KCSE 2023 SMARTGRADE MOCK

ALL SUBJECTS

A Joint Evaluation Examination Test for our KCSE 2023 Candidates. Special Project by a Team of Veteran Experienced Examiners within the National Group of Mwalimu Consultancy Ltd.

SUBJECTS COMPILED;

Mathematics, English, Kiswahili, Biology, Chemistry, Physics, CRE, Geography, History, Business Studies, IRE, Home-science, Agriculture and Computer Studies.

SERIES 1

For Marking Schemes

Mr Isaboke 0746-222-000 /0742-999-000

MWALIMU CONSULTANCY

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

231/1 **BIOLOGY** Paper 1

(Theory)

Time: 2 Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

b) *Sign in the spaces provided above.*

c) *Answer **ALL** questions in the spaces provided.*

d) *All workings **MUST** be clearly shown where necessary.*

FOR EXAMINERS USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1 – 30	**80**	

*Answer **ALL** questions in the spaces provided*

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

(i) Protein synthesis. **(1mark)**

……

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

……

2. (a) Define the term 'parthenocarpy'. **(1mark)**

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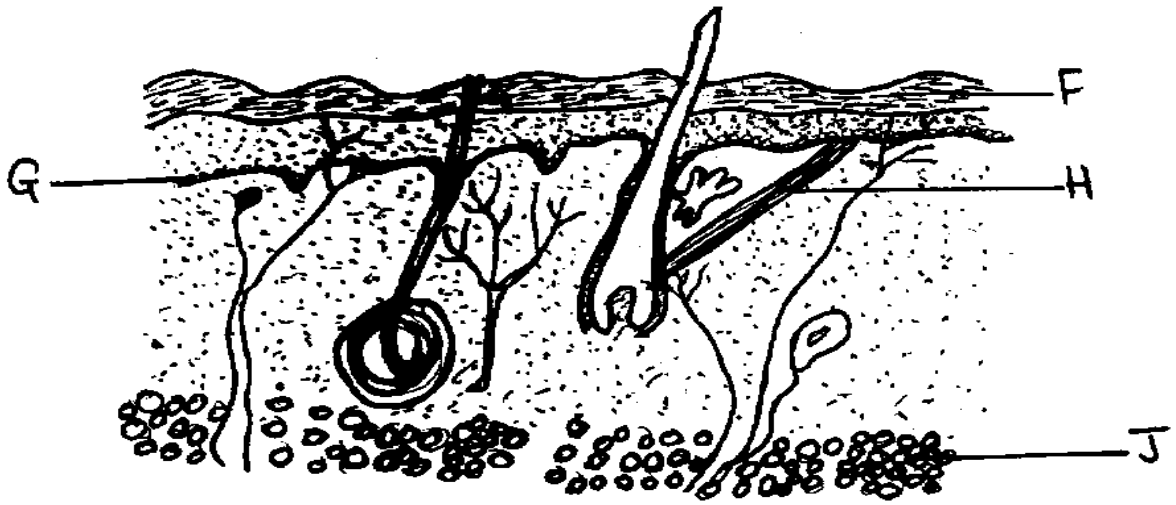
(b) Name **two** plant growth hormones that promote parthenocarpy. **(2marks)**

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3. The diagram below shows a longitudinal section of mammalian skin.



a) Name the parts labelled **F** and **G.** **(2marks)**

F……

G……

b) State **one** function of each of the parts labelled **H** and **J** **(2marks)**

H……

J ……

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

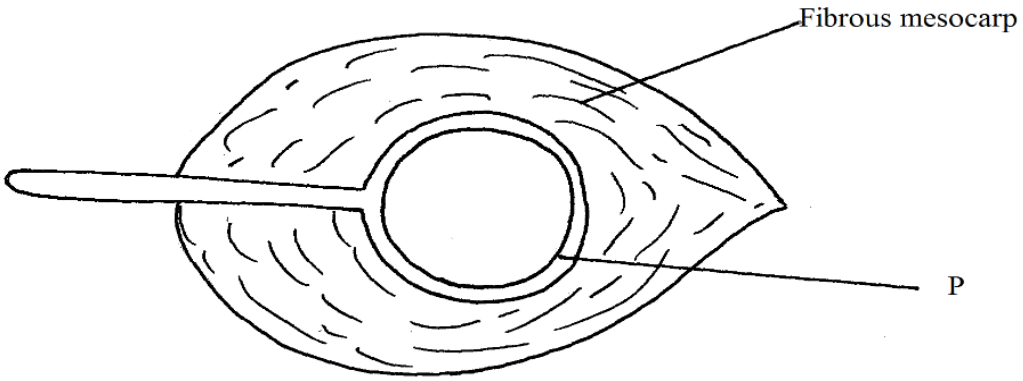
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(**b)**Name the class with the largest number of individuals in the phylum Arthropoda. **(1mark)**

……

5. The diagram below represents a longitudinal section of a fruit



(i) Identify the mode of dispersal **(1mark)**

……

(ii) Describe **two** adaptations of the fruit to its mode of dispersal **(2marks)**

……

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6. (a) What causes the following diseases?

(i) Diabetes mellitus. **(1mark)**

……

……

(ii) Diabetes insipidus. **(1mark)**

……

b) An individual shows the symptoms for diabetes mellitus, how would you determine in the school laboratory whether they are positive for the condition? **(2marks)**

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7. (a) Give **two** examples of natural selection in action. **(2marks)**

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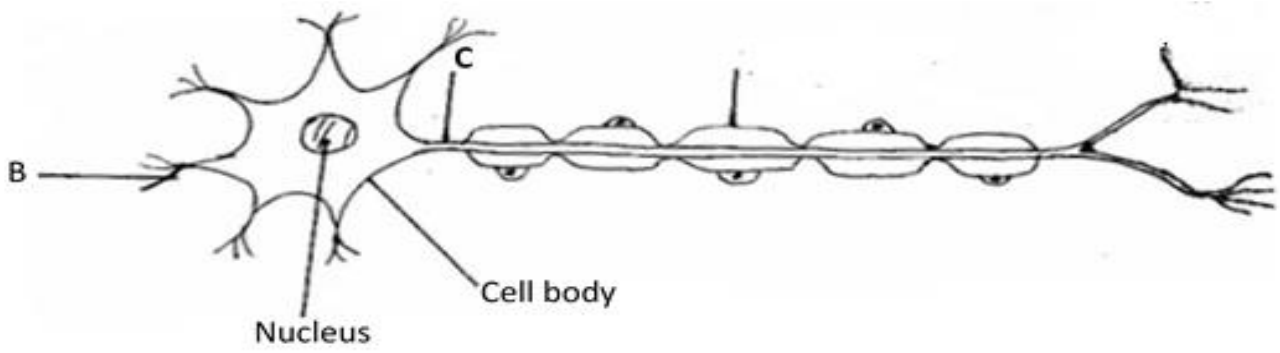
(b) List **two** features that make man the most dominant species on earth. **(2marks)**

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8. Study the diagram **below** of a neurone in human being.



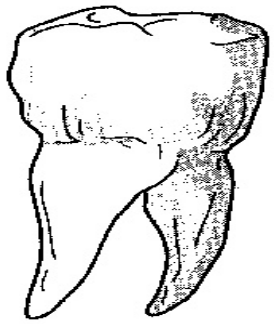
(a)Identify the neurone. **(1mark)**

……

(b) Name the part labeled **B** **(1mark)**

……

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



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

……

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

……

……

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

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……

10. It was found that during germination of pea seeds 9.3cm^3 of carbon (iv) oxide was produced while 9.1cm^3 of oxygen was used up.

a) Calculate the respiratory quotient (RQ) of the reaction taking place. **(2marks)**

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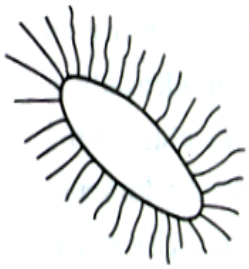
b) Explain why it is difficult to measure respiratory quotient in plants during the day. **(1mark)**

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11. The diagrams below represent two types of bacteria species that causes some human diseases.



A



B

Identify each bacterium and state the disease it causes. **(4 marks)**

A:

……

Disease it causes:

……

B:

……

Disease it causes:

……

12. a) What is metamorphosis? **(1mark)**

……

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b) What is the biological significance of metamorphosis to an insect? **(2marks)**

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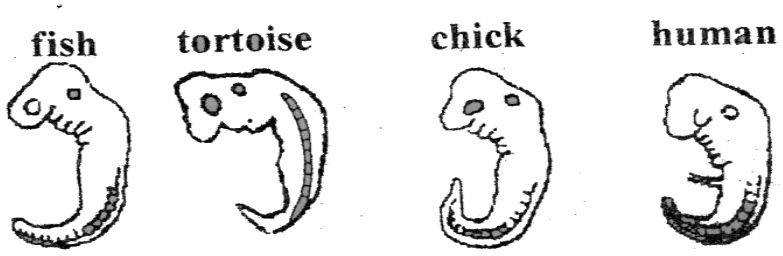
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13. Study and complete the table below. **(3mks)**

Feature	Monocot	Dicot
a) Number of stamens		
b) Arrangement of vascular bundle in stem		
c) Type of root		

14. The diagrams below show embryos of certain vertebrates animals. Study them and answer the question that follows.



a) Mention two observable structural features in these embryos that suggest that they have a common ancestral origin. **(2marks)**

……

……

……

(b) What phenomenon in organic evolution is exhibited by these diagrams of embryos? **(1mark)**

……

……

15. What is meant by the terms? **(2marks)**

a) Hypogynous flower

……

……

b) Dichogamy

……

……

16. What is the main difference between the phloem tissues of sub divisions Gymnospermaphyta and Angiospermaphyta. **(1mark)**

……

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17. State **two** ways in which the skin of a frog is adapted for gaseous exchange. **(2marks)**

……

……

……

18. What would be the effect of the following treatments on the nerve transmission?

(i) Inducing the axon with metabolic inhibitors. **(1mark)**

……

……

(ii) Removing myelin sheath from a nerve fiber. **(1mark)**

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19. Give one reason why blood leaving the lungs may not be fully oxygenated **(1mark)**

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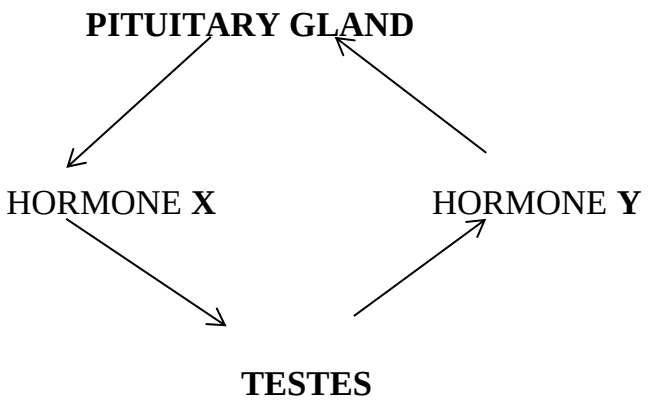
20. What is the importance of retina in vision? **(2marks)**

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21.The diagram below represents a simple endocrine feedback mechanism in human male.



(a) Name the hormone labelled **X** **(1mark)**

……

(b) State **two** differences that may be observed between a normal male and one who is incapable of producing hormone labelled **Y**. **(2marks)**

……

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……

22. a) Name the cartilage found between the bones of the vertebral column. **(1mark)**

……

b) State the function of the cartilage named in (a) above. **(1mark)**

……

……

23. The cells shown below were obtained from two different plant cells which were immersed in 2% and 25% salt solutions



A B

(a) Which of the two cells **A** and **B** was immersed in 2% salt solution? **(1mark)**

……

(b) Comment on the nature of 25% salt solution in relation to the cell sap. **(1mark)**

……

……

(c) What biological phenomenon leads to the observation made in **A**. **(1mark)**

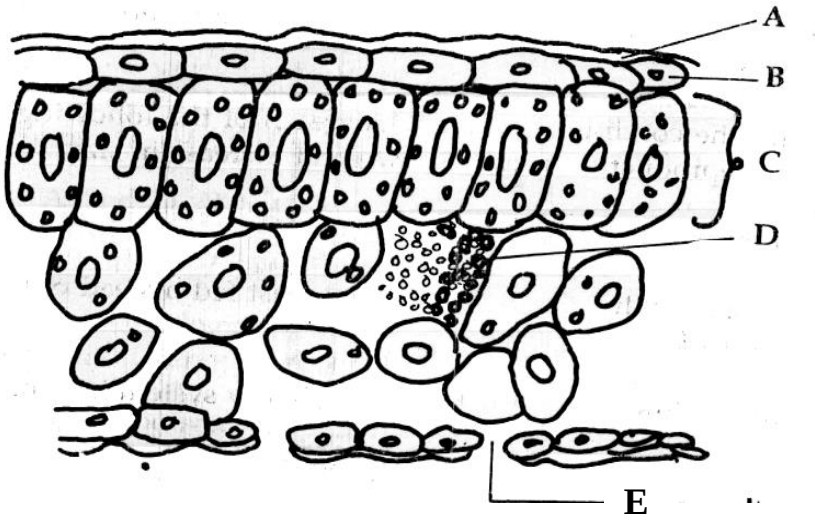
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24. Name **one** structure found in the cortex of the kidney **(1mark)**

……

25. The diagram below shows the internal structure of a leaf



(a)Name the part labelled **B** **(1mark)**

……

(b) State the function of the part labelled **C**. **(1mark)**

……

……

(c) State **two** difference between xerophytic and hydrophytic leaves. **(2marks)**

Xerophytic	**Hydrophytic**

26. a) Distinguish between gaseous exchange and respiration. **(1mark)**

……

……

……

……

b) Explain the disadvantages of anaerobic respiration in plant roots. **(2marks)**

……

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……

……

27. a) Suggest the significance of the following adaptations in bony fish.

(i) Flexible vertebral column **(1mark)**

……

……

(ii) Presence of swim bladder **(1mark)**

……

……

b) State **two** features which reduce resistance in fish during swimming. **(2marks)**

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28. State **two** protective feature of human eye. **(2marks)**

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29. State **two** differences between photosynthesis and respiration **(2marks)**

PHOTOSYNTHESIS	RESPIRATION

30. Explain why malaria cannot be transmitted through blood transfusion **(2marks)**

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KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

231/2 **BIOLOGY** Paper 2

(Theory)

Time: 2 Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

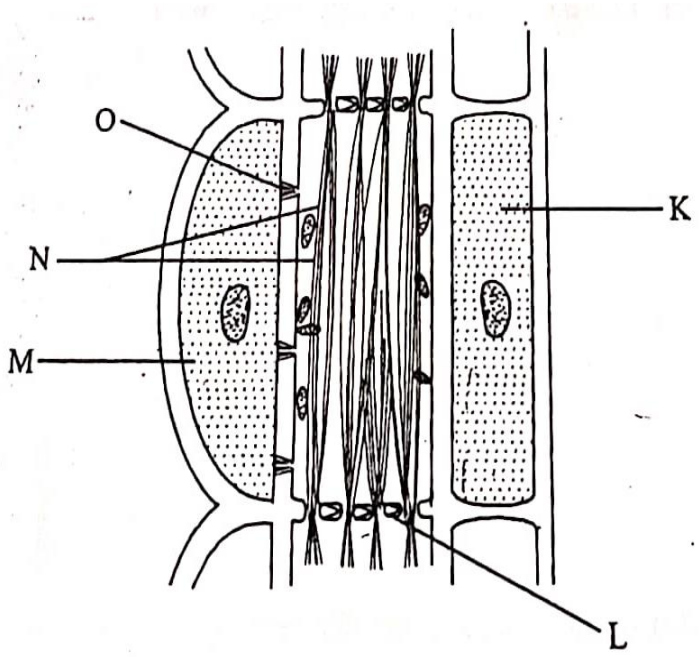
- *Write your name and Index Number in the spaces provided above.*
- *This paper consists of **two** sections. Section **A** and section **B.***
- *Answer **ALL** questions in section **A** in the spaces provided. In section **B** answer question **6** (compulsory) and either question **7** or **8** in the spaces provided after question 8*

FOR EXAMINERS USE ONLY.

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

QUESTIONS

1. The diagram below represents a plant tissue



a) Name the structures L and O. **(2 marks)**

L……

O…….....

b) State the function of structure N and cell labelled M. **(2marks)**

N……

M……

c) Give two structural differences between phloem tissue and xylem tissue. **(2marks)**

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d) Distinguish between active and passive immunity. **(2marks)**

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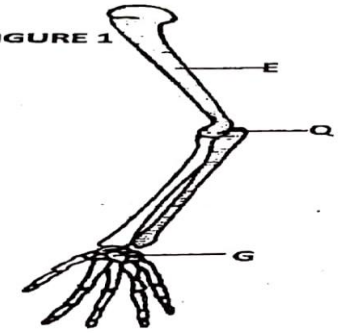
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2. The following figures represent the forelimb of a certain animal species. Study them and answer the questions that follow

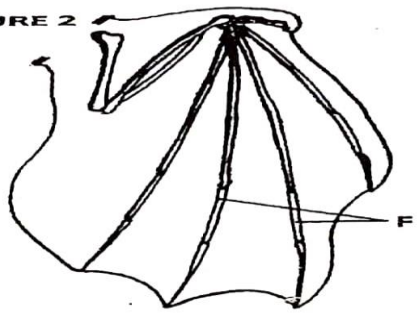
Human Hand

FIGURE 1



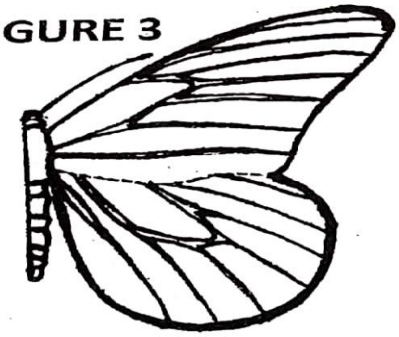
Bat Wing

FIGURE 2



Butterfly Wing

FIGURE 3



a) Name the bones labelled E and G. **(2marks)**

E……

G……

b) State the type of skeleton represented by figure 1. **(1mark)**

……

c) Name the type of joint at point Q. **(1mark)**

……

d) Which two figures represent analogous structures? **(1mark)**

……

e) Give **adaptational** differences between structures in figure 1 and 3. **(3 marks)**

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3. Colour blindness is a disorder caused by gene mutation and it is controlled by a recessive gene. A man with normal colour vision marries a carrier woman:

a) Using letter **B** to represent the gene for **normal color vision**, what is the chance that their son will be colour blind? Show your working. **(4marks)**

b) Name another trait in humans inherited in the same way as colour blindness. **(1mark)**

……

c) Briefly describe inversion in gene mutation. **(1mark)**

……

……

d) Distinguish between back cross and testcross. **(2marks)**

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4. a) Nitrogen in the atmosphere cannot be directly utilized by plants. State two ways by which this nitrogen is made available for plant use. **(2marks)**

……

……

……

c) State the importance of saprophytic bacteria in the environment**.** **(1mark)**

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d) Briefly explain the how excessive use of fertilizers affects the large water bodies. **(3marks)**

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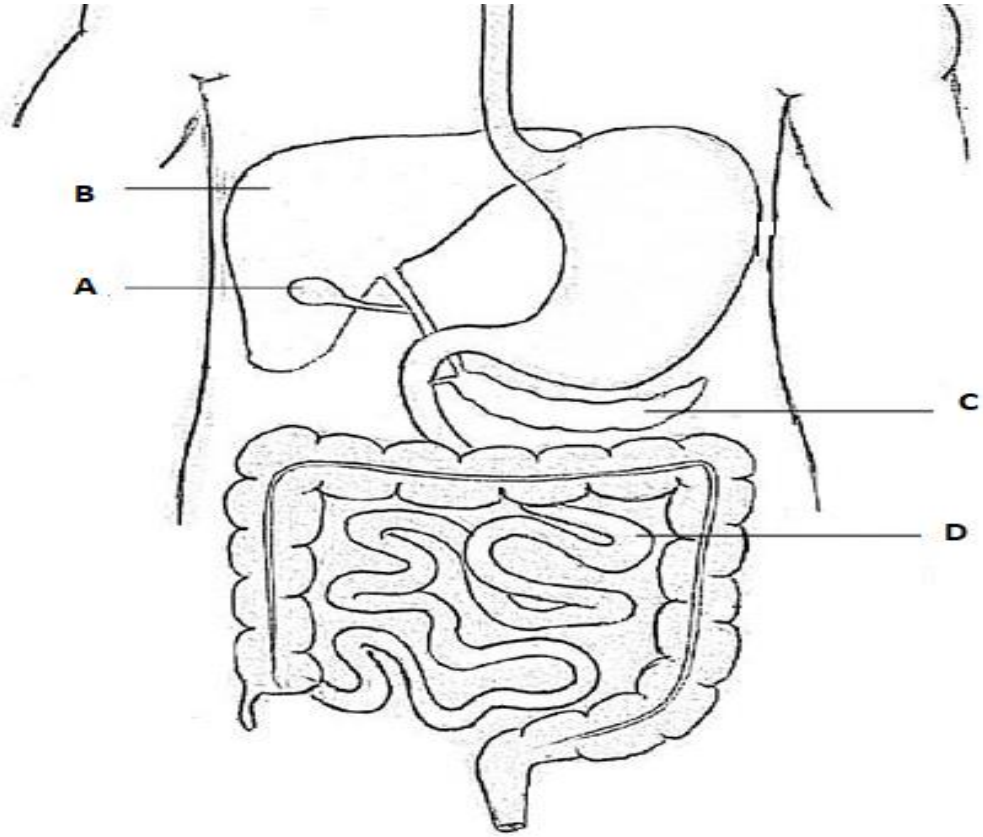
e) Explain how competition regulates the animal population in a habitat. **(2marks)**

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5. The figure below shows the parts of the human digestive system. Study it and answer the questions that follow.



a) Name the organs labelled A, B and D. **(3marks)**

A……

B……

D……

b) State the role of part labelled C. **(1mark)**

……

c) Name the two salivary glands in human beings. **(2marks)**

……

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d) Give two adaptations of part labelled D to its function. **(2marks)**

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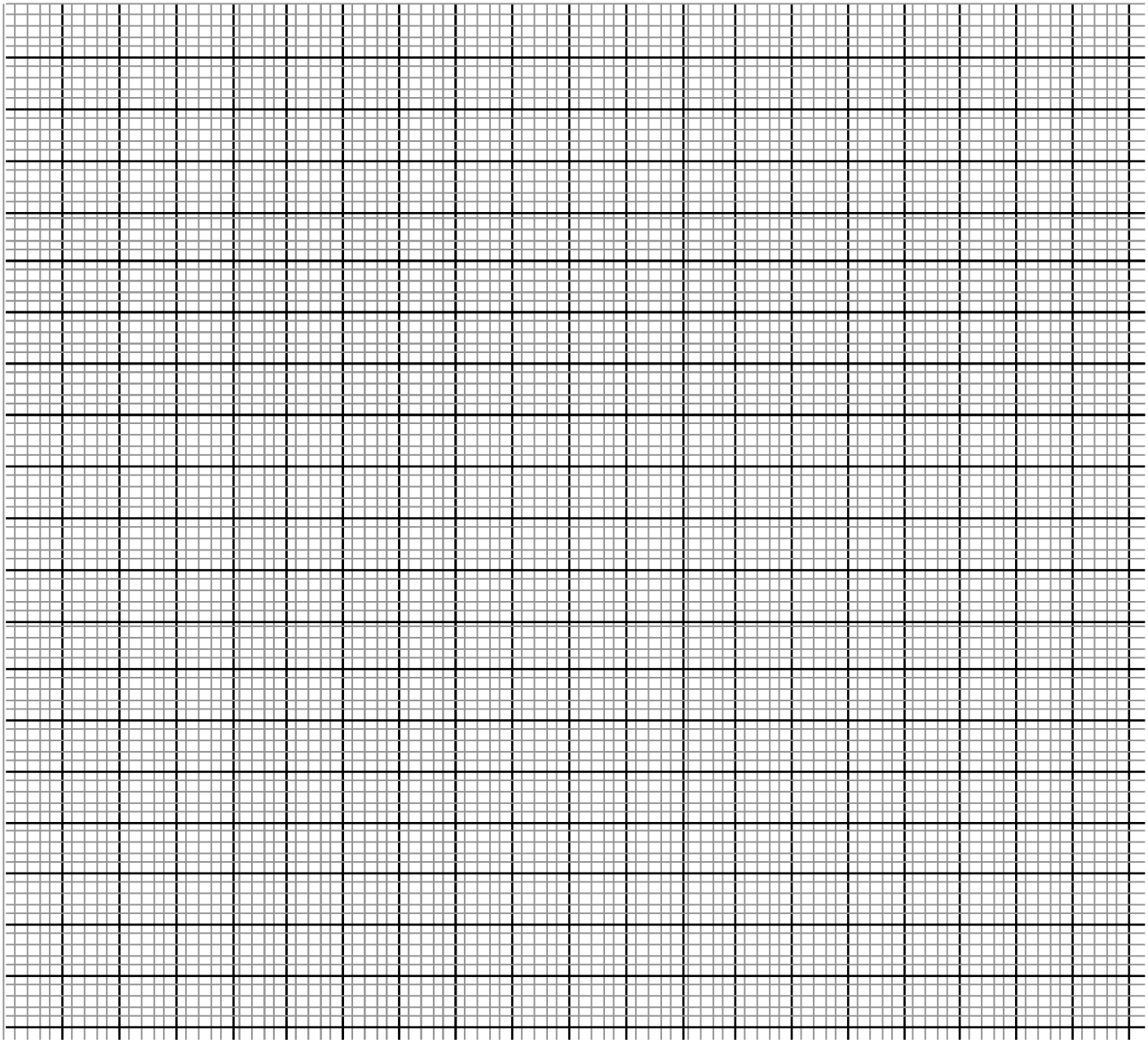
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6. An experiment was carried out to investigate transpiration and absorption of water in sunflower plants in their natural environment with adequate supply of water. The amount of water was determined in a two hour intervals. The results are as shown in the table below.

TIME OF THE DAY	**AMOUNT OF WATER IN GRAMMES**	
	Transpiration	**Absorption**
11:00-13:00	33	20
13:00-15:00	45	30
15:00-17:00	52	42
17:00-19:00	46	46
19:00-21:00	25	32
21:00-23:00	16	20
23:00-01:00	8	15
01:00-03:00	4	11

a) Using the same axes, plot graphs to show transpiration and absorption of water in grammes against time of the day. **(7marks)**



b) At time of the day was the amount of water the same for transpiration and absorption? **(1 mark)**

……

c) Account for the shape of the graph of :

i) transpiration **(3marks)**

……

……

……

……

ii) absorption **(3marks)**

……

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……

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d) What would happen to transpiration and absorption of water if the experiment was continued till 0500 hours? **(2marks)**

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e) Name two environmental factors that may affect rate of transpiration and absorption at any given time. **(2marks)**

……

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f) Explain how the factors you named in (e) above affect transpiration. **(2marks)**

……

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……

7. a) Explain how blood sugar is regulated in the human body. **(12marks)**

b) Explain the adaptation of the mammalian skin to thermoregulation. **(8marks)**

8. a) Describe the factors that make the leaf of a terrestrial plant to absorb maximum light for photosynthesis. **(12marks)**

b) Describe how support is achieved in herbaceous plants and shrubs. **(8marks)**

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

231/3 **BIOLOGY** Paper 3

(Practical)

Time: 1¾ Hours

SCHOOL…… SIGN……

Kenya Certificate of Secondary Education.

CONFIDENTIAL

Each candidate should be provided with the following:

(1) Specimen **K** (Orange fruit)

(2) About **3cm^3** of substance **B** (olive oil)

(3) About **3cm^3** of liquid **C** (fresh cow milk)

(4) About **2cm^3** of **0.01%** DCPIP (supplied with a dropper)

(5) About 2cm^3 of Iodine solution

(6) About **2cm^3 $NaHC0_3$** solution (supplied with a dropper)

(7) **6** test tubes in a test tube rack

(8) Distilled water in a wash bottle

(9) Scalpel

(10) **Two** 10ml measuring cylinder

(11) **One** 100ml beaker

(12) **2** Labels

(13) Two droppers

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

231/3 **BIOLOGY** Paper 3

(Practical)

Time: 1¾ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES:

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

b) *Sign and write* ***date*** *of examination in the spaces provided above*

c) *Answer* ***all*** *the questions in this paper.*

d) *You are required to spend the first 15 minutes of the 1¾ hours allowed for this paper reading the whole paper carefully.*

For Examiner's Use only

QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
1	17	
2	11	
3	12	
TOTAL	**40**	

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

1. You are provided with **Specimen K** .Carefully cut a transverse section through specimen **K** using a scalpel provided.

(a) (i) By observing one of the two halves of specimen **K**, Give **two** reasons to prove that specimen **K** has **axile** placentation **(2marks)**

……

……

……

(ii) Squeeze some juice from **specimen K** into 100ml beaker provided and label it as **juice K.** Using a portion of **juice K**, carry out the food test using the reagents provided and complete the table below. (**NB preserve the remaining portion of juice K for use in question 2) (8marks)**

Food substance	**Procedure**	**Observation**	**Conclusion**

(iii) Name the **deficiency** disease that results from lack of the food substance present in juice **K.** **(1mark)**

……

(iv) Highlight **two** symptoms of the disease named in **(a) (iii)** above **(2marks)**

……

……

(b) Put **2cm^3** of liquid labeled **C** into a test tube. Draw some of the juice from specimen **K** into a dropper. Add 4 drops of the juice into the test tube with solution ***C*** and shake.

(i) State your observation. **(1mark)**

……

……

(ii) State the part of the human body where the process demonstrated above occurs and the enzyme that carries out the process.

Part of body……..……(1mark)

Enzyme……...……(1mark)

(iii) Which gland produces the enzyme stated in (a) (ii) above? **(1mark)**

……

2. (a) Take a small amount of substance **B** provided and add to it **2cm^3** of sodium hydrogen carbonate solution.

(i) State your observations (**1mark)**

……

……

(ii) Which process in the body is illustrated above? **(1mark)**

……

(iii) State the part of the body where the above process takes place **(1mark)**

……

(iv) State two functions of substance **B** in the body **(2marks)**

……

……

……

(v) Name **two** diseases of the circulatory system caused by excess cholesterol in food. **(2marks)**

……

……

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



(i) Identify the habitats in which they are found **(2marks)**

Y ……

Z……

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

R ……

S……..

3. (a) Below are photographs of **Venus flytrap** (an insectivorous plant). Study them and answer the questions that follow.

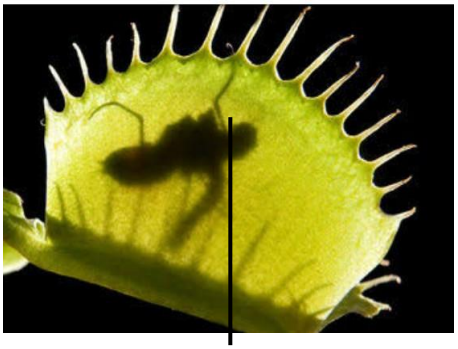
A



B



C



(i) Name **<u>one</u>** major nutrient that is **deficient** in the soil where the above plant grows. **(1mark)**

……

……

(ii) Name the type of response shown by photograph **C** **(1mark)**

……

……

(iii) Describe how the above plant traps the insect **(4marks)**

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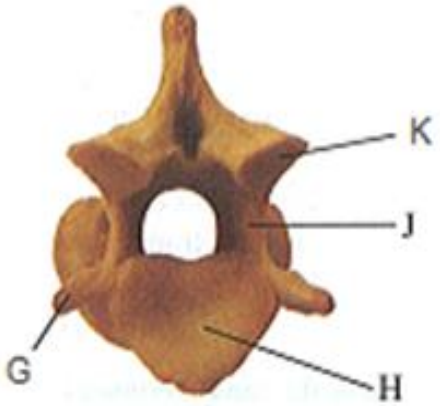
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(b) The photographs below are of the same mammalian vertebra showing two views of the same bone. Examine them carefully.



View 1



View 2

(i) Identify the vertebra…… **(1mark)**

(ii) Name the region from which the vertebra is obtained. **(1mark)**

……

(ii) Name the part marked X **(1mark)**

……

(iv) State the function of part X **(1mark)**

……

……

(c) State the functional difference between a tendon and a ligament **(1mark)**

……

……

(d) Name the bone that articulate with this vertebra at the distal end **(1mark)**

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KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

233/1 **CHEMISTRY** Paper 1

(Theory)

Time: 2 Hours

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

*(b) Answer **ALL** the questions in the spaces provided and calculations **MUST** be clearly shown*

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1-27	80	

*Answer **ALL** the questions in the spaces provided*

1a). State two reasons why most laboratory apparatus are made of glass **(2marks)**

……

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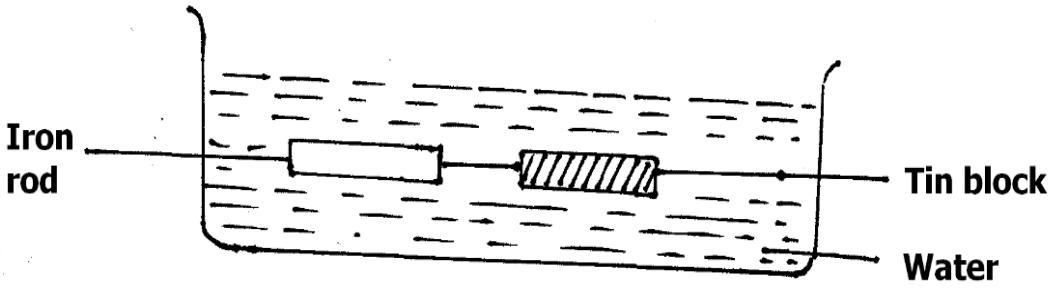
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b) How can one increase the luminosity of a flame? **(1marks)**

……

……

2. The set – up below was used by a student to try to prevent the rusting of an Iron rod.



a) Did the student succeed in preventing the rusting of Iron using the set – up above?

Explain **(2marks)**

……

……

……

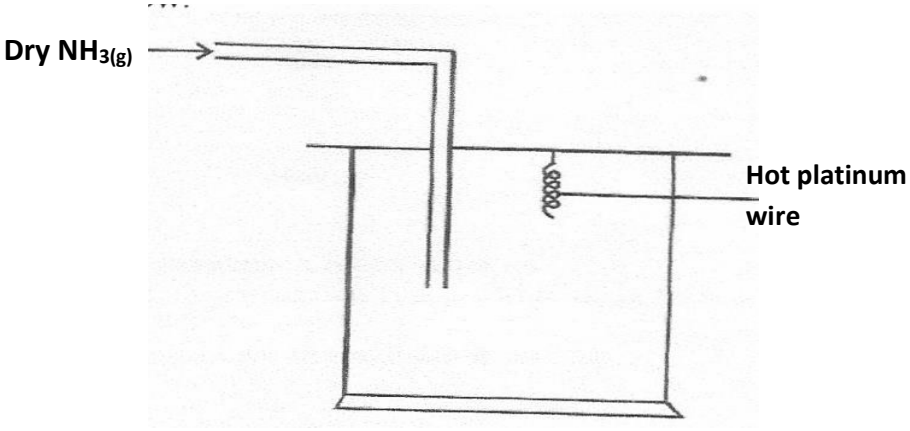
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b) Which method of rust prevention was the student investigating? **(1mark)**

……

……

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



i) Write an equation for the reaction that takes place in the gas jar **(1mark)**

……

ii) What is the role of hot platinum wire? **1marks)**

……

iii) Write the formula of the complex ion formed when excess ammonia gas is passed through a solution containing Zn^{2+} ions. **(1mark)**

……

4. The atomic number of sulphur is 16. By calculating the of oxidation number of sulphur, state the electron configuration of sulphur in the sulphate ion (SO_4^{2-}) **(2marks)**

……

……

5. Explain the following trends

i) Atomic radius of alkaline earth metals increase down the group **(1mark)**

……

……

ii) Melting and boiling points of halogens increase down the group VII **(1mark)**

……

……

iii) Aluminium metal is a better conductor than sodium metal **(1mark)**

……

……

6 a) State Le Chatelier's Principle **(1mark)**

……

……

b) A dynamic equilibrium between dichromate and chromate ions is established as shown in the equation below.

