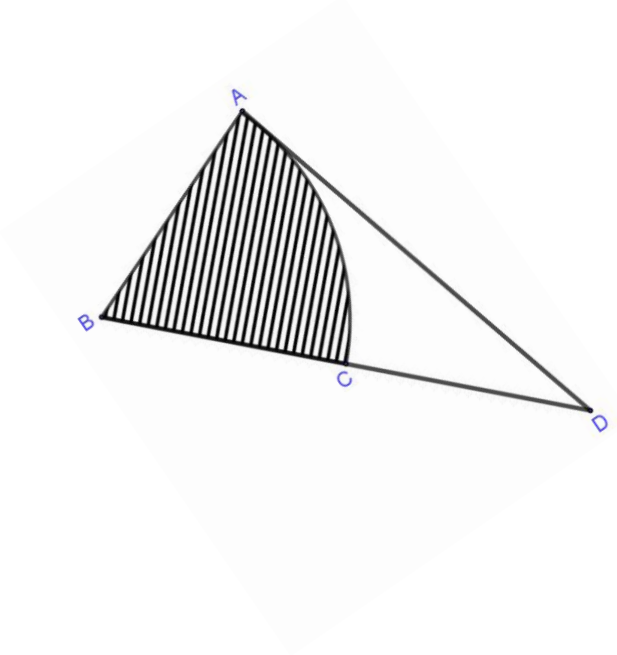


Calculate the size of the angle between the lines UR and UW (3 marks)

13. Given that $\boldsymbol{r = i + 2j - k, s = 4i - j + 2k, t = 2i + 3k}$ and O is the origin, determine the coordinates of P if $\boldsymbol{OP = r - 3s + t}$. (3 marks)

14. Bag contains 14 beads of which x are red and the remainder blue .When 4 Red beads are removed ,the probability of selecting a red bead is $\frac{2}{5}$ .Find the value of x (3 marks)

15. Calculate the area of the unshaded region given that AC is an arc of a circle centre B. Given that AB = BC = 14cm, CD = 8cm and angle $ABD = 75°$ (3 marks)



16. If $A = 2.3, B = 8.7\ and\ C = 2.2$, find the percentage error in $\frac{A+B}{C}$ (4 marks)

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SECTION B (50 Marks)

17. The mass, m, grams of a cylinder varies jointly as the square of its radius, r, and its height, h.

a) Find the percentage change in the mass if the radius is tripled and the height is halved. (3 marks)

b) Given that $m = 990g$ when $r = 3cm$ and $h = 7cm$;

i. Find the equation connecting m, r and h. (3 marks)

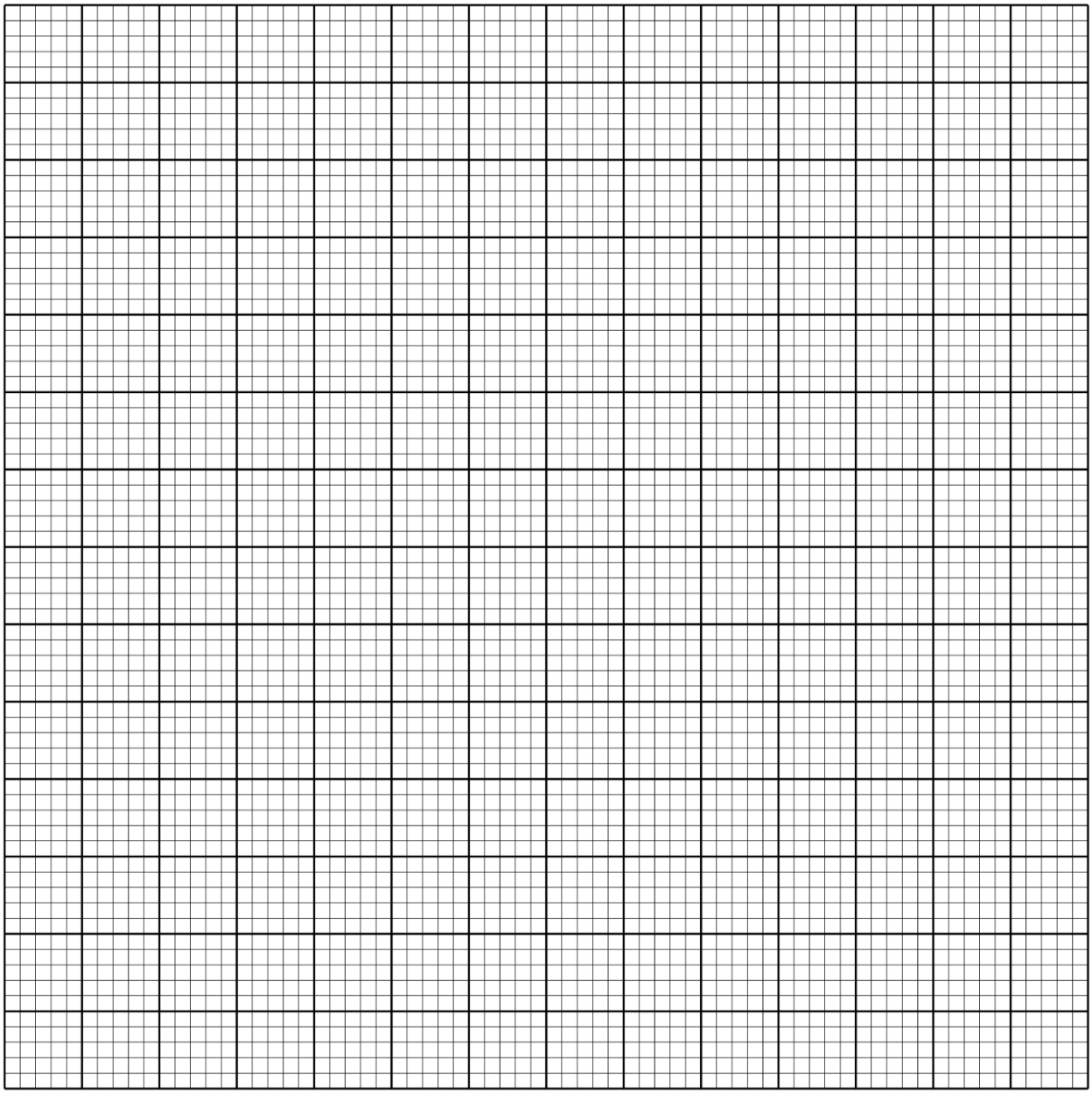
ii. Calculate the value of m when r =3.5cm and h =5cm. (2 marks)

c) Taking $\pi = \frac{22}{7}$ calculate the density of the cylinder (2 marks)

18. The table below shows the distribution of marks scored by 60 students in a test.

Marks	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90
Frequency	2	5	6	10	14	11	9	3

a) On the grid provided draw a cumulative frequency curve of the data. (3 marks)
(Take 1cm to represent 5 students on the vertical scale and 1 cm to represent 10 marks on the horizontal scale).



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b) From the curve in (a) above

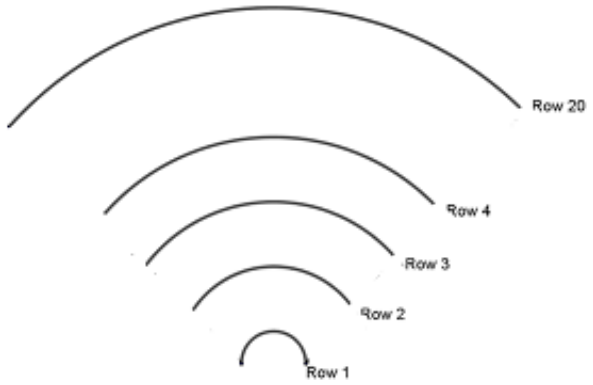
i. Estimate the median mark (1 mark)

ii. Determine the quartile deviation. (2 marks)

iii. Determine the 10^{th} and 90^{th} percentile range. (2 marks)

c) It is given that students who score over 45 marks pass the test. Use your graph in (a) above to estimate the percentage of students that pass. (2 marks)

19. Seats in the theatre area arranged in rows. The number of seats in this theatre form the terms of an arithmetic series.