$Cr_2O_7^{2-}{}_{(aq)} + 2OH^-{}_{(aq)} \rightleftharpoons 2CrO_7^{2-}{}_{(aq)} + H_2O_{(l)}$

Orange Yellow

State and explain the observation made if a few drops of sodium hydroxide are added to the equilibrium mixture. **(2marks)**

……

……

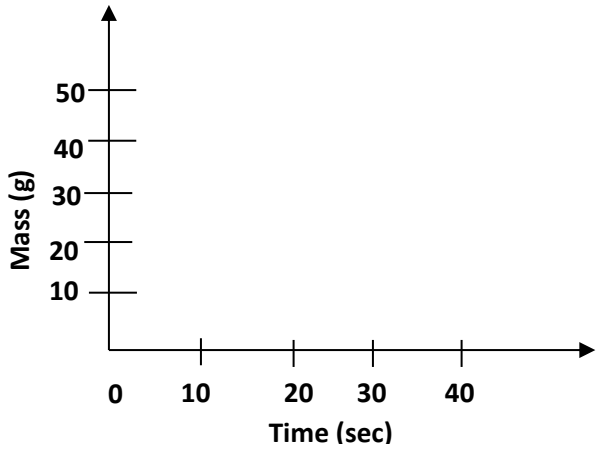
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7 a) Complete the nuclear equation below. **(1mark)**

$${}^{24}_{11}Q \longrightarrow {}^{24}_{12}R + _____$$

b) A radioactive element of mass 50g has a half-life of 10 seconds. Sketch a graph of mass against time to show how the element mass varies with time **(1mark)**

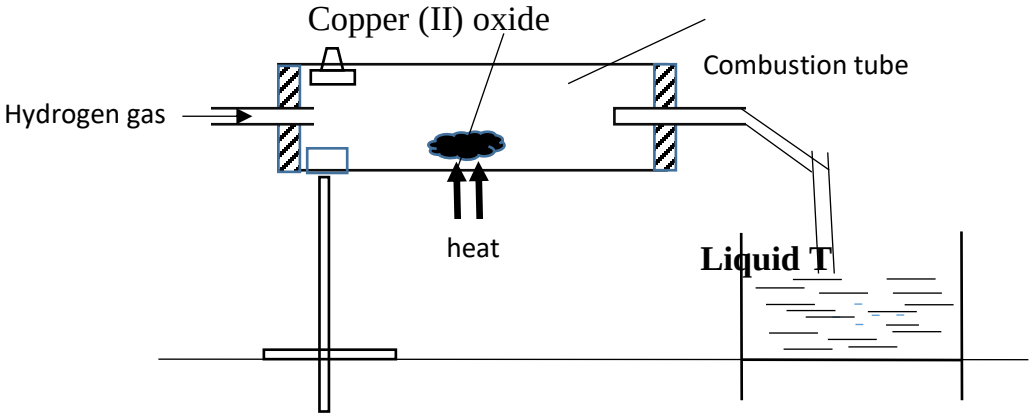


c) Give one use of radioactive isotopes in medicine **(1mark)**

……

……

8. The set-up below was used to investigate reaction between copper (II) oxide and hydrogen gas



a) Identify liquid T **(1mark)**

……

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

……

c) State an observation made in the combustion tube. **(1mark)**

……

……

9. The table below shows PH values of some solutions

Solution	A	B	C	D
PH values	13	7	1	6.5

a) Which solution reacts vigorously with Magnesium metal? **(1mark)**

……

b) Which solution is likely to be that of Lemon juice? **(1mark)**

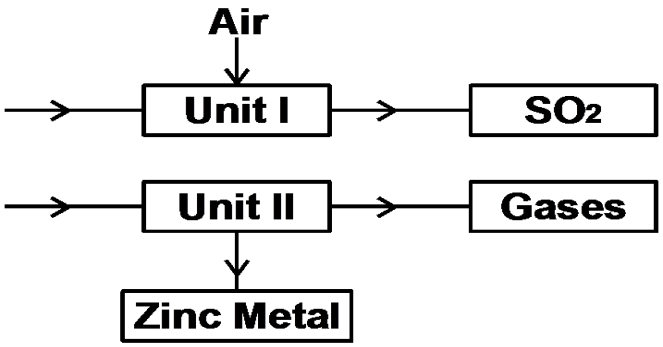
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c) Select any two solutions that are likely to react with aluminium hydroxide **(1mark)**

……

……

10. The flow chart below shows some processes involved in the industrial extraction of zinc metal.



a) Name one ore from which zinc is extracted. **(1mark)**

……

b) Write the equation for the reaction taking place in unit I. **(1mark)**

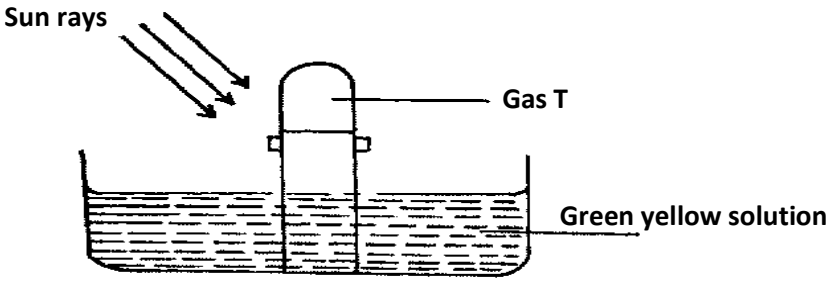
……

c) State any one use of zinc metal. **(1mark)**

……

……

11. Chlorine gas was bubbled through water for some time. The pale yellow solution formed was poured into a long glass tube and placed in the sun as shown in the diagram below.



a) Give the chemical composition in the pale yellow solution? **(1mark)**

……

……

……

b) Write an equation to show how gas T is formed **(1mark)**

……

c) Give one use of chlorine **(1mark)**

……

12. The solubility of potassium nitrate in water at $70^{O}C$ is 155g/100g H_2O while at $20^{o}C$, the solubility is 31g/100g water. 50g of a saturated solution of potassium nitrate at $70^{o}C$ was cooled to $20^{o}C$, calculate the mass that crystallized out. **(3marks)**

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13. Substance L, M, N and P have the following properties.

Substance	M.P.	Solubility in water	Electrical conductivity	
			Solid state	Liquid state
L	Low	Soluble	Does not	Does not
M	High	Soluble	Does not	Conducts
N	High	Soluble	Conducts	Conducts
P	High	Insoluble	Does not	Does not

a) Select the letter which represents a substance which is suitable for making kettle handles.**(1mrk)**

……

b) Which letter represents a substance which is likely to be sodium chloride? **(1mark)**

……

c) Name the bond structure and bond type likely to be in L. **(1mark)**

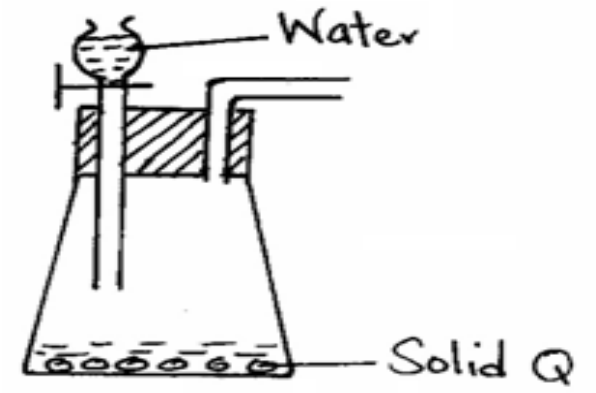
i) Bond structure

……

ii) Bond type

……

14. The diagram below represents a set-up used to prepare oxygen gas.



a) Name substance Q. **(1mark)**

……

b) Complete the set-up given, to show how <u>DRY</u> oxygen gas is collected. **(2mrks)**

15. Explain why a reaction between sodium carbonates powder with hydrogen chloride solution in in water produces effervescence while the same reaction with hydrogen chloride solution in methylbenzene does not produce effervescence **(2marks)**

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……

16. A hydrocarbon S contains 3.6g carbon by mass and 0.8g hydrogen. Given that $3dm^3$ of the compound at s.t.p has a mass of 5.89g. Calculate the molecular formula (Molar gas volume at s.t.p = $22.4dm^3$, C=12, H=1) **(3marks)**

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17. Name the following processes.

a) When anhydrous calcium chloride is left in an open beaker overnight a solution was formed **(1mark)**

……

b) White sugar changes to black solid when mixed with excess concentrated sulphuric (VI) acid. **(1mark)**

……

c) Sodium deca-hydrate crystals change to anhydrous sodium carbonate (powder) **(1mark)**

……

18. Chlorine has two isotopes with mass number 35 and 37. If the relative atomic mass of chlorine is 35.5. Determine the percentage abundance of each isotope of chlorine. **(3marks)**

……

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19 a) Explain why water containing some traces of common salt is considered to be hard water **(1mark)**

……

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b) i) State one method used to remove permanent hardness **(1mark)**

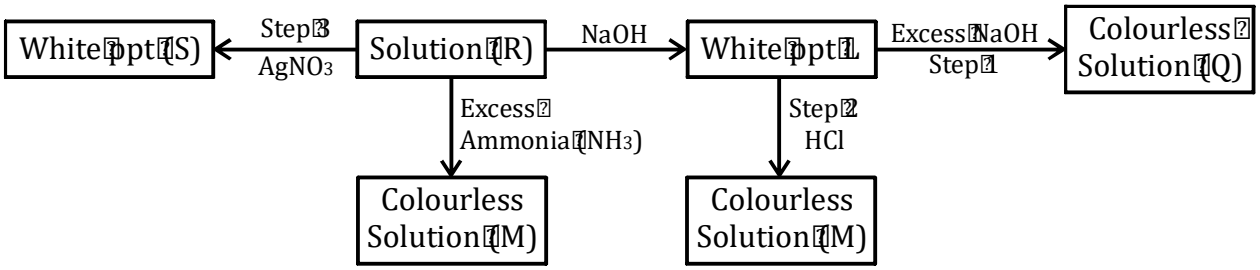
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ii) Give one advantage of using hard water for domestic purpose. **(1mark)**

……

……

20. Study the flow chart below and use it to answer the questions that follow.



a) Identify the cation and anion in solution (R) **(1mark)**

Cation

……

Anion

……

b) Write an ionic equation for the formation of compound S **(1mark)**

……

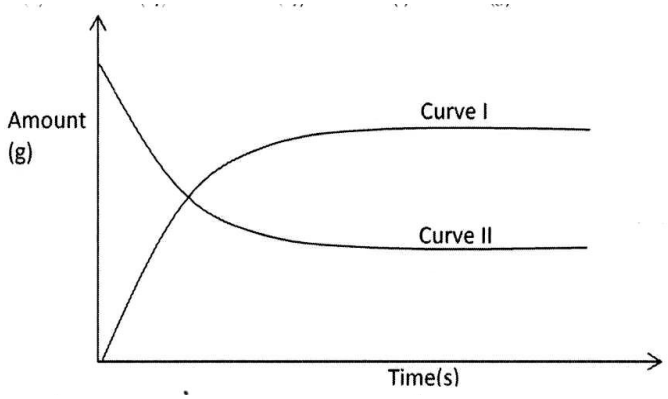
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c) Write the formula for complex ion in solution Q. **(1mark)**

……

21. The graph below shows the amount of calcium carbonate and calcium chloride varying with time in the reaction.

$$CaCO_{3(s)} + 2HCl_{(aq)} \longrightarrow CaCl_{2(aq)} + H_2O + CO_{2(g)}$$



a) Which curve shows the amount of calcium chloride formed varying with time? **(1mark)**

……

b) Explain why the two curves become horizontal after a given period of time. **(1mark)**

……

……

……

c) Sketch on the graph, how curve I would appear if the experiment was repeated using a more dilute hydrochloric acid solution. **(1mark)**

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

……

……

b) $60cm^3$ of oxygen diffused through a porous plate in 20 seconds. How long will it take $120cm^3$ of carbon (iv) oxide gas to diffuse through the same plate under the same conditions? (C=12 , O=16) **(2marks)**

……

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23. Methane undergoes combustion in oxygen as shown by the equation below.

$$CH_{4(g)} + 2O_{2(g)} \longrightarrow CO_{2(g)} + 2H_2O_{(g)}$$

a) Calculate the heat change for the reaction using bond energies in the table **(3marks)**

Bond	**Bond energy (KJ/mol)**
C – H	413
O = O	497
C = O	740
O - H	463

……

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24. Describe how a DRY,PURE sample of Lead (II) chloride can be prepared using the following reagents; dilute nitric (V) acid, dilute hydrochloric acid and lead carbonate **(3marks)**

……

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25. Hydrogen sulphide gas was passed through a solution of iron (III) chloride

i) State and explain the two observations made **(2marks)**

……

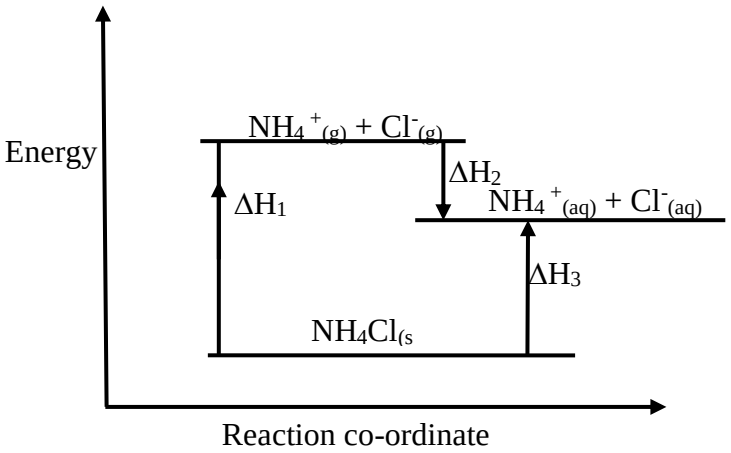
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ii) Write an ionic equation for the reaction taking place in (i) above **(1mark)**

……

26. Study the diagram below and answer the questions that follow.



a) What do ΔH_1 and ΔH_2 represent. **(2marks)**

ΔH_1…..…….. ΔH_2.....

b) Write an expression to show the relationship between ΔH_1, ΔH_2 and ΔH_3. **(1mark)**

……

……

27. Use the information below and answer the questions that follow .The letters are not the actual symbols of the elements.

$E^{2+}_{(aq)} + 2e \rightleftharpoons E_{(s)}$ -0.76V

$F^{3+}_{(aq)} + 3e \rightleftharpoons F_{(s)}$ -1.66V

$G^{2+}_{(aq)} + 2e \rightleftharpoons G_{(s)}$ -0.44V

a) Calculate the E^{θ} value for the electrochemical cell represented below. **(2mark)**

$F_{(s)} \mid F^{3+}_{(aq)} \parallel G^{2+}_{(aq)} \mid G_{(s)}$

……

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b) Arrange the elements in order of reactivity starting with the least reactive. **(1mark)**

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KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

233/2 **CHEMISTRY** Paper 2

(Theory)

Time: 2 Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

(b) *Sign and write the date of the examination in the spaces provided*

(c) *Answer **ALL** the questions in the spaces provided.*

(d) *Candidates **MUST** answer all questions in English.*

(e) *KNEC mathematical tables and silent non-programmable electronic calculators may be used.*

FOR EXAMINER'S USE ONLY.

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	09	
2	13	
3	12	
4	11	
5	14	
6	11	
7	10	
TOTAL SCORE	80	

*Answer **ALL** the questions in the spaces provided.*

1. a) The relationship between the pressure and volume of a fixed mass of gas was studied at 25^{o}C. The data was recorded as shown in the table below.

Volume (m^3)	1	2	4	6
Pressure (Pa) x 10^5	12	6	3	2
Product of volume and pressure				

(i) Complete the table by calculating the product of the volume and pressure. **(2 marks)**

(ii) Using the data, state the law governing the relationship between volume and pressure of a fixed mass of a gas**.** **(1 mark)**

……

(**b)** The volume of nitrogen gas at 27^{o}C and a pressure of 1 x 10^5 pa is 8m^3. Calculate its volume at 128^{o}C and a pressure of 3.2 x 10^5pa **(2 marks)**

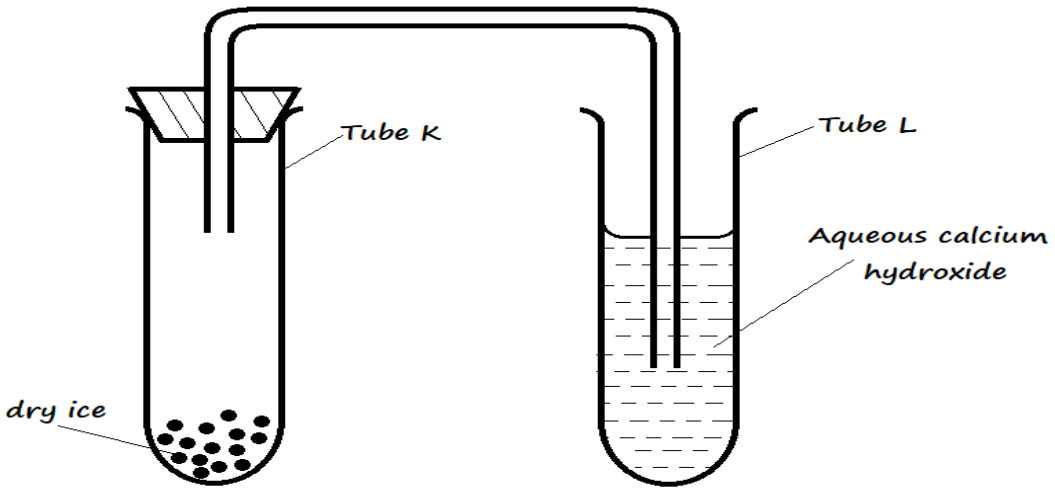
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(c) The set up below was used to study the properties of dry ice. Study it and answer the questions that follow:



(i) State the observation(s) that was made in tubes **K** and **L** after some time. (2 marks)

I. Tube **K**

……

II. Tube **L**

……

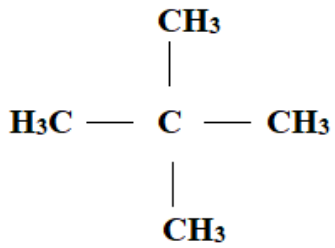
(ii) Name **two** processes that took place in tube **K**. **(2 marks)**

……

……

2. (a) Give the names of the following compounds.

(i)

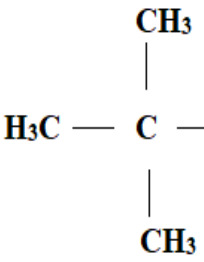


(1 mark)

(ii) $CH_3C \equiv C\ CH_2\ CH_3$

(1 mark)

(b) Describe a chemical test that can be carried out to distinguish between the compounds:**(2 mks)**

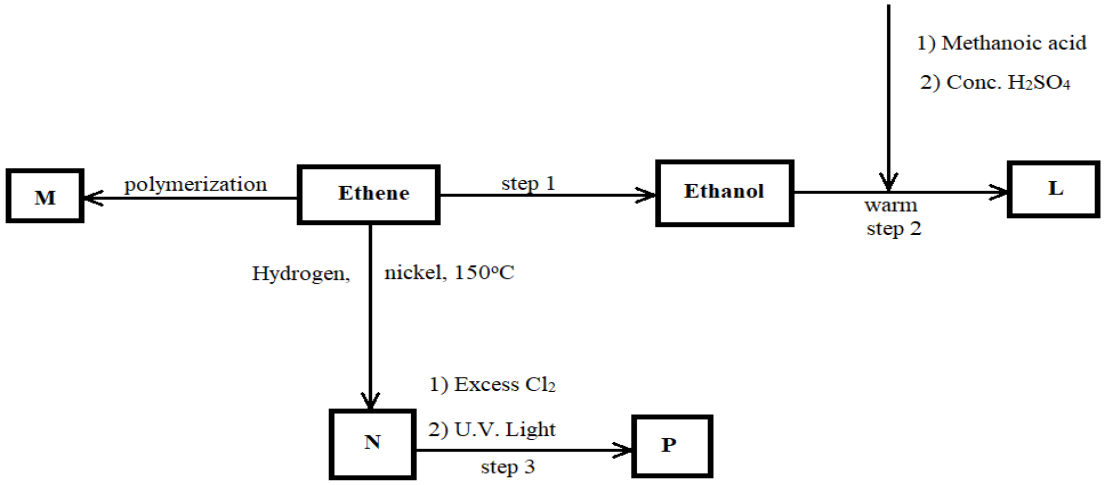
 and $CH_3C \equiv C\ CH_2\ CH_3$

……

……

……

c) Study the flow chart below and answer the questions that follow



(i) Name the **compounds** **(2 marks)**

I) L: ……

II) N: ……

(ii) Draw the structural formula of compound **M** showing **three** repeating units. **(1 mark)**

(iii) Give the reagent and condition used in **step 1** **(2 marks)**

……

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(iv) State the type of reaction that takes place in: **(2 marks)**

I) Step 2: ……..

II) Step 3: ……..

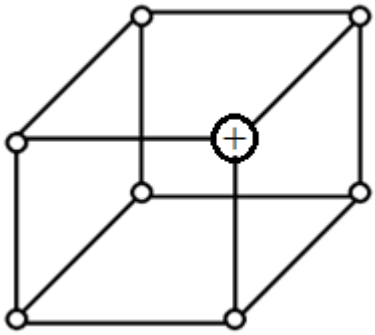
(v) The molecular formular of **compound P** is $C_2H_2Cl_4$. Draw the **two** structural formulae of **compound P** **(2 marks)**

……

……

……

2. (a) The diagram below represents part of the structure of a sodium chloride crystal. The position of one of the sodium ions in the crystal is shown as +.



(i) On the diagram, mark the positions of the other three sodium ions **(3 marks)**

(ii) The melting and boiling points of sodium chloride are 801^{o}C and 1413^{o}C respectively. Explain why sodium chloride does not conduct electricity at 25^{o}C but does at temperatures between 801^{o}C and 1413^{o}C. **(2 marks)**

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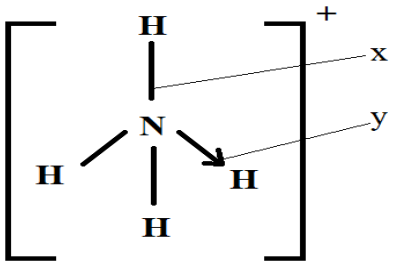
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(iii) (b) Give a reason why ammonia gas is highly soluble in water **(1 mark)**

……

……

(iv) (c) The structure of an ammonium ion is shown below.



Name the types of bonds represented by the letters **X** and **Y** **(1 mark)**

X ……

Y ……

(d) Carbon exists in different crystalline forms. Some of these forms were recently discovered in soot and are called fullerenes.

(i) What name is given to different crystalline forms of the same elements **(1 mark)**

……

(ii) Fullerenes dissolve in methylbenzene while other forms of carbon do not. Given that soot is a mixture of fullerenes and other solid forms of carbon, describe how crystals of fullerenes can be obtained from soot. **(3 marks)**

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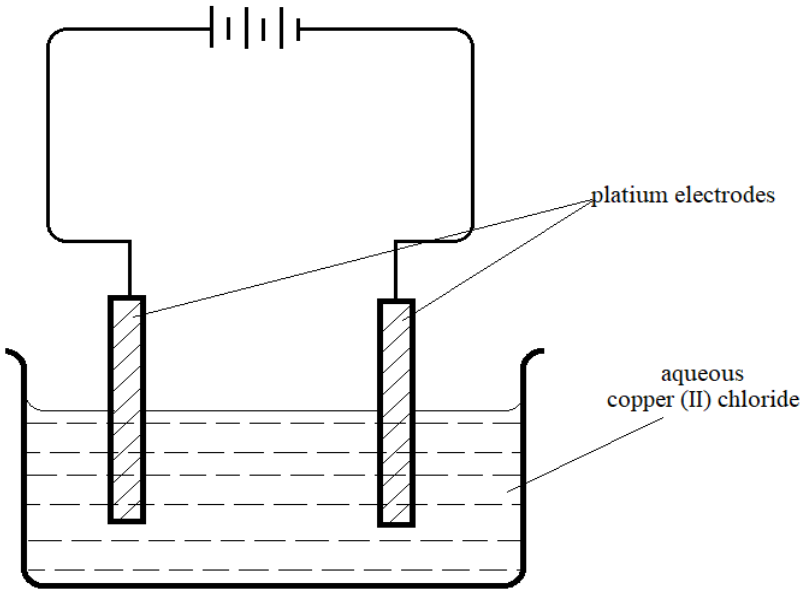
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(iii) The relative molecular mass of one of the fullerenes is 720. What is the Molecular formula of this fullerene? (C = 12.0) **(1 mark)**

……

……

3. The set up below was used by a student to investigate the product formed when aqueous Copper (II) chloride was electrolysed using platinum electrodes.



(a) (i) Write the equation for the reaction taking place at the cathode. **(1 mark)**

……

……

(ii) Name and describe a chemical test for the product initially formed at the anode when a highly concentrated solution of Copper (II) chloride is electrolysed. **(3 marks)**

……

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(iii) How would the mass of the anode change if the platinum anode was replaced with copper metal? Explain. **(2 marks)**

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(b) 0.6g of metal **X** were deposited when a current of 0.45A was passed through an electrolyte for 1 hour and 12 minutes. Determine the charge on the ion of metal **X**. (RAM of X = 59 1 Faraday = 96500 C) **(3 marks)**

……

……

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……

(c) The electrode potentials for cadmium and zinc are given below

$Cd^{2+}_{(aq)} + 2e^- \rightleftharpoons Cd_{(s)}$ $\quad E^0 = -0.40$ v

$Zn^{2+}_{(aq)} + 2e^- \rightleftharpoons Zn_{(s)}$ $\quad E^0 = -0.76$ v

Explain why it is <u>not</u> advisable to store a solution of cadmium nitrate in a container made of zinc.

(2 marks)

……

……

……

4. (a) (i) what is meant by the term Enthalpy of formation? **(1 mark)**

……

……

……

(ii) The enthalpies of Carbon, methane and hydrogen are indicated below: -

$C_{(s)} + O_{2(g)} \rightarrow CO_{2(g)}$; $\Delta H = -393KJmol^{-1}$

$H_{2(g)} + {}^{1}/_{2} O_{2(g)} \rightarrow H_2O_{(g)}$ $\Delta H = -286KJmol^{-1}$

Enthalpy of combustion of CH_4 = $-890KJmol^{-1}$

I) Draw an energy cycle diagram that links the enthalpy of formation of methane to enthalpies of combustion of carbon, hydrogen, and methane. **(2 marks)**

II) Determine the enthalpy of formation of methane. **(2 marks)**

……

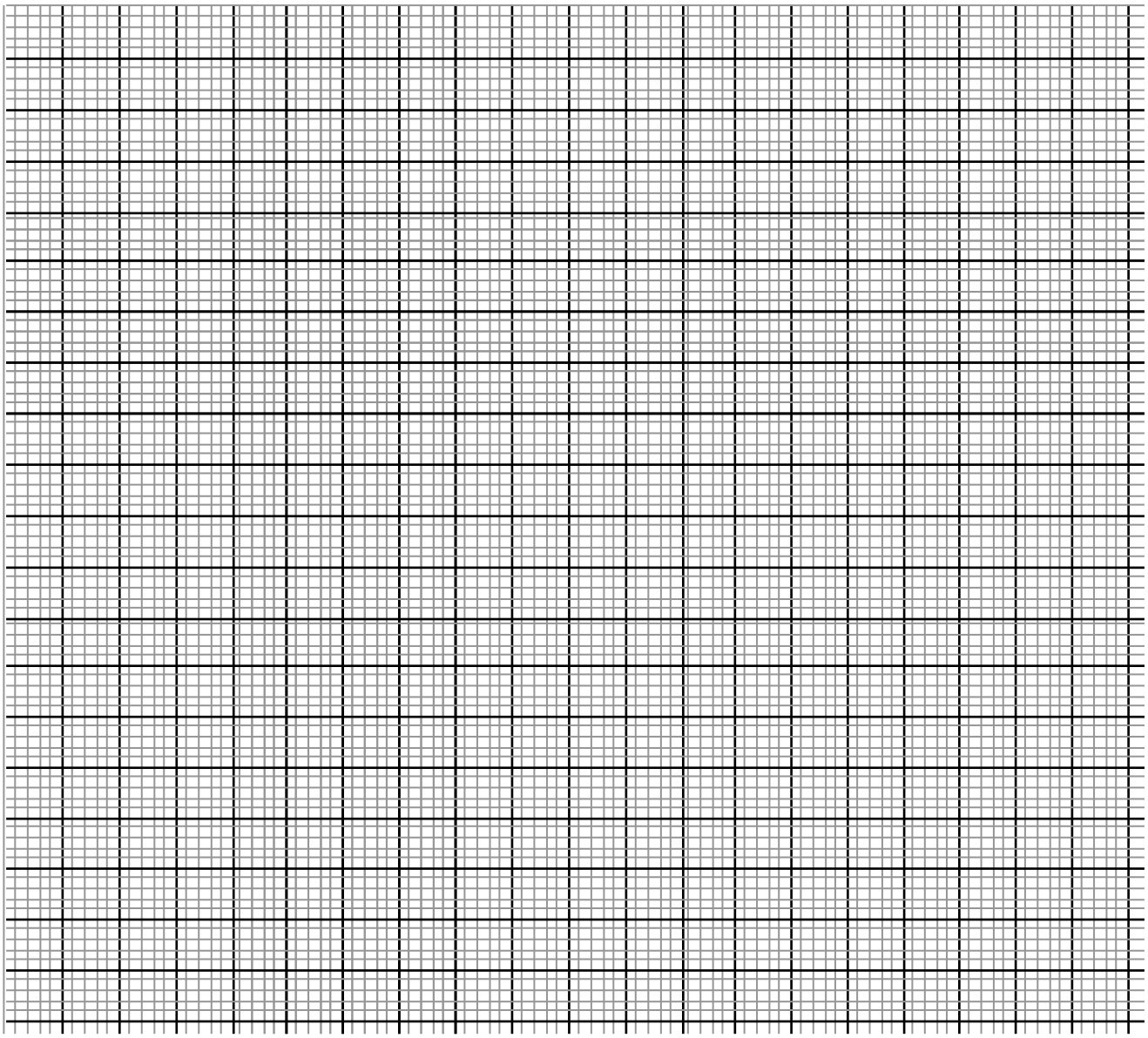
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(b) An experiment was carried out where different volumes of dilute nitric (V) acid and aqueous potassium hydroxide both at 25^{o}C were mixed and stirred with a thermometer. The highest temperature reached by each mixture was recorded in the table below.

Volume of nitric acid (cm^3)	5	10	15	20	25	30	35	40	45
Volume of Potassium hydroxide (cm^3)	45	40	35	30	25	20	15	10	5
Highest temperature of mixture (^{o}C)	27.2	29.4	31.6	33.8	33.6	31.8	30.0	28.4	26.6

(i) On the grid provided, plot a graph of highest temperature (vertical axis) against volume of nitric (V) acid. **(3 marks)**



(ii) Using your graph, determine the:

I) Highest temperature reached **(1 mark)**

……

II) Volume of acid and base reacting when highest temperature is reached. **(1 mark)**

……

(iii) Calculate the amount of heat liberated during the neutralization process. (Specific heat capacity is $4.2Jg^{-1}K^{-1}$ and density of solution is $1.0gcm^{-3}$). **(2 marks)**

……

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(iv) (c) The molar enthalpy of neutralisation between nitric (V) acid and ammonia solution was found to be $-52.2KJmol^{-1}$, while that of nitric (V) acid and potassium hydroxide was – 57.1 $KJmol^{-1}$. Explain the difference in these values. **(2 marks)**

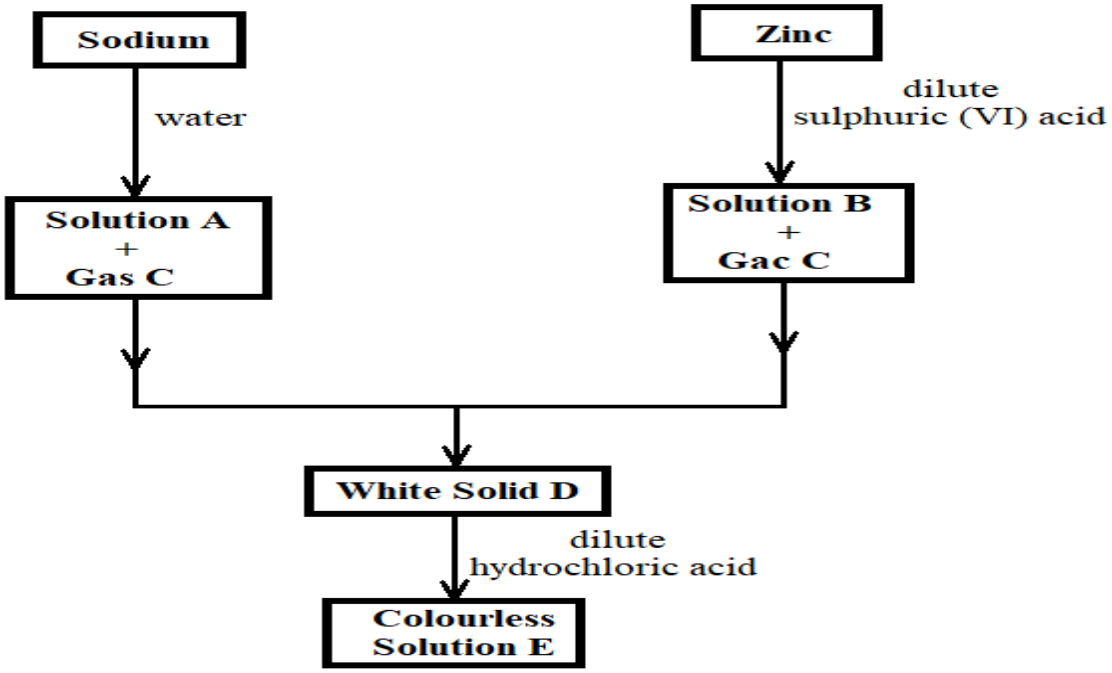
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5. The scheme below shows the preparation of a certain salt. Study it and answer the questions that follow.



(a) Identify the following substances: **(2 marks)**

Solution A ……

Solution B ……...

Gas C: ……..

Solid D ……

(b) (i) Write an ionic equation for the formation of solid **D**. **(1 mark)**

……

(ii) Write an equation for the formation of colourless solution **E**. (**1 mark)**

……

(c) (i) Describe how the identity of **gas C** can be confirmed **(2 marks)**

……

……

……

(ii) Name the catalyst that can be used in the reaction between zinc and dilute sulphuric (VI) acid. **(1 mark)**

……

(d) Explain any **two** observations made when sodium reacts with water. (**2 marks)**

……

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(e) Describe how you can obtain from **solution E**:

(i) A hydrated salt **(1 mark)**

……

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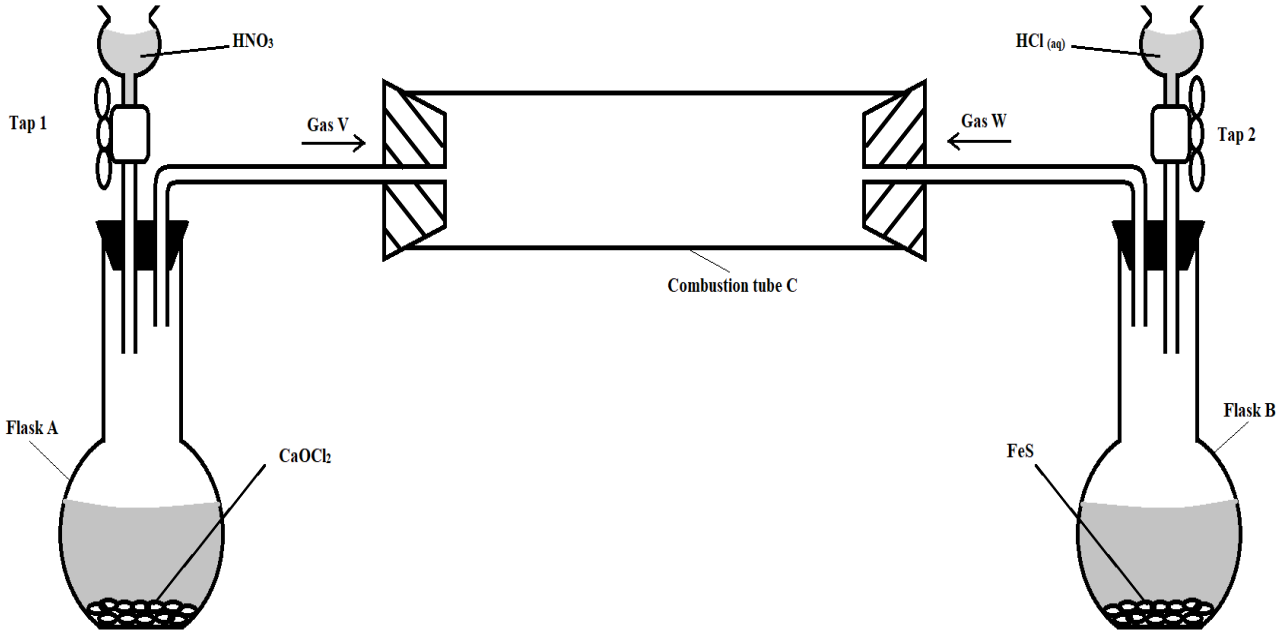
(ii) Anhydrous salt **(1 mark)**

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6. A student set up the following arrangement to prepare and react gases **V** and **W**. Use it to answer the questions that follow. (S =32, H =1, Cl =35.5).