The sixth row has 23 seats and the fifteenth row has 50 seats. The theatre has 20 rows in total. Find:

i. The number of seats in the first row. (4 marks)

ii. The number of seats in the eleventh row. (2 marks)

iii. The number of seats in this theatre. (4 marks)

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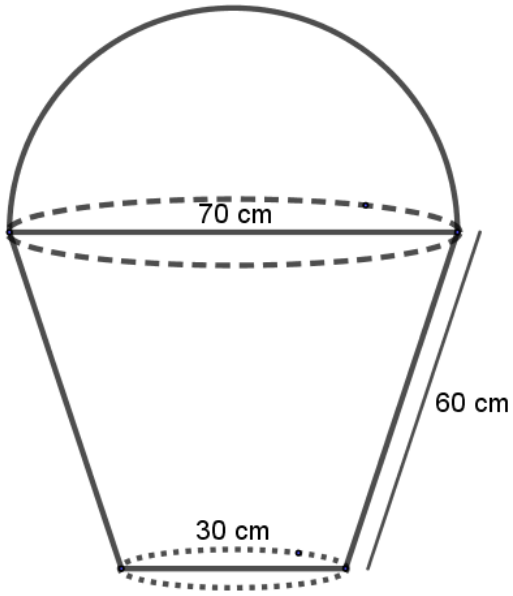
20. The figure below represent a model of a solid structure in the shape of a frustum of a cone with a hemispherical top. The diameter of the hemispherical part is 70cm and is equal to the diameter of the top of the frustum. The frustum has a base diameter of 30 cm and slant height of 60 cm (use $\pi = 3.142$)



Calculate

a) The area of the hemispherical surface. (2 marks)

b) The slant height of cone from which the frustum was cut. (2 marks)

c) The surface area of the frustum. (2 marks)

d) The area of the base (2 marks)

e) The total surface area of the model. (2 marks)

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21. The table below shows income tax rates in a certain year.

Taxable Income (Ksh per month)	Tax Rate (%)
$0 - 13\,450$	10
$13\,451 - 26\,350$	15
$26\,351 - 39\,250$	20
$39\,251 - 52\,150$	25
$52\,151\ and\ above$	30

In that year, the monthly earnings for Amilo were as follows: basic salary Ksh 35 500, House allowance Ksh 12 600 and other allowances that amount to Ksh. 5 872 were exempted from taxation. Amilo contributes 12.5% of her basic salary to a pension scheme. She is entitled to a personal tax relief of Ksh 1 845 per month. Calculate:

(a) Amilo's taxable income in Ksh per month. (2 marks)

(b) Amilo's P.A.Y.E that month. (5 marks)

(c) Amilo's net pay that month, given that the following are deducted monthly from her salary; (3 marks)
NHIF – Ksh 1000,
Union dues – Kshs 455
BBF – Ksh 200.

22. Machine K makes 45% of the biscuits. Machine J makes 30% of the biscuits. The rest of the biscuits are made by machine L. It is known that 2% of the biscuits made by machine J are broken, 3% of the biscuits made by machine K are broken and 5% of the biscuits made by machine L are broken. A biscuit is selected at random.

a. Draw a tree diagram to illustrate all the possible outcomes and associated probabilities. (2 marks)

b. Using the tree diagram, calculate the probability that the biscuit is:

i. Made by machine J and is not broken. (3 marks)

ii. Broken. (3 marks)

iii. Broken but not made by machine K. (2 marks)

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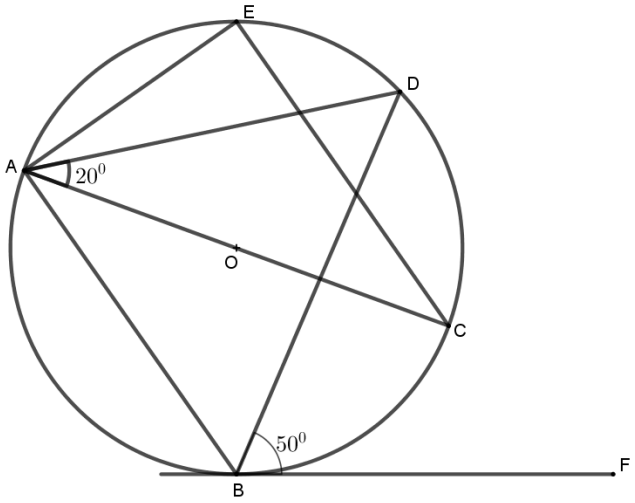
23. The diagram below shows a circle center **O.** BF is a tangent to the circle at **B.** Angle $DAC = 20^0$ and angle FBD $= 50^0$



Giving reasons in each case, find;

a) Angle AEC (2 marks)

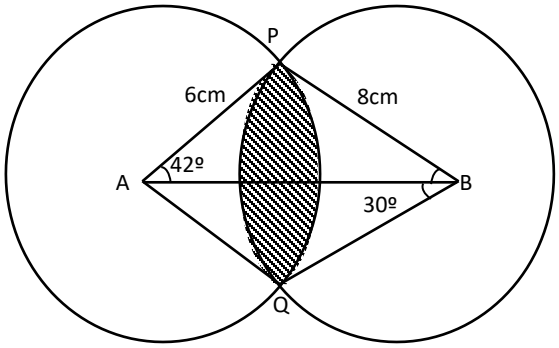
b) Angle CAB (2 marks)

c) Angle ADB (2 marks)

d) Angle BCD (2 marks)

e) Angle AOB (**reflex)** (2 marks)

24. The figure below shows two circles centres A and B and radii 6 cm and 8 cm respectively. The circles intersect at P and Q. Angle PAB = 42^0 and angle ABQ = 30^0.



(a) Find the size of angle PAQ and angle PBQ. (2 marks)

(b) Calculate, to one decimal place the area of:

i. Sector APQ and PBQ. (2 marks)

ii. Triangle APQ and PBQ. (2 marks)

iii. The shaded area (Take $\pi = \frac{22}{7}$) (4 marks)

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NAME: …… INDEX NO: ……

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

232/1

PHYSICS PAPER 1

TIME: 2HRS

PHYSICS FORM 4

INSTRUCTIONS TO CANDIDATES

i. Write your name and Adm No in the spaces provided above
ii. Answer all questions in section A and B in the spaces below each question.
iii. For numerical questions, show all your working
iv. Maths table and calculators may be used for calculation

Section	Questions	Max score	Candidate score
A	1 - 13	25	
B	14 15 16 17 18	14 11 11 11 8	
	TOTAL	80	

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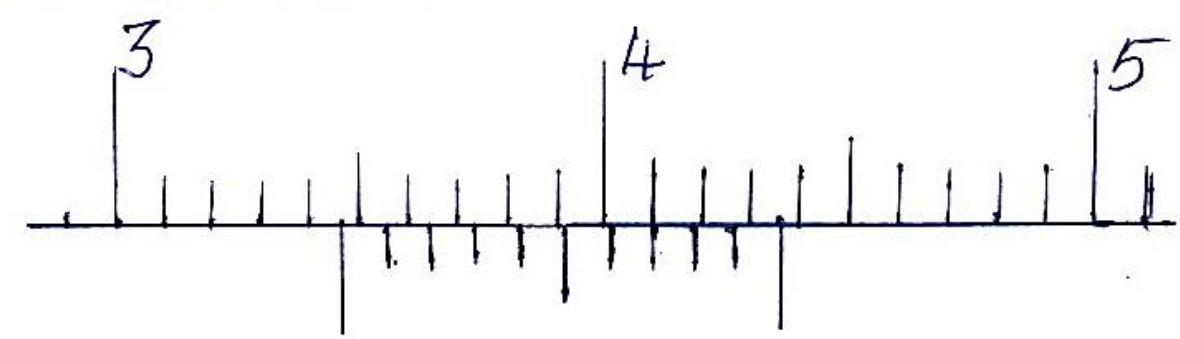
1. A salt solution of volume $30cm^3$ and density $1.1\ g/cm^3$ is mixed with $25cm^3$ of pure water of density $1g/cm^3$. determine
    a. Total mass of the mixture (1mk)

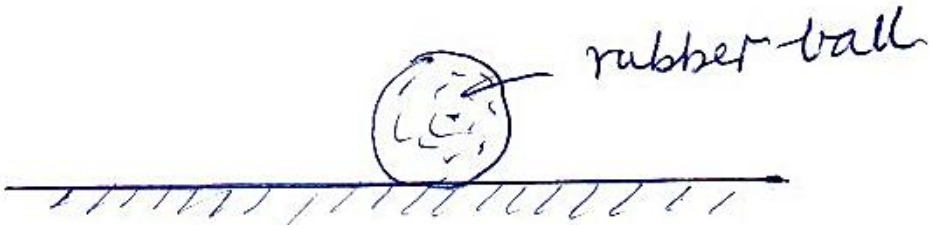
    b. Density of the mixture (2 mks)

2. The figure below shows a section of a vernier callipers to measure the thickness of a wooden block.



If the vernier calliper has zero error of. What is the actual reading of the vernier callipers (2mks)