Taps 1 and 2 were opened at the same time.

(i) Write an equation for the reaction that took place in **flask A**. **(1 mark)**

……

(ii) State and explain the observations that were made in: **(2 marks)**

I) Flask **B**

……

……

……

II) Combustion tube **(2 marks)**

……

……

……

(iii) Mark on the diagram the approximate position where reaction occurred in the combustion tube. Explain your answer. **(2 marks)**

……

……

……

(iv) State **one** possible objective of the experiment apart from testing whether gas **W** reacts with gas **V**. **(1 mark)**

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(v) Giving a reason, state **one** precaution that should be taken when carrying out this experiment. **(2 marks)**

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KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

233/3 **CHEMISTRY** Paper 3

(Practical)

Time: 2¼ Hours

SCHOOL…… SIGN……

Kenya Certificate of Secondary Education.

CONFIDENTIAL

INSTRUCTIONS TO SCHOOLS

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

A: Each candidate

1. About 80cm^3 of **solution L**
2. About 100cm^3 of **solution C**
3. About 80cm^3 of **solution**
4. One burette 0 – 50 ml
5. One pipette 25.0ml and a pipette filler
6. One Filter funnel
7. 100ml beaker
8. Solid K
9. Two clean dry 250 ml conical flasks
10. Six (6) clean and dry test tubes on a test tube rack
11. One boiling tube
12. 0.2g of solid sodium hydrogen carbonate supplied in a stoppered container
13. About 500cm^3 of distilled water supplied in a wash bottle
14. One 250ml volumetric flask
15. 4 filter papers (125mm Whatman no. 1)
16. One 10ml measuring cylinder
17. Seven (7) labels
18. One metallic spatula

19. One test tube holder
20. One stopwatch
21. A white tile
22. About 1.0g of solid E supplied in a stoppered container
23. About 0.5g of solid F supplied in a stoppered container

B: Access to:

1. Phenolphthalein indicator supplied with a dropper
2. Bunsen burner
3. 2.0M aqueous ammonia supplied with a dropper
4. 2.0M sodium hydroxide solution supplied with a dropper
5. Bromine water supplied with a dropper
6. 0.5M Barium (II) nitrate solution supplied with a dropper

C: Preparation of solutions and solids

1. **Solution L** is prepared by accurately adding 172$cm^3$of concentrated hydrochloric acid (density 1.18gcm^3) to about 500cm^3 of distilled water and diluting with distilled water to make one litre solution.
2. **Solution C** is prepared by dissolving 8.0g of sodium hydroxide in 700cm^3 of distilled water and diluting it to one litre.
3. **Solid E** is a mixture of zinc carbonate and magnesium sulphate in the ratio 1:1
4. **Solid F** is sodium benzoate
5. **Solid K** is 6 cm long Magnesium ribbon

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

233/3 **CHEMISTRY** Paper 3

(Practical)

Time: 2¼ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

Instructions to candidates

(a) Write your Name, admission number and class in the spaces provided in the question paper.

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

(c) Answer ALL questions in the spaces provided on the question paper

*(d) You are NOT allowed to start working with the apparatus for the first **15 minutes** of the 2¼ hours allowed for this paper. This time is to enable you to read the question paper and make sure you have all the apparatus and chemicals that you may need.*

*(e) All working **MUST** be clearly shown where necessary*

(f) Mathematical tables and silent non-programmed electronic calculators may be used.

FOR EXAMINERS USE ONLY.

QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1	21	
2	11	
3	08	
Total Score	40	

Answer ALL questions in the spaces provided

1. You are provided with:

- **Solid K** – Magnesium ribbon
- **Solution L** – 2.0M Hydrochloric acid
- **Solution C** – 0.4 M Sodium hydroxide solution
- Stopwatch

You are required to determine:

- the rate of reaction between magnesium and hydrochloric acid at different concentrations
- Mass of magnesium ribbon that reacted

PROCEDURE I

i) Place the five test tube on the test tube rack and label them 1, 2, 3, 4 and 5. Using a 10 cm^3 measuring cylinder, measure out the volumes of 2.0 M hydrochloric acid, Solution L, as shown in **table 1** below and pour them into the corresponding test tube. **RETAIN** the remaining solution L for use in question 2 and 3. Wash the measuring cylinder and use it to measure volumes of water as indicated in the table and pour into the corresponding test tubes.

ii) Cut out FIVE pieces each of **exactly** 1 cm length of magnesium ribbon, Solid K.

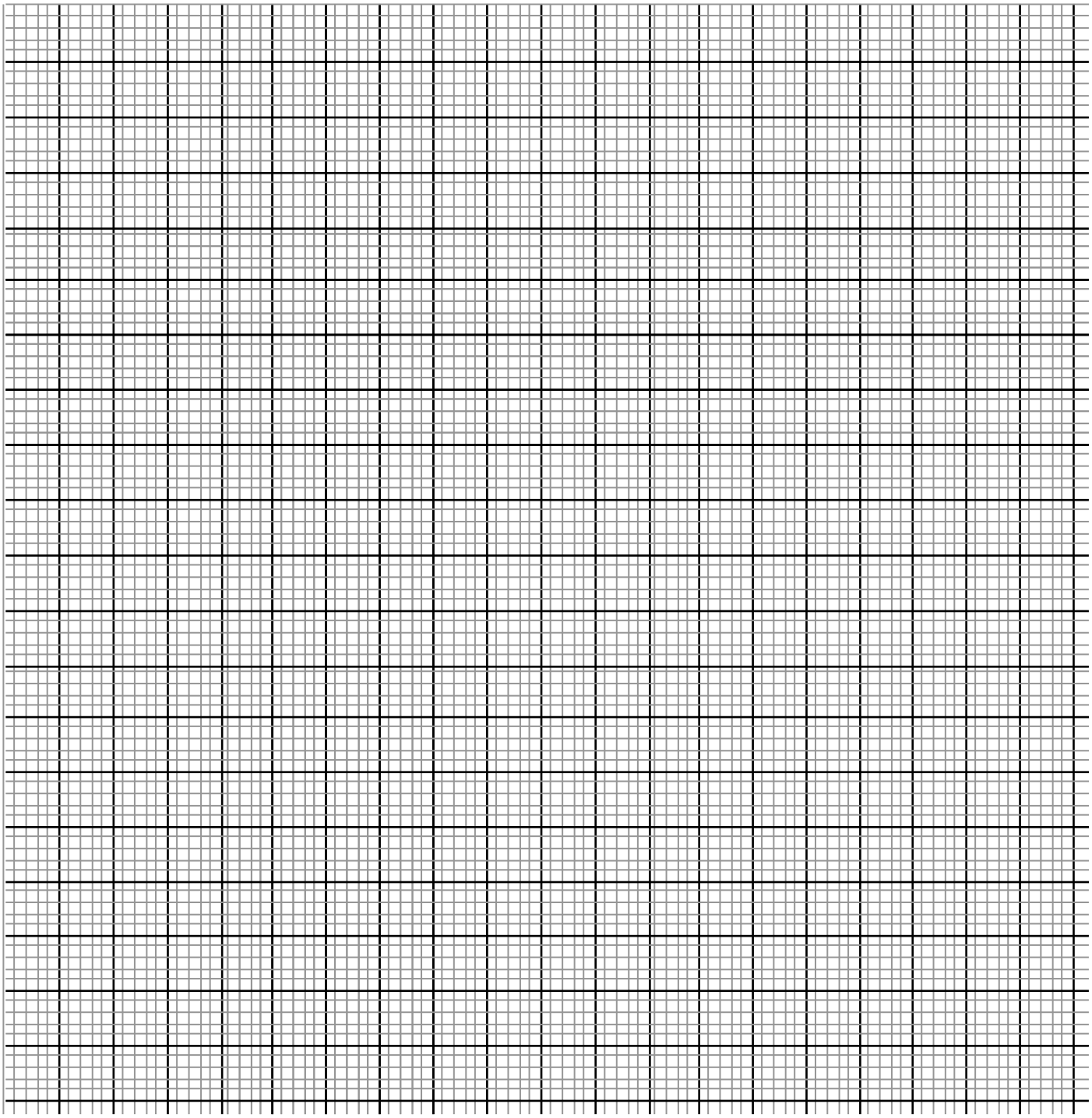
iii) Transfer all the solution in test tube 1 into a clean 100 cm^3 beaker. Place one piece of magnesium ribbon into the beaker and start the stopwatch immediately. Swirl the beaker continuously ensuring that the magnesium is always inside the solution. Record in the table the time taken for the magnesium ribbon to disappear. **TRANSFER** carefully the contents of the beaker into the 250ml volumetric flask. Add 10 cm^3 of distilled water into the beaker, swirl and add it to the volumetric flask. **Retain this for Procedure II.**

iv) Repeat procedure (iii) for each of the solutions in test tube 2, 3, 4 and 5 and complete the table I below.

Table 1 **(5 marks)**

Test tube Number	**1**	**2**	**3**	**4**	**5**
Volume of solution L (cm^3)	**10**	**9**	**8**	**7**	**6**
Volume of water added (cm^3)	**0**	**1**	**2**	**3**	**4**
Time taken for the ribbon to disappear (sec.)					
Rate of reaction $\left(\frac{1}{time}\right)$ s^{-1}					

b) i) Plot a graph of rate of reaction $\left(\frac{1}{time}\right)$ (y-axis) against volume of **solution L**. **(3 marks)**



ii) Using the graph, determine the time that would be taken for a 1 cm length of Magnesium ribbon to disappear if the volume of the acid was 7.5 cm^3. **(1 mark)**

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PROCEDURE II

To the contents of 250ml volumetric flask from Procedure I, add distilled water to the mark while shaking. Label this as **solution D**. Fill the burette with solution C. Pipette 25 cm^3 of solution D into a 250 cm^3 conical flask. Add three drops of phenolphthalein indicator and titrate with solution C. Record the results in table 2. Repeat the titration and complete table 2.

Table 2 **(4 marks)**

	I	**II**	**III**
Final burette reading (cm^3)			
Initial burette reading (cm^3)			
Volume of Solution C used (cm^3)			

(a) Determine the average volume of solution C used. **(1 mark)**

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(b) Calculate the number of moles of:

(i) Sodium hydroxide in solution C used. **(1 mark)**

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(ii) Hydrochloric acid in 25cm^3 of solution D. **(1 mark)**

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(iii) Hydrochloric acid in 250 cm^3 of solution D. **(1 mark)**

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(iv) Hydrochloric acid in 40 cm^3 of solution L **(1 mark)**

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(v) Hydrochloric acid that reacted with Magnesium. **(1 mark)**

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(c) Determine the mass of Magnesium that reacted. (Mg =24.0) **(1 mark)**

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

(a) Place all of solid E in a boiling tube. Add about 10 cm^3 of distilled water and shake thoroughly. Filter the mixture into another boiling tube. **Retain** the filtrate for use in test 2(b) below. Dry the residue using pieces of filter papers.

i) Place the residue in a dry test-tube. Add 4 cm^3 of 2M hydrochloric acid, **solution L**. Retain the mixture for test (iii) below.

OBSERVATIONS	**INFERENCES**
, **(½ mark)**	**(1mark)**

ii) To 2 cm^3 of the solution obtained in (i) above, add aqueous ammonia dropwise until in excess.

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

(b) Use about 2 cm^3 of the filtrate obtained in (a) above for tests (i) to (iii) below.

i) Add aqueous ammonia dropwise until in excess.

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

ii) Add about 2 cm^3 of 2M hydrochloric acid, **solution L**.

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

iii) Add aqueous sodium hydroxide dropwise until in excess.

Observations	Inferences
(½ mark)	**(1mark)**

v) Add three drops of barium nitrate solution.

Observation	Inference
(1mark)	(1mark)

3. You are provided with **solid F**. Carry out the following tests. Write your observations and inferences in the spaces provided.

a) Place all of solid F in a boiling tube. Add about 20 cm^3 of distilled water and shake until all the solid dissolves. Label the solution as solution F.

Add about half of the solid sodium hydrogen carbonate provided to 2 cm^3 of solution F.

Observations	Inferences
(½ mark)	(½ mark)

b) (i) Add about 10 cm^3 of dilute hydrochloric acid, **solution L**, to the rest of solution F in the boiling tube. Filter the mixture. Wash the residue with about 2 cm^3 of distilled water. Dry the residue between filter papers. Place about one third of the dry residue on a metallic spatula and burn it in a Bunsen burner flame.

Observations	Inferences
(l mark)	**(l mark)**

(ii) Place all the remaining residue into a boiling tube. Add about 10 cm^3 of distilled water and shake thoroughly. Retain the mixture for tests in (c).

Observations	Inferences
(l mark)	**(l mark)**

c) Divide the mixture into two portions:

(i) To the first portion, add the rest of the solid sodium hydrogen carbonate.

Observations	Inferences
(½ mark)	**(½ mark)**

ii) To the second portion, add two drops of bromine water.

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

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KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

232/1 **PHYSICS** Paper 1

(Theory)

Time: 2 Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO THE CANDIDATE:

*(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) This paper consists of **two** Sections **A** and **B**.*
*(e) Answer **all** the questions in sections **A** and **B** in the spaces provided.*
*(f) All working **must** be clearly shown in the spaces provided.*
*(g) Mathematical tables and electronic calculators **may be** used.*

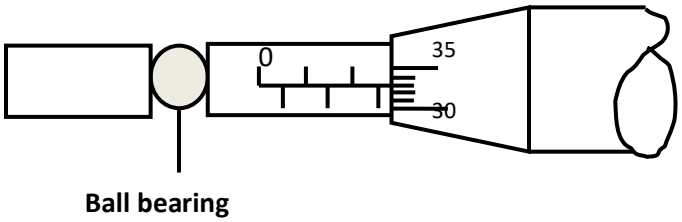
FOR EXAMINER'S USE ONLY:

Section	Question	Maximum Score	Candidate's Score
A	1 – 12	25	
	13	08	
B	14	10	
	15	09	
	16	07	
	17	12	
	18	09	
Total Score		80	

SECTION A: (25 MARKS)

1. A ball bearing is held between the anvil and spindle of a micrometer screw gauge as shown in the **Figure 1** below.

Figure 1



What is the diameter of the ball bearing? **(1 mark)**

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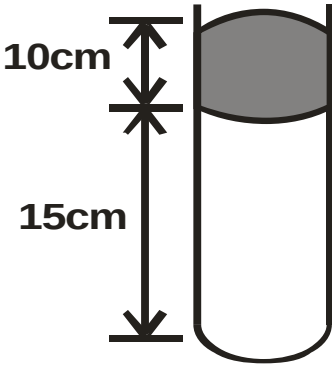
2. State two properties of a liquid that is suitable for use in a thermometer. **(2marks)**

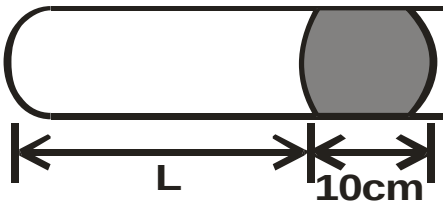
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3. A column of air 15cm is trapped by mercury thread of 10cm as shown below. Calculate the length of the trapped air when the tube is laid horizontally given that atmospheric pressure is 76cmHg. **(3 Marks)**





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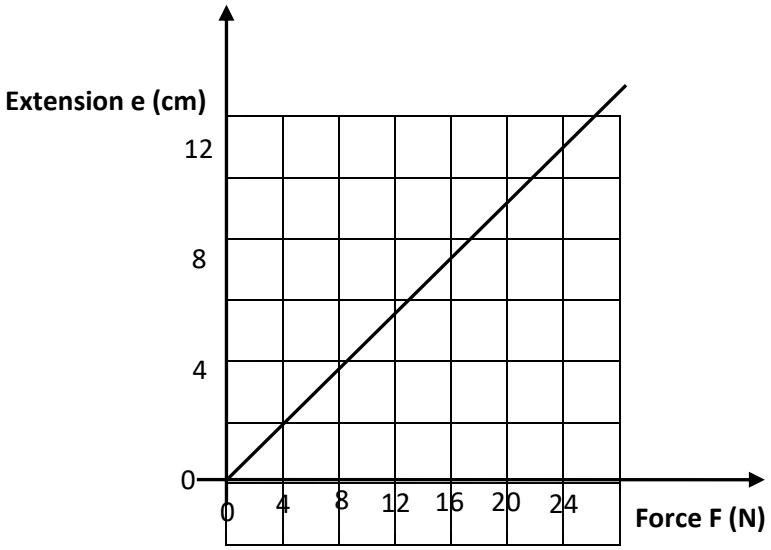
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4. Why are gases more compressible while liquids and solids are almost incompressible? **(1mark)**

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5. The graph shows variation of extension and stretching force F for a spring which obeys Hooke's law.



(i) Determine the spring constant in SI units. **(1mark)**

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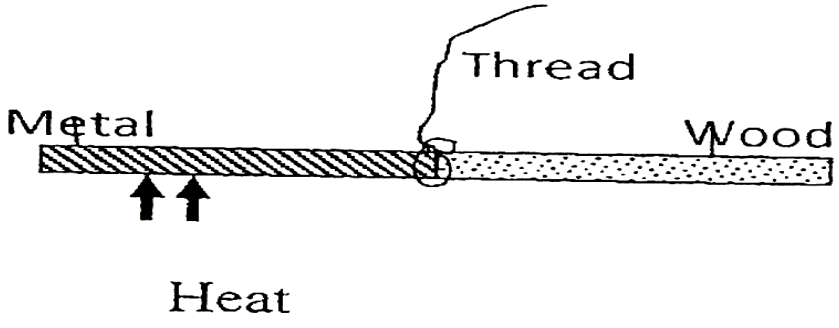
(ii) The energy stored when the extension is 20cm. **(2marks)**

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6. The figure 2 below shows a rod made of wood on one end and metal on the other end suspended freely with a piece of thread so that it is in equilibrium.



The side made of metal is now heated with a Bunsen flame. State with a reason, the side to which the rod is likely to tilt. **(2 marks)**

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7. State one factor that would increase the surface tension of pure water in a beaker of water. **(1 mk)**

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8. The figure below (figure 3) shows a uniform metal rod balanced at its Centre by different forces.

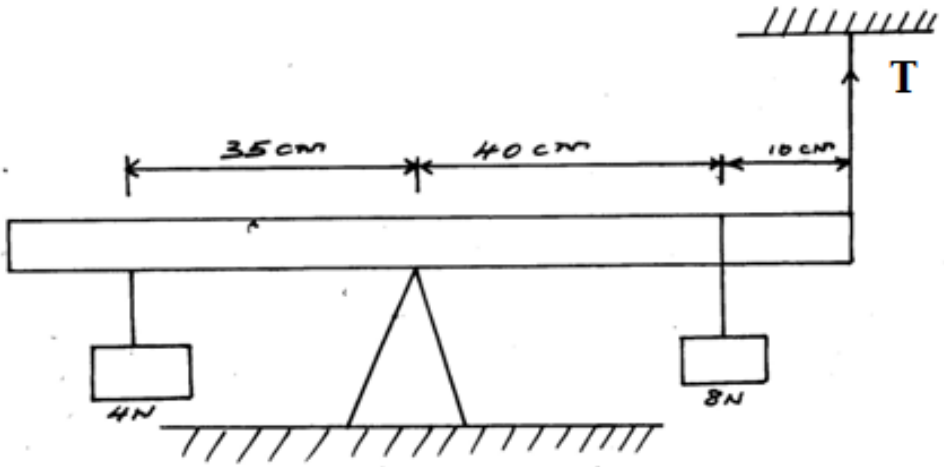


Figure 3

Determine the value of T. **(3 marks)**

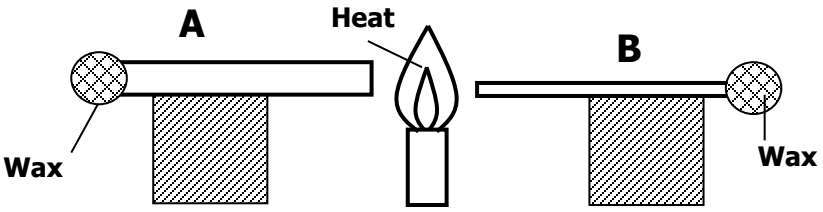
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9. Two rods of copper **A** and **B** of the same length but different thickness with candle wax attached to either end are heated as shown below.



State and explain the observation made. **(2 marks)**

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10. Figure 4 shows a manometer attached to a gas supply. If the atmospheric pressure is 1.0336 x 10^5Pa. Calculate the pressure of the gas supply.

(Density of mercury = 13600kg/m^3) **(2 marks)**

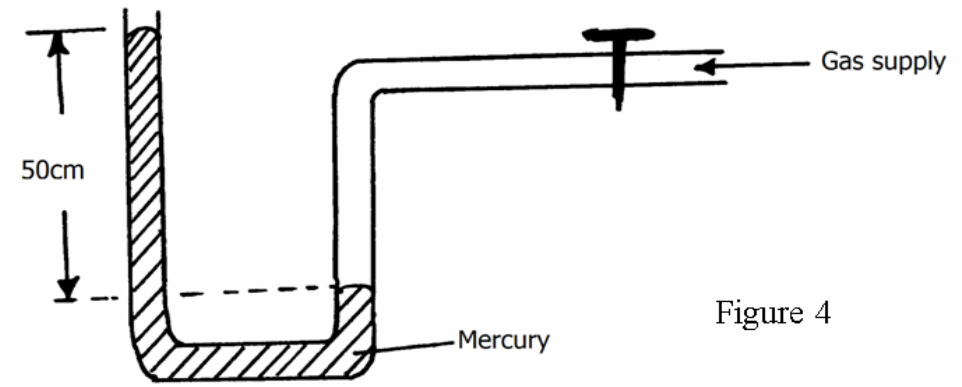


Figure 4

11. A block of wood measuring 0.8m by 0.5m by 2m floats in water. 1.2m of the block is submerged. (Density of water = 1000kg/m^3 , g=10N/kg) Determine the weight of the water displaced. **(3 marks)**

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12. The figure 5 below shows two light sheets of paper arranged as shown.

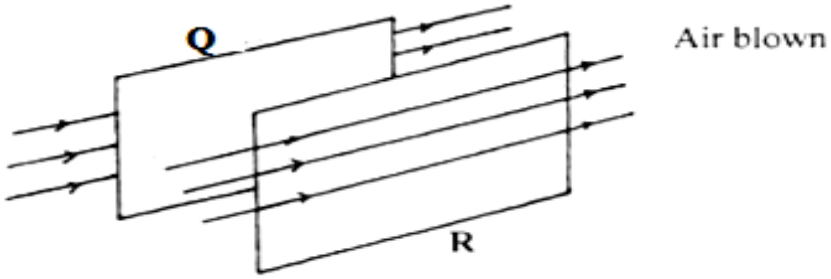


Fig. 5

Its observed that the papers move away from each other when strong air is blown at the same time behind paper Q and in front of paper R as shown. Explain **(2 marks)**

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SECTION B (55 MARKS)

13. A block and tackle is made up of three pulley wheels on top and two pulley wheels at the bottom in figure 6

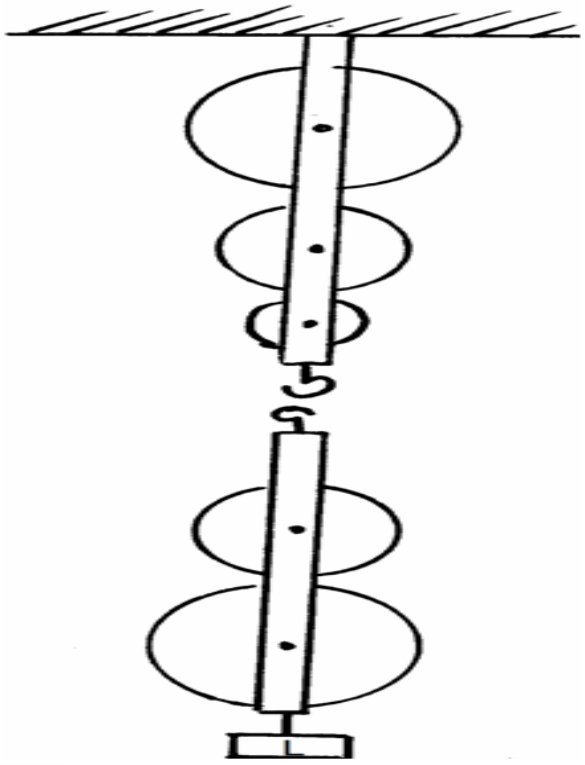


Figure 6

(a) Complete the diagram by drawing the chain which passes over the wheels and indicate where the effort is applied **(2 marks)**

(b) What is the velocity ratio (V.R) of the machine **(1 mark)**

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(c) A load of 1120N is lifted by an effort of 250N

Determine

(i) The mechanical advantage (M.A) of the system **(2 mark)**

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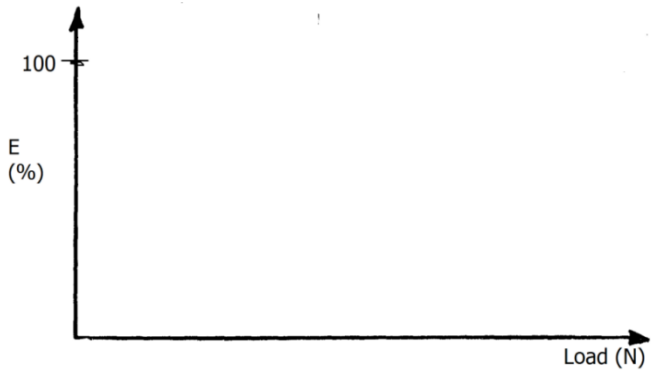
(ii) The efficiency, E, of the system **(2 marks)**

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(e) Using the axes given below, sketch a graph of efficiency, E, against load **(1 mark)**



14. (a) What is meant by the term specific latent heat of fusion of a substance? **(1 mark)**

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(b) Water of mass 200g at a temperature of 60^{o}C is put in a well lagged copper calorimeter of mass 80g. A piece of ice at 0^{o}C and mass 20g is placed in the calorimeter and the mixture stirred gently until all the ice melts. The final temperature of the mixture is then measured (Latent heat of fusion of ice = 334000Jkg^{-1}, specific heat capacity of water = 4200Jkg^{-1}K^{-1})

Determine:

(i) The heat absorbed by the melting ice at 0^{o}C **(2 marks)**

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(ii) The heat absorbed by the melted ice (water) to rise to temperature T **(2 marks)**

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(iii) The heat lost by the warm water and the calorimeter (Specific heat capacity of the calorimeter = $900Jkg^{-1}K^{-1}$) **(3 marks)**

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(iv) The final temperature T of the mixture **(2 marks)**

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15. A lead shot of mass 40g is tied to a string of length 70cm. It is swung vertically at 5 revolutions per second. (Take $g=10m/s^2$)

(a) Determine;

(i) Periodic time, **(1 mark)**

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(ii) Angular velocity **(2 marks)**

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(iii) Linear velocity **(2 marks)**

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(iv) Maximum tension in the string. **(2 marks)**

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(b) The figure 7 below shows a container with small holes at the bottom in which wet clothes have been put. When the container is whirled in air at high speed as shown, it is observed that the clothes dry faster. Explain how the rotation of the container causes the clothes to dry faster.

(2 marks)

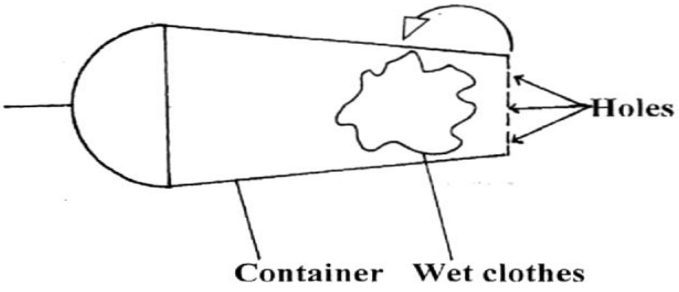


Fig 7

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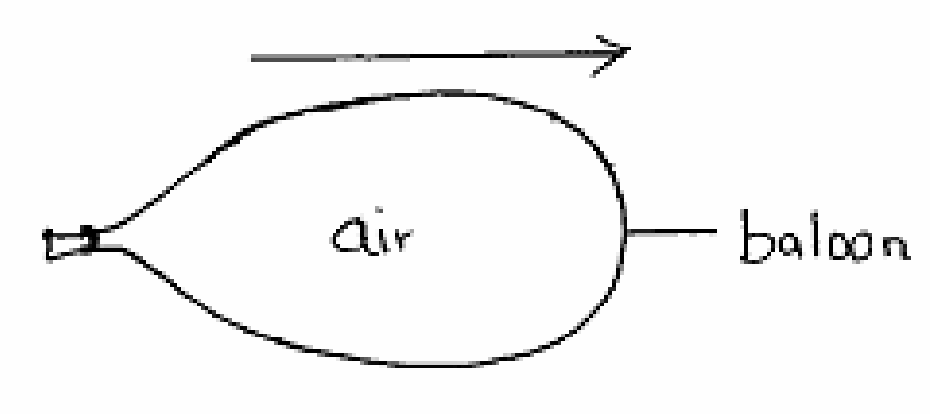
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16. (a)Give a reason why the inside of a helmet is lined with sponge. **(1 mark)**

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(b) The figure below shows a balloon filled with air.



When the mouth is suddenly opened, the balloon moves in the direction shown above by the arrow. Explain that observation. **(2 marks)**

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(c) A rock of mass 150kg moving at 10m/s collides with a stationary rock of mass100kg. They fuse after collision. Determine the

(i) Total momentum before collision. **(2 marks)**

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(ii) Their common velocity after collision. **(2 marks)**

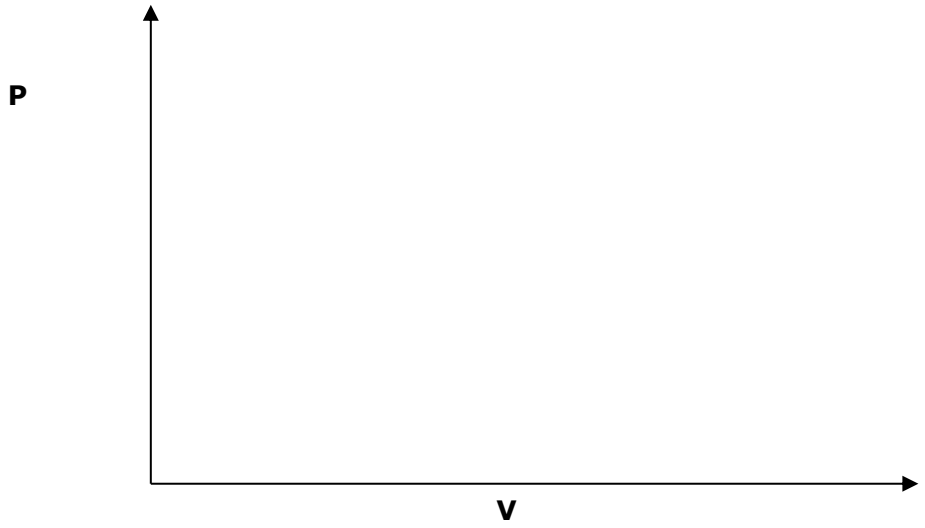
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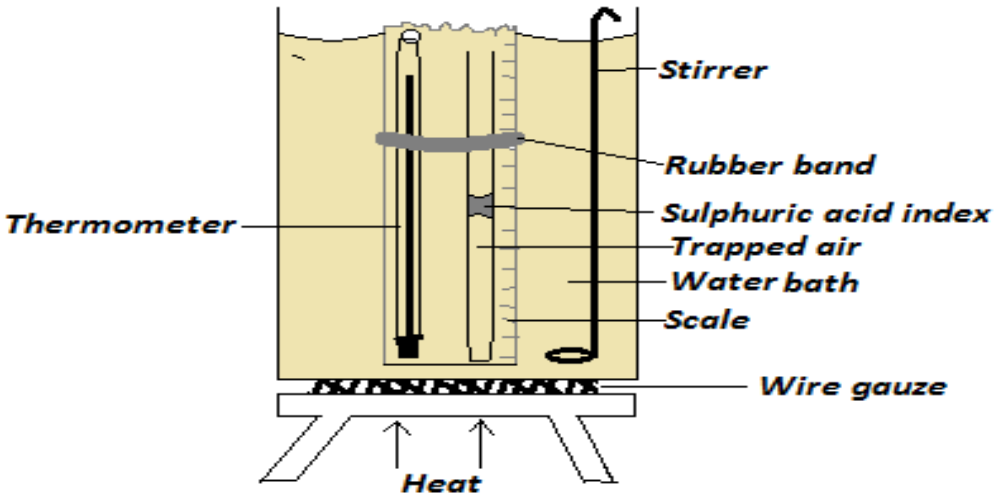
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17. (a) On the axis below, sketch a graph to show how the pressure of a fixed mass of a gas varies with volume at constant temperature. **(1 mark)**



(b) The set-up below shows an arrangement that can be used to Verify Charles' law.



(i) State any one use of sulphuric acid index in the above set up. **(1 mark)**

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(ii) What is the use of the stirrer? **(1 mark)**

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(iii) State two measurements that should be taken in this experiment. **(2 marks)**

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(iv) Describe how the set up can be used to verify Charles' law. **(4 marks)**

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(c) The volume of a gas enclosed with a movable piston is 300 cm^3 when the temperature is 290K. Determine the temperature at which the volume of the gas increases to 355 cm^3 (Assume pressure does not change**)** **(3 marks)**

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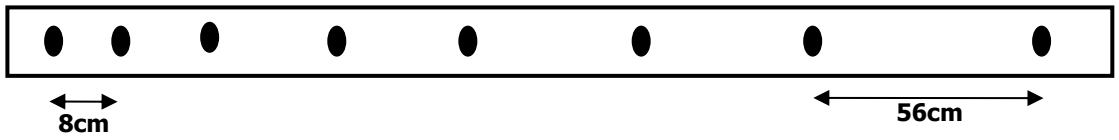
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18. (a). The section of the tape shown below was produced when a tape running down an incline plane was attached to a **ticker-tape timer** of frequency **50Hz**.



i) Indicate above the tape the direction in which the trolley was moving. **(1 mark)**

ii) What type of current was used to operate the ticker timer? **(1 mark)**

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iii) Find the acceleration of the trolley in SI units. **(3 marks)**

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(b). A stone is projected vertically upwards with initial velocity of 40m/s from the ground. Calculate:

i) Time taken to reach maximum height **(2 marks)**

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ii) Maximum height reached **(2 marks)**

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KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

232/2 **PHYSICS** Paper 2

(Theory)

Time: 2 Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

1) Write your name and your admission number in the spaces provided above.
2) Write the date and your signature.
*3) This paper consists of two sections; **A** and **B***
*4) Answer **all** questions in section **A** and **B** in the spaces provided.*
*5) All working **must** be clearly shown in the spaces provided in this booklet.*
6) Non programmable silent electronic calculators may be used.