3. State the type of equilibrium for a rubber ball placed on a horizontal table as shown below (1mks)



4. A ball is thrown vertically upwards and return to its starting point after 6 seconds. Calculate the maximum height reached ($g=10m/s^2$) (3 mks)

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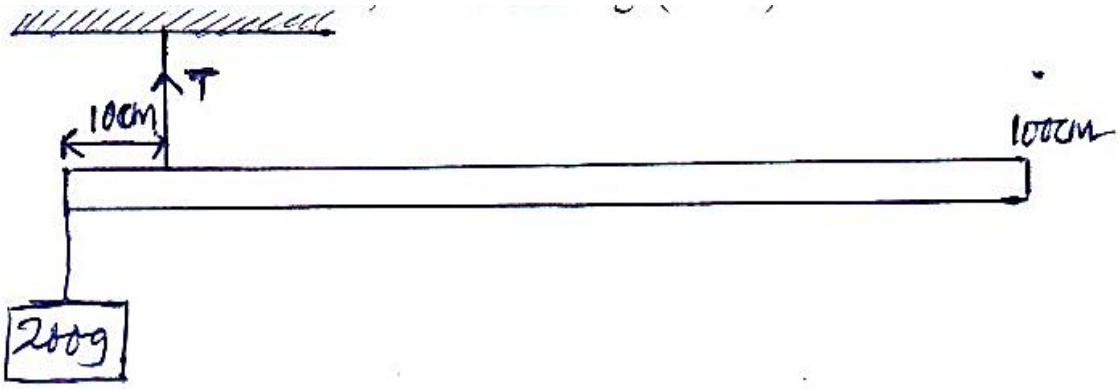
5. A piece of paper is held in front of the mouth and air is blown horizontally over the paper.it is observed that the paper get lifted up. Explain this observation (2mks)

6. The figure below shows a uniform metre rule balancing when a mass of 200g is hung at one end. Determine the tension, T in the string. (3mks)



7. A diver is 12m below the surface of water in a dam. If the density of the sea water is 1000kg/m3 determine the pressure due to the water on the diver. (g =10N/kg (2mks)

8. A crystal of potassium permanganate was carefully introduced at the bottom of water column held in a gas jar. After sometime the whole volume of water was coloured. Explain this observation (1mks)

9. Define absolute zero temperature for an ideal gas (1mk)

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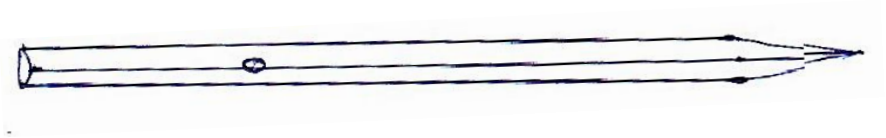
10. A substance of mass 2kg and specific heat capacity 400jkg^{-1}k^{-1} initially at 80°c is immersed in water at 19°c. If the final temp is 20°c. Calculate the mass of water specific heat capacity of water = 4200jkg-1k-1. (3mks)

11. The cover of a ball point has a small hole on the stem as shown below
Explain its function (1mk)



12. Give a reason why hot water put in a sufuria covered with a blackened aluminium foil cools faster than one covered with a shiny foil . (1mks)

13. A mass of 7.5kg has a weight of 30N on a certain planet .calculate the acceleration due to gravity on this planet (2mks)

SECTION B (55MARKS)

14. (a) Define **angular velocity** and state its SI unit (2mk)

(b) A stone of mass 500g is whirled in a vertical circle at 5 revolutions per Second. If the length of the string used is 1.5m, determine

i. The angular velocity (3mks)

ii. The maximum tension of the string (3mks)

(c) State three factors that will make the stone to remain in a state of vertical motion (3mks)

(d) A glass block of mass 300g is placed on a frictionless rotating table while fixed 10cm from the centre of the table by a light thread. The string can withstand a maximum tension of 6.6N. Determine the maximum velocity that the table can attain before the string cuts. (3mks)

15. (a) State hooke's law (1mk)

(b) A form 4 student did an experiment on hooke's law and from his data drew the following graph.

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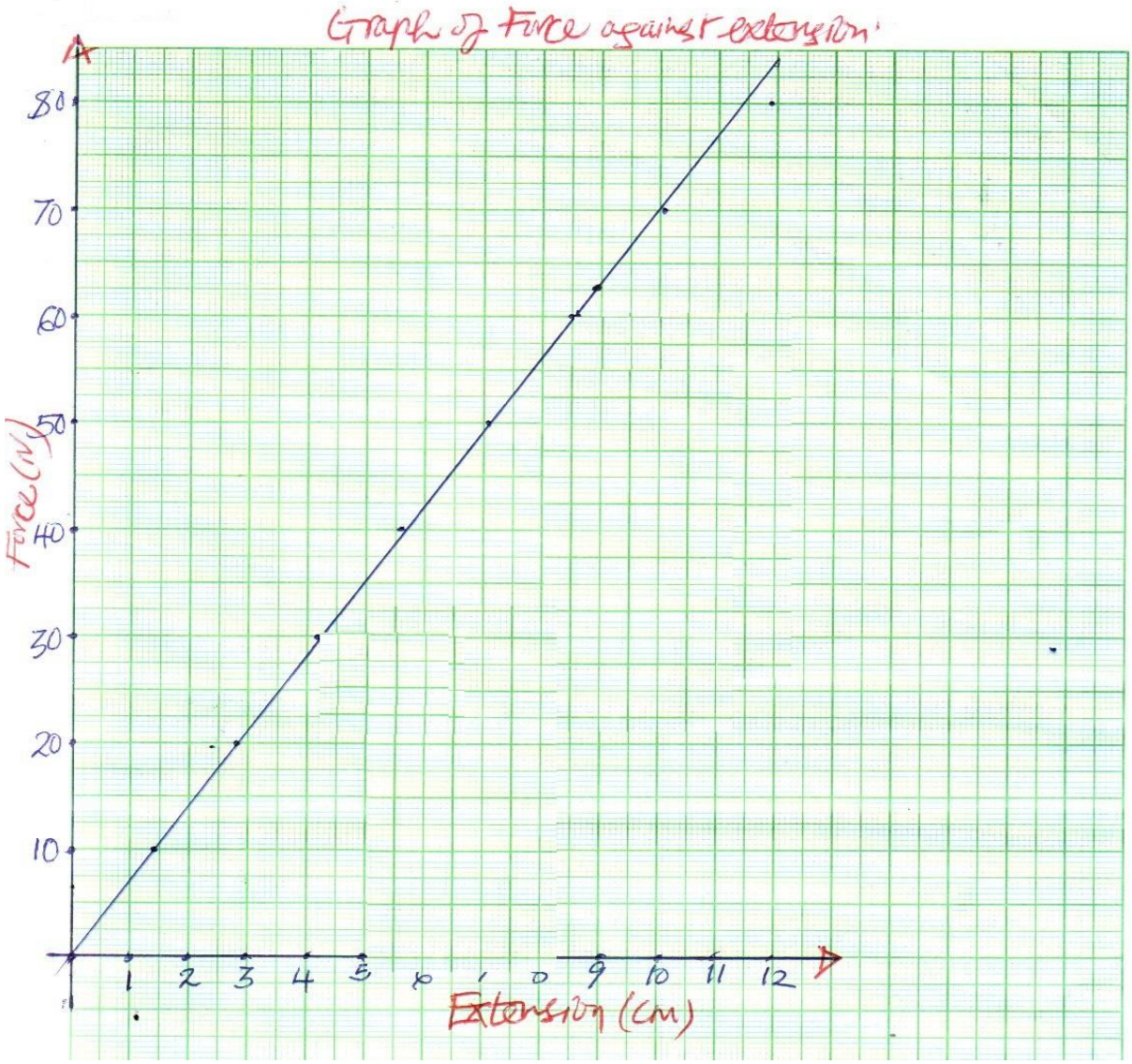

From the graph,

i) Determine the spring constant (2mks)

(ii) Work done in producing an extension, e of 8cm. (2mks)

c) State the factors which affect the spring constant calculated in b (i) above (2mks)