FOR EXAMINERS USE

SECTION	QUESTIONS	MAX SCORE	SCORE
A	1 – 12	25	
B	13	13	
	14	15	
	15	15	
	16	12	
	TOTAL	**80**	

SECTION A (25 MARKS)

1. An object pin is placed in front of a plane mirror. The image of the pin is viewed from position A. Draw array diagram to show this image**.** **(2 marks)**

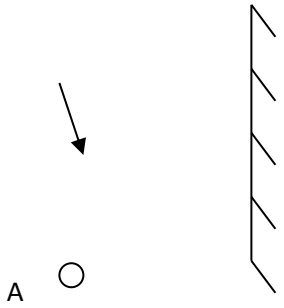


Figure 1

2. You are provided with two rods, a conductor and an insulator. Describe how you would use a charged gold-leaf electroscope to distinguish between the insulator and a conductor. **(2 marks)**

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3. A pin-hole camera of length 10 cm is placed 0.5 m away from a goalpost. A sharp image of the goalpost 15 cm high is formed on the screen. Determine the height of the goalpost**. (2 marks)**

4. The figure 2 below shows a displacement- time graph of a particular progressive wave.

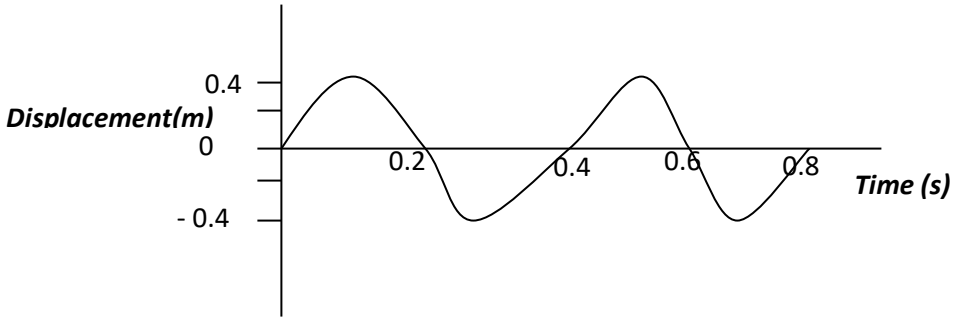


Figure 2

Draw on the same diagram, a wave which passes through the points with double frequency and half amplitude of the first wave**.** **(2 marks)**

5. Explain how temperature affects the speed of sound is gases **(1 mark)**

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6. A polythene charged strip is brought near two spheres A and B that are in contact as shown in **figure 3**

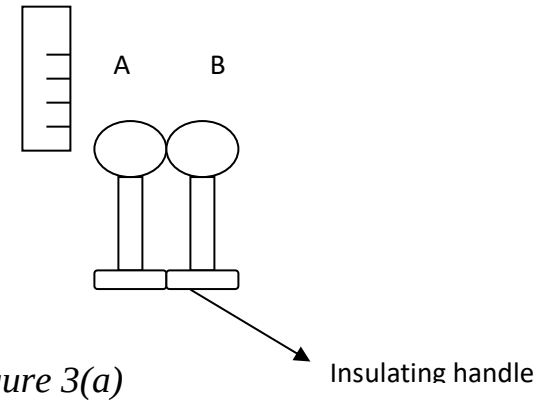


Figure 3(a)

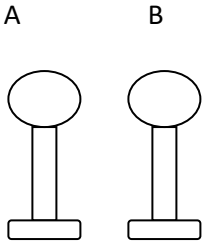


Figure 3(b)

(i) indicate the charge distribution the spheres when negatively charged polythene is brought near A. **(1 mark)**

(ii) draw the charge distribution on A and B shown in (b) when the spheres are separated and immediately polythene **withdrawn.** **(2 marks)**

7. Three identical lamps X, Y, Z are connected as in figure 4. The E.m.f applied in the circuit 3.0 volts

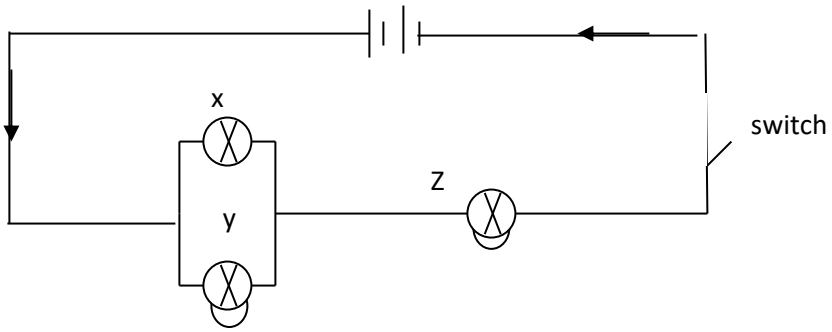


Figure 4.

(i) State which lamp is brightest when circuit is **closed?** **(1 mark)**

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(ii) Explain your answer in part **(i) above.** **(2mrks)**

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8. Figure 5 shows an iron rod on which a wire is to be wound to make an electromagnet.

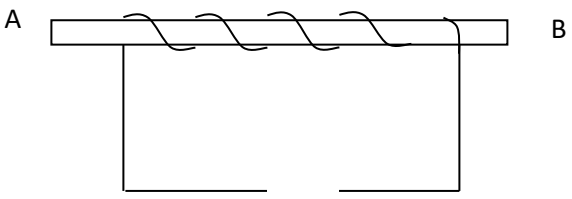


Figure 5

By drawing, show how two cells are connected so that end A becomes North pole and end B south pole. **(2marks)**

9. The force on a conductor carrying current in a magnetic field can be varied by changing, among others, the magnitude of the current and magnetic field strength. State two other factors that can be changed to vary the force**.** **(2marks)**

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10. Using domain theory explain the differences between a magnetic material and a magnet**(2marks)**

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11. Figure 6 shows water waves traveling from deep into shallow water.

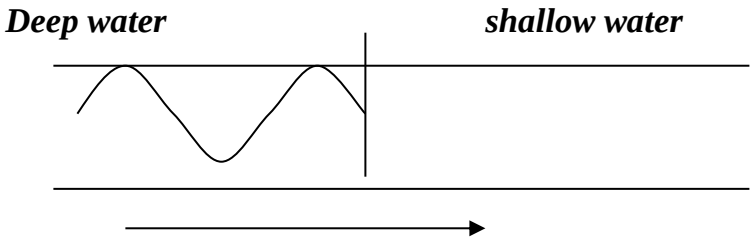


Figure 6

Complete the wave front to show how it travels in shallow **water** **(1 mark)**

12. Figure 7. Shows two rays incident on a converging lens

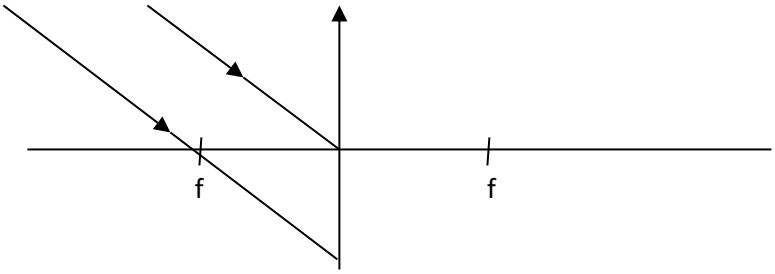


Figure 7.

(i) Draw the ray after refraction to show positions of the image**.** **(2marks/)**

(ii) State the application of this arrangement in (i) **above** **(1 mk).**

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SECTION B(55 MARKS)

13. (a) Define refractive index of a material in terms of velocity of **light.** **(1mark/)**

……

……

(b) state the conditions necessary for a total internal refraction to **occur** **(2marks)**

……

……

(c) Figure 8 shows light ray traveling from air to glass and from glass to air. Ray of Light AO is incident normally on the semicircular glass,

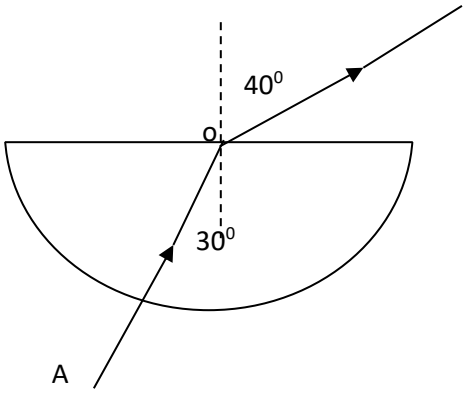


Figure 8

(i) Determine the refractive index of glass with respect to air. **(3 marks)**

(ii) In addition to the circular glass, you are provided with; a ray box (source of light ray), four office pins, soft board, white paper and a protractor, describe how this apparatus may be used to determine the critical angle of the glass. **(4marks)**

(iii) Determine the critical angle of this semicircular **glass.** **(3 marks)**

14.(a) you are provided with three resistors 1 **Ω**, 3 **Ω** and 6 **Ω**.

(i) Draw a circuit diagram to show 6**Ω** and 3**Ω** resistors in parallel and this combination in series with 2**Ω** resistor and the 6 V battery**.** **(2marks).**

(ii) Determine the total effective resistance in the circuit drawn in (i) above **(2 marks)**

(iii) Calculate the p.d across a 2 **Ω resistor** **(2 marks)**

(iv) Determine the value of current through the 6 **Ω resistor** **(3marks)**

(b) Figure 9, shows a graph of potential difference (V) against current (I A) through a filament lamp (bulb)

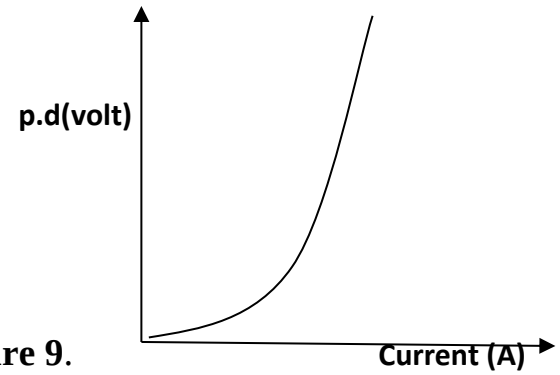


Figure 9.

(i) Draw a well labeled working circuit diagram showing the apparatus that can be used to obtain a set of readings used to draw the graph in (figure9**). (2marks)**

(ii) explain why the filament lamp does not obey ohm's **law** **(2 marks)**

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……

(iii) Explain how resistance of the filament lamp varies as current increases. **(1 mark).**

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……

(iv) State the characteristics of material wire used in the filament lamp. **(1 mark).**

……

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15. (a)define capacitance of a capacitor. **(1 mark)**

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(b) (i) Describe the essential features in the construction of a parallel plate capacitor. **(3 marks)**

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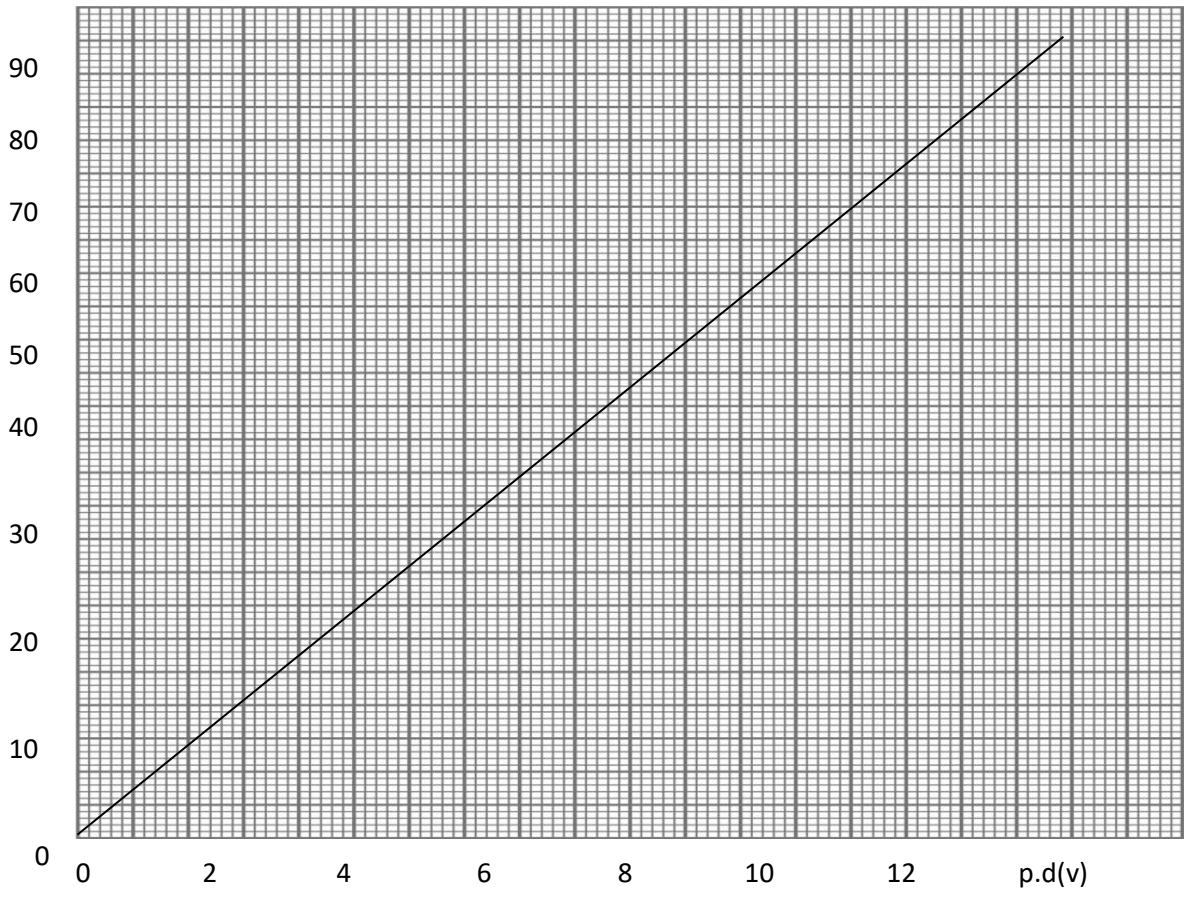
(iii) Explain how charge is distributed in such parallel capacitor in b(i) above. **(2marks)**

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(c) In an experiment to charge a capacitor, the charge stored was measured for different values of charging potential difference. A graph of charge stored Q (μc) (y-axis) against potential difference p.d (v) was plotted as shown graph 1.



(i) list down the apparatus used to perform this experiment **(1 mark)**

……

(ii) draw a circuit diagram showing all connections of the listed apparatus in (i) above to perform the experiment of charging a capacitor**.** **(2 marks)**

From the graph

(ii) determine the capacitance of the capacitor used in this experiment. **(3 marks)**

(iii)Calculate the energy stored in this capacitor**.** **(2 marks)**

(d) Three capacitors are connected a shown in figure 10.

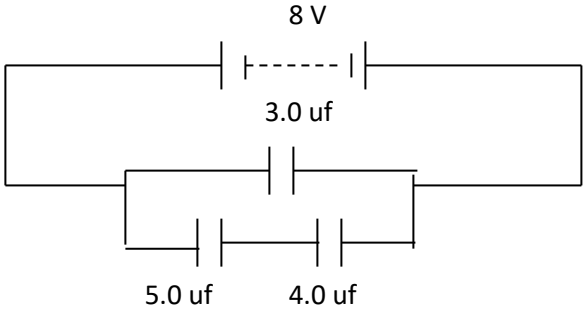


Figure 10

Calculate:

(i) total effective capacitance in the circuit**.** **(2 marks)**

(ii) The charge on a 4.0 µF capacitor**.** **(2 marks)**

16. (a) Complete figure 11 by drawing two rays to show the final image formed by convex lens of the object O, shown **(2 marks)**

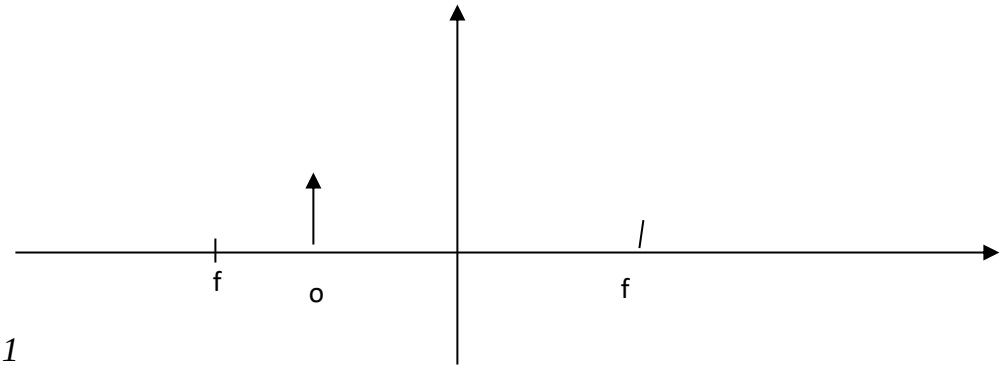


Figure 11

(b) Describe the characteristics of the image formed in 16 (a) **above** **(3 marks)**

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(c) State the optical device that uses the arrangement in (**a) above.** **(1 mark)**

……

(d) A person viewing a near object switches attention to look at an aero-plane far away.

(i) State the change that occurs in his eye in order to see the aero-plane clearly. **(2 marks)**

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(ii) If this person fails to see the aero-plane clearly, what defect is he suffering from? **(1 mark)**

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(iii) Explain with a diagram how the defect can be corrected. **(3 marks)**

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

232/3 **PHYSICS** Paper 3

(Practical)

Time: 2½ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS

a) *Answer all the questions in this paper*

b) *You are supposed to spend the first 15 minutes of the 2 ¼hours allowed for this paper reading the whole paper carefully before starting your work.*

c) *Marks are given for clear record of the observations made, their suitability and accuracy and the use made of them.*

d) *Candidates are advised to record observations as soon as they are made*

e) *Mathematical table and electronic calculators may be used.*

FOR EXAMINER'S USE ONLY

QUESTION	TOTAL MARKS	CANDIDATE'S SCORE
A	12	
B	21	
C	7	
	GRAND TOTAL	40

Answer all the questions

QUESTION 1

You are provided with the following:
- Lump of plasticine
- 50g mass
- Stand, boss and clamp
- 3 pieces of threads
- Meter rule
- Measuring cylinder
- Some water in a beaker

(a) Put 50ml of water in a measuring cylinder.

Mould the plasticine into a shape that can fit into the measuring cylinder without touching it's walls and tie it with the thread and completely immerse it in water in the measuring cylinder to determine it's volume, V.

V=……cm^3 **(1mark)**

V=……m^3 **(1mark)**

(b) Given that upthrust, **U** experience by the plasticine in water is **U=vρg**

Where: **v** – volume of the 20g mass

ρ- density of water ($1g/cm^3$)

g – acceleration due to gravity

Determine upthrust **U** on the of plasticine **(3 marks**

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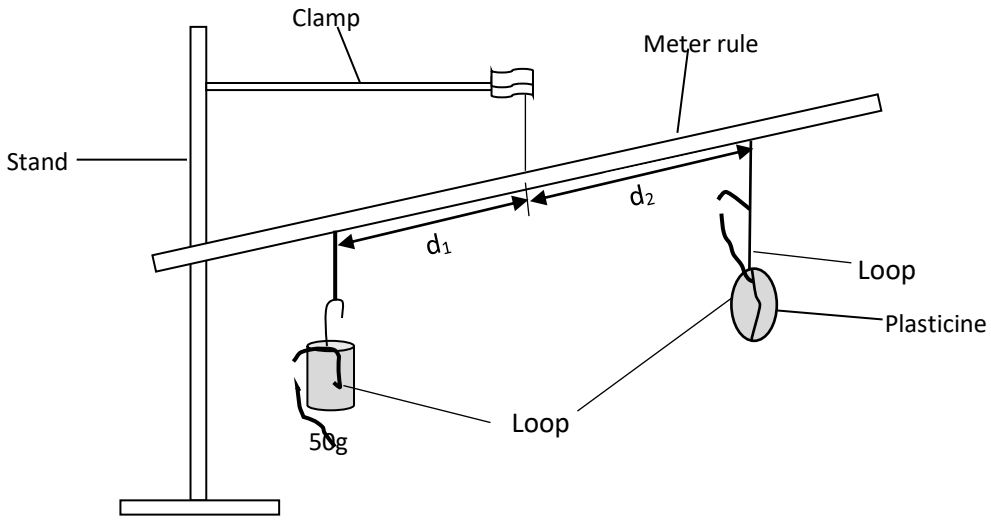
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(c) Tie the meter rule with the thread at the center (50cm mark) and suspend it on the stand as shown on the figure below.

(d) Tie 50g mass with the thread and suspend it on the meter rule at a distance d_1 = 10cm from the center as shown on the figure.

e) Suspend the plasticine on the meter rule and then adjust distance d_2 of the plasticine such that the system balances horizontally as shown in the set up below.



(f) Using the principle of moment determine the weight, **W** of the plasticine when the system is balancing horizontally. **(3 marks)**

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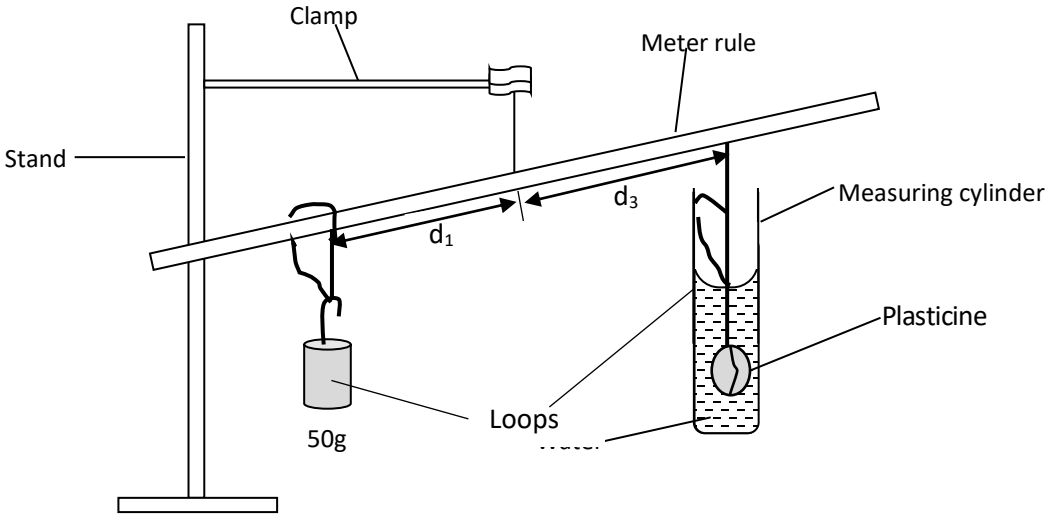
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(g) Immerse the suspended plasticine in the water in the measuring cylinder and adjust distance d_3 of the plasticine such that the system balances horizontally as shown below



(h) Record the value of $\mathbf{d_3}$ **(1mark)**

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i) Given $R = \frac{d_3}{d_3 - d_2}$ determine the value of **R** **(3marks)**

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QUESTION 2

You are provided with the following:

- Two dry cells and a cell holder
- One voltmeter (0 – 5V)
- One ammeter (0 – 1A) or (0 – 2.5A)
- Six resistors labeled AB
- One resistor labeled R
- A switch
- 6 connecting wires with crocodile clip at one end
- Jockey attached to a connecting wire

(a) Set up the circuit as shown in figure 1

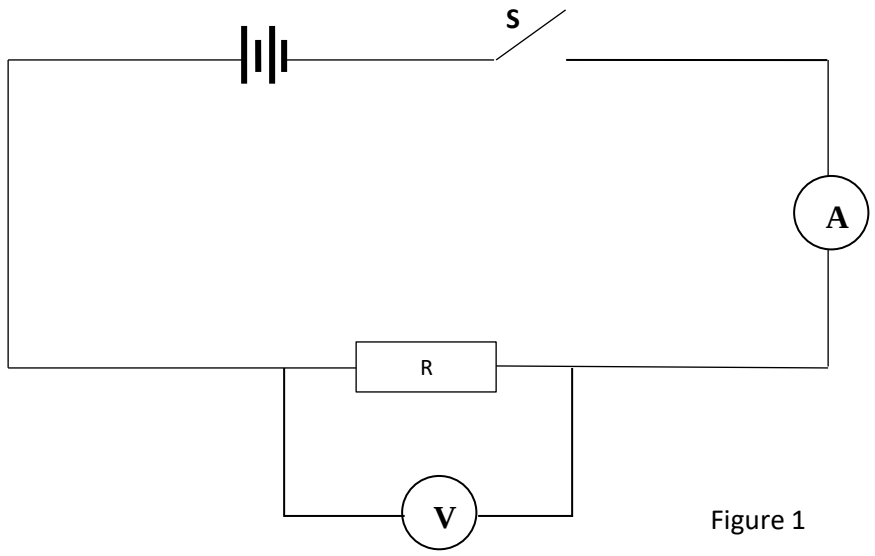


Figure 1

(i) Close the switch S, Read and record the voltmeter and ammeter readings

V = ... **(1mark)**

I = ... **(1mark)**

(ii) Determine the value of R given that $R = \frac{V}{I}$ **(3marks)**

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(b) Set the circuit as shown in figure 2

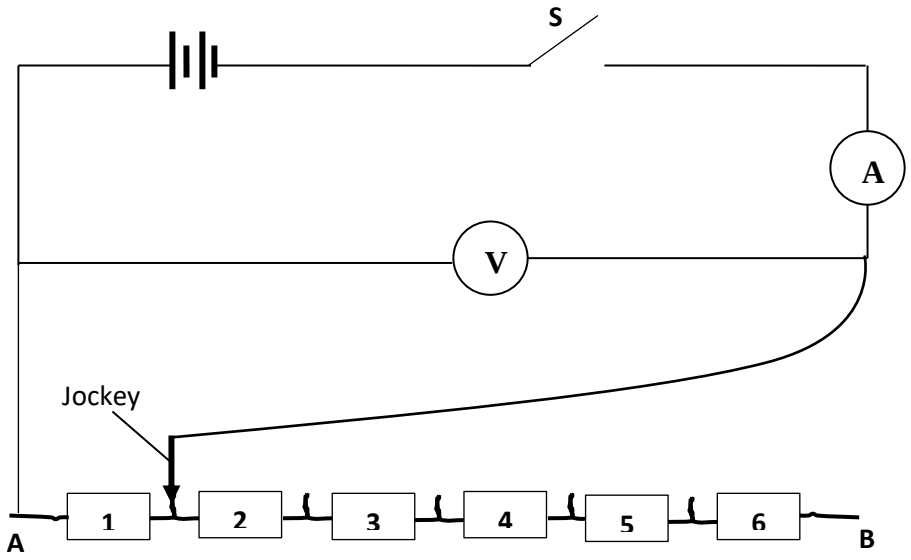


Figure 2

(i) With the jockey across resistor 1 as shown above, close the switch, read and record the ammeter and voltmeter readings in table.

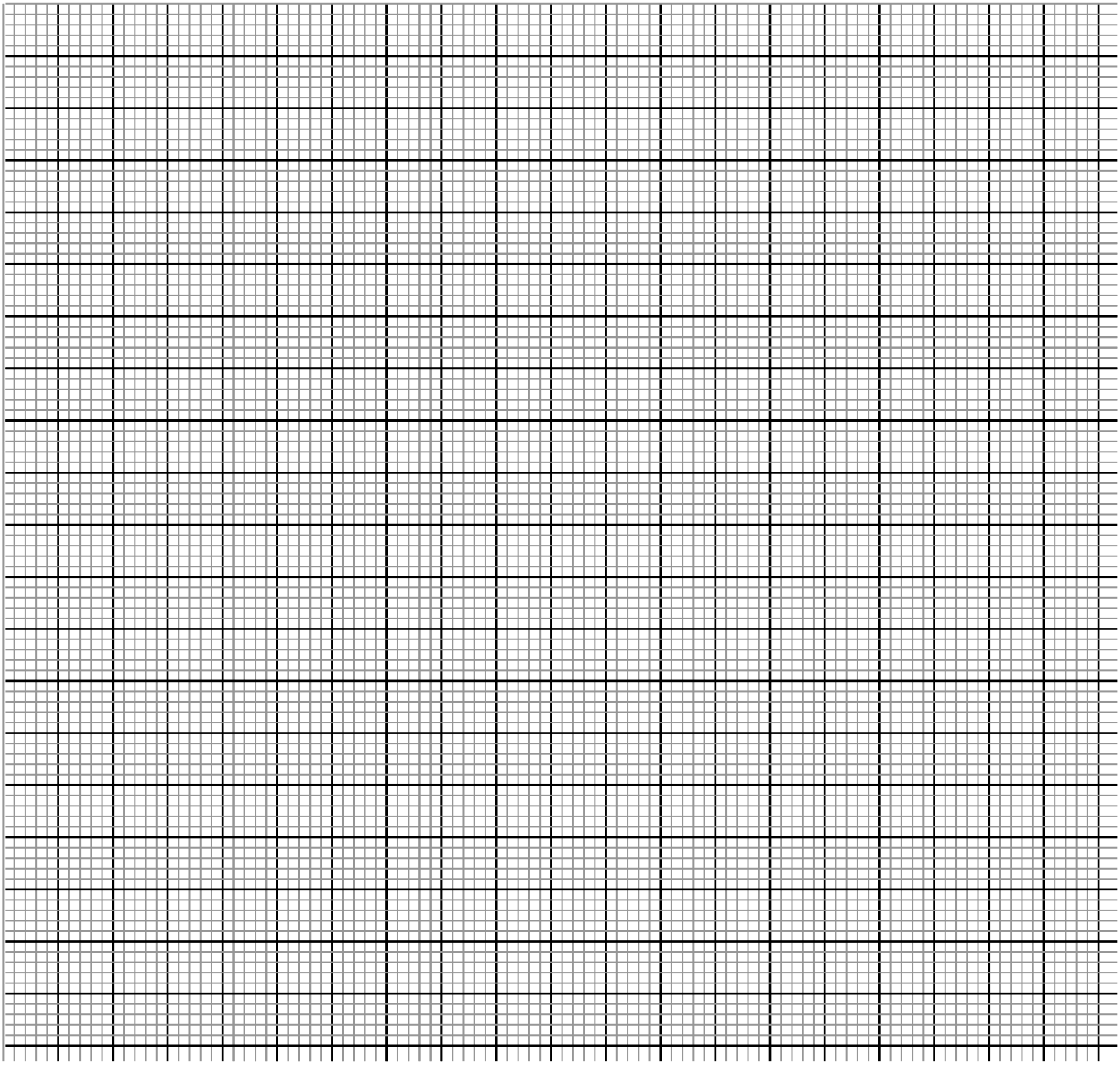
(ii) Repeat the procedure b (i) with crocodile clips across resistors 2, 3, 4, 5 and 6 respectively, each time recording the corresponding values for V and I in table 1

Table 1

Number of resistors	1	2	3	4	5	6
p.d. (volts)						
Current I (Amperes)						

(6 marks)

(c) On the grid provided plot the graph of p.d (V) (y axis) against I (A) **(5 marks)**



(**d)** Determine the slope of the graph **(2 marks)**

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(e) Given that $E = V + Ir$ use your graph and this equation to determine the value of: **(3 marks)**

(i) E

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(ii) r

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QUESTION 3

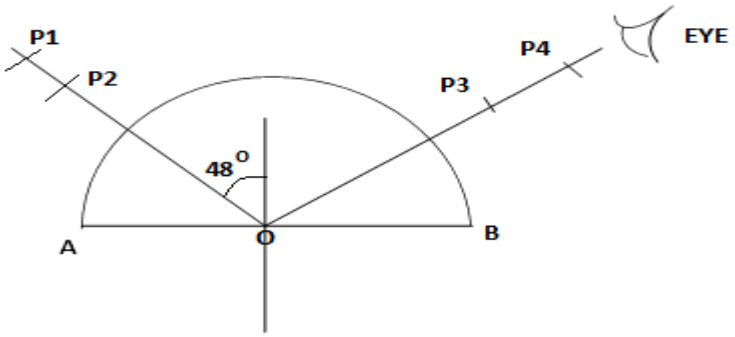
You are provided with the following:

- A semi-circular glass block
- Soft board
- White paper
- Four Optical pins
- Two Thumb pins
- Vernier calipers

Procedure

a) Measure the thickness of the glass block using the Vernier calipers provided

t = ……**cm** **(1mark)**



b) Fix the plain paper to the soft board using drawing/thumb pins

c) Place the semi-circular glass block on the paper and trace its outline. Remove the block and label A and B as shown in figure above.

d) Identify the centre O of the plane and draw the normal at that point as shown in the figure above.

e) Measure incident angle ***i*** as $\mathbf{48^0}$ then draw the incident ray

d) Place two pins P_1 and P_2 on the incident ray as shown.

e) Move your eyes at curved face and locate the images of pins P_1 and P_2, place pins P_3 and P_4 such that the four pins are aligned in a straight line.

f) Remove the glass block and join points P_3 and P_4 to meet the interface AB.

g) Measure the angle Y between incident ray and the reflected ray.

Y= ……. **(1 mark)**

h) Find the value of **M** given that **(3marks)**

$$M = \left(\frac{tY}{2}\right)^{-1}$$

i) Hand in the white paper used **(2marks)**

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Kenya Certificate of Secondary Education.

SERIES 1

443/1 **AGRICULTURE** Paper 1

Time: 2 Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- *Write your name, index number, admission number and class in the spaces provided.*
- *Sign and write the date in the spaces provided above.*
- *Answer **all** the questions in section A and B.*
- *Answer any **two** questions in section C.*
- *Answers should be written in the spaces provided.*

FOR EXAMINERS USE ONLY

SECTIONS	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A	1-20	30	
B	21-24	20	
C		20	
		20	
TOTAL		90	

SECTION A: (30 marks)

Answer all questions in this section in the spaces provided.

1. List **two** disadvantages of small scale farming. **(1 mark)**

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……

2. Name **two** ways by which predators affect agricultural production. **(1 mark)**

……

……

3. Name the role of each of the following chemicals in water treatment.

i) Alum **(½ mark)**

……

ii) Soda ash **(½ mark)**

……

4. State **two** ways in which crop rotation controls weeds. **(1 mark)**

……

……

5. State **four** characteristics of a good vegetable seedling. **(2 marks)**

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6. Name **two** forms of horticulture practised in Kenya. **(1 mark)**

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7. State **two** mechanical methods of separating soil particles, according to size, during soil analysis.

(1 mark)

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8. State **four** reasons why a nursery is important in crop production. **(2 marks)**

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9. Name the part used for vegetative propagation of each of the following plants. **(2 marks)**

a) Cassava ……...

b) Sisal ……..…..

c) Pyrethrum ……...

d) Sweet potatoes ……..

10. State **four** reasons for applying phosphatic fertilizers during planting. **(2 marks)**

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11. Give **two** reasons for testing soil. **(2 marks)**

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12. State **four** management practices undertaken to improve natural pastures**.** **(2 marks)**

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13. State **four** qualities of certified seeds. **(2 marks)**

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14. Name **four** classes of weeds. **(2 marks)**

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15. State **three** causes of land fragmentation in Kenya today. **(1½ marks)**

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16. State any **three** organic farming practices. **(1½ marks)**

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17. What is meant by the term production function? **(1 mark)**

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18. What is meant by the term integrated pest management? **(1 mark)**

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……

19. Give **three** examples of fixed costs in maize production. **(1 1/2 marks)**

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20. State **three** factors that determine the choice of water pipes used on the farm. **(1 1/2 marks)**

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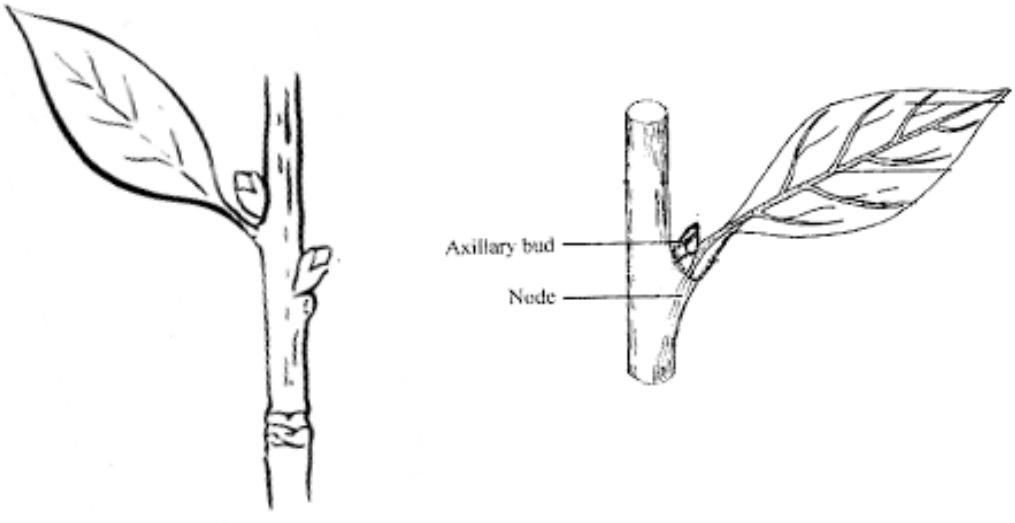
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SECTION B (20 MARKS)

Answer all questions in this section in the spaces provided.

21. The diagram below shows a section of plant from which the planting material illustrated was obtained.



a) Identify the planting material illustrated. **(1 mark)**

……

b) Give **two** reasons why only the middle part of the plant was used to prepare the planting material. **(1 mark)**

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c) Apart from using the middle part of the plant, explain **three** precautions that should be observed when preparing the illustrated planting material. **(3 marks)**

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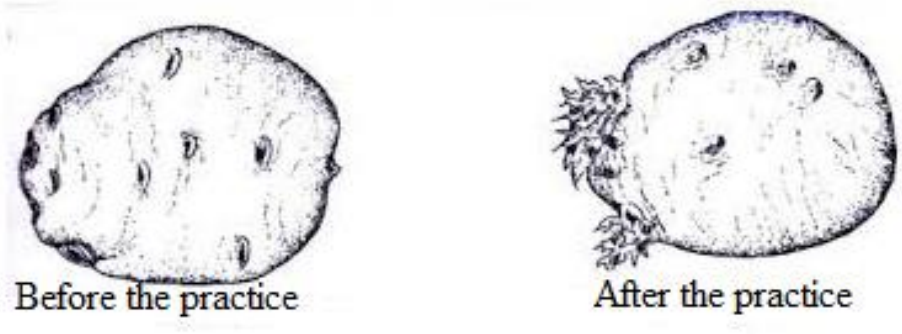
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22. The diagram below illustrates seed potato which has been prepared for planting. Study it carefully and answers the questions that follow.



i) Name the practice that has been used to prepare the seed potato above for planting. **(1 mark)**

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ii) Describe the procedure followed in preparing seed potatoes for planting. **(4 marks)**

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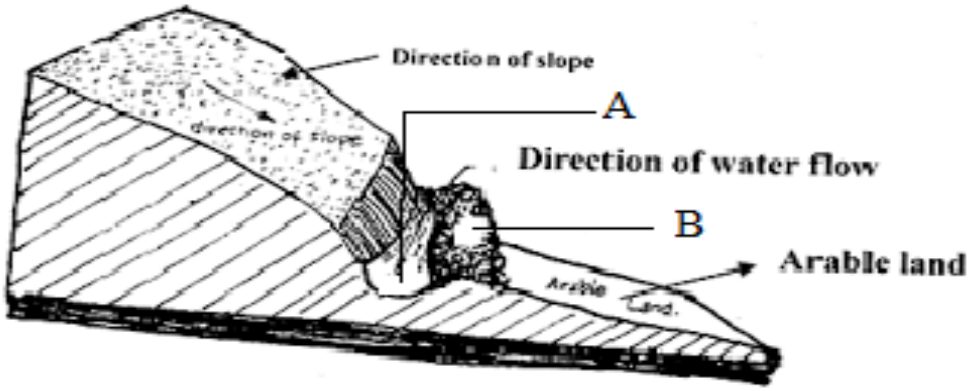
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23. The diagram below illustrates a newly constructed cut-off drain. Study it carefully and answer the questions that follow.



i) Identify the parts of cut off drains labeled A and B. **(2 marks)**

A ……

B ……..

ii) How can the part of the structure labeled B be stabilized after it has been constructed**? (2 marks)**

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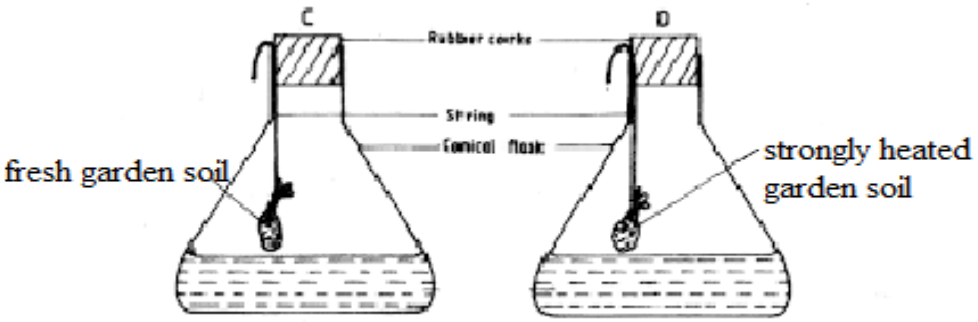
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iii) State any **one** factor that would determine the width and depth of the cut-off drain. **(1 mark)**

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24. The diagrams below show a set up of an experiment to study an aspect of soil. The set up was left undisturbed for five hours. Study it and answer the questions that follow.



a) What was the aim of the experiment? **(1 mark)**

……

b) State **one** observation that was made in each of the flasks labelled C and D. **(2 marks)**

C ……..

D ……..

c) Give a reason for each of your answers in (b) above. **(2 marks)**

C ……

……

D ……

……

SECTION C (40MARKS)

Answer any two questions from this section in the spaces provided after question 27.

25 a) Explain **seven** factors that should be considered when selecting seeds for planting**. (7 marks)**

b) State **four** benefits of adequate and reliable rainfall in vegetable crop production**. (4 marks)**

c) Explain **four** factors that determine the nutrient content of hay. **(4 marks)**

d) State **five** reasons for keeping farm records. **(5 marks)**

26a) State the importance of any **five** nursery management practices. **(5 marks)**

b) Explain **seven** cultural methods of soil and water conservation. **(7 marks)**

c) Describe the role of magnesium in crop production. **(4 marks)**

d) Describe **four** practices that a farmer should carry out to ensure uniform germination of seeds. **(4 marks)**

27 a) Explain **five** factors that determine the spacing of crops. **(5 marks)**

b) Explain **five** factors that may encourage soil erosion. **(5 marks)**

c) Describe **five** management practices that should be carried out on a vegetable nursery after sowing seeds until the seedlings are ready for transplanting. **(5 marks)**

d) State **five** soil factors that should be considered when selecting a crop to grow in an area. **(5 marks)**

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Kenya Certificate of Secondary Education.

SERIES 1

443/2 **AGRICULTURE** Paper 2

Time: 2 Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTION TO CANDIDATES

- *Write your name and index number in the spaces provided above.*
- *Sign and write the date of Examination in the space provided.*
- *This paper consists of three sections A, B and C.*
- *Answer ALL the questions in section A and B.*
- *Answer TWO questions in section C in the spaces provided.*

FOR EXAMINER'S USE ONLY.

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A	1 – 15	30	
B	16 – 19	20	
C	20– 22	20 20	
TOTAL SCORE		90	

SECTION A (30MKS|)

Answer all questions in this section on spaces provided.

1. State four non-chemical method used to control ticks **(2marks)**

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2. Highlight two management practices carried out on a broody hen **(2marks)**

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3. Give four characteristics of a good fish pond **(2marks)**

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4. Mention four physical characteristics of exotic beef cattle breeds **(2marks)**

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5. Give four features of calf pen that help to control calf diseases **(2marks)**

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6. a) What is dry cow therapy **(1mark)**

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b) At what stage of gestation is dry cow therapy practiced **(1mark)**

……

7. Name four farm structures used for handling livestock **(2marks)**

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8. Give four symptoms of respiratory disorders in a sick cow **(2marks)**

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9. Mention two characteristics of abdomen of a poor layers **(2marks)**

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10. Distinguish between mothering ability and prolificacy **(2marks)**

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11. List two factors that can lead to conception failure after female cow has been served **(2marks)**

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12. Give four factors that may lead to a farmer culling dairy cattle **(2marks)**

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13. State four reasons for doing Agriculture as a discipline **(2marks)**

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14. Name four tools that are used when laying concrete blocks during construction of a wall **(2marks)**

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15. State four features on the animal which may pre-dispose it to livestock diseases **(2marks)**

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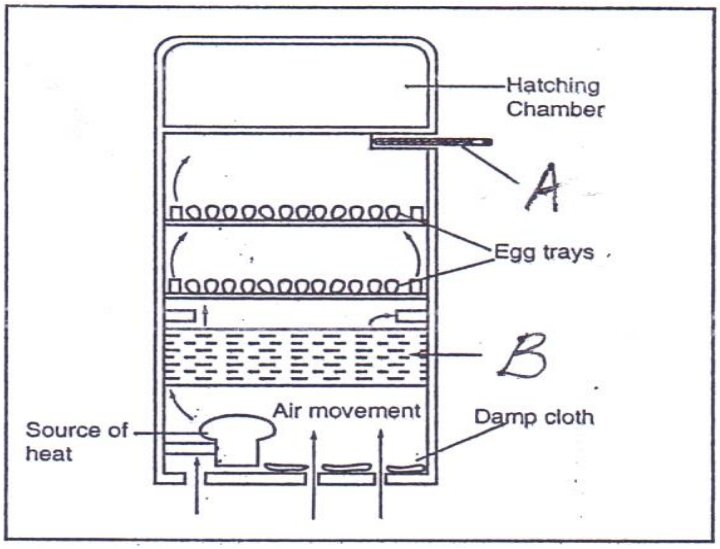
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SECTION B (20 MARKS)

Answer ALL questions in this section in the spaces provided

16. The following is a diagram of an artificial incubator. Study it and answer questions that follow.



(a) Identify the following parts shown by letters A and B. **(2marks)**

A ……

B ……

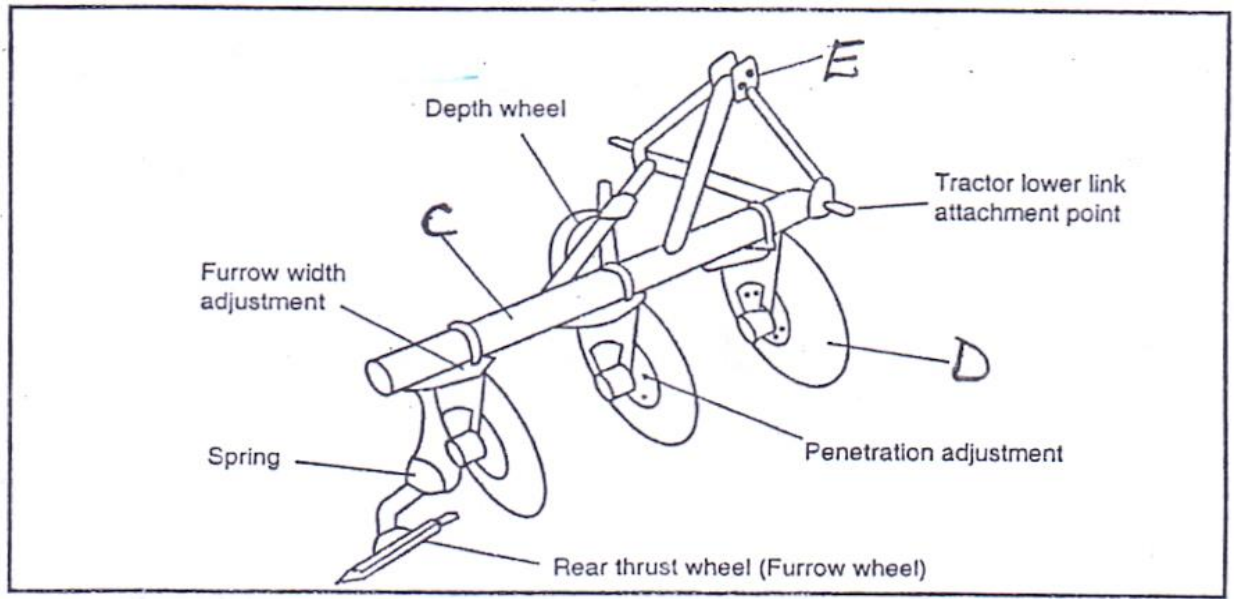
(b) State three conditions that are necessary for a successful hatching. **(3marks)**

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17. Study the following farm implement and answer the questions below.



(a) Identify the above implement. **(½mark)**

……

(b) Identify the parts shown by letters C, D, E. **(1½marks)**

C ……..

D ……..

E ……..

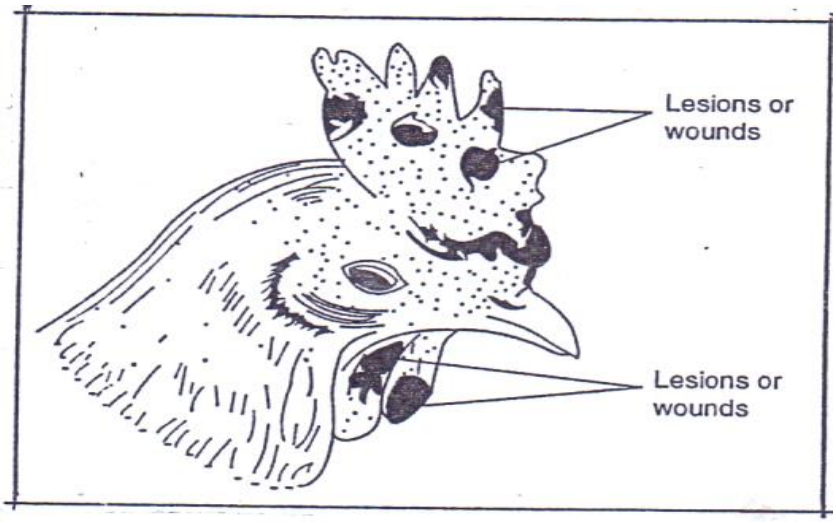
(c) Give three reasons that make the implement better in land preparation. **(3marks)**

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18. Study the following diagram and answer questions below.



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

……

(b) What causes the above disease? **(1mark)**

……

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(c) Give two predisposing factors of the disease. **(2marks)**

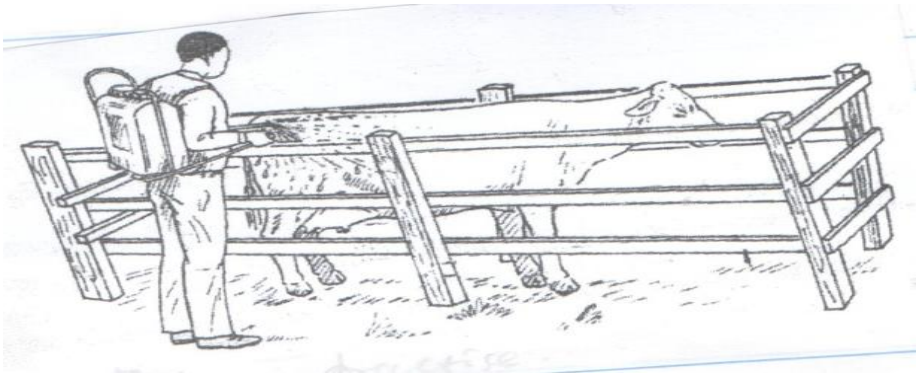
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(d) Give one control measure of the disease. **(1mark)**

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19. The illustration below shows a farm practice used in controlling external parasites in livestock. Study it and answer the questions that follows.



(a) Identify the methods of parasite control in the illustration above **(1mark)**

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(b) Name the equipment used for the practice in the illustration **(1mark)**

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(c) State two factors that leads to maximum effectiveness when using the practice above in tick control **(2marks)**

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(d) Name any other equipment that is used for the same practice **(1mark)**

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SECTION C (40 MARKS)

Answer any two questions from this section.

20.(a) Explain eight practices you can carry out in a crush. **(8 marks)**

(b) Describe six advantages of rotational grazing. **(6 marks)**

(c) Describe six effects of parasites on livestock. **(6 marks)**

21 (a) Describe eight short term services that should be done to a farm tractor. **(8 marks)**

(b) Explain five reasons for maintaining farm tools and equipment. **(5marks)**

(c) State eight causes of long calving intervals. **(7marks)**

22.(a) Describe ten uses of fences on a farm. **(10 marks)**

(b) Explain five factors a farmer should consider in the construction of farm structures. **(10 marks)**

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

565/1 **BUSINESS SSTUDIES** Paper 1

Time: 2 Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

(b) *This paper consist of 25 questions*

(c) *Answer **all** the questions in the spaces provided*

FOR EXAMINER'S USE ONLY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Marks															

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

TOTAL MARKS

*Answer **all** the questions in the spaces provided*

1. List four types of utility. **(4 marks)**

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2. Identify four items that is included in a business plan. **(4 marks)**

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3. Highlight four features of oligopoly market structure. **(4 marks)**

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4. State four advantages of audio-visual communication **(4 marks)**

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5. The following are description of errors. Identify the type of error that matches the description given in the table below. **(4 marks)**

Description	Type of error
a) Occurs where a transaction is not recorded at all in the books of accounts.	
b) Occurs where errors is both the debit and credit balance are of equal amounts.	

c) Occurs when entries are made in the wrong class of accounts.	
d) Occurs where both the debit and credit entries are made using similar but erroneous figures.	

6. Highlight four assumptions of a two-sector economy **(4 marks)**

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7. List four polices under marine insurance. **(4 marks)**

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8. Give the right document that relates to the following statements. **(4 marks)**

Statement	Document
a) Corrects an undercharge	
b) Shows total amount expected from a number of transactions in a given period.	
c) It's a booklet containing brief description of goods.	
d) Demands payment for goods sold on credit.	

9. Highlight four measures that have been enacted by the government to protect consumers.**(4 mks)**

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10. Mention four characteristics of assets in an organization. **(4 marks)**

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11. State four types of demands described in each of the following: **(4 marks)**

Description	**Type of Demand**
a) A farmer needs to produce milk but must first of all breed cows.	
b) A farmer producing cotton for him to get clothes, pillows and blankets	
c) Buying a car leading to purchase of petrol	
d) Consumer purchasing tea instead of coffee to satisfy his needs	

12. Highlight four ways through which a country can increase the volume of **exports** **(4 marks)**

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13. State ways in which commercial banks facilitates payment on behalf of their customers.**(4 mks)**

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14. The following transactions took place during the month of March 2021 in the business of Ali Traders.2021 March 5 Hodari traders returned goods amounting to sh. 1500. They were issued credit note No. 204. On 15th, Otano returned part of the goods sold to him amounting to 1000. He was issued with credit note No. 205. On 20th Milo a customer returned wrong sized goods which had been sold to her earlier on, worth sh. 500. She was issued with the credit note No. 206

Required; prepare a relevant journal. **(4 marks)**

15. Outline four benefits that a country would get by encouraging businessmen to locate new industries in rural areas. **(4 marks)**

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16. Outline four elements that comprise the internal environment of a business. **(4 marks)**

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17. Name four documents required for the registration of a limited liability company. **(4 marks)**

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18. Outline four structural changes that may take place when a country is experiencing economic development. **(4 marks)**

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19. State Four differences between liners and tramps **(4 marks)**

LINERS	TRAMPS

20. Mention four expenses incurred by intermediaries in the channel of distribution. **(4 marks)**

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21. Highlight four requirements that are needed for a smooth functioning of a warehouse. **(4 marks)**

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22. State four measures which are used to control inflation under monetary policy. **(4 marks)**

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23. Outline four merits of replacing manual systems with automated ones in carrying out office activities. **(4 marks)**

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24. State four causes of seasonal unemployment in Kenya. **(4 marks)**

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25. State the effects of the following transactions in the balance sheet by writing INCREASE or DECREASE or NO EFFECT in each case. **4 marks)**

Transactions	**Effect**
a) Bought machinery on credit	_____
b) Withdraw cash from the businesses for personal use	_____
c) Purchased stock in cash	_____
Paid outstanding loan by cheque	_____

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KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

565/2 **BUSINESS SSTUDIES** Paper 2

Time: 2½ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

Instruction to candidates

- ***a)*** *Write your name and stream in the space provided above.*
- ***b)*** *This paper consists of six questions*
- ***c)*** *Answer any **five** questions of your choice in the spaces provided.*
- ***d)*** *All questions carry equal marks*
- ***e)*** *Students should answer the questions in English only.*

For examiner's use only

Question	Maximum Score	Candidate's Score
1	20	
2	20	
3	20	
4	20	
5	20	
6	20	
Total		

*Answer any **five** questions*

1 (a). Explain **five** reasons why many people would prefer to start a partnership business.**(10mrks)**

(b). Explain **five** disadvantages of departmental stores. **(10marks)**

2 (a). Explain **five** problems encountered at plan implementation stage. **(10marks)**

(b). Explain **five** advantages of government involvement in business. **(10marks)**

3 (a). Explain **five** characteristics of land as factor of production. **(10marks)**

(b). Explain **five** factors that may lead to a country to experience unfavorable terms of trade. **(10marks)**

4 (a). Give **five** differences between open office layout and enclosed office. **(10marks)**

(b). On 1 Jan 2020 Mulei traders had 180,000 cash in hand and a bank credit balance of sh. 57,500. During the month the following transactions took place.

3rd cash sales sh.21, 800.

4th a debtor settled his account of sh.90, 000 by cheque.

10th paid salaries sh. 40,000 in cash.

12th took cash sh. 3,500 to settled a personal debt.

23rd received a cheque of sh.8, 460 from Nganda wholesalers after deducting 6% cash discount.

24th deposited sh. 10,000 in the bank from the office.

25th purchased stock worth sh. 8,950 on credit from Ngumo distributors.

26th cash sales banked directly sh. 38,000

29th settled creditors account sh. 6,000 by cheque less 3% cash discount.

31st banked all cash except sh. 40,000

Required: prepare Mulei traders 3 column cash book as at 31 Jan 2020 **(10marks)**

5 (a). Explain **five** disadvantages of newspapers advertising. **(10marks)**

(b). Explain **five** factors that influences the level of national income in a country. **(10marks)**

6 (a). Explain **four** benefits of intermediaries in the distribution channel **(8marks)**

(b). The information below relate to the trial balance of Songo traders as at 30 June 2022.

Songo traders

Trial balance as at 30 June 2022

Particulars	Dr shs.	Cr shs.
Stock on 30/6/2021	4,00	
Capital		13,870
Purchases and sales	3,500	7,000
Drawings	6,00	
Furniture and fittings	2,000	
Motor vehicle	15,000	
Debtors and creditors	8,00	1,200
Returns	150	2,00
Discounts	90	80
Rent		1,00
Insurance	210	
Bank		300
TOTAL	**22,750**	**22,750**

Additional information

Closing stock was valued at 500

Required:

(i). Prepare Songo trading, profit and loss account for the year ended 30/6/2022.

(ii). Balance sheet as at 30/6/2022 **(12marks)**

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

101/1 **ENGLISH** Paper 1

(Functional Skills)

Time: 2 Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

Instructions to candidates

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

(e) *This paper has **three** sections: **1, 2** and **3.***

(f)*Answer **ALL** questions in this paper.*

For Examiner's Use Only

Section	Maximum Score	Candidate's Score
1	20	
2	10	
3	30	
Total	60	

Q1. FUNCTIONAL WRITING **(20 Marks)**

Your mother has asked you to write a recipe for your favourite main dish to be shared with members of your family because you have made great improvements in your academic performance. Write the recipe in the spaces provided.

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Q2. CLOZE TEST

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

Artificial intelligence describes the work processes of machines that would require intelligence if **(1)…….**performed by humans. The term 'artificial intelligence' thus means 'investigating intelligent problem-solving behaviour and creating **(2) ……..** computer systems.' There are two kinds of artificial intelligence: weak and **(3) ……** artificial intelligence. In general, the economic use of AI can be separated into several **(4)……**including deep learning that is; machine learning based on a set of algorithms that attempt to model high-level abstractions in data. **(5)……** human workers, the machines are connected the whole time. If one machine makes a mistake, all autonomous systems will keep this in mind and will avoid the same mistake the next time.

In the **(6)……..**run, thus, intelligent machines will win against every human expert. Since the 19 th Century, production**(7)……**have been replacing employees because of the advancement in technology. They work more **(8)……..**than human beings and cost less. Creative solutions like 3D printers and the self-learning **(9)…….** of these production robots will replace human workers. Customer profiling in terms of product offering i.e. credit card or a loan facility, have been made simple through application of artificial intelligence tools. For students in Finance and in other fields, this is an area one will **(10)……..** to pay attention to.

Q3a. Read the oral narrative below and then answer the questions that follow.

An Elegy on the Death of a Mad Dog.

Good people all, of every sort,
Give ear unto my song;
And if you find it wond'rous short,
It cannot hold you long.

In Isling town there was a man,
Of whom the world might say,
That still a godly race he ran,
Whene'er he went to pray.

A kind and gentle heart he had,
To comfort friends and foes;
The naked every day he clad,
When he put on his cloaths.

And in that town a dog was found,
As many dogs there be,
Both mongrel, puppy, whelp, and hound,
And curs of low degree.

i) Describe the rhyme scheme of the poem and explain its effect. **(3Marks)**

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ii) Identify and illustrate any **two** sound features used in the poem. **(4Marks)**

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iii) Describe how you would say the following lines in the poem.

I. Give ear unto my song; **(2Marks)**

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II. Both mongrel, puppy, whelp, and hound,

And curs of low degree. **(2Marks)**

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b) Cluster words from this list based on pronunciation of vowel sounds **(5Marks)**

[Elephant, biscuit, cruise, deodorant, neither, eleven, leopard, guide, guise, neighbor, juice, Jeopardy, built, electricity, guilt, either] An example has been given for you.

Neither					
Either					

c) James reports to you that he has received a call informing him that he has been successful in an interview that he had attended recently. What could have been the possible reasons for his success during the interview? **(4Marks)**

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d) Read the telephone conversation below and answer the questions that follow.

Wanjala: Hello! Is that Chaka Limited?

Sheilla: (Picking the phone) those shoes fit well, hello is anyone on this line?

Wanjala: Hello! Is that Chaka Limited?

Sheilla: What do you want?

Wanjala: Please confirm for me whether I called the right place Chaka Limited?

Sheilla: (Shouting) Which other company has a similar phone number as this?

Wanjala: May I then speak to the managing director?

Sheilla: I prefer the red pair of shoes (on phone) What did you say? oh, the Managing Director can't talk to you.

Wanjala: May I then leave a message which you can pass to him?

Sheilla: Why can't you call him in his personal line… (anyway from the receiver) go for the red ones

Wanjala: (Surprised) hello, excuse me madam, I am Wanjala Nicholus, and I am requesting to talk to the Managing Director over an important matter concerning one of your employees.

Sheilla: I told you the Managing Director is not in. (hangs up)

QUESTIONS

i) Explain FOUR things which make Sheila an ineffective communicator. **(4Marks)**

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ii) Explain FOUR things that one should observe if they are to effectively communicate over the phone. **(4Marks)**

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iii) Identify any two responses that are improper in Sheila's speech and rewrite them properly to show etiquette. **(2Marks)**

Improper Response	Correct Response

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KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

101/2 **ENGLISH** Paper 2

(Comprehension, Literary Appreciation and Grammar)

Time: 2½ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES.

1. *Write your **name, class, Admission number, signature and date** in the spaces provided above.*
2. *Answer **ALL** questions in this question paper.*
3. *Write **ALL** your answers in the spaces provided.*
4. *Write legibly and neatly preferably in **blue ink.***

For Examiner's use only.

Question	Maximum Score	Student's Score
1. Unseen Passage	20	
2. Extract	25	
3. Oral Literature	20	
4. Grammar	15	
Total	80	

COMPREHENSION

Read the passage below and answer the questions that follow

Even though tattoos are sometimes associated with rebellion, they have long standing history among community. Tahitians, for instances used tattoos as a permanent way of preserving their culture and to show social ranking. Early Christians, on the other hand, often had the sign of a cross tattooed on their bodies, particularly their faces and arms, representing a permanent mark of the believer's faith.

The word 'tattoo' is derived from a Tahitian word tatau that means to mark. Tatau has been suggested to be the onomatopoeic sound tap, tap made by the tapping of a tattoo instrument as it works on skin while 'au' is associated with the cry of pain a person gives when being tattooed.

The first ever tattoo to be found on a human being was found on a mummified iceman in 3,300BC with 58 tattoos on his body, which contained lines and dots. This is nothing, however, compared to Scottish Tom Leopard, recorded as the world's most tattooed person, with 99.9 percent of his body covered in leopard, skin design. Guinness world records record that the only part of his body that remained is the skin between his toes and inside of his ears.

When receiving a tattoo, the skin is pierced between 50 to 3,000 times per minute by a needle in the tattoo machine. Most tattoo machines consist of four parts: the needle, the tube that holds thje ink, an electric motor, and a foot pedal that controls the movement; almost similar to how a sewing machine works.

Sterilization and disposable materials are crucial to tattooing because tattoos are created by thousands of puncture marks to the skin, each of which could be infected. The autoclave is a safe popular way to sterilize any tattoo equipment that is not disposable. A combination of heat, steam and pressure kills all bacterial and organisms to prevent infection.

In the 18th and 19th centuries, tattoos were dangerous to have. European 'head hunters' caused a terror by collecting tattooed Maori heads. As the odd sport became popular, more Maoris were murdered to meet the demand. In the time, slaves began being tattooed so that their heads could be cut off and sold. Luckily, however, Christian missionaries in the cook island condemned the practice of tattooing quoting the Bible "....do not cut your bodies for the dead or put marks on yourself....."They tried to stamp out the custom going as far as trying to remove tattoos by rubbing the skin with sandstone in a practice was known as 'holy stoning'. This was the primitive forerunner to modern tattoo removal known as dermabrasion, where the skin is 'sanded' to remove layers, dermabrasion has now largely given way to laser surgery as a popular means of tattoo removal.

While tattoos bring colour to humanity, research has shown that unclean tattooing practices can transmit diseases such as hepatitis B. Some pigments used in tattoos contain metals that can cause pain during a Magnetic Resonance Imaging (MRI) test, or even affect the resulting MRI image. Because of the possible negative effects tattoos pose to humans, those keen on

getting one have to be very careful before they get one. That said, it is important to note that presently, many tattoo artistes earn a good living out of the art.

QUESTIONS

a) From paragraph one; state two historical uses of tattoos. **(3mks)**

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b) According to the writer state the origin of the word tattoo. **(1mk)**

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c) What is most striking about Tom leopard? **(2mks)**

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d) Explain the meaning of the following words as used in the passage. **(4mks)**

-Mummified

-Sterilize

-Pigment

-Earn a good living.

e) What was the risk associated with tattooing in the 18^{th} and 19^{th} centuries. **(2mks)**

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f) State two modern ways of tattoo removal. **(2mk)**

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g) Many tattoo artists earn a good living out of the art. (Add a question tag) **(1mk)**

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h) In note form state the negative effects of tattooing. **(3mks)**

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i) What are the benefits of tattooing as suggested in the passage? **(2mks)**

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2. ***<u>Read the excerpt below and then answer the questions that follow.</u>*** **(25 marks)**

Krogstad: Are you aware that is a dangerous confession?

Nora: In what way? You shall have your money soon.

Krogstad: Let me ask you a question: Why did you not send the paper to your father?

Nora: It was impossible: papa was so ill. If I had asked him for his signature, I should have had to tell him what the money was to be used for: and when he was so ill himself, I couldn't tell him that my husband's life was in danger – it was impossible.

Krogstad: It would have been better for you if you had given up your trip abroad.

Nora: No, that was impossible. That trip was to save my husband's life. I couldn't give that up.

Krogstad: But did it never occur to you that you were committing a fraud on me?

Nora: I couldn't take that into account: I didn't trouble myself about you at all. I couldn't bear you, because you put so many heartless difficulties in my way, although you knew what a dangerous condition my husband was in.

Krogstad : Mrs. Helmer, you evidently do not realise clearly what it is that you have been guilty of. But I can assure you that my one false step, which lost me all my reputation, was nothing more or nothing worse than what you have done.

Nora: You? Do you ask me to believe that you were brace enough to run a risk to save your wife's life?

Krogstad: Foolish or not, it is the law by which you will be judged, if I produce this paper in court.

Nora: I don't believe it. Is a daughter not to be allowed to spare her dying father anxiety and care? Is a wife not to be allowed to save her husband's life? I dont know much about law: but I am certain that there must be laws permitting such things as that. Have you no knowledge of such laws – you who are a lawyer? You must be very poor Mr Krogstad.

Krogstad: Maybe. But matters of business – such business as you and I have had together – do you think I don't understand that? Very well. Do as you please. But let me tell you this – if I lose my position a second time, you shall lose yours with me. (He bows and goes out through the hall) Nora (appears buried in thought for a short time, then tosses her head) Nonsense! Trying to frighten me like that! – I am not so silly as he thinks. (begins to busy herself putting the children's things in order) And yet-? No it's impossible! I did it for love's sake.

QUESTIONS:

a) Briefly describe the dangerous confession Nora admits to in the onset of the excerpt.**(3 marks)**

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b) Explain why Nora did not send the paper to her father for signing**.** **(3 marks)**

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c) Explain **two** themes evident in the excerpt above. **(4 marks)**

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d) Contrast Krogstad's and Nora's views on the law **(2 marks)**

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e) How is Krogstad portrayed in the excerpt **(2 marks)**

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f) The law cares nothing about motives. (Add a question tag) **(1 mark)**

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g) Krogstad informs Nora that "one false step, lost him all reputation." Briefly explain how.

(2 marks)

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h) "…….If I lose my position a second time, you shall lose yours with me." From elsewhere in the play, show the truth of this statement **(2 marks)**

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i) What is the general tone in this excerpt? Explain your answer**.** **(3 marks)**

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

(a) defiantly

(ii) false step

3. *Read the poem below and answer the questions that follow*

The in mates
Huddled together
Cold biting their bones,
Teeth chattering from the chill,
The air oppressive,
The smell offensive
They sit and they reflect

The room self-contained,
At the corner the 'gents' invites
With the nice fragrance of ammonia,
And fresh human dung,
The fresh inmates sit thoughtfully.

Vermin perform a guard of honour,
Saluting him with a bite here,
And a bite there,
'Welcome to the world, they seem to say.

The steel lock of the door,
The walls insurmountable
And the one torching tortorous bulb
Stare vacantly at him.
Slowly he reflects about the consignment
That gave birth to his confinement
Locked in for conduct refinement
The reason they put him in the prison.

The clock ticks
But too slowly
Five years will be a long time
Doomed in the dungeon
In this hell of a cell

QUESTIONS

a) Who is the persona in the poem? **(1mk)**

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b) Briefly explain what the poem is about. **(2mks)**

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c) Identify and illustrate three a aspects of style in the poem. **(6mks)**

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d) Give evidence from the poem which indicates the inmates are suffering. **(3mks)**

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e) Why is the fresh inmate in prison? **(2mks)**

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f) Identify and explain the mood of the new convict. **(2mks)**

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g) Explain the meaning of the following lines as used in the poem

i) That gave birth to his confinement. **(1mk)**

i) The room is self contained. **(1mk)**

h) What does the steel lock of the door and the insurmountable walls suggest? **(2mks)**

GRAMMAR

A) ***Rewrite the following sentences according to the instructions given.*** **(3mks)**

i) It is not necessary for my parents to come. (Begin: There is.....

ii) I am sorry you missed lunch. (Begin: I regret.....

iii) But for my daughters prompt action, I would be dead by now.(Begin: Had it.....

b) **Change the following sentences into the passive.** **(3mks)**

i) The farmer had planted the beans

ii) The principal gave the education officer the forms

iii) We expect the strike to end soon.

c) Fill in each blank space using the correct form of the words in brackets (3mks)

i) The hen had.....eggs in the bushes near the house. (lay)

ii) Tell me, ...a wise person search for knowledge? (do)

iii) The watchman.....the lamps when he heard commotion behind the office. (light)

d) Change the following sentences from direct speech. (2mks)

i) "You are invited to my birthday on Sunday,"Mwikali told me.

ii) "I will cook supper," Wangui offered.

e) Fill in the blank spaces with the appropriate form of the word in brackets. (2mks)

i) His.....is amazing high. (popular)

ii) The shepherd travelled.....in search of pasture. (east)

f) Rewrite the following sentences replacing the underlined idiomatic expressions. (2mks)

i) His friends made him lose heart on carrying out the project

ii) He was green with envy

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

101/3 **ENGLISH** Paper 3

(Creative writing and set text essays)

Time: 2½ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

(b) *This paper has **three** sections: **A, B** and **C.***

(c) *Answer **ONE** question from each section.*

FOR EXAMINER'S USE ONLY

Section	Maximum Score	Candidate's Score
1	20	
2	20	
3	20	
Total	60	

Answer three questions only.

QUESTIONS

1. Either **(20 marks)**

(a) Write a story entitled "Pride comes before a fall"

Or

(b) Write a story beginning with the words:

The whole neighbourhood was full of shouts…

2. Compulsory set book: "Blossoms of the Savannah". **(20 marks)**

Mama Milanoi's submissiveness results in the break up of her family. With clear illustrations from the novel, Show the truth of this statement.

3. OPTIONAL TEXTS Either: **(20 marks)**

(a) "Inheritance'' by David Mulwa.

Drawing illustrations from David Mulwa's Inheritance, write an essay to show how moral decadence among leaders affects the society.

Or:

(b) "Artist of the Floating World by Kazuo Ishiguro.

Intergenerational Conflicts are dominant in modern society. Basing your illustrations on **An Artist of The floating world**, write an essay to validate thisassertion.

Or:

(c) ***A silent Songs and Other Stories*** **by Godwin Shiundu**

In the face of affliction, faith is essential for man's survival. Write an essay to validate this statement inreference to **Leo Tolstoy's God Sees the Truth, but Waits**.