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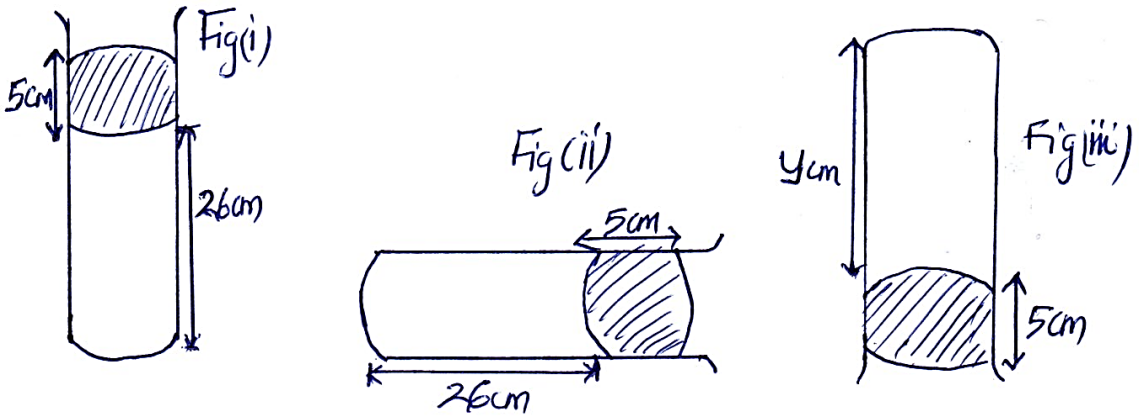
d) A column of air 26cm is trapped by mercury thread 5cm long as shown in the diagram below.



e) When the tube is laid horizontally as in figure (ii) the air column is now x cm long. When inverted as shown in figure (iii), the length of the column is y cm.
Find

(i) The values of x (2mks)

(ii) The values of y (2mks)
(Take atmospheric pressure to be 70cmHg)

16. (a) State newtons third law of motion. (1mk)

(b) A car of mass 900kg is initially moving at 20m/s, calculate

i) Acceleration of the car (2mks)

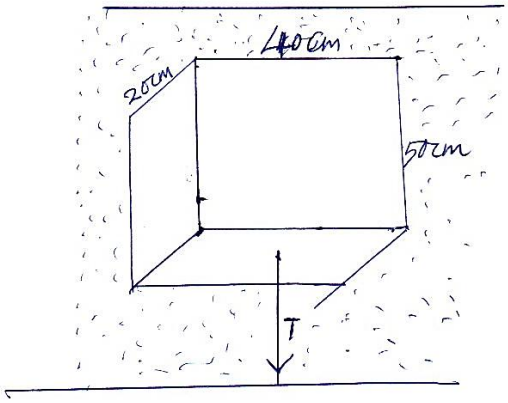
(ii) The force required to bring the car to rest over a distance of 15M. (2mks)

(c) Two trolleys of masses 2.0 kg and 1.5kg travelling towards each other at 0.20m/s and 0.35m/s respectively combine head on. The trolleys combine on collision. Calculate the velocity of the combined trolleys. (3mks)

(d.)A stone is projected vertically upwards with a velocity of 30m/s from the ground. Determine the maximum height reached (3mks)

17. (a) State the law of floatation (1mk)

(b)The diagram below shows a wooden block of dimensions 50cm by 40cm by 20cm held in a position by a string attached to the bottom of a swimming pool.(density of block is 600kg/m^3, density of water = 1000kg/m^3)



The three forces acting on the block are tension (T) in the string, the weight (W) of the block and the up thrust (U) due to water.

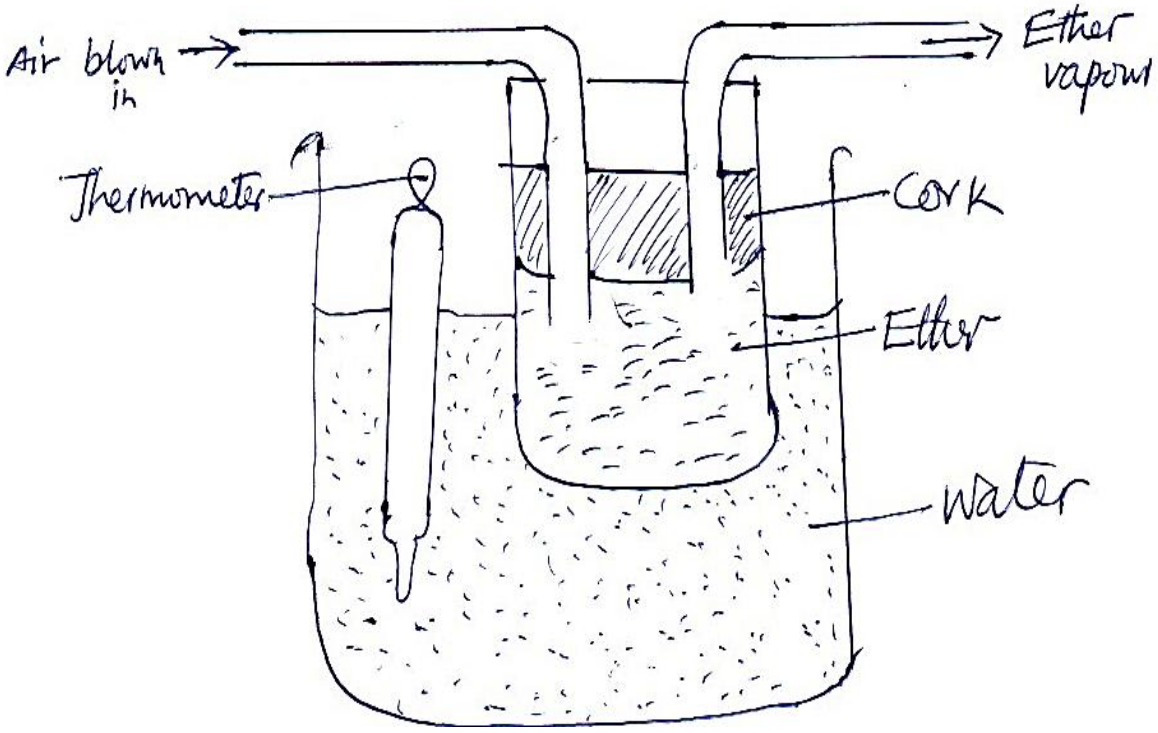
i. Write an equation relating T, W and U when the block is at stationery position. (1mk)

ii. What is the weight of the block (3mks)

iii. What is the weight of the water displaced by the block (2mks)

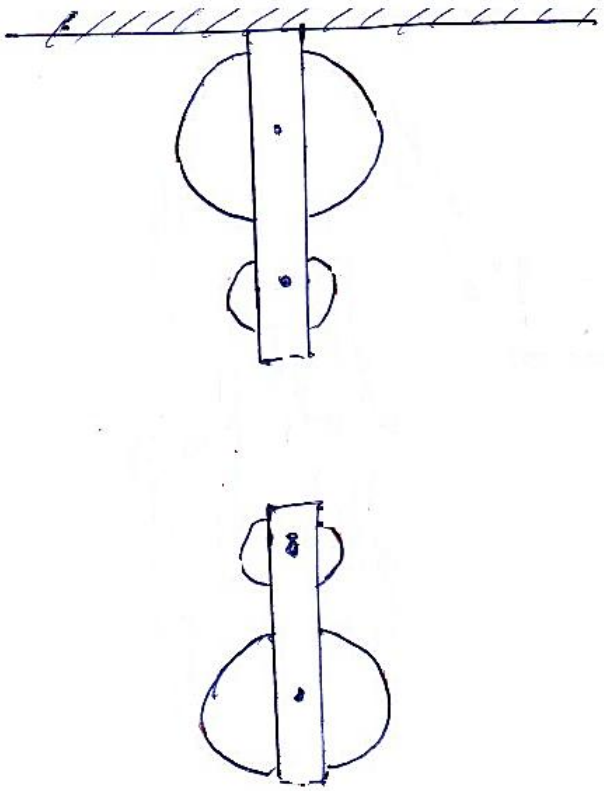
iv. Determine the tension (T) on the string. (2 mks)

(c) Some ether is put in a combustion tube and two glass tubes inserted into the tube through a cork as shown in the figure below. The combustion tube is then put into a smaller beaker containing some water and a thermometer dipped in the water.



When air is blown into the ether, the reading in the thermometer lowers. Explain this observation (2mks)

18. (a) Complete the diagram below to show how the pulleys can be used to raise a load, L by applying an effort ,E (2mks)



(b) The pulley system above has a mechanical advantage of 3. Determine

i. The velocity ratio of the system (2mks)

ii. The efficiency of the system (2mks)

iii. The effort when a load of 60N is raised (2mks)

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NAME: …… INDEX NO: ……

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

Kenya Certificate of Secondary Education
Physics Paper 2
2 Hours
INSTRUCTIONS TO CANDIDATES:

1. Write your name, school, admission number and index number is the spaces provided above.
2. Sign and write the date of examination in the spaces above.
3. Answer **ALL** the questions in section **A** and **B** in the spaces provided.
4. All working **MUST** be clearly shown.
5. Non-programmable silent electronic calculators and KNEC mathematical tables may be used.
6. This paper consists of **12** pages.
7. Candidates should check the question paper to ascertain that **ALL** the pages are printed and that no questions are missing.