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

102/1 **KISWAHILI** Paper 1

Insha

Time: 1¾ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

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MAAGIZO

a) *Andika insha* ***mbil****i. Insha ya kwanza ni ya* ***lazima.***

b) *Kisha chagua insha nyingine moja kati ya hizo tatu zilizobakia.*

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

d) *Kila insha ni alama* ***20.***

e) *Kila insha lazima iandikwe kwa lugha ya Kiswahili.*

Kwa Matumizi ya Mtahini Pekee

Swali	Upeo	Alama
1	20	
	20	
Jumla	40	

1. Insha ya lazima

Umepata fursa ya kumhoji Waziri wa Ugatuzi nchini kuhusu mikakati ya kukabiliana na umaskini nchini. Andika mahojiano yenu.

2. Mitandao ya kijamii imeleta hasara nyingi kuliko faida. Jadili.

3. Andika kisa kinachodhihirisha maana ya methali:

Mti mkuu ukigwa, wana wa ndege huyumba.

4. Andika insha itakayomalizikia kwa maneno yafuatayo:

…Nilijitolea mhanga na msaada wangu ukazaa natija kwa wengi.

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

102/2 **KISWAHILI** Paper 2

(LUGHA)

Time: 2½ Hours

NAME……

SCHOOL…… SIGN……

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MAAGIZO

1. *Karatasi hii ina maswali manne (Ufahamu, Ufupisho, Lugha na Isimujamii)*

2. *Jibu maswali yote kwenye nafasi zilizoachwa baada ya kila swali.*

KWA MATUMIZI YA MTAHINI PEKEE

Swali	Upeo	Alama
1	15	
2	15	
3	40	
4	10	
JUMLA	80	

1. <u>UFAHAMU (ALAMA 15)</u>

<u>Soma kifuatacho kisha ujibu maswali.</u>

Lugha inaweza kuelezwa kwa jumla kuwa ni mfumo wa kueleza chanzo au kiini cha mawasiliano na sote tunakubaliana kuwa matumizi yake yameanza tangu kuumbwa kwa binadamu kwani ni vigumu kukisia kuwepo kwa jamii ya watu bila lugha ya mawasiliano yoyote ile.

Katika taifa lolote,huwepo na lugha moja au hata zaidi ya moja ambayo huwa ndicho chombo zatika cha mawasiliano ya taifa katika nyanja za:elimu, maandishi, siasa na biashara.Kwa mfano mataifa ya Kanada hutumia lugha mbili kwa usawa kama lugha za taifa na za kikazi. Maana ya lugha ya taifa ni lugha moja ambayo huteuliwa kutumika katika shughuli zote za taifa hasa katika nchi yenye lugha nyingi za kikabila. Lugha ya taifa ni muhimu sana kwa maisha na maendeleo ya taifa lolote lile.Lugha hii huwa ndiyo kiungo cha kueneza umoja na uelewano miongoni mwa jamii nyingi tofauti na huwa kama kitambulisho kwao kwa kuwa wao ni ndugu wa jamii moja kubwa, yaani taifa lao.

Kenya ni mfano mzuri wa taifa lenye lugha nyingi zinazozidi 40 za vikundi vidogo vidogo vya kikabila.Hapo kabla ya miaka mia moja hivi iliyopita kila kimojawapo cha vikundi hivi kilijitambulisha kama taifa huru.Baada ya kuja kwa serikali ya kikoloni na hasa baada ya Kenya kujinyakulia uhuru,haja ya kuunganisha raia wote chini ya taifa moja lenye uongozi na shabaha moja lilikuwa ndilo jambo lililozingatiwa sana.Kwa hivyo utamaduni wa taifa la Kenya ni mchanganyiko wa tamaduni za watu wengi wenye mila,desturi,imani na itikadi tofauti. Utamaduni humaanisha jumla ya amali na tabia za watu wa jamii fulani. Amali hizi zinafungamanisha fikira, ustaarabu, mila, taasisi na sanaa za aina zote za jamii inayohusika. Ili kujieneza na kujiimarisha,taifa huhitaji chombo hicho kuwasiliana na kuwaunganisha watu wake wenye asili mbalimbali.Chombo hicho huwa ni lugha ambayo siyo tu kwamba ni sehemu ya utamaduni wa jamii bali pia ni njia muhimu sana ya kutawanyia na kustawishia ule utamaduni.

Katika taifa lenye lugha nyingi kama Kenya kwa mfano,lugha ya taifa inayozungumzwa na kueleweka na idadi kubwa ya raia ambayo imekiuka mipaka na tofauti za kikabila ni njia muhimu sana ya kueneza maongozi ya taifa, bendera ya taifa, ndicho kielelezo cha taifa lolote lile lililo huru. Lugha kama hiyo huvunja na hukomesha hisia za kibinafsi na kikabila na badala yake kuunda moyo wa uaminifu wa kitaifa.

Zaidi ya kuwa chombo cha mawasiliano, lugha ni kielelezo cha fikira na hisia za binadamu.Lugha ya watu fulani haituelezi tu ujuzi au maarifa yao bali pia mtazamo wao kimaisha, falsafa na mawazo yao. Kwa ufupi lugha hutufahamisha namna akili za watu waizungumzayo ile lugha zinavyofikiri na kutafanya maazimio.Lugha ni sehemu ya utamaduni wa taifa ilimozaliwa na lazima lugha hiyo ifunzwe katika muktadha wa maisha ya jamii ihusikayo.Utamaduni wa jamii havitenganiki na lugha yake.

MASWALI

(a) Ni nini fasiri ya neno lugha? **(alama 2)**

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……

……

(b) Tofautisha baina ya lugha ya taifa na lugha ya kikazi. **(alama 2)**

……

……

……

(c) Kwa nini lugha ya taifa huhitajika sana katika nchi kama Kenya? **(alama 2)**

……

……

……

(d) Taja kazi **tatu** kuu zinazotekelezwa na lugha ya taifa. **(alama 3)**

……

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……

(e) Eleza maana ya msamiati ufuatao kulingana na taarifa. **(alama 3)**

(i) Haiyamkiniki: **……**

……

(ii) Amali na tabia za watu **:…….....**

…….....

(iii) Kielelezo**:……..……**

……

(iv) Muktadha wa maisha ya jamii: **…….**

…….....

(f) Eleza majukumu mawili ya lugha kwa ujumla. **(alama 2)**

…….....

……

2. UFUPISHO: (ALAMA 15)

Soma kifungu kifuatasho kisha ujibu maswali.

Kwa kawaida, binadamu huishi kwa kutangamana na binadamu wenzake. Katika kutangamana huku, watu huathiriwa kitabia, kifikira, kimavazi na kimaisha kwa jumla. Watu wote katika jamii wana uwezo wa kuathiri na kuathiriwa na wenzao wa umri mmoja. Hata hivyo, walio katika hatari ya kuathiriwa zaidi na mahirimu wao ni vijana. Hali hii ya kuathiriana huitwa shinikizo-rika au shinikizo-marika. Vijana huaminiana na kuthaminiana sana. Kwa sababu hiyo, ni rahisi sana kuingizwa katika mitego na wenzao. Isiaminiwe kuwa vijana pekee ndio wanaoathiriwa na shinikizo-rika. La hasha! Watu wazima pia huwafuata wenzao mithili ya bendera kufuata upepo. Mwenzake akinunua gari, yeye pia hukimbilia mkopo kununua gari la sampuli iyo hiyo bila kuwazia kima cha kibindo chake.

Wataalamu wa saikolojia husema kuwa kukabiliana na tatizo la shinikizo-rika si rahisi kwa sababu shinikizo-rika huleta mtafaruku wa kinafsi akilini mwa anayeathiriwa. Nafsi moja humshawishi kufuata wenzake huku nyingine ikimnasihi kuandamana upekee au ubinafsi wake. Shinikizo-rika huathiri sana mahitaji ya kisingi ya binadamu. Ikumbukwe kuwa mahitaji haya ya kimsingi ni ya kila mwanadamu, nayo ni kama vile kupata lishe, hewa safi, kupenda na kupendwa miongoni mwa mengine. Kila mtu hutaka kujihusisha na kundi la watu ambao watamfanya kuhisi kuthaminiwa na kukubalika. Kutokana na haja ya kutaka kukubalika, anayetaka kutambuliwa huridhia matakwa ya wenzake bila hata kuyawazia.

Shinikizo-rika hujittokeza kwa sura nyingi. Mathalani, vijana huwafanya wenzao kuona kuwa wana hatia wasipoafiki kutekeleza kama wanavyoshinikizwa. Kauli kama vile ‘tulifikiri wewe ni mmoja wetu’ au ‘usiposhirikiana nasi utakuwa umetuvunja moyo’ hutamalaki. Wanaokataa kushinikizwa hubezwa na kufanyiwa stihizai na wenzao na hata kutengwa. Vitisho hutolewa, wakati mwingine, na anayeshinikiswa akidinda, mabavu hutumika.

Ni muhimu kwa watu, hasa vijana, kufahamu kuwa shinikizo-rika lipo na wanapokabiliwa na tatizo hilo, watambue kuwa wana haki ya kusimama kidete kutetea msimamo wao dhidi ya wenzao. Kumbuka, baridi huwazizima kondoo kwa namna tofauti.

Kama njia moja ya kukabiliana na shinikizo-rika, wanasaikolojia wanapendekeza watu kujiamini na kuelewa kwamba wana haki ya kuwa tofauti na kuwa na upekee wao. Mtu anapojiamini na kushikilia msimamo wake, anaweza kujiepusha na madhara yatokanayo na shinikizo-rika. Asiyejiamini huwa mwepesi sana wa kuingizwa katika lindi la mashaka na wenzake.

MASWALI

(a) Bila kupoteza maana, fupisha aya ya kwanza na ya pili kwa **maneno (40)**.

(alama 8, 1 ya utiririko)

Nakala chafu

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Jibu

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(b) Fupisha mambo muhimu ambayo mwandishi amezingatia katika aya tatu za mwisho. **(man 30)**

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……

……

……

Jibu

……

……

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……

……

3. MATUMIZI YA LUGHA: (ALAMA 40)

(a) Tofautisha kati ya: (i) / e / (ii) / u / **(alama 2)**

……

……

……

(b) Onyesha **muundo** wa **silabi** ya kwanza katika maneno yafuatayo: **(alama 2)**

(i) Nyakua

(ii) Chura

……

……

……

(c) Tunga sentensi kwa kutumia kibadala cha kiasi jumla. **(alama 2)**

……

……

……

(d) Changanua sentensi ifuatao kwa kutumia **jedwali**. **(alama 4)**

Mkongojo mrefu sana ulioletewa babu utauzwa na fundi mcheshi.

(e) Andika **kinyume** cha sentensi ifuatayo:

Mtoto msichana anathema dawa. **(alama 2)**

……

……

……

(f) Kanusha: **(alama 2)**

Nikimpiku masomoni nitatuzwa zawadi.

……

……

……

……

(g) Andika katika usemi halisi. **(alama 3)**

Chifu wetu alitwambia kuwa watu wanaopenda kukaa bwerere huishia kuwa wezi wa mabavu.

……

……

(h) Nyambua vitenzi vifuatavyo katika kauli zilizo mabanoni. **(alama 2)**

(i) (-la) (kauli tendeshea)

(ii) Toa (tendeka)

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……

(i) Eleza matumizi ya alama zifuatazo za uakifishi. **(alama 2)**

(i) **!**

……

……

(ii) ?

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……

(j) Bainisha mofimu **–Li-** katika tungo hili. **(alama 3)**

Alivyolikimbilia

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……

(k) Tunga sentensi moja yenye shamirisho hizi. **(alama 3)**

(i) Kipozi

(ii) Kitondo

(iii) Ala

……

……

……

……

……

(l) Ainisha vishazi. **(alama 2)**

Mhamiaji haramu aliyeshikwa amefikishwa mahakamani.

……

……

……

……

(m) Andika katika wingi <u>karibu</u>. **(alama 2)**

Mtu yuyo huyo aliubeba mzigo uo huo licha ya kukanywa.

……

……

……

(n) Andika sentensi ifuatayo katika watati ujao timilifu. **(alama 2)**

Mbunge alitawazwa kabla ya mpinzani wake kufika.

……

……

……

(o) Andika kwa wastani. **(alama 1)**

Magoma haya yatachezwa wanjani.

……

……

……

(p) Taja na utoe mifano, matumizi <u>mawili</u> ya kiimbo. **(alama 4)**

……

……

……

(q) Eleza maana mbili za sentensi. **(alama 2)**

Nenda ukaniletee mbuzi.

……

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……

4. <u>SEHEMU YA D: ISIMU JAMII (ALAMA 10)</u>

(a) Eleza mitazamo mine kuhusu chimbuko la Kiswahili. **(alama 4)**

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(b) Eleza njia za uundaji wa maneno katika lugha ya Kiswahili. **(alama 6)**

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SERIES 1

102/3 **KISWAHILI** Paper 3

FASIHI

Time: 2½ Hours

NAME……

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MAAGIZO

a) *Andika jina lako, nambari ya usajili, mkondo, sahihi na tarehe katika nafasi ulizoachiwa hapo juu.*

b) *Jibu maswali* ***manne*** *pekee.*

c) *Swali la kwanza ni la* ***lazima****.*

d) *Maswali hayo mengine matatu yachaguliwe kutoka sehemu nne zilizobaki Riwaya, Tamthilia, Hadithi Fupi na Fasihi Simulizi.*

e) *Usijibu maswali mawili kutoka sehemu moja.*

Kwa matumizi ya mtahini pekee

SWALI	UPEO	ALAMA
1	20	
	20	
	20	
	20	
JUMLA	80	

SEHEMU A: USHAIRI.

1. Lazima

Soma shairi lifuatalo kisha ujibu maswali.

Miji yetu kwa yakini, kidogo kama Sodoma!
Haihitaji makini, kwa mwenye macho mazima
Utaona walakini, mradi ukitazama
Wanazini hadharani, wana kwa watu wazima
Yafanana na sodoma, miji yetu kwa yakini

Miji yetu kwa yakini, kidogo kama Sodoma!
Wanazini hadharani, wana kwa watu wazima
Wanatafuna maini, vijana na kina mama,
Hawana haya nyusoni, wameharamisha wema,
Yafanana na Sodoma, miji yetu kwa yakini

Miji yetu kwa yakini, kidogo kama Sodoma!
Hawana haya nyusoni, wameharamisha wema
Baba na binti ndani, wanacheza lelemama
Marijali wa mbioni, kujipagaza umama
Yafanana na Sodoma, miji yetu kwa yakini

Miji yetu kwa yakini, kidogo kama Sodoma!
Marijali wa mbioni, kujipagaza umama
Wameikataa dini, toka tumboni mwa mama
Wadai Wataliani, watajirisha mapema
Yafanana na Sodoma, miji yetu kwa yakini

Miji yetu kwa yakini, kidogo kama Sodoma!
Wadai Wataliani, watajirisha mapema
Hivyo mambo ya kigeni, yametunukiwa dhima
Uwaonapo fuoni, nusu uchi wa mnyama,
Yafanana na Sodoma, miji yetu kwa yakini

Miji yetu kwa yakini, kidogo kama Sodoma!
Uwaonapo fuoni, nusu uchi wa mnyama
Watu hawana Imani, umezidi uhasama,
Na viongozi wa dini, kuabudu darahima
Yafanana na Sodoma, miji yetu kwa yakini

Miji yetu kwa yakini, kidogo kama Sodoma!

Na viongozi wa dini, kuabudu darahima
Wamekeuka yamini, kati yao na Rahima
Wamemuasi Manani, na kusahau kiyama
Yafanana na Sodoma, miji yetu kwa yakini
Miji yetu kwa yakini, kidogo kama Sodoma!
Wamemuasi manani, na kusahau kiyama,
Ya Illahi tuauni, tuwe watu maamuma
Tukue katika dini, siku zetu za uzima
Yafanana na Sodoma, miji yetu kwa yakini

Maswali

a) Lipe shairi hili kichwa mwafaka. **(alama 1)**

b) Bainisha bahari ya shairi hili ukijikita katika ruwaza zifuatazo. **(alama 3)**

i. Idadi ya mishororo
ii. Mpangilio wa maneno
iii. Vina

c) Ni ujumbe upi unaojitokeza katika shairi hili. **(alama 5)**

d) Bainisha mbinu zifuatazo za kimtindo katika shairi hili. **(alama 3)**

i. Tashbihi
ii. Taswira
iii. Tasfida

e) Eleza toni ya shairi hili. **(alama 2)**

f) Bainisha nafsinenewa katika shairi hili. **(alama 2)**

g) Andika ubeti wa **tatu** kwa lugha nathari. **(alama 4)**

SEHEMU B: RIWAYA

A.Matei: *Chozi la Heri.*

Jibu swali la 2 au la 3

2. "Alikuwa wapi siku kiduka changu ambacho mimi na aila yangu tumekitegemea kwa miaka kumi kilipoporwa na kugeuzwa majivu?"

a) Eleza muktadha wa dondoo hili. **(alama 4)**

b) Tathmini umuhimu **nne** wa msemaji katika kuijenga riwaya hii. **(alama 4)**

c) Jadili umuhimu wa mandhari katika kujenga riwaya ya *Chozi la Heri* kwa kurejelea Msitu wa Mamba. **(alama 12)**

3. (i) "Nina wazazi wawili, ila hawa ni wazazi tu, hawajadiriki kuwa walezi wangu, wala jina 'mlezi' haliwaafiki."

Onyesha jinsi kauli iliyopigwa mstari inavyowaafiki baadhi ya wazazi katika Jumuiya ya Wahafidhina ukirejelea riwaya *Chozi la Heri.* **(alama 12)**

(ii) "Tumeendelea kuwakweza akina dada huku tukididimiza nguzo ya jamii yetu."

Kwa hoja **nane,** onyesha jinsi ambavyo nguzo ya jamii inadidimizwa kwa mujibu wa riwaya *Chozi la Heri.* (alama 8)

SEHEMU C: TAMTHILIA

Timothy Arege: *Bembea ya Maisha*

Jibu swali la 4 au la 5

4. ***"Ukilazwa tayari unakuwa umeonja seli. Hata wahudumu wenyewe hawana mlahaka mwema. Amri na vitisho kama askari."***

(a) Eleza muktadha wa dondoo hili **(alama4)**
(b) Ainisha mbinu mbili za kimtindo katika dondo hili **(alama2)**
(c) Eleza sifa nne za msemaji **(alama4)**
(d) Dhibitisha kuwa mahali panaporejelewa palikuwa kama seli **(alama4)**
(e) Jadili maudhui ya utepetevu kama yanavyojitokeza katika tamthilia nzima **(alama6)**

5.

"Basi usijipandishe presha bure mama! " **(alama4)**

(a) Eleza muktadha wa dondoo hili
(b) Ainisha mbinu mbili za kimtindo zilizotumika katika dondoo hili **(alama2)**
(c) Eleza sifa nne za msemewa **(alama6)**
(d) Jadili maudhui ya utamaduni kama yanavyojitokeza katika tamthilia mzima **(alama10)**

SEHEMU D: HADITHI FUPI

Alifa Chokocho na Dumu Kayanda (wah): *Tumbo Lisiloshiba na Hadithi Nyingine*

Jibu swali la 6 au la 7

6. Fafanua dhana ya **AJIRA** katika hadithi mapambazuko ya machweo **alama 20**

7. Urumo umekita mzizi katika jumuiya ya ***Mapambazuko ya Machweo.*** Jadili **(alama 20)**

SEHEMU E: FASIHI SIMULIZI

8. Soma utungo ufuatao kisha ujibu maswali yanayofuata.

Ewe Mainga wa Ndumi
Siwe uloambia akina mama
Siku tulopiga foleni
Chakula cha msaada kupata
Turudishe vifaranga kwenye miji
Wageuke vijusi tena

Njaa isiwaangamize?
Siwe ulopita
Matusi ukitema
Chumvi na sukarikuturushia ja samadi?
Uhitaji wetu ukatutuma
Kuokota vihela uloturushia
Ukatununua,kura ukapata?
Sasa miaka mitano imetimia
Waja tulaghai tena
Mainga wa Ndumi huna lolote safari hii
Ubunge umekudondoka ukitazama

MASWALI

a) Huu ni wimbo wa aina gani? **alama 2)**

b) Taja shughuli **mojamoja** ya kijamii na kiuchumi ambazo huendelezwa katika jamii ya utungo huu. **(alama 2)**

c) Wewe ni mwasilishaji wa kipera hiki jukwani, eleza mambo **sita** ambayo utazingatia katika uwasilishaji wako. **(alama 6)**

d) Jadili jinsi jamii ya kisasa inavyojaribu kuendeleza fasihi simulizi**.** **(alama 5)**

e) Maandishi ni mojawepo ya vifaa vya kukusanya na kuhifadhi fasihi simulizi. Tathmini udhaifu wa kutumia kifaa hiki. **(alama 5)**

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SERIES 1

313/1 **Christian Religious Education** Paper 1

Time: 2½ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

313/1

CHRISTIAN RELIGIOUS EDUCATION

PAPER 1
TIME: 2½ HOURS

INSTRUCTIONS TO CANDIDATES

a) *Write your name, school and index number in the spaces provided above.*

b) *Write the date of examination and sign in the spaces provided above.*

c) *This paper consists of **six** questions.*

d) *Answer any **five** questions in the answer booklet provided.*

FOR EXAMINER'S USE ONLY

Question	**1**	**2**	**3**	**4**	**5**	**6**	**TOTAL SCORE**
Candidates Score							

*Answer any **five** questions*

1. a) Identify **five** poetic books in the Bible. **(5 marks)**

b) Explain **four** effects of translating the Bible from original language into African local languages. **(8 marks)**

c) Outline **seven** ways in which Christians in Kenya use the Bible today**.** **(7 marks)**

2. a) Describe the call of Abraham in Genesis 12:1-9. **(7 marks)**

b) Give **six** reasons why Israelites broke the covenant at Mt. Sinai. **(6 marks)**

c) What do Christians learn about the nature of God from the Exodus? **(7 marks)**

3. a) List **six** judges that ruled in Israel. **(6 marks)**

b) Outline **seven** failure of King Saul. **(7 marks)**

c) Give **seven** factors that have led to the increase of Christians denominations in Kenya today. **(7 marks)**

4. a) Identify **six** reasons why prophet Amos was against the way the Israelites worshipped God. **(6 marks)**

b) Explain the vision of the basket of summer fruits shown to prophet Amos by God. (Amos 8:1-3) **(7 marks)**

c) How does the church punish errant members in Kenya today? **(7 marks)**

5. a) Describe the personal life of prophet Jeremiah. **(8 marks)**

b) Outline the stages followed in the renewal of the covenant during the time of Nehemiah. **(6 marks)**

c) State **six** lessons Christians learn from prophet Jeremiah's temple sermon. **(6 marks)**

6. a) Give **six** reasons why children are important in traditional African communities. **(6 marks)**

b) Explain **seven** factors contributing to harmony and mutual responsibility in African Traditional communities **(7 marks)**

c) Identify **seven** factors that have affected kinship ties in the traditional African communities today. **(7 marks)**

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KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

313/2 **Christian Religious Education** Paper 2

Time: 2½ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

313/1

CHRISTIAN RELIGIOUS EDUCATION

PAPER 1
TIME: 2½ HOURS

INSTRUCTIONS TO CANDIDATES

a) *Write your name, school and index number in the spaces provided above.*

b) *Write the date of examination and sign in the spaces provided above.*

c) *This paper consists of **six** questions.*

d) *Answer any **five** questions in the answer booklet provided.*

FOR EXAMINER'S USE ONLY

Question	**1**	**2**	**3**	**4**	**5**	**6**	**TOTAL SCORE**
Candidates Score							

*Answer any **five** questions*

1 a) Describe the birth of Jesus in Luke 2:3-7. **(7marks)**

b) Highlight **seven** ways in which the early life of Jesus prepared Him for His earthly ministry. **(7marks)**

c) How do Christians today celebrate the birth of Jesus? **(6marks)**

2 a) Give **six** reasons why Jesus performed miracles during His earthly ministry. **(6marks)**

b) Narrate the healing of Simon's mother-in-law in Luke 4:38-39. **(8marks)**

c) Why are miracles rare in Christian churches in Kenya today? **(6marks)**

3 a) Name the people who were in the squad that arrested Jesus. **(6marks)**

b) Describe the Trial of Jesus before Herod in Luke 23:8-11. **(8marks)**

c) Mention **six** evidences proving that Jesus resurrected from the dead. **(6marks)**

4) a) Explain **four** effects of the Day of Pentecost to the disciples in Acts 2. **(8marks)**

b) Explain **six** Gifts of the Holy Spirit outlined in 1 Corinthians 12 **(6marks)**

c) Show how the gift of love is abused by Christians today. **(6marks)**

5 a) How is wealth acquired in Kenya today? **(7marks)**

b) Explain **four** importance of introduction of money economy in the society. **(8marks)**

c) Show how church leaders misuse their wealth in Kenya today. **(5marks)**

6 a) Outline **four** teachings of Jesus on Law. **(8marks)**

b) Give reasons why punishment is a remedy to social disorder in the society today. **(6marks)**

c) Identify **six** areas of church-state co-operation in Kenya today. **(7marks)**

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KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

311/1 **History and Government** Paper 1

Time: 2½ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- *This paper consists of three sections A,B and C*
- *Answer **All** questions in section A, **three** questions in section B and **two** Questions in section C*
- *Answer to all question must be written in the answer booklet provided*
- *Candidate should answer the questions in English*

FOR EXAMINER USE ONLY

SECTION	QUESTION	MAX SCORE	SCORE
A	1-17	25	
B		15	
		15	
		15	
C		15	
		15	
TOTAL SCORE			

SECTION A (25 Marks)

*Answer **all** questions in this section in the spaces provided at the end of question 24.*

1. Give the **main** method used by anthropologists to gather their historical data. **(1 mark)**

2. Identify the method used in making Sangoan tools. **(1 mark)**

3. Give the **main** role of age –set system among the Agikuyu. **(1 mark)**

4. Identify **one** role played by theatre in Kenya. **(1 mark)**

5. Mention **two** functions of Portuguese Captains in administering the Kenyan coast. **(2 marks)**

6. Outline **two** ways in which a person can qualify to be a Kenyan citizen by birth. **(2 marks)**

7. Name **two** social factors that promote national unity in Kenya. **(2 marks)**

8. List **one** right of a person under arrest according to the Bill of Rights. **(1 mark)**

9. Give **two** factors that determined the type of constitution in Kenya**.** **(2 marks)**

10. Identify any **two** roles of the Commissioner according to the East Africa order in Council of 1897. **(2 mks)**

11. Identify **one** reason for the collapse of Gede as an early urban center. **(1 mark)**

12. Outline **two** developmental rights of Kenyan child. **(2 mrks)**

13. State **two** proposals made by the Lennox Boyd constitution. **(2 mrks)**

14. Give **one** commission that was established to look into African Education in colonial Kenya. **(1 mark)**

15. Name the political paper that was published by the Kenya African Union (KAU) periodically. **(1 mark)**

16. Mention **one** principle of the concept of natural justice. **(1 mark)**

17. State **two** major challenges facing Health sector in Kenya. **(2 mrks)**

SECTION B: (45 Marks)

*Answer any **THREE** questions from this section in the space provided at the end of question 24.*

18. (a)Mention **five** communities that comprise the highland Nilotes. **(5 marks)**

(b)Explain **five** social effects of Bantu migration into Kenya. **(10 marks)**

19. (a) State **five** reasons for the conflict between the Busaidi Sultan of Oman and the Mazrui governors of Mombasa **(5 marks)**

(b) Explain **five** factors which led to the decline of the coastal settlements between 1500 and 1700. **(10 marks)**

20. (a) Name **five** Kenyan nationalists that were detained alongside Jomo Kenyatta in Kapenguria in 1952. **(5 marks)**

(b) Describe **five** roles of Jaramogi Oginga Odinga in the struggle for independence in Kenya. **(10 marks)**

21. (a)Identify **five** roles of national philosophies in Kenya's development. **(5 marks)**

(b)Explain **five** problems that have undermined the performance of national philosophies in Kenya. **(10 marks)**

SECTION C: (30 MARKS)

*Answer any **TWO** questions from this section in the space provided at the end of question 24.*

22. (a)State the composition of the National Defence Council in Kenya. **(3 marks)**

(b)Describe the challenges facing the Kenya Defence Forces. **(12 marks)**

23. (a)Give **three** sources of the Kenyan law. **(3 marks)**

(b)Explain **six** functions of the civil servants of the National Government of Kenya **(12 marks)**

24. (a)State **three** principles of devolution of government in Kenya. **(3 marks)**

(b)Discuss **six** functions of a county Governor in Kenya **(12 marks)**

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KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

311/2 **History and Government** Paper 2

Time: 2½ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- *This paper consists of three sections A,B and C*
- *Answer **All** questions in section A, **three** questions in section B and **two** Questions in section C*
- *Answer to all question must be written in the answer booklet provided*
- *Candidate should answer the questions in English*

FOR EXAMINER USE ONLY

SECTION	QUESTION	MAX SCORE	SCORE
A	1-17	25	
B		15	
		15	
		15	
C		15	
		15	
TOTAL SCORE			

SECTION A (25MARKS)

ANSWER ALL QUESTIONS

1. Define the term pre-history **(1mk)**

2. Give **two** reasons for studying social history **(2mks)**

3. Give **one** custodian of oral tradition as a source of information in history. **(1mk)**

4. State **one** theory about the origin of iron working in Africa **(1mk)**

5. Mention two contribute of Louis Pasteur in the field of medicine. **(2mks)**

6. List **two** manmade factors that influenced the development of earl agriculture in Egypt **(2mks)**

7. Give the **main** reason for the growth of Kilwa **(1mks)**

8. Give **two** European activities in Africa before 1850 **(2mks)**

9. Give **two** economic benefits enjoyed by assimilated Africans in Senegal **(2mks)**

10. Identify **one** Portuguese colony in Africa **(1mk)**

11. Outline **two** shorting coming of Samori Toure's second empire **(2mks)**

12. What was Schielefen Plan **(1mk)**

13. Name **two** Congolese provinces that attempted to secede during crisis **(2mks)**

14. Identify the military wing of Economics Community of West Africa States (**ECOWAS)(1mk)**

15. Name **two** leader from Nigeria who attended the 1945 Manchester pan African conference **(2mks)**

16. Give **two** military Alliance that formed during the Cold War **(2mks)**

17. Identify the body that elect the president of United States of America **(1mk)**

SECTION B (45 MARKS)

Answer Any Three Questions from This Section

18. (a) Identify **three** species of Homo Sapiens **(3mks)**

b) Describe the culture of early Man during old age period **(12mks)**

19. a) State **three** political benefits of modern means of communication **(3mks)**

(b) Explain **six** impacts of modern means of transportation **(12mks)**

20. a) Give **three** reasons why Odwira festival in the ancient Asante kingdom was important **(3mks)**

(b) Describe social organization of the Shona in 19th century **(12mks)**

21. a) Identify **five** challenges which Europe colonialist faced as they established their rule in Africa **(5mks)**

b) Explain **five** reasons for rise of nationalism in Ghana **(10mks)**

SECTION C (30MARKS)

Answer Any Two Questions from This Section

22. a)State **three** roles of emirs in Northern Nigeria **(3mks)**

b) Explain **six** reasons why in direct rule was unsuccessful in Southern Nigeria**. (12mks)**

23. (a) Give **five** causes of first world war (**1914_1918)** **(5mks)**

b) Discuss the political effects of Second World W**ar** **(10mks)**

24. (a)State **three** sources of the British Constitutio**n.** **(3mks)**

(b)Discussion **Six** functions of British Prime Minister **(12mks)**

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

312/1 **GEOGRAPHY** Paper 1

Time: 2¾ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

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*** *(compulsory) and any other two questions from section* ***B.***

For Examiner's Use Only

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1 - 5	25	
B	6	25	
		25	
		25	
	Total Score	100	

SECTION A (25 Marks)

Answer ***all*** the questions in this section in the spaces provided below each question

1. (a) Define the term Geomorphology. **(2 marks)**

……

……

(b) Other than being a career subject, state ***three*** reasons why it is important for students in secondary school to study geography. **(3 marks)**

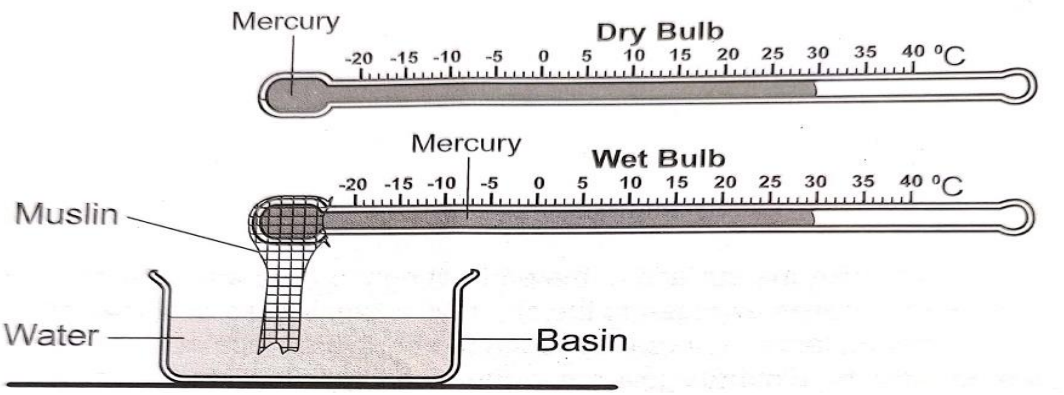
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2. The diagram below shows an instrument used in measuring one of the weather elements. Study it and answer the questions that follow.