FOR EXAMINER'S USE ONLY.

SECTION	QUESTIONS	MAX. SCORE	CANDIDATE'S SCORE
A	1 -11	25	
B	12	8	
	13	11	
	14	13	
	15	12	
	16	11	
	TOTAL	80	

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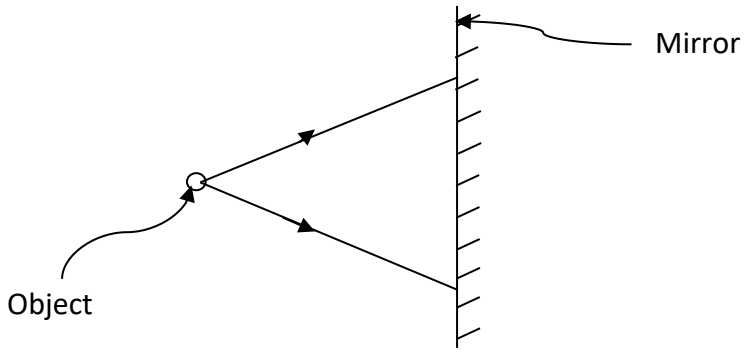
SECTION A (25MARKS)

1. The figure below shows two rays drawn from an object on to the mirror.



Complete the ray diagram to show the position of the image. (2 marks)

2. A small chain is often seen hanging at the back of a petrol carrying lorry. State and explain its significance. (2marks)

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3. (a) Define diffraction with respect to waves. (1 mark)

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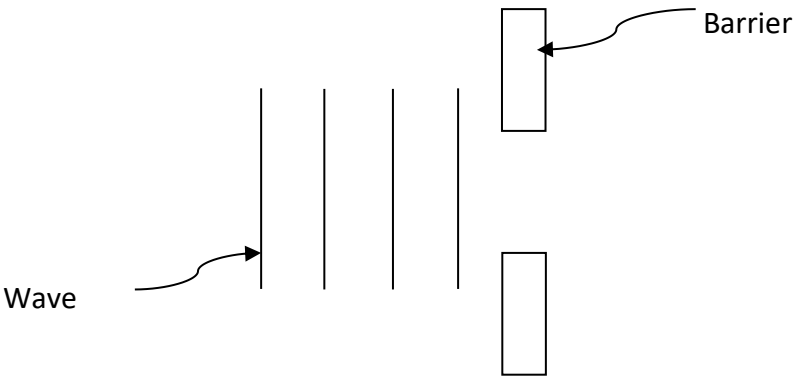
(b) The diagram below show consecutive wave fronts. If the waves are moving towards the barrier, draw the wave fronts as they appear after passing through the aperture. (2 marks)



4. State what determines the carrying capacity of an accumulator. (1mark)

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5. Sketch a displacement time graph of a wave of frequency 4HZ and amplititude 3.0cm over a time interval of 1.5 seconds (3mks)

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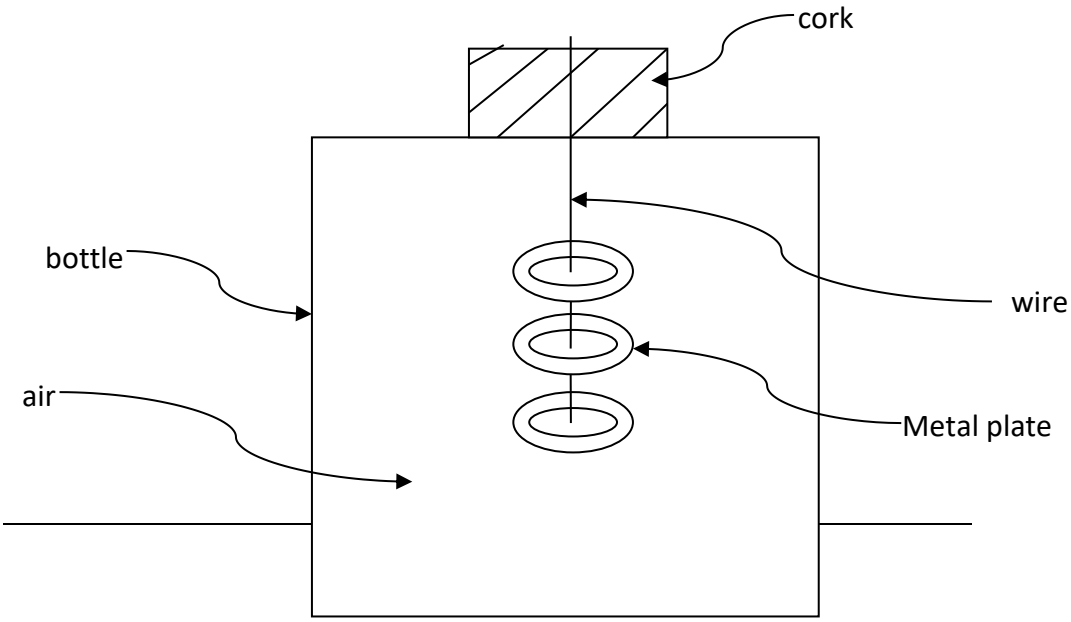
6. The figure below shows a set up used to study sound waves.



It is observed that when the bottle is shaken sound from the metal plates is heard. State and explain the observation that would be made if a little hot water is poured into the bottle and after sometime the cork is tightly replaced and the bottle shaken. (2 marks)

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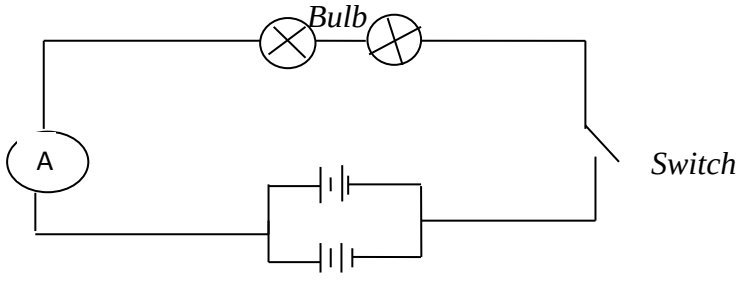
7. The figure below shows a circuit diagram with cells in parallel. Each cell has e.m.f of 1.5V and internal resistance of 0.5Ω and the resistance of the bulb is 6Ω each. Determine the ammeter reading when the switch is closed. (3marks)



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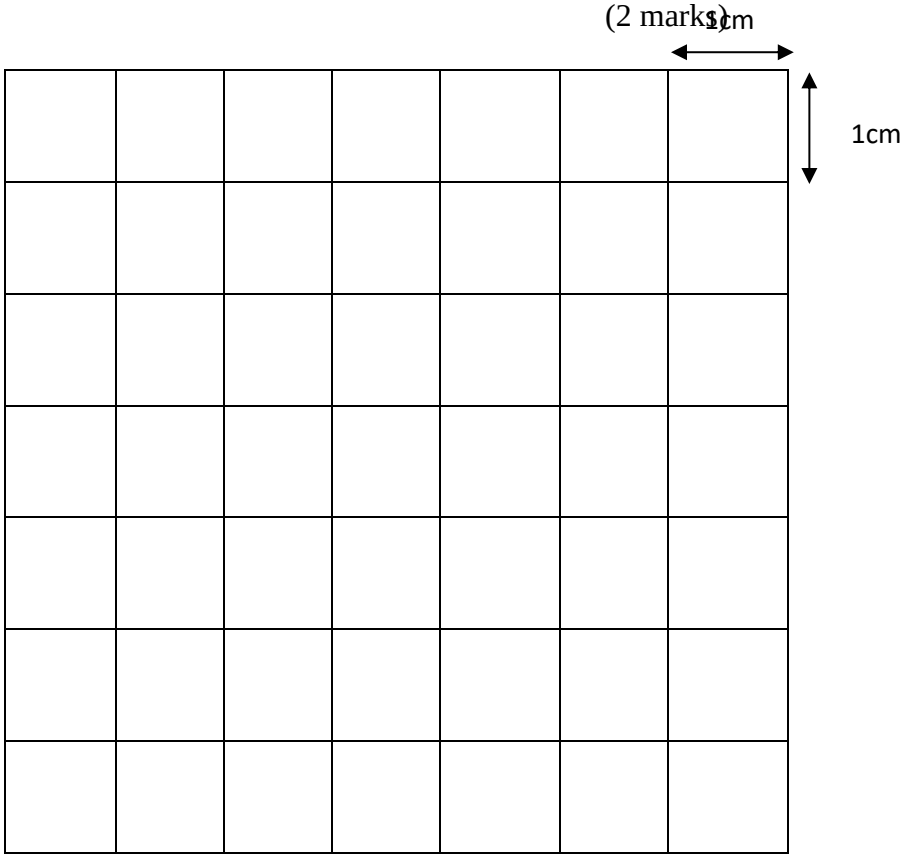
8. An alternating voltage of peak value 15v and frequency 25Hz is applied to the terminals of a Cathode ray oscilloscope. The Y-gain is set at 5 v/cm and the time base at 10 ms/cm. Draw the trace observed on the screen. (2 marks)