(a) Identify; (i) the instrument shown above. **(1 mark)**

……

(ii) the weather element measured using the instrument identified in (a) (i). **(1 mark)**

……

(b) State ***three*** importance of the weather element identified in (a) (ii) in the atmosphere**. (3 marks)**

……

……

……

……

3. (a) Name the temperate grassland found in:

(i) New Zealand: **…….....** **(1 mark)**

(ii) Central Asia: **……(1 mark)**

(b) State ***three*** uses of vegetation. **(3 marks)**

……

……

……

……

4. (a) Name ***two*** output processes in the hydrological cycle. **(2 marks)**

……

……

(b) State ***three*** negative influences that rivers have on human environment. **(3 marks)**

……

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……

5. (a) Define the term soil. **(2 marks)**

……

……

(b) State ***three*** causes of chemical degeneration of soils. **(3 marks)**

……

……

……

……

SECTION B (75 Marks)

Answer ***question 6*** (compulsory) and any other ***two*** questions in this section

6. Study the map of Nyeri 1:50,000 (Sheet 120/4) provided and answer the questions that follow.

(a) (i) Give the longitudinal extent of the area covered by the map. **(2 mrks)**

(ii) Name ***two*** districts in the area covered by the map. **(2 marks)**

(b) (i) Calculate the area of Nyeri forest. Give your answer in kilometres. **2 marks)**

(ii) What is the magnetic variation of the area covered by the map. **(1 mark)**

(c) Describe the drainage of the area covered by the map. **(6 marks)**

(d) (i) Using a scale of 1 cm represents 50 metres, draw a cross-section along northing 64 between easting 68 and 74. **4 marks)**

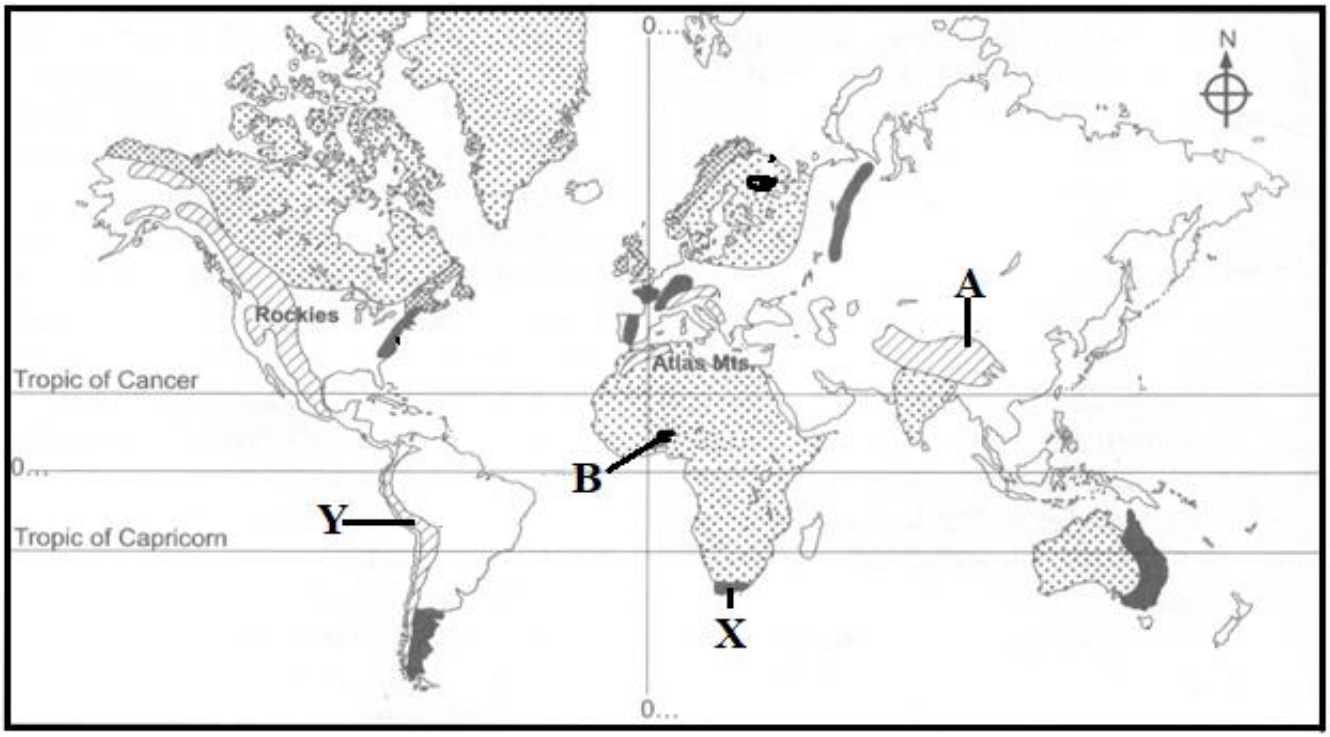
(ii) On the cross-section, mark and label the following;

- Hill. **(1 mark)**
- All weather road loose surface. **(1 mark)**
- River. **(1 mark)**

(iii) Calculate the vertical exaggeration of the cross-section. **(2 marks)**

(e) Citing evidence from the map, identify ***three*** social functions of the area covered by the map. **(3 marks)**

7. Below is a world map showing the distribution of fold mountains. Use it to answer question (a).



(a) (i) Name the fold mountains marked ***A*** and ***B***. **(2 mrks)**

(ii) Give the orogenies during which the fold mountains marked ***X*** and ***Y*** were formed. **(2 mrks)**

(b) With the aid of well labelled diagrams, describe the formation of anticlinorium and synclinorium complex of folds. **(6 mrks)**

(c) (i) Give ***three*** features resulting from folding other than fold mountains. **(3 mrks)**

(ii) Describe how fold mountains were formed according to the proponents of contraction theory. **(3 mrks)**

(d) Explain ***two*** positive significance of folding to human activities. **(4 mrks)**

(e) Your class intends to carry out a field study on folding;

(i) State ***three*** ways in which you would prepare for the field study. **(3 mrks)**

(ii) Give ***two*** methods of data collection you would use during the field study **(2 mrks)**

8. (a)(i) Differentiate between a mineral and a rock. **(2 marks)**

(ii) Describe the following characteristics of minerals:

- Tenacity **(2 mrks)**
- Streak **(2 mrks)**

(b) Describe the process of formation of the following rocks:

(i) Chemically formed sedimentary rocks. **(5 marks)**

(ii) Volcanic ejecta. **(4 marks)**

(c) State ***four*** characteristics of metamorphic rocks. **(4 mrks)**

(d) Explain ***three*** significance of rocks to human activities in Kenya. **(6 marks)**

9. (a)(i) What is a piedmont glacier? **(2 mrks)**

(ii) Give ***three*** ways through which ice moves. **(3 marks)**

(c) (i) Apart from roche mountonnee, name ***three*** other features formed by glacial erosion in lowlands. **(3 marks)**

(ii) Using a well labelled diagram, describe the formation of a roche mountonnee. **(6 mks)**

(c) Your class is planning to carry out a field study on features formed by glacial erosion in highlands;

(i) State ***two*** objectives you would have for the study. **(2 mks)**

(ii) Give ***three*** qualities of a good questionnaire you would prepare for collecting data. **(3 mks)**

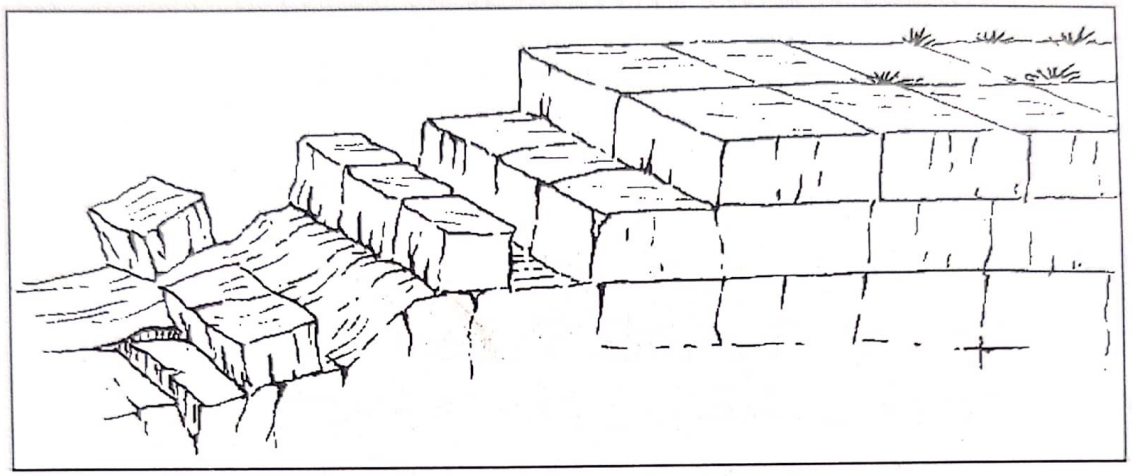
(d) Explain ***three*** positive significance of glaciation in lowland areas. **(6 mrks)**

10. (a)(i) Define the term denudation. **(2 marks)**

(ii) Explain how the following factors influence weathering:

- Mineral composition of the rocks **(2 marks)**
- Colour of the rocks **(2 marks)**
- Structure of the rocks **(2 marks)**

(b) The diagram below shows a process of mechanical weathering:



(i) Identify the process. **(1 mark)**

(ii) Describe how the process occurs. **(5marks)**

(c) State ***five*** evidences of soil creep. **(5marks)**

(d) Explain ***three*** significance of mass wasting on the physical and human environments.

(6marks)

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KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

121/1 **MATHEMATICS** Paper 1

Time: 2½ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES.

(a) *Write your name and index number in the spaces provided above.*
(b) *Sign and write the date of the examination in spaces provided above.*
(c) *This paper consists of two sections: Section **I** and **II**.*
(d) *Answer **all** the questions in section I and **only five** questions from section II.*
(e) *Show **all** the steps in your calculations, giving your answer at each stage in the space provided.*
(f) *Marks may be given for correct working even if the answer is wrong.*
(g) *Non-programmable silent electronic calculators and **KNEC** mathematical tables may be used, except where stated otherwise.*

For examiner's use only

SECTION I

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

SECTION II

17	18	19	20	21	22	23	24	TOTAL

GRAND

SECTION I (50 MARKS):

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

1. Without using a calculator evaluate. **(3 marks)**

$$\frac{\sqrt{\frac{1}{9}} of\ 2\frac{1}{3}+\frac{2}{3}\left(\frac{5}{3}-\frac{3}{2}\right)}{\frac{2}{5} of\ 3\frac{1}{3}\div\frac{1}{3}}$$

2. The distance between Jane's home and her school is $^{4}/_{5}$ of 8km. One day she run ¼ of the way and walked the rest of the journey. What distance did she walk? **(3marks)**

3. Otiende works for a coffee processing company as a sales man. He is paid on Monthly basis as per agreement below.

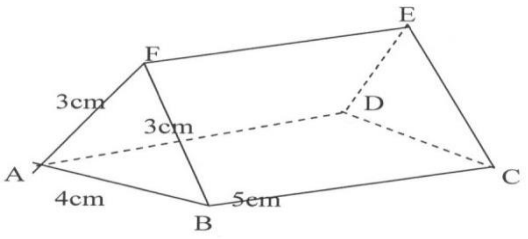
a) A basic pay of sh. 20,000 per Month.

b) A commission of 2% for goods sold up to a maximum of sh. 200,000.

c) A commission of 4% for goods sold over sh. 200,000 in that Month.

In a certain Month he sold goods worthy sh. 600,000. Calculate his total pay for that Month.**(3mks)**

4. The figure below is a triangular prism of uniform cross-section in which AF = FB =3cm, AB = 4cm and BC = 5cm. Draw a clearly labeled net of the prism. **(3marks)**

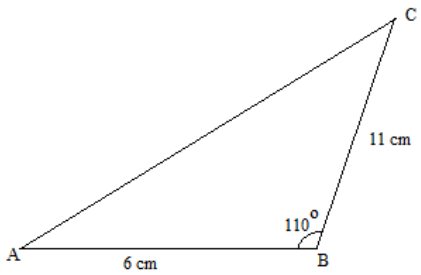


5. Solve for y in the equation. $8^{y+1} - 2^{3y+1} = 48$ **(3marks)**

6. Simplify the expression; $\frac{12x^2+ax-6a^2}{9x^2-4a^2}$ **(3marks)**

7. A line P whose equation is $y = {}^1/_3 x + 4$ is parallel to another line Q. Find the equation of line Q in the form $y = mx + c$ given that it passes through Point (3, 6) **(3marks)**

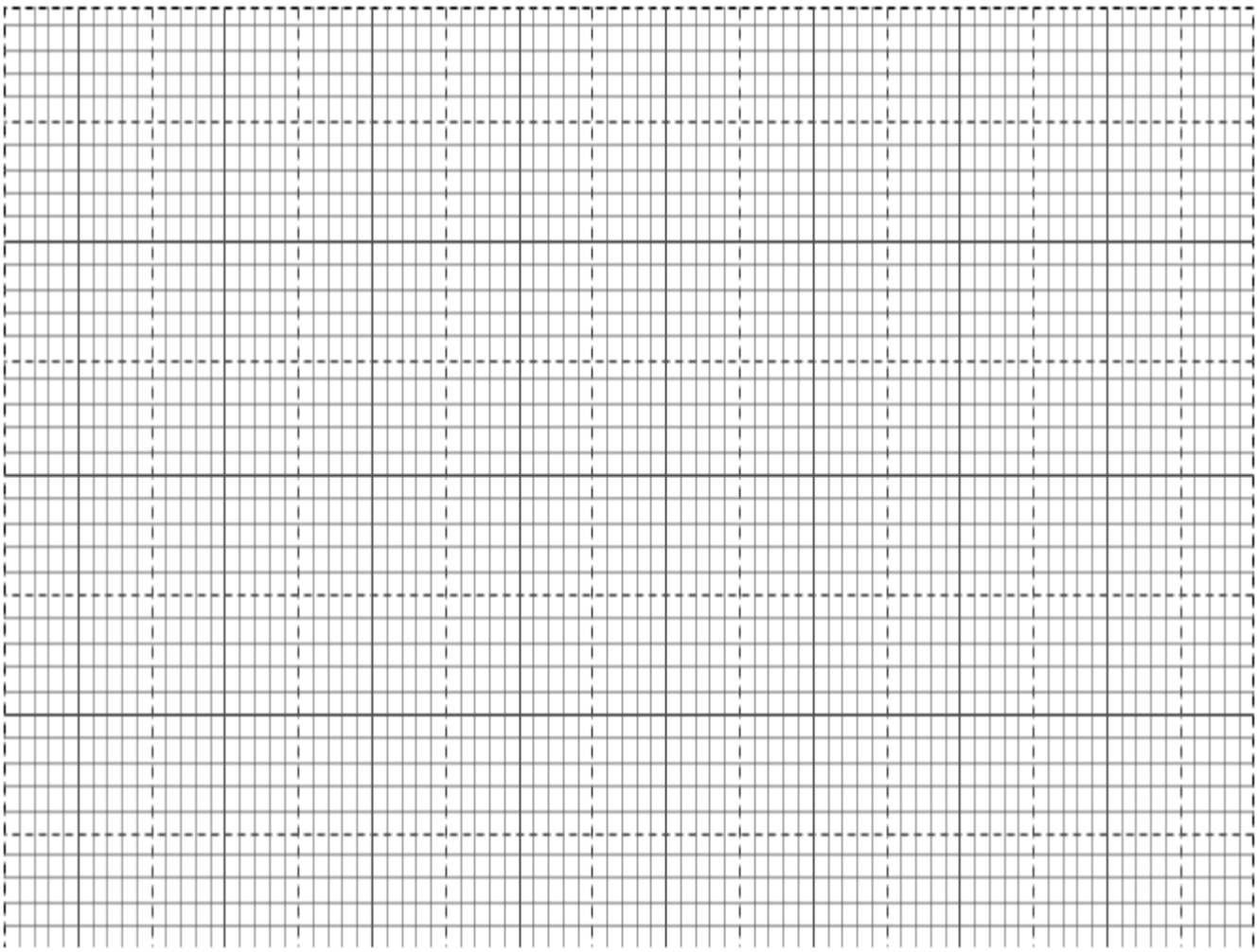
8. The figure below shows a triangle ABC in which AB = 6cm, BC = 11cm and angle ABC = 100^0. Calculate to the decimal places the length of AC. **(3marks)**



9. A football match between Bercelona FC and Liverpoo FC started at 1500hrs. It lasted for the official 90 minutes with a half time break of 15 minutes. The referee added five extra minutes for injuries and other stoppages. Find the time the match ended. **(3marks)**

10. Find the region defined by the following inequalities **(3marks)**

$2y < x + 4;\ 4y \geq -x - 4;\ x \leq 2$



11. The GCD three numbers is 6 and their LCM is 900. If two of the numbers are 36 and 60, find the least possible third number. **(3 marks)**

12. The mass of two similar cans is 960g and 15000g. If the total surface area of the smaller can is 144cm^2, determine the surface area of the larger can. **(3 marks)**

13. The width of a rectangular hall of Busiada Girls Secondary School is 16m less than its length. Calculate the length of the hall if its area is $32m^2$. Hence calculate its perimeter. **(4marks)**

14. Town A is 80km due east of town B. Town C is on a bearing of 234^0 form town B. If town C is 100km from town A, by scale drawing find the distance of town C from town B. **(4marks)**

15. a) Find the inverse of the matrix $\begin{pmatrix} 7 & 4 \\ 3 & 2 \end{pmatrix}$. **(1mark)**

b) Using matrix method, solve the simultaneous equations. **(2 marks)**

$7x + 4y = 14$

$3x + 2y = 8$

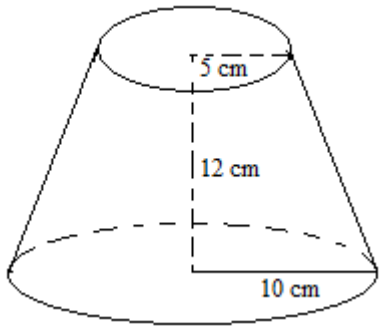
16. Use tables of square roots and reciprocals to find the value of x. **(3marks)**

$x = \sqrt{\frac{1}{15.36} + \frac{3}{1.302}}$

SECTION II (50 marks).

Answer *only five* questions in this section in the spaces provided.

17. The figure below shows a frustrum. The top and bottom radii are 5cm and 10cm respectively, while the vertical height of the frustrum is 12cm.



Find the:-

a) Slant height of the frustum. (**3marks)**

b) Curved area of the frustum. **(3marks)**

c)Volume of the frustum. **(4marks)**

18. Bumala is a market centre 600km from Kisumu town.A bus starts from Kisumu for Bumala at 7.00am at an average speed of 80 km/h. At 8.30 am a car started from Kisumu to Bumala and moved at an average speed of 120 km/hr. Calculate

i)The distance bus covered before the car started moving. **(3marks)**

ii) **The** relative speed for the two vehicles. **(2marks)**

iii) The time the car overtook the bus. **(1 mark)**

iv) Distance covered by the car before overtaking the bus. **(2marks)**

v)Distance from Bumala to the car at the time the car was overtaking the bus. **(2marks)**

19. The height of 36 students in a class was recorded to the nearest centimeter as follows:-

148	159	158	163	166	155	155	179	158
161	160	157	165	165	175	173	172	178
147	168	157	172	165	154	170	157	167
155	159	173	171	168	160	172	156	167

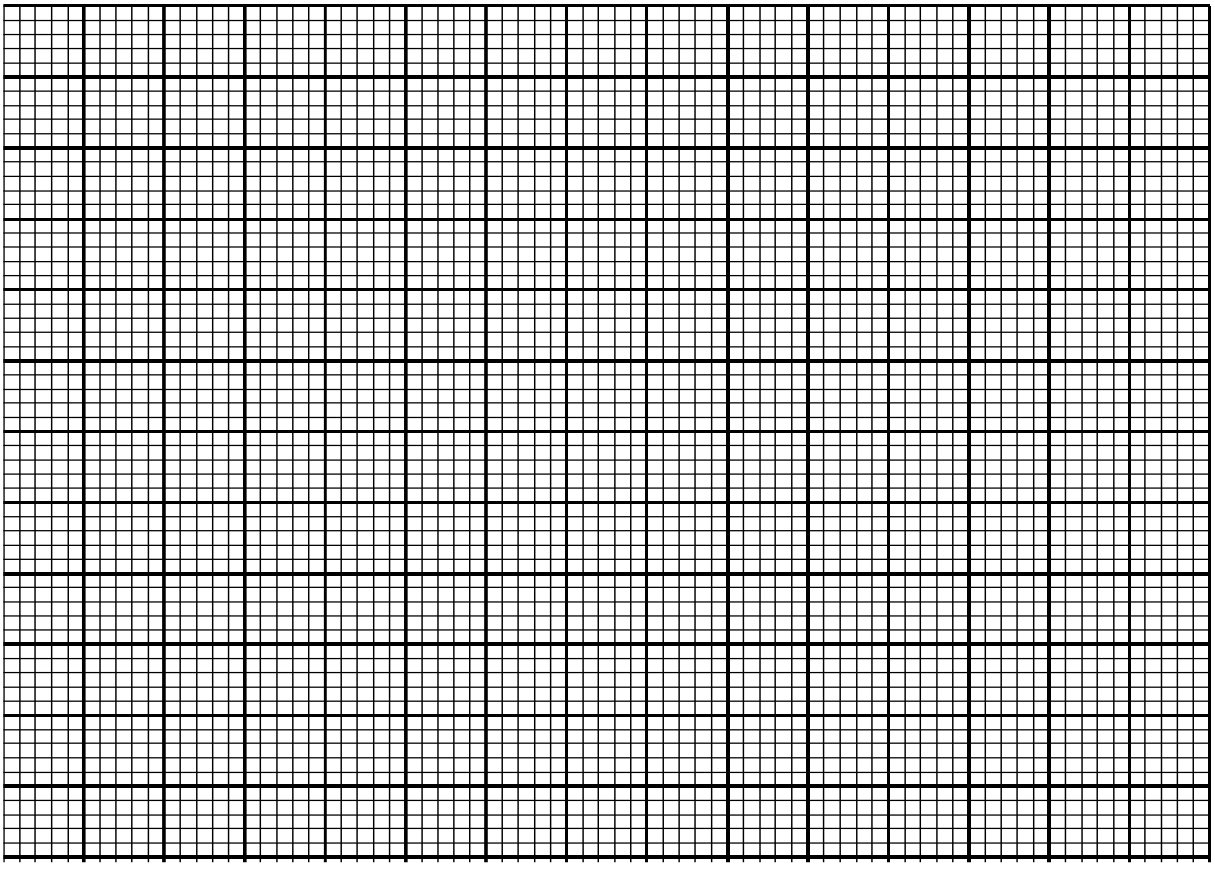
a) Make a frequency distribution table using a class interval of 5 and starting with the class 145 – 149. **(2marks)**

b) **From** the table above

i) Calculate the mean mark **(3marks)**

ii) Calculate the median **(3marks)**

d) Draw a frequency polygon using the table in (a) above. **(2 marks)**



20. Bujumba Boys Secondary School. Intends to buy a certain number of chairs For Ksh. 16,200. The supplier agreed to offer a discount of Ksh. 60 per chair which will enable the school to get 3 chairs more.

Taking *y* as the originally intended number of chairs:-

a) Write an expression in terms of *y* for

i) Original price per chair. **(1mark)**

ii) Price per chair after discount. **(1mark)**

b) Determine

i) The number of chair the school originally intended to buy. **(4marks)**

ii) Price per chair after discount. **(2marks)**

iii) The amount of money the school would have saved per chair of it got the intended number of chairs at a discount of 15%. **(2marks)**

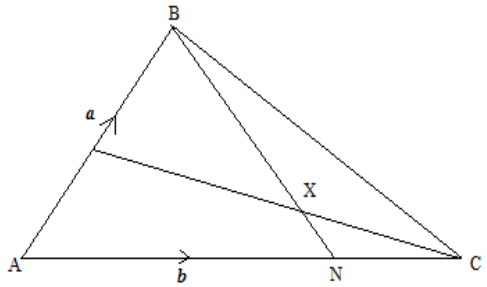
21. a) Without using a protractor, construct triangle ABC such that angle ABC = 60^0, BC = 8cm and AC = 9cm.Measure AB. **(3marks)**

b) Drop a perpendicular from A to BC and measure its length. **(2marks)**

c) Hence calculate the area of triangle ABC. **(2marks)**

d) Locate a point D on BC such that the area of triangle ABC is three times that of triangle ABD. **(3marks)**

22. In triangle ABC, shown below, AB = a AC = b point M lies on AB such that AM: MB = 2:3 and point N lies on AC such that AN: NC = 5:1 line BN intersects line MC at X.



a) Express the following in terms of ***a*** and ***b***

i) **BN** **(1 mark)**

ii) **CM** **(1 mark)**

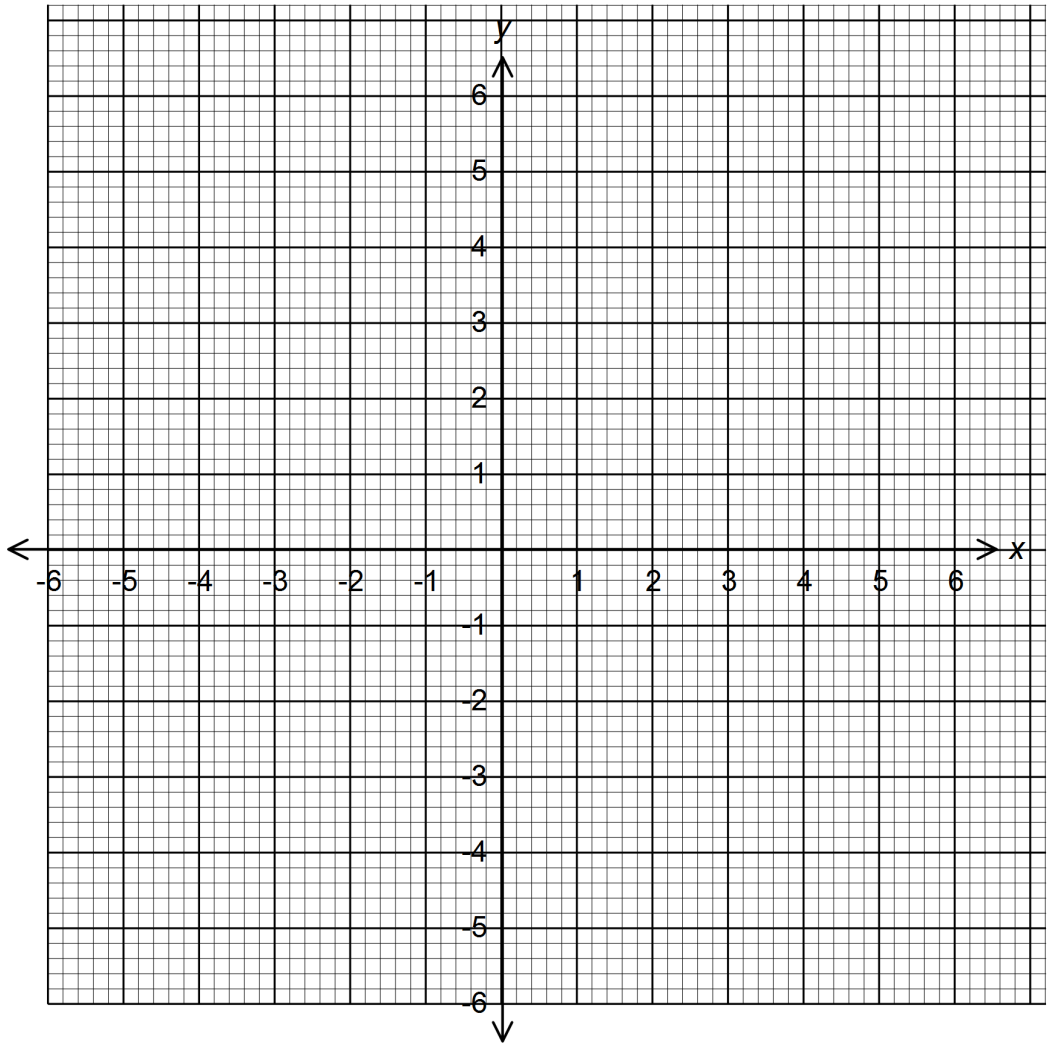
b) Given that **BX** = k**BN** and **CX** = r**CM** where k and r are scalars

i)Write two different expressions for **AX** in term of a, b, k and r **(4marks)**

ii) Find the values of k and r **(4 marks)**

23. A triangle ABC has vertices A(2,1), B(5,2) and C(0,4).

(a)On the grid provided plot the triangle ABC. **(2 marks)**



(b) $A^1B^1C^1$ is the image of ABC under a translation $\begin{pmatrix} 2 \\ -5 \end{pmatrix}$. Plot $A^1B^1C^1$ and state its coordinates.

(2 marks)

(c) Plot $A^{11}B^{11}C^{11}$ the image of $A^{1}B^{1}C^{1}$ after a rotation about the origin through a negative quarter turn. State its coordinates. **(3 marks)**

(d) $A^{111}B^{111}C^{111}$ is the image of $A^{11}B^{11}C^{11}$ after a reflection on the line $y = 0$.

Plot $A^{111}B^{111}C^{111}$ and state its coordinates. **(3 marks)**

24. The displacement h metres of a particle moving along a straight line after t seconds is given by $h = -2t^3 + {}^3/_2\, t^2 + 3t$

(a) Find the initial acceleration. **(3 marks)**

(b) Calculate

(i) The time when the particle was momentarily at rest. **(3marks)**

(ii) Its displacement by the time it comes to rest momentarily. **(2 marks)**

(c) Calculate the maximum speed attained. **(2 marks)**

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

121/2 **MATHEMATICS** Paper 2

Time: 2½ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

b) *This paper consists of* ***TWO*** *sections:* ***Section I*** *and* ***Section II.***

c) *Answer* ***ALL*** *the questions in* ***Section I*** *only* ***five*** *questions from Section II.*

d) Show all the steps in your calculations, giving your answers at each stage in the spaces provided below each question.

FOR EXAMINER'S USE ONLY

Section I

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

Section II

17	18	19	20	21	22	23	24	Total

SECTION 1 (50 MARKS)

1. Evaluate using squares, cubes and reciprocal tables **(4 marks)**

$$\left[\frac{1}{\sqrt[3]{27.56}} + \frac{3}{(0.071)^2}\right]^{-2}$$

2. Make x the subject in $\frac{x^4 - 4}{x^2 - 2} = K$ **(3 marks)**

3. Ali deposited Ksh.100,000 in a financial institution that paid simple interest at the rate of 12.5% p.a. Mohamed deposited the same amount of money as Ali in another financial institution that paid compound interest. After 4 years, they had equal amounts of money. Determine the compound interest rate per annum to 1 decimal place. **(3 marks)**

4. Simplify **(3 marks)**

$$\left(\frac{a^3 - ab^2}{a^4 - b^4}\right)^{-1}$$

5. Expand $\left(1 - 2x\right)^4$, hence find the value of $\left(1.02\right)^4$ correct to 3 significant figures. **(3 marks)**

6. If $\sin x = 2b$ and $\cos x = 2b\sqrt{3}$, find the value of b **(3 marks)**

7. Find the relative error in $\frac{a + b}{c - d}$ given that $a = 77ml$, $b = 23ml$, $c = 36ml$, and $d = 16ml$. **(3 marks)**

8. Without using a calculator or mathematical tables, express $\frac{\sqrt{3}}{1 - \cos 30°}$ in surd form and simplify. **(3 marks)**

9. The equation $3x^2 - 8px + 12 = 0$ has real roots.

Find the value of P. **(2 marks)**

10. A construction company employs 200 artisans and craftsmen in the ratio 1:3 every week. An artisan is paid 2 ½ times as much as a crafts man. At the end of 3 weeks the company paid ksh 1485000 to those employees. Find how much each artisan and each craftsman is paid. (a working week has six days) **(3 marks)**

11. A dam containing $4158m^3$ of water is to be drained. A pump is connected to a pipe of radius 3.5cm and the machine operates for 8 hours per day. Water flows through the pipe at the rate of 1.5m per second. Find the number of days it takes to drain the dam. **(4 marks)**

12. Two brands of coffee Arabica and Robusta costs sh.4,700 and sh.4,200 per kilogram respectively. They are mixed to produce a blend that costs shs.4,600 per kilogram. Find the ratio of the mixture. **(3 marks)**

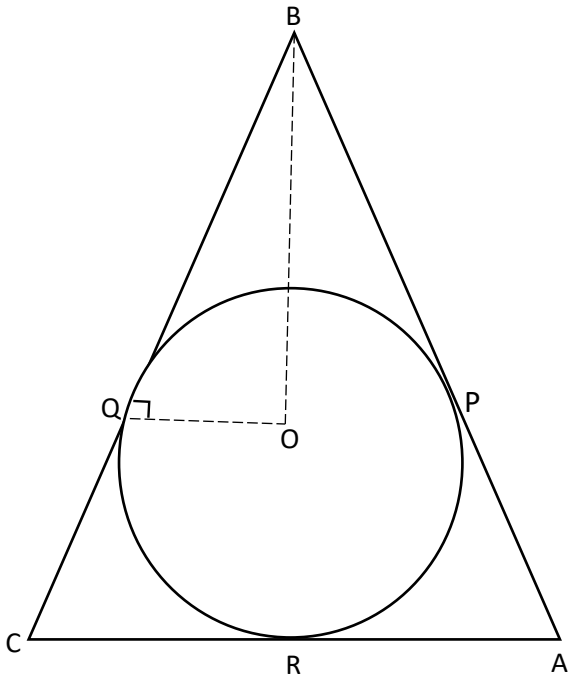
13. Under a transformation represented by a matrix $\begin{pmatrix} 5X & 2 \\ -3 & X \end{pmatrix}$, a triangle of area 10cm^2 is mapped onto a triangle whose area is 110cm^2. Find x **(3 marks)**

14. Find the distance between the centre 0 of a circle whose equation is $2x^2 + 2y^2 + 6x + 10y + 7 = 0$ and a point $B(-4,1)$. **(3 marks)**

15. Solve for x in the equation:

$(\log_2 x)^2 + \log_2 8 = \log_2 x^4$ **(4 marks)**

16. The figure below shows a circle inscribed in an isosceles triangle ABC. If Q, P and R are the points of contact between the triangle and the circle, O is the centre of the circle, $BO = 19.5cm$ and $BQ = 18cm$. Find the radius of the circle and hence the length of the minor arc PQ. **(3 marks)**



SECTION II (50 MARKS)
ANSWER ONLY FIVE QUESTIONS

17. (a) Mr. Mackey pays a tax of Kshs.5,800 per month according to the income tax table given below. He is married and entitled to a family relief of K€ 420p.a.

Taxable income (K€ p.a.)	**Rate (Ksh per K€)**
1 – 9,600	2
9,600 – 19,200	3
19,201 – 29,800	5
29,801 - 38,400	7
38,401 - 47,200	9
Over 47,200	10

Calculate Mackey's gross annual salary in K€ **(6marks)**

(b) The difference between compound interest and simple interest on Kshs.P over a duration of 36 months at the rate of 15% p.a. is Kshs.52,477.50. Calculate the value of P.

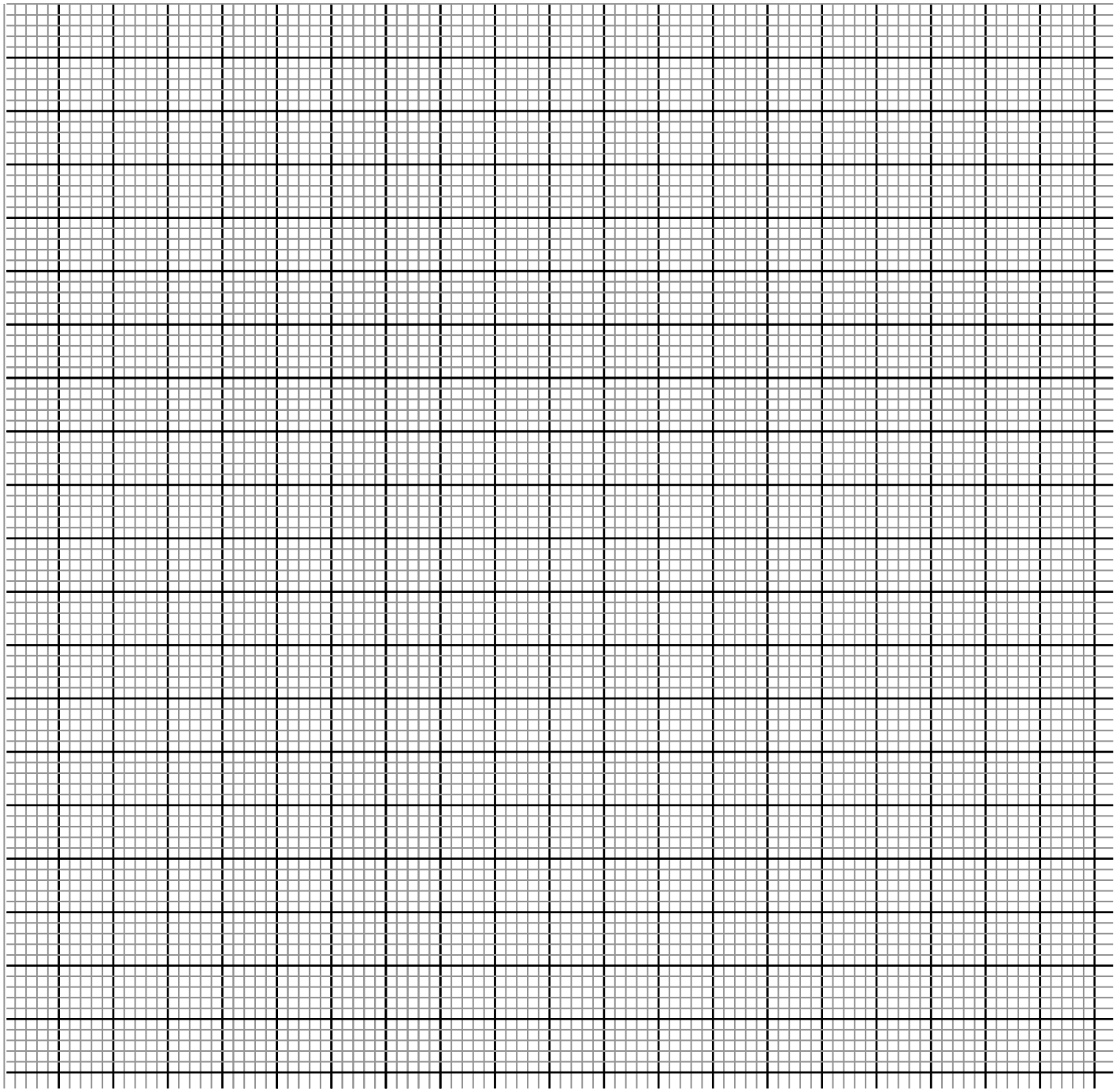
(4 marks)

18. (a) Complete the table below for $y = x^3 + 4x^2 - 5x - 5$ **(2 marks)**

X	-5	-4	-3	-2	-1	0	1	2
y			19			-5		

(b) On the grid provided, draw the graph of $y = x^3 + 4x^2 - 5x - 5$ for

$-5 \leq \times \leq 2$ **(3 marks)**



(c) i) Use the graph to solve the equation

$x^3 + 4x^2 - 5x - 5 = 0$ **(2 marks)**

ii) By drawing a suitable straight line on the graph, solve the equation

$x^3 + 4x^2 - 5x - 5 = -4x - 1$ **(3 marks)**

19. OPQ is a triangle in which OP=P and OQ=q. x is a point on OP such that OP:XP=5:2 and y is another point on PQ such that PY:YQ=1:2. Lines OY and XQ intersect at T.

(a) Express the following vectors in terms of P and q

(i) PQ **(1 mark)**

(ii) OY (**1 mark)**

(iii) OX **(1 mark)**

(b) If $OT = kOY$ and $QT = hQX$ express OT in two different ways. Hence or otherwise find the values of h and k. **(6 mrks)**

(c) Determine the ratio OT:TY **(1 mark)**

20. If $(x - 1\,{}^{1}/_{8})$, x and $(x + {}^{3}/_{2})$ are the first three consecutive terms of a geometric progression;

(a) Determine the values of x and the common ratio. **(4 marks)**

(b) Calculate the sum of the first 6 terms of this progression. **(3 marks)**

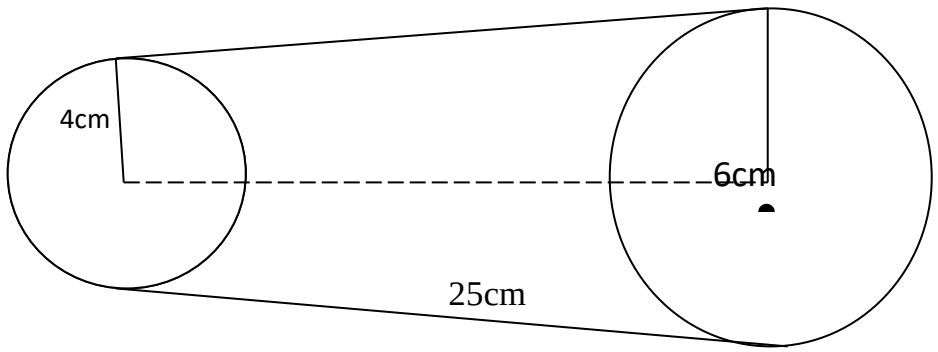
(c) Another sequence has the terms

-13, -16, -19, ……-310.

Find the sum of this sequence. **(3 marks)**

21. The figure below shows a belt passing round two pulleys of centres A and B.

The radius of the pulleys is 4cm and 6cm respectively and the distance between the centres is 25cm.



Calculate the length of the belt used for the pulley system. **(10 marks)**

22. The points P(2,1), Q(4,1) R(4,3) and S(3, 3) are coordinates of a quadrilateral.

(a) Plot the quadrilateral PQRS on the grid provided. **(1 mark)**

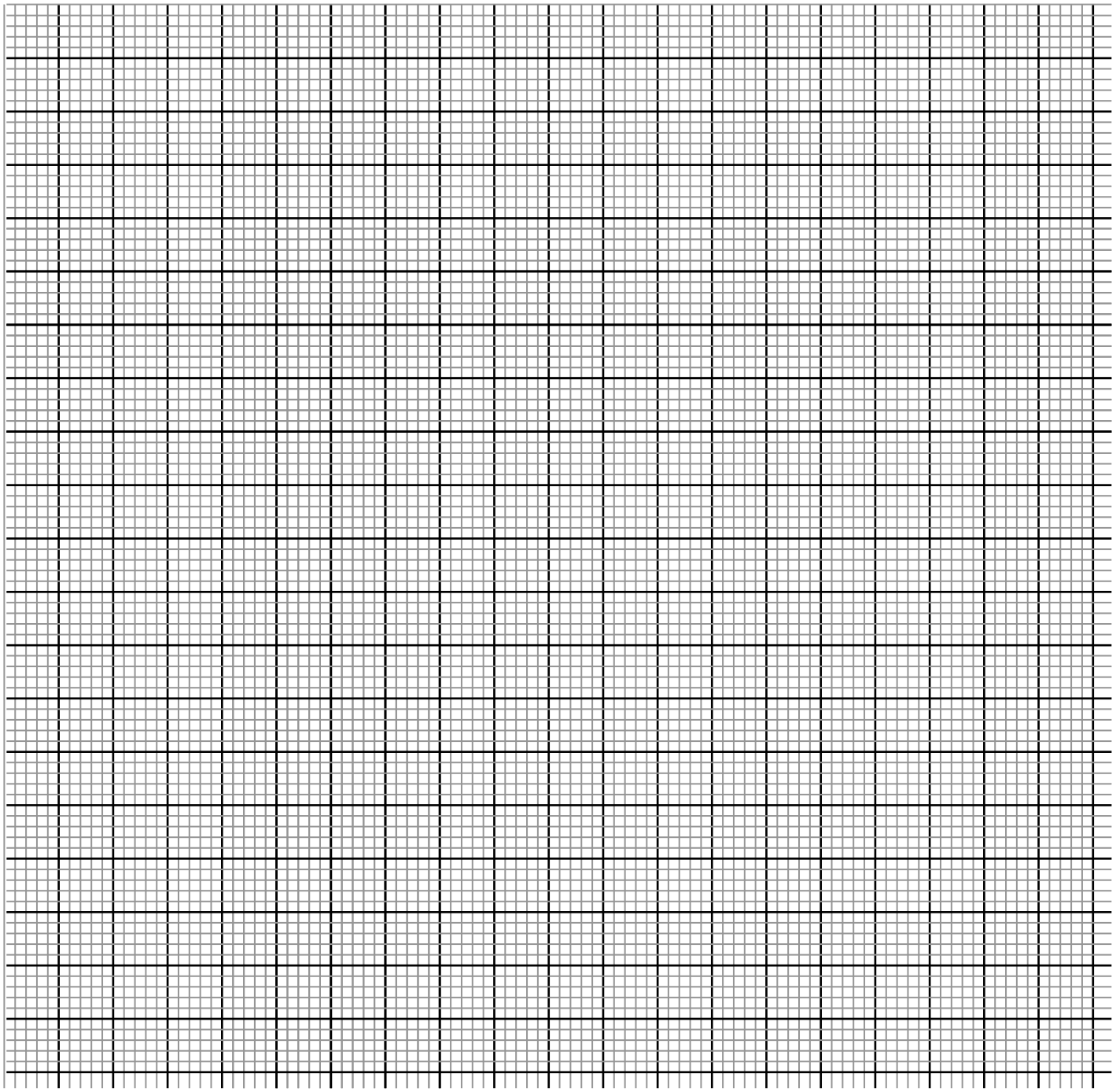
(b) Find the coordinates of $P^1Q^1R^1S^1$ the image of PQRS under the transformation represented by the matrix $M = \begin{pmatrix} 1 & 1 \\ 2 & 0 \end{pmatrix}$ **(2 marks)**

(c) Draw and label $P^1Q^1R^1S^1$ on the same grid.

(d) Find the coordinates of $P^{11}Q^{11}R^{11}S^{11}$ on the image of $P^1Q^1R^1S^1$ under the transformation represented by the matrix $N = \begin{pmatrix} -2 & 1 \\ 0 & 1 \end{pmatrix}$ **(2 marks)**

(e) Draw and label $P^{11}Q^{11}R^{11}S^{11}$ on the same grid. **(1 mark)**

(f) Determine the matrix that maps PQRS directly onto $P^{11}Q^{11}R^{11}S^{11}$. **(3 marks)**



23. The table below shows the ages of people in years who attended a wedding ceremony.

Age in years	10-19	20-29	30-39	40-49	50-59	60-69	70-79
Frequency	2	4	4	8	6	3	2

(a) State the modal class **(1 mark)**

(b) Using an assumed mean of 44.5 calculate

(i) The mean age **(3 marks)**

(ii) The standard deviation **(3 marks)**

(iii) The median age **(3 marks)**

24. A supermarket is stocked with plates which come from two suppliers A and B. They are bought in the ratio 3:5 respectively, 10% of plates from A are defective and 6% of the plates from B are defective.

(a) A plate is chosen by a buyer at randon.

Find the probability that

i) It is from A **(2 marks)**

ii) It is from B and it is defective **(2 marks)**

iii) It is defective **(2 marks)**

(b) Two plates are chosen at random. Find the probability that;

i) Both are defective **(2 marks)**

ii) At least one is defective **(2 marks)**

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

451/1 **COMPUTER STUDIES** Paper 1

Time: 2½ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

Instruction to candidates

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

(b) *This paper consists of **two** sections **A** and **B***

*(c) Answer **ALL** questions in section **A***

*(d) Answer question 16 and any other **THREE** questions from section **B***

(e) All answers should be written in the spaces provided on the question paper

For Examiner's Use Only

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

SECTION A (40 MARKS)

Answer ALL the questions in SECTION

1. Mention two devices that can connected to the computer via HDMI cable **(2marks)**

……

……

2. State three ways in which ICT can be used to enhance customer service delivery in a supermarket **(3marks)**

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3. List two types of job opportunities that are available in the field of computer hardware **(2marks)**

……

……

4. Mr. Kamau is a teacher at Chianda High School used Ms-Excel to process the marks obtained by his student during the term. The table below shows the details entered in the Ms-Excel worksheet

	A	B	C	D	E	F	G	H	I
1	**Name**	**CAT 1**	**CAT 2**	**CAT TOTAL**	**EXAM**	**TOTAL MARKS**	**POSITION**	**GRADE**	**REMARK**
2	**Mark Jama**	**14**	**06**	**20**	**56**	76	**1**		
3	**Caleb Wekeza**	**13**	**08**	**21**	**34**	**55**	**6**		
4	**Kanini Mulue**	**10**	**04**	**14**	**59**	**73**	**3**		
5	**Justine Melanie**	**11**	**07**	**18**	**57**	**75**	**2**		
6	**Julia Wahome**	**06**	**09**	**15**	**48**	**63**	**5**		
7	**Austin Kilome**	**08**	**07**	**15**	**50**	**65**	**4**		

Hints

CAT1is out 15, CAT2 is out 15 and Exam is out 70

(a) Give the formula used to calculate the Total Marks for Julia Wahome **(1mark)**

……

……

(b) Write a function that gives each student his position in class based on the performance **2 marks)**

……

……

(c) Write a logical function that will display the following remarks in column I **(2marks)**

Total Marks	Remark
0 - 49	Fail
50 - 59	Above Average
60 - 69	Fair
70 - 79	Good
80 - 100	Excellent

5. Give two reasons to justify why SATA cables are used in modern computers to connect the hard disk to the motherboard **(2mrks)**

……

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……

6. Give three file systems supported by windows operating system **3marks)**

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……

7. Describe the use of the following keys found on a standard keyboard **(2marks)**

(a) Esc

……

……

(b) Prt sc

……

……

8. Explain the following terms with references to algorithm

(a) Definiteness **(2marks)**

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(b) Finiteness **(2marks)**

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9. Mention two ICT related courses offered in Kenyan universities at undergraduate level **(2marks)**

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10. What is flaming **(2marks)**

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11. A Principal of a school wishes his school to have an internet connection in a bid to improve its service delivery. Mention three internet connectivity requirements that must be present to enable the connection. **(3marks)**

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12. Identify two limitations of traditional approach to system development **(2marks)**

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13. Use flowchart to demonstrate how IF THEN and REPEAT..... UNTIL can be implemented **(2marks)**

14. State three functions of Repeater stations in data communication **(3marks)**

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15. Describe three layout guides available in DTP that assist a user to place an object in a preferred position **(3marks)**

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SECTION B (60 MARKS)

16. a) State three features of a compiler **(3marks)**

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b) When writing a computer program programmers are always advised to use approaches and techniques that make the program easy to follow and maintain. List four ways in which a programmer can make program code easy to follow **(4marks)**

……

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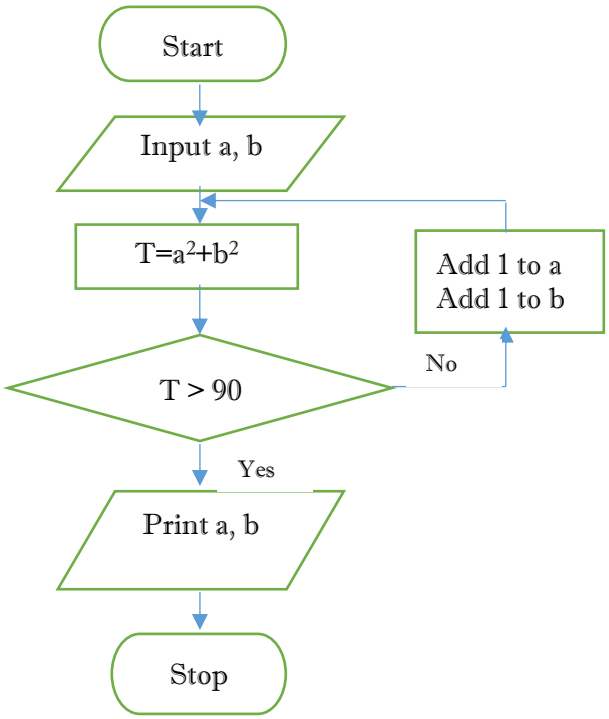
……

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……

c) Study the flowchart below and use it to answer the questions that follow



(i) Given that the user keyed in 3 as the value of a and 1 as the value of b get the final output of the flowchart **(3marks)**

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.....

(ii)Use a pseudo code to represent the flowchart in (c) **(5marks)**

17. a) Briefly describe the three main coding schemes **(3marks)**

b) Convert the following numbers to binary number

(i) B2.AAH (**3marks)**

(ii) $\frac{13}{64}$ base 10 **(3marks)**

c) The table below was created using Ms-Access use it to answer the questions that follow

Table Name: Product

Product ID	Product Name	Unit Cost	Quantity	Total
P00101	Milk	120	34	4080
P00201	Bread	100	56	5600
P00301	Beans	150	45	6750

(i) State the most appropriate data type for Product ID and Total **(2marks)**

(ii) Suggest how you would set the input mask for the Product Name so that the data entered in that field appear the way they are in the table **(2marks)**

(iii) Represent the dynaset shown below in a SQL form given that the table Name is product **(2marks)**

Product ID	Product Name	Unit Cost	Quantity	Total
P00101	Milk	120	34	4080

18. a) Describe four services available in the internet that support business **(4marks)**

b) Modern computing has embraced the use of drop box, google drive and OneDrive. These platforms are hosted by the internet and many computer users prefer backing up their data using these facilities. Give three reasons to justify this phenomenon **(3marks)**

c) Jeff a computer student from Ramba High school launched the browser to access the internet , the browser displayed an error message Server Not Found on the screen this didn't allow Jeff to access the internet. State three possible causes of this anomaly **(3marks)**

d) Briefly describe the following features of word processor **(2marks)**

(i) Subscript

(ii) Drop cap

e) State two arithmetic operation that can be performed on a row of a numeric data in a word processor table **(1 mark)**

f) In each case of (e) above give the expression used **(2marks)**

19. a) Enumerate four breakthroughs in health care instigated by ICT **(4marks)**

b) Mention four application areas of Artificial Intelligence **(3marks)**

c) List three scanning devices available at Electronic Point Sale Terminal **(3marks)**

d) Describe two ways of preventing eavesdropping **(2marks)**

e) System failure is considered as threat to data security. Describe three measures an organization should put in place to guard against system failure **(3marks)**

20. a) Identify modes of data communication represented in (i), (ii), (iii) and (iv) below **(4marks)**

(i) Principal Addressing students in assembly using public address system

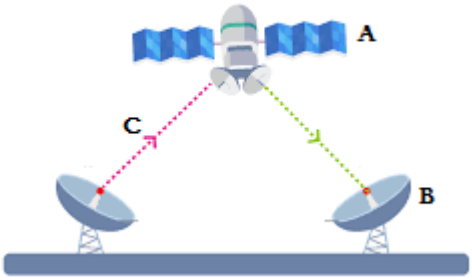
(ii) WhatsApp chat

(iii) Phone conversation

(iv) Walkie talkie conversation

b) List three challenges experienced by computer networks that are set up using twisted pair cables **(3marks)**

c) Study the diagram below and use it to answer the questions that follow



(i) Identify the parts labelled A, B and C in the diagram above **(3marks)**

(ii) State function of the part labelled A **(2marks)**

d) Name any three components of virtual reality **(3marks)**

THIS IS THE LAST PRINTED PAGE

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

451/2 **COMPUTER STUDIES** Paper 2

Practical

Time: 2½ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

a) *Indicate your name and index number at the right hand corner of each printout*

b) *Write your name and index number on the CD/removable storage medium provided*

c) *Write the name and version of the software used for each question attempted in the answer sheet provided*

d) *Answer all the questions, All questions carry equal marks*

e) *This paper consists of **6** printed pages. **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.***

f) *Passwords should not be used while saving in the CD/removable storage Medium*

g) *Marked printout of the answers on the sheet*

h) *Hand in all the printouts and the CD/removable storage medium used*

For Official Use Only

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

1. KenTelcom is a company that engages in the sales of the following Mobile service providers: Faiba, Gateway, Vodafone and SAF. The company uses sales representatives who operate at various regions in Nairobi town. Each sales representative presents monthly sales to the manager (Values are in Ksh).

	A	B	C	D	E	F
	Mobile _ Accessories Sales LTD					
		Product type				
	Sales Rep.	**Faiba**	**Gateway**	**Vodafone**	**SAF**	**Total Sales**
	James	24000	37500	39500	49500	
	Peter	15000	26500	21500	25500	
	Beryl	5500	14800	3500	16500	
	Melanie	7000	15500	14500	64500	
	Mariana	11000	69000	2200	64500	
	Maggi	33500	12000	14500	23500	
	Valentine	15500	80000	17200	23500	

(a) Using spreadsheet package,

(i) Enter the information given in the table above into a worksheet. Save workbook as **KenTelcomREPS** and rename sheet 1 as **Sales.** **(20 marks)**

(ii) Validate all the cells in the Product Type columns to allow entry of numeric data from 0 to 80,000 **only**. A message, Invalid data!: should be displayed whenever a cell is typed with non-compliant data.(3 marks)

(b) Using formulae, determine the;

(i) Total sales for each Sales representative **(2 marks)**

(ii) Product type Total Sales for each provider. **(2 marks)**

(c) Each sales person earns Bonus points for the sales of each product type based on the following criteria.

- 1 point for every sh. 50 for Faiba,
- 2 points for every sh. 60 for Gateway,
- 3 point for every sh. 50 for Vodafone,
- 2 point for every sh. 60 for SAF.

(d) Insert a column **Bonus Points** and compute the points of each sales person **(5 marks)**

(e) Insert a blank column **Awards** and based on the Bonus points earned by each sales representative, use a function to display the remarks on Awards as follows: **(5 marks)**

Total Sales	**Awards**
2,500 and above	Cash
More than 1,000 and less than 2,500	Vouchers
1,000 and below	try again

(f) Format the figures in worksheet as follows: **(3marks)**

✓ Title and subtitle:

(e) Double underline

(f) Font type – Algerian

(g) Font size

(g) Rotate, all the Product Type heading labels in the worksheet to -90^0. **(1 mark)**

(h) Generate a column chart to represent the Total sales for each sales representative. Label your chart accordingly and place it in a new worksheet renamed as CHART. **(7marks)**

(i) Print Sales and CHART **(2marks)**

2. The table below shows list of students admitted to Mangu High School under different sponsors.

(a) Open a database program and create a database named **MHS.** **(1mark)**

(b) Create three tables named **Students**, **Sponsor** and **Fees.** **(3marks)**

(c) Using database file created in (a) above use the following field properties. **(6marks)**

Student Table

Field name	Data types and properties
School-Code	Default value = 427
AdmNo	Text (Size = 4, Required = Yes)
Student Name	Text (Size = 16)
Date of Birth	Date and time (Size = 10)
Amount paid	Text (Size = 4, Required = Yes)
SponsorID	LookUp -sponsor table
BankID	Text

Sponsor_Table

Field name	Data types and properties
SponsorID	Text (Size = 4, Required = Yes)
Sponsor Name	Text (Size = 16)

Amount_Table

Field name	Data types and properties
BankID	Text
BankName	Text (Size = 10)
Amount Per Student	Number (Size = 8, Decimal Place = 2)
Mode of payment	Text (Size = 12)

(i) Create the relationship between the tables. **(2marks)**

(ii) Enforce referential integrity between the tables. **(1mark)**

(iii) Create the three forms **StudentForm, SponsorForm** and **AmountForm**. **(3marks)**

(iv) Enter the following data in their respective tables using the respective **forms.** **(8marks)**

Table 1: Sponsor Table

SponsorID	Sponsor Name
S1	Wings
S2	Majani
S3	Elimu

Table 2: Student Table

Sch-Code	AdmNo	SponsorID	StudName	BankID	DateOfBirth
427	444	S1	Lilian Mwende	100	12/03/2000
427	443	S3	Ruth Akinyi	200	23/01/1998
427	445	S2	Frida Omondi	100	11/07/2002
427	442	S1	Bianca Godana	300	12/05/2005
427	410	S3	Christine Awuor	300	28/05/1999
427	413	S2	Baraka kalala	200	30/09/1998
427	449	S1	Rael Mokaya	100	18/02/2005
427	411	S3	Slivia Odanga	100	17/04/2001
427	412	S2	Jane Kawaswa	200	19/06/2004
427	415	S2	Jack Jake	100	22/03/2003

Table 3: Amount Table

BankID	BankName	Amount Per Student	Mode of payment
100	COOP	550,000	EFT
200	KCB	120,000	M-banking
300	EQUITY	420,000	Cheque

(d) Create a query to display the fields:

(i) AdmNo, Sponsor name, age and Students whose first name start with letter **"B"** and whose payment Bank is **"COOP"** Save query as **B-query**. **(5marks)**

(ii) StdName, Sponsor name, Mode of payment and Amount per student. Calculate the total amount received. Save query as **AMount-query**. **(5marks)**

(iii) Create **Amountreport** from A**mount query** display all the records grouped by mode of payment and find the average per mode of payment **(4 marks)**

(e) Create a bar chart to display students and their respective amount received. Save chart as S-**chart.** (**2 marks)**

(f) Create **S-report** to display the following. **5marks)**

Report title Sponsorship Report 2022

AdNo, Student Name, Sponsor Name, Bank Name, Bank ID and Amount

(g) Print the following: **(4marks)**

(i) The Student table

(ii) The B- query

(iii) The chart

(iv) The S-report

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

441/1 **HOME SCIENCE** Paper 1

Time: 2½ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- *Answer all questions in section A in the spaces provided*
- *Section B is compulsory*
- *Choose any two questions from section C*

FOR EXAMINERS USE ONLY

SECTION	Question	Maximum score	Candidate's score
Section A	1-39	40	
Section B	40	20	
Section C	41-43	40	
Total score		100	

SECTION A

1. Give two uses of fruits in cake making . **(1mark)**

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2. Name two types of pleats **(1 mark)**

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3. Name the biological raising agent used in bread making **(1mark)**

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4. List two methods of incorporating air into flour mechanically **(1mark)**

……

……

5. Give two functions of sebum **(1mark)**

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……

6. State two ways in which a country with home scientists will benefi**t** **(1mark)**

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7. Mention two minerals needed for healthy teeth **(1mark)**

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8. List any two ways of finishing wood **(1mark)**

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9. Mention two advantages of charcoal as a fuel **(1mark)**

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……

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10. Define the following terms: **(1mark)**

a) Fixed dirt

……

……

b) Fracture

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11. Identify other two causes of anaemia other than nutritional deficiency **(1mark)**

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12. Give two reasons for food fortification **(1mark)**

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13. Highlight two ways of conserving vitamin C during the storage of kales **(1mark)**

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14. Mention two signs and symptoms of marasmus **(1mark)**

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……

15. Write the following abbreviations in full **(1mark)**

a) AIDS

……

……

b) TBA

……

……

16. Give two functions of the S and U bend below every sink in the disposal of waste water from the house **(1mark)**

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17. Detergents are classified into two groups .Name them **(1mark)**

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18. Mention two rules to observe in stain removal **(1mark)**

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19. Name two the stain removal agents used in removing a banana sap stain from your t-shirt **(1mark)**

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20. Identify two methods suitable for disinfecting a kitchen towel **(1mark)**

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21. List two ingredients used in the making of laundry blue **(1mark)**

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22. Give two points to observe when taking body measurement**s** **(1mark)**

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23. Name two conspicuous seams used to bring out style features in garment construction **(1mark)**

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24. Give two examples of stitches used to neaten raw edges **(1mark)**

……

……

25. Mention two possible causes of stiches looping when sewing with a sewing machine **(1 mark)**

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26. List two examples of haberdashery /sewing notions in garment constuction **(1mark)**

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27. Give two ways you can identify elastofibres physically **(1mark)**

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28. Outline two examples of synthetic fibers **(1mark)**

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29. Differentiate between aerobic and anaerobic food spoilage **(1mark)**

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30. Apart from kitchen knife ,identify one other type of knife and give its function. **(1mark)**

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31. State two roles of advertisements **(1mark)**

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32. Point out two styles of food service **(1mark)**

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33. Outline two functions of darts in clothing and construction **processes** **(1mark)?**

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34. List two examples of basic pattern symbols and markings in garment **construction (1mark)**

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35. Identify suitable textile fiber for making lingerie **(1mark)**

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36. Mention two methods of treating water at home **(1mark)**

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37. Give two reasons for cleaning a house **(1mark)**

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38. Outline two advantages of flats/apartments type of houses **(1mark)**

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39. Suggest two ways of managing foreign body in the ear **(1mark)**

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40. Mention two dangers that arise from misuse of cosmetics **(1mark)**

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SECTION B (Answer all the questions)

41. You are doing thorough cleaning at home on a Saturday morning. Describe how to;

a) Clean a white washable cotton mask you had used the previous day. **(8marks)**

b) Sweep an earthen sitting room floor **(7marks)**

c) Wash a Calabash that had been used to take porridge in the morning for breakfast**.(5 marks)**

SECTION C (Answer only two questions from this section.)

42.

a) Explain four factors to consider when planning meals **(4marks)**

b) Explain three merits of credit **cards** **(3marks)**

c) Explain four importance of immunization **(4marks)**

d) Describe how to make hand worked **gathers** **(4marks)**

e) State five points on the choice of brooms and **brushes** **(5marks)**

43.

a) Outline three steps in preparing a budget **(3marks)**

b) Give the importance of table setting **(4marks)**

c) Explain the importance of breastfeeding to a child (**3marks)**

d) Outline four qualities of a well-made stitch **(4marks)**

e) Explain three ways in which detergents aid in removal of dirt **(6marks)**

44.

a) Explain three reasons for making a shopping list prior to the actual **buying** **(3marks)**

b) Use the following dishes to organize a breakfast menu **(3marks)**

Tea with milk, Fried liver, Boiled arrowroot, Fresh passion juice, Wimbi porridge

c) Explain four ways of handling temper tantrums during habit training **(4marks)**

d) Describe how to make a plain seam on a skirt yoke **(4marks)**

e) Draw six care labels on drying in laundry work and explain the meaning of each **(6marks)**

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

441/2 **HOME SCIENCE** Paper 2

Time: 2½ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

441/2

CLOTHING AND TEXTILES

PAPER 2

PRACTICAL

$2^1/_2$ HOURS

INSTRUCTIONS TO SCHOOLS

The following materials will be provided by the school

1. *Plain light weight cotton 55 cm long by 70cm wide*

2. *Cotton sewing thread to match the fabric*

3. *Embroidery thread 130cm long*

4. *A4 envelope*

FABRIC IN EXCESS OF THE AMOUNT SPECIFIED MUST NOT BE SUPPLIED TO THE CANDIDATES.

These instructions consist of 1 printed page

KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

441/2 **HOME SCIENCE** Paper 2

Time: 2½ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

441/2

HOME SCIENCE (CLOTHING CONSTRUCTION)

PAPER 2

PRACTICAL

Time: 2 ½ hours

HOME SCIENCE

(CLOTHING CONSTRUCTION)

PAPER 2

PRACTICAL

TIME: 2 ½ HOURS

Instructions to candidates

- *This paper consists of **3** printed pages.*
- *Candidates should check the question paper to ascertain that all pages are printed and no questions are missing.*

A pattern of a girl's dress is provided. You are advised to study the sketches, instructions and layout carefully before you begin the test.

Materials provided

1. Pattern pieces
   - A -Dress Front
   - B -Dress Back
   - C -Yoke
   - D - Pocket
2. Plain light weight cotton fabric 70cm wide by 55cm long.
3. Cotton thread to match the fabric.
4. Embroidery thread 130cm long.
5. A4 Envelope

THE TEST

Using the materials provided, cut out and make up the **LEFT HALF** of the dress to show the following process.

1. Cutting out.
2. Working of double pointed dart at the dress back.
3. Preparation and attachment of the patch pocket to include the working of satin stitch to fill "O" on the pocket.
4. Preparation of gathers on the dress front. DO NOT REMOVE GATHERING STITCHES.
5. Joining the dress front to the yoke using overlaid seam.
6. Joining the dress front to the dress back at the shoulder using double stitched seam.
7. Working the side seam using an open seam.
8. Managing the hem on the lower edge of the dress by;

(a) Holding the hem using even tackings. (DO NOT REMOVE TACKINGS)

(b) Working hemming stitches at the front part of the dress.

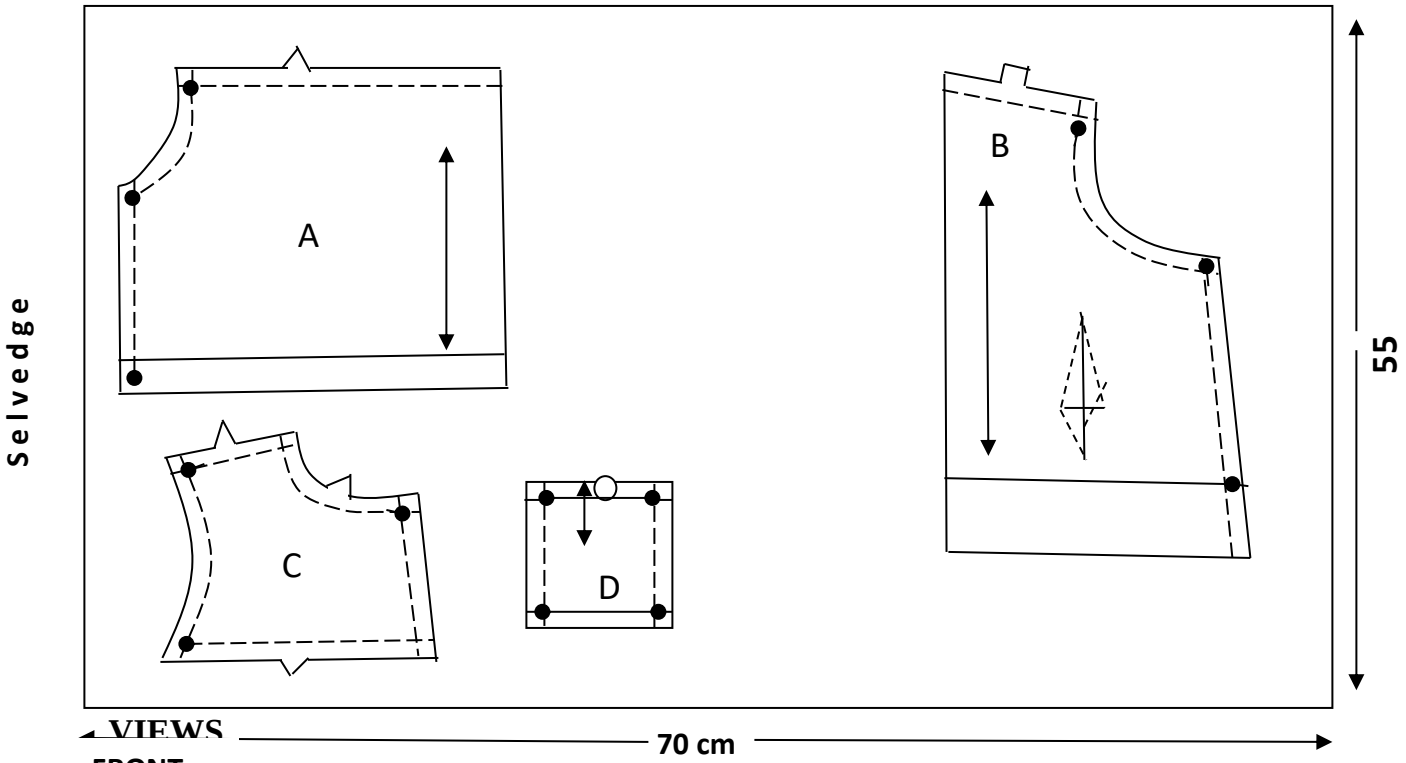
9. Presentation.

NB:

At the end of the examination, firmly sew on your work on single fabric a label bearing your name, class and admission number. Remove the needles, pins and unnecessary threads from your work. Fold your work neatly and place it in the envelope provided.

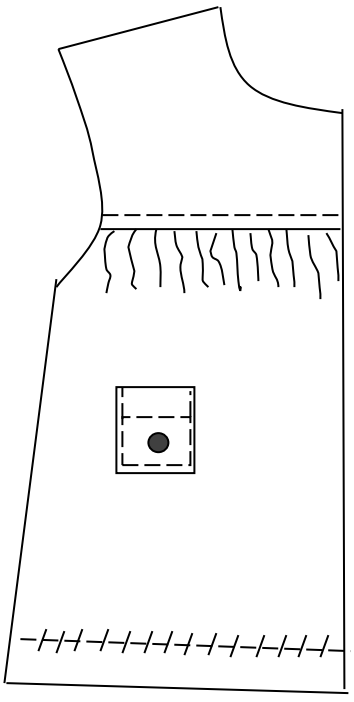
DO NOT PUT SCRAPS OF FABRIC IN THE ENVELOPE AND DO NOT SEAL THE ENVELOPE.

LAYOUT (NOT DRAWN TO SCALE)

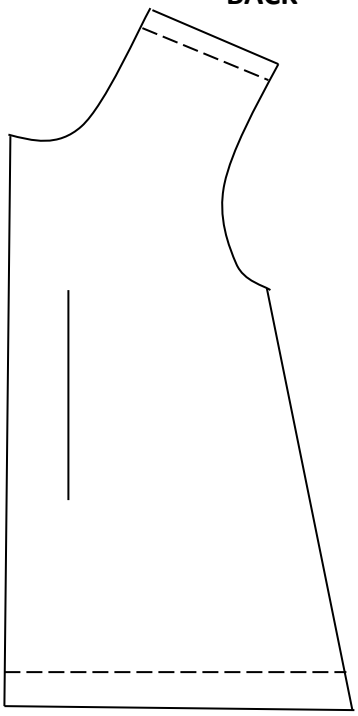


VIEWS

FRONT



BACK



KCSE 2023 SMARTGRADE MOCK

Kenya Certificate of Secondary Education.

SERIES 1

441/3 **HOME SCIENCE** Paper 3

Time: 1¾ Hours

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

441/3

HOMESCIENCE

Paper 3

[FOOD AND NUTRITION]

Practical

Time: 3 $^{1}/_{4}$ Hours

Planning session: 30 minutes

Practical session 1 ¼ hours

INSTRUCTIONS TO CANDIDATES

- Read the test carefully.
- Textbooks and recipes may be used during planning session as reference materials
- You will be expected to keep to your order of work during the practical session.
- You are not allowed to bring additional notes to the practical session.

THE TEST

Your cousin is coming to visit you at your home. Using the ingredients listed below, prepare, cook and serve a one-course meal and a dessert for two of you.

Ingredients

- *Rice/maize flour/wheat flour*
- *Beef/Chicken/Peas*
- *Tomatoes*
- *Onions*
- *Dhania*
- *Kales/cabbages*
- *Fruits*
- *Sugar*
- *Fat*
- *Royco*
- *Salt*
- *Capsicum*

Planning Session.

Use separate sheets of paper for each task listed below and a carbon paper to make duplicate copies and proceed as follows:-

(i). Identify the dishes and write down their recipes

(ii). Write down your order of work.

(iii). Make a list of the food stuff, equipment and materials you would require.

Instructions to the candidates

- Read the test carefully.
- Write your name and index number on every sheet of paper used.
- Text books and recipes may be used during planning session as reference materials.
- You will be expected to keep to your order of work during practical session.
- You are not allowed to bring any additional notes to the practical session.

THE END

FOR THE FOLLOWING;

- ✓ **ONLINE TUITION**
- ✓ **REVISION NOTES**
- ✓ **SCHEMES OF WORK**
- ✓ **SETBOOKS VIDEOS**
- ✓ **TERMLY EXAMS**
- ✓ **QUICK REVISION KITS**
- ✓ **KCSE TOPICALS**
- ✓ **KCSE PREMOCKS**
- ✓ **TOP SCHOOLS PREMOCKS**
- ✓ **JOINT PREMOCKS**
- ✓ **KCSE MOCKS**
- ✓ **TOP SCHOOLS MOCKS**
- ✓ **JOINT MOCKS**
- ✓ **KCSE POSTMOCKS**
- ✓ **TOP SCHOOLS PREDICTIONS**
- ✓ **KCSE PREDICTIONS**
- ✓ **KCSE REVEALED SETS**

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