9. Name all the radiations of the electromagnetic spectrum which have higher wavelengths than the visible light in their increasing wavelengths. (1 mark)

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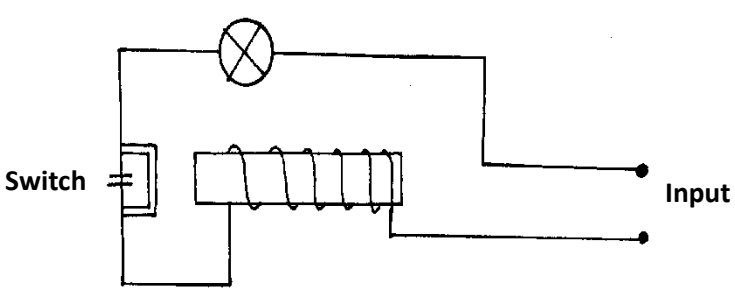
10. The figure below shows a diagram of circuit breaker .



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Explain how it operates (3mks)

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11. A resistance wire is 2 m long and has a cross-sectional area of 0.50 mm^2. If its resistance is 2.6Ω, calculate its resistivity. (3 marks)

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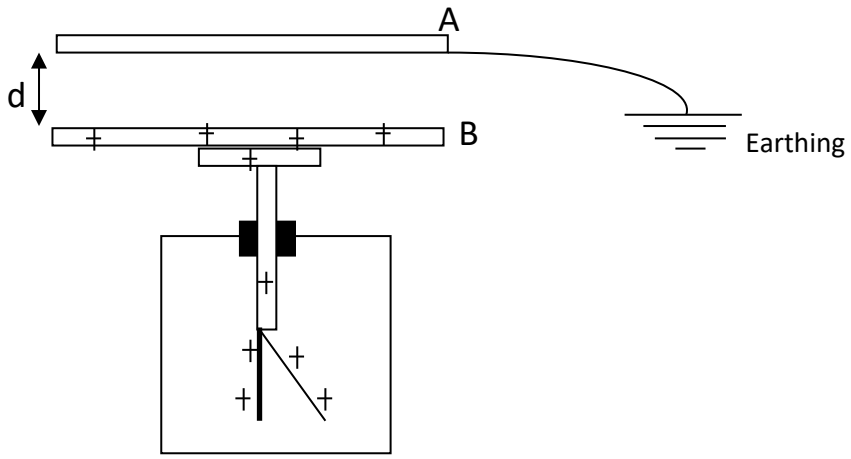
SECTION II (55MARKS)

12. (a) The figure below shows a charged electroscope and two aluminum plates A and B arranged as shown



State and explain the observations made on the leaf divergence when plate A is moved closer to B. (2 marks)

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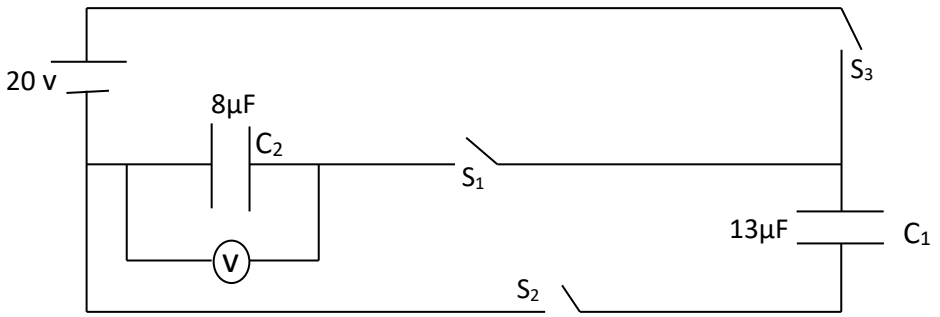
(b) The figure below shows a circuit having the following components: a 20V p.d. source, a voltmeter, three switches S_1, S_2 and S_3 and two capacitors C_1 and C_2 of capacitances 13µF and 8µF respectively.



(i) Determine the charge on C_1 when switches s_2 and s_3 are closed while s_1 is open (2 marks)

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(ii) After some time s_3 is opened and both s_1 and s_2 are closed. Find the maximum voltage,V, recorded by the voltmeter. (2 marks)

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(iii) Using the values obtained in (ii) above, calculate the energy stored in c_2. (2 marks)

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13. (a)Define refractive index. (1mk)

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(b) The critical angle of a certain material medium is 43.2º. Determine the refractive index of the material. (2mks)

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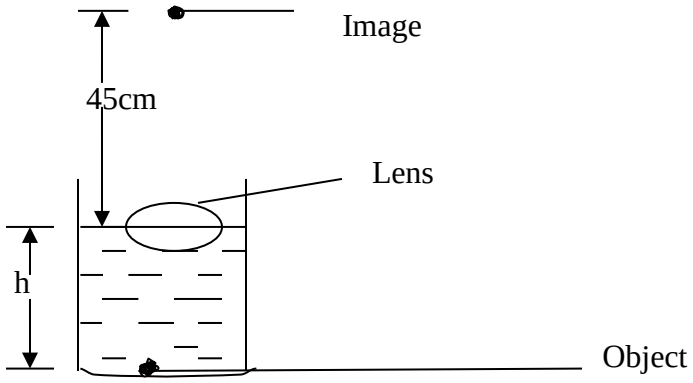
c) A small bright object O lies at the bottom of a beaker containing water of depth h cm. A convex lens of focal length 15cm is held at the surface of water. The lens forms an image of O at 45cm from the surface of water.



Taking the refractive index of water to be 4/3, determine:

(i) the apparent depth of the object. (2mks)

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(ii) the real depth h, of the object (2mks)

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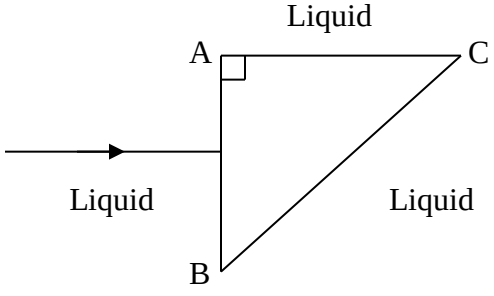
(d). A ray of light is incident at right angles to the face AB, of a right angled isosceles prism of Refractive index 1.6 as shown in the figure below.



If the prism is surrounded by a liquid of refractive index 1.40, determine:

(i) The angle of incidence on the face BC. (1mk)

.....

(ii) The angle of refraction on the face BC. (3mks)

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14. (a) (i) What do you understand by the term accommodation? (1mk)

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(ii) An object is placed 40cm in front of a concave lens of focal length 20cm; determine the position of the image. (3mks)

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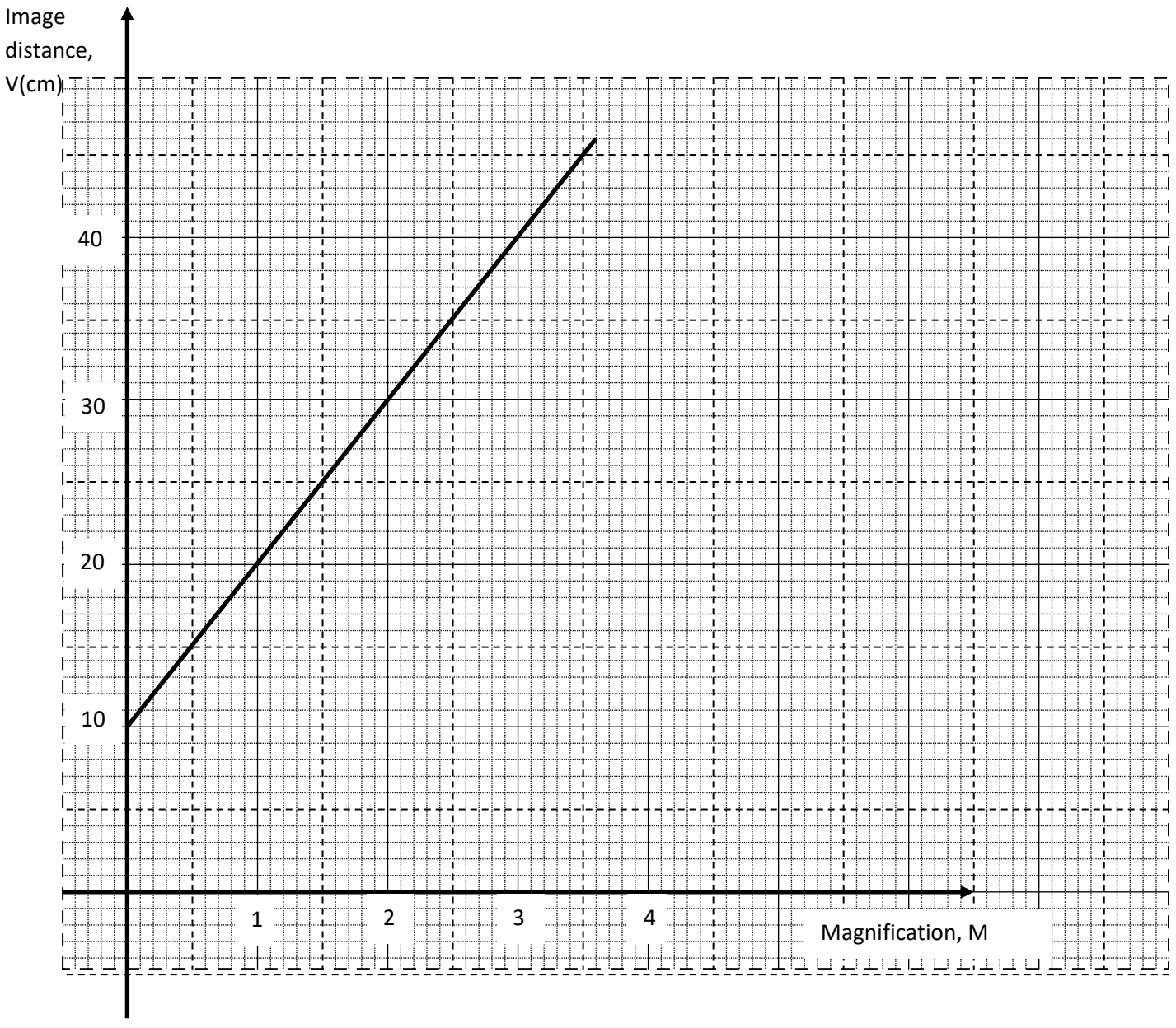
(b) The following graph shows the variation of image distance, v, with magnification, m, for a converging lens.



Using the graph and the equation $\frac{V}{f} = M + 1$ to determine:

(i) The object position when the image position is 45cm. (3marks)

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(ii) The focal length of the lens. (1 mark)

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(iii) The power of the lens. (2 marks)

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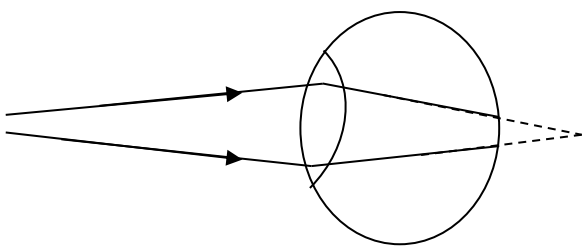
(c) The following figure below shows an eye defect



Name the defect and show on the same diagram how the defect could be corrected.

(3 marks)

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15. a) What do you understand by the term mutual induction? (1 mark).

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b) State **two** factors that determine magnitude of e.m.f induced in a coil. (2 marks).

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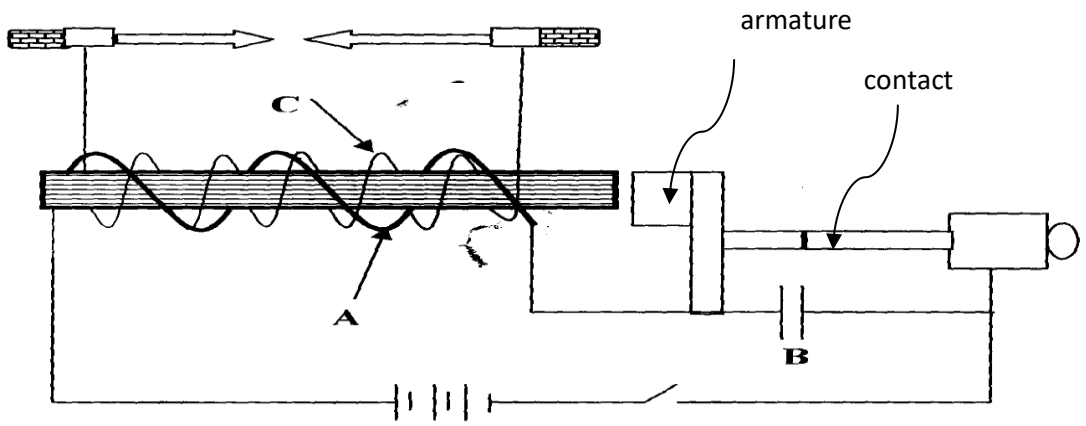
c) The diagram below shows an induction coil used to produce sparks.



(i) Name parts labeled A and B. (2marks)

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(ii) Briefly explain how the induction coil works. (3 marks)

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b) A transformer has 800 turns in the primary and 40 turns in the secondary winding. The alternating e.m.f connected to the primary is 240V and the current is 0.5A.

(i) Determine

I the secondary e.m.f (2marks)

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II the power in the secondary if the transformer is 95% efficient. (2mks)

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16. a) The mains electricity is transmitted at high voltages. State two dangers of this high voltage transmission. (2marks)

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b) What is a fuse? (1mark)

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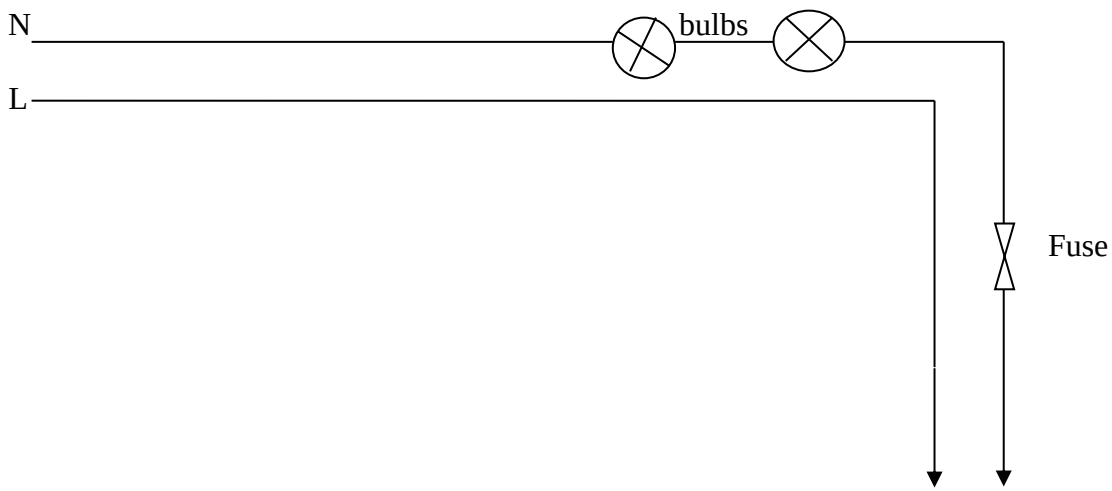
c) The figure shows a section of a domestic wiring.



i) Identify two serious mistakes in the circuit. (2marks)

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ii) Explain why the circuits in domestic wiring should be connected in parallel with the main supply. (1mark)

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iii) Mrs. Sitima has two 2.5KW electric heater, 2.0KW electric stove, two 60W electric bulbs, 500W electric fan and 1.0Kw electric pressing box. Her power supply is 240V and main fuse 30A.

I) Can she connect all the appliances to her power supply at the same time?(2marks)

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II) If the cost of electricity is Ksh.6.50 per unit, calculate the cost of using electric stove and electric pressing box for 3 hours a day in the month of June. (3marks)

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THIS THE LAST PRINTED PAGE

NAME: …… INDEX NO: ……

DATE : ……..CANDIDATE'S SIGNATURE:……

MANGU HIGH SCHOOL TRIAL 4 MOCK 2025

232/3

PHYSICS

(PRACTICAL)

FORM 4

TIME 2 ½ Hours

INSTRUCTIONS TO CANDIDATES

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

(b) write the date of examination in the spaces provided above.

(c) Answer ALL the questions in the spaces provided in the question paper.

(d) You are supposed to spend the first 15 minutes of the 2½ hours allowed for this paper reading the whole paper carefully before commencing your work.

(e) Marks are given for a clear record of the observations actually made, their suitability, accuracy and the use made of them.

(f) Candidates are advised to record their observations as soon as they are made.

(g) Non-programmable silent electronic calculators may be used.

(h) This paper consists of 7 printed pages.

(i) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

(j) Candidates should answer the questions in English.

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QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	20	
2	20	
TOTAL	40	

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QUESTION ONE

PART A

You are provided with the following

- Metre rule
- Knife edge
- 10 microscope slides
- A 50g mass
- A piece of cellotape
- A pair of vernier calipers

Proceed as follows

(a) Using the vernier calipers provided measure the length L and the width, W of the microscope slide

L=_____ (1mk)

W=_____ (1mk)

(b) Stack ten (10) slides together using a cello tape as shown below fig 1.

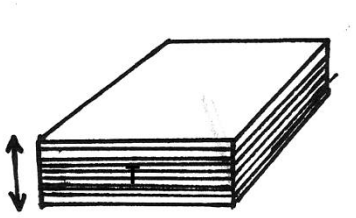


Figure 1

(i) Measure the thickness T of the stack of microscope slides. (1mk)

T=_____

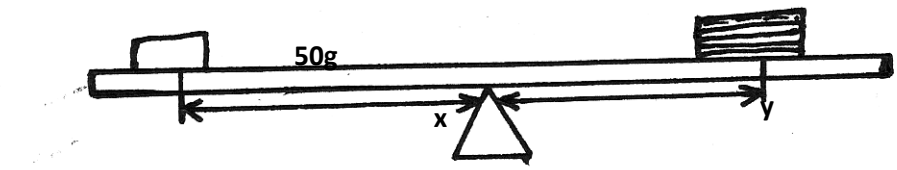
(ii) Determine the volume v of the stack (2mk)

V=(LWT)

=_____

(c) Balance the metre rule at its centre of gravity and maintain the position of the fulcrum on the centre of gravity throughout the experiment

Place the 50g mass and the stack of slides as shown in figure 4 below



Adjust the position of both the50g mass and stacked slides until the rule is again balanced making the distances x and y as large as possible

(i) x=_____ (1mk)

y=_____ (1mk)

(ii) Calculate the mass '*m*' in grams of the stacked slides given that (2mk)

$$m = 50\frac{x}{y}$$

(iii) Determine the density of glass given that $density = \frac{m}{v}$ (2mk)

PART B

You are provided with the following apparatus:

- Resistance wire fitted on a millimeter scale labeled MN
- Switch
- Voltmeter
- Ammeter
- Two dry cells in a cell holder
- Six connecting wires

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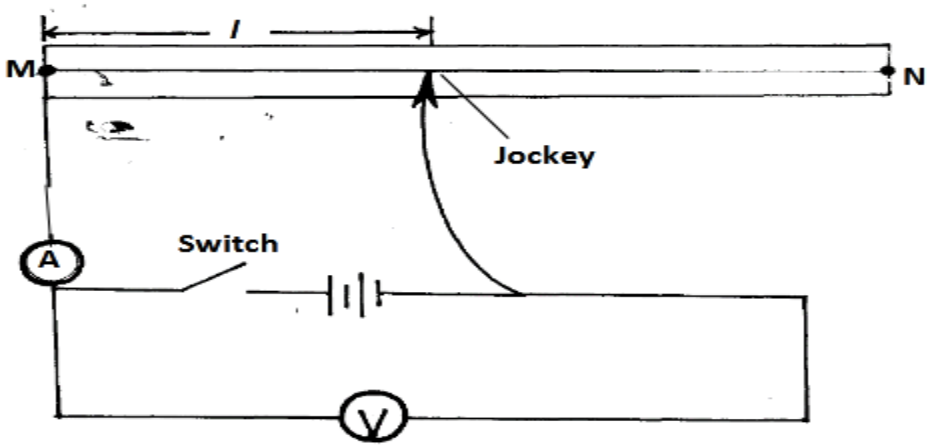
- Micrometer screw gauge

Proceed as follows;

i. Set –up the apparatus as shown in the Figure 3 below;



ii. Remove the crocodile clip from the resistance wire MN and close the switch. Record the voltmeter reading V0.

V0 = ... (1mark)

iii. Attach the Jockey to the resistance wire such that l = 50cm

iv. Record the voltmeter and ammeter readings as V1 and Z respectively

V1 =..... (1mark)

Z =..... (1mark)

v. Determine the value of X given that (1mark)

$$X = \frac{V1}{Z}$$

vi. Use the equation below to determine the value of k , where m = 2.549Ω (2marks)

$$\frac{V_1}{V_0 - V_1} = \frac{mX}{5} + k$$

vii. Measure the diameter d of the of the wire on the millimeter scale using the micrometer screw gauge

d = ...mm =.....m (1mark)

viii. Determine the resistivity ρ of the wire used in this experiment given that (2marks)

$$X = \frac{\rho l}{A}$$

Question two

You are provided with the following;

-A retort stand, boss and clamp.

-Test tube

-Piece of duplicating paper

-A thermometer

-A large beaker containing some water

-A tripod stand and wire gauze

-A cardboard with a hole in the middle

-A burner

-A rubber band

-A stop band

-A stop watch

Proceed as follows;

a) Set up the apparatus as shown in figure 4 below.

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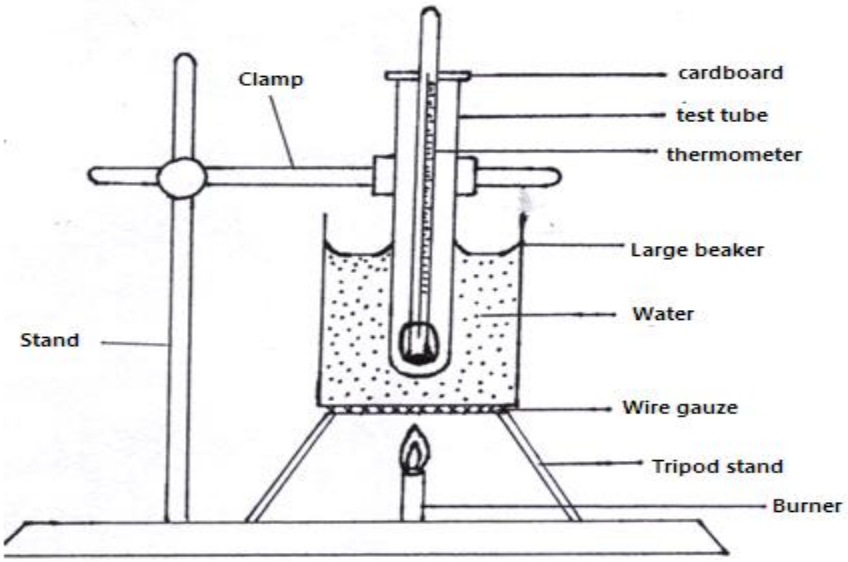

b) Heat the water in the beaker provided and leave it to boil

c) Wrap the given piece of duplicating paper round the bulb of the thermometer. Use rubber band to hold the paper in place.

d) Place the thermometer inside in the dry test tube.

e) Place the test tube in the water as shown in the diagram above. Make sure that the water does not enter the test tube. Leave the test tube in the boiling water until the thermometer indicates a steady temperature.

f) Remove the thermometer and immediately start the stop watch.

While holding the thermometer in air record the readings of the thermometer T_1 at intervals of 30seconds for 10 minutes. (10mrks)

Time in minutes	0	0.5	1.0	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
T_1 (^{0}c)											
T_2(^{0}c)											

Time in Minutes	6.0	6.5	7.0	8.0	8.5	9.0	9.5	10.0
T_1 (^{o}C)								
T_2 (^{o}C)								

g) Place the wrapped thermometer directly into boiling water. Leave the thermometer in the boiling water until it indicates a steady temperature.

h) Repeat procedure (f) and (g) and record the reading T_2 of the thermometer in the table at half minute intervals for 5minutes.

i) Using the same axes on the grid provided, plot a graph of temperature (y-axis) against time for result obtained in (g) and (i) (label the graph T_1 and T_2) (8mrks)

(**graph paper provided)**

j) From the graphs determine;

i. For each graph the time for temperature to fall from 60^0C to 40^0C. (1mrk)

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ii. Find the ratio of the two times in k (i) above (1mrk)

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