NATIONAL SCHOOLS' PREMOCK

KCSE SERIES 2 EXAMS-2023

ALL SUBJECTS

The Second Trial Joint Pre-mock Examinations among Select National Schools for the current KCSE 2023 Candidates in the Republic of Kenya.

SUBJECTS COMPILED;

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

SERIES 2

For Marking Schemes

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MWALIMU CONSULTANCY

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

BIOLOGY

231/1

PAPER 1 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS TO CANDIDATES

a) *Write your name and Index Number in the spaces provided above.*

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

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

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1-30	**80**	

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

1. Name the branch of Biology that involves the study of: **(2marks)**

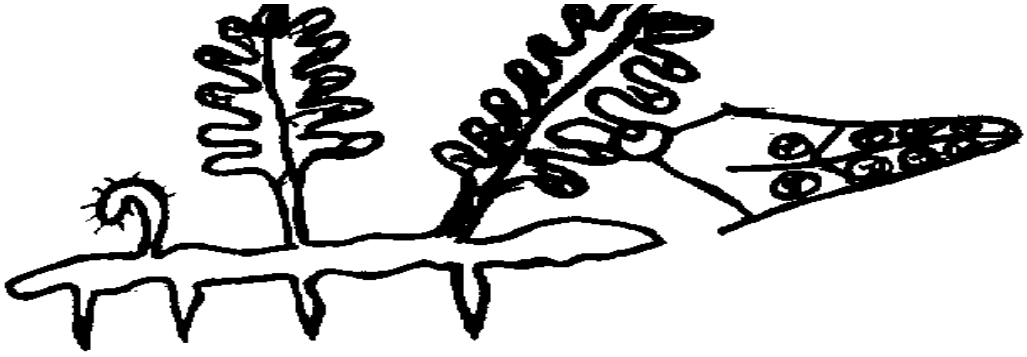
a) Organisms for the sake of classifying them.

……

b) Microscopic organisms.

……

2. The diagram below represents a plant



a) Name the division to which the plant belongs. **(1mark)**

……

b) Give **three** reasons for your answer in (a) above. **(3marks)**

……

……

……

3. State **three** parameters that can be used to estimate growth in seedlings. **(3marks)**

……

……

……

4. Equal amounts of crushed Irish potato were placed in equal volumes of hydrogen peroxide solution at indicated pH. The volume of the gas produced was measured and recorded as shown in the table below.

pH	4.0	7.0	9.0
Volume of gas (cm^3)	2.7	5.7	7.7

(a) Name the gas that was produced. **(1mark)**

……

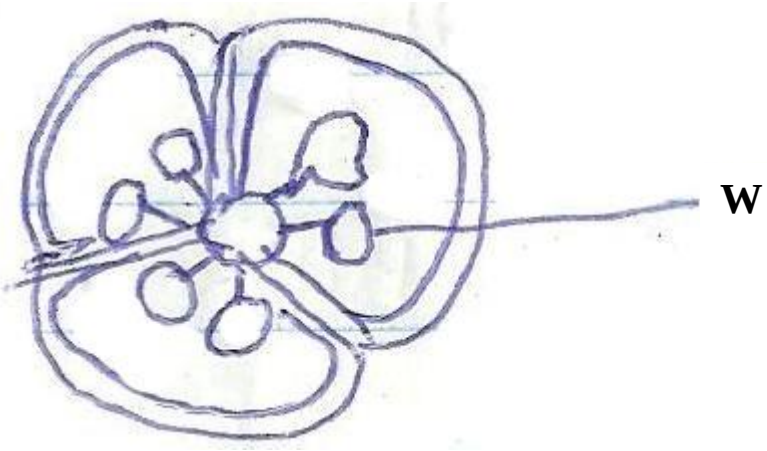
(b) Account for the difference in the volume of the gas produced in pH 4.0 and pH 9.0 **(2marks)**

……

……

……

5. The diagram below represents a transverse section of an ovary from a certain flower.



(i) Name the structure labeled W. **(1mk)**

……

(ii) Name the type of placentation illustrated in this diagram. **(1mk)**

……

6. What are the names of modified leaves enclosing bougainvillea flowers whose function is to attractinsect pollinators? **(1mark)**

……

7. **(a)** A dog weighing 15.2kg requires 216kJ while a mouse weighing 50g requires 2736 kJ per day. Explain. **(2marks)**

……

……

……

(b) Under what condition is lactic acid formed in human muscles? **(1mark)**

……

8. In a certain experiment, the following observation was made:

When red blood cell was placed in a certain solution, the solution exerted more osmotic pressure leading to the cell losing water molecules to become crenated/ shrunk.

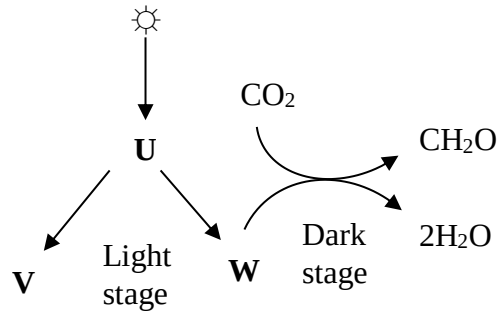
(a) What type of solution was the cell placed in respect to the cell's cytoplasm**?** **(1 mark)**

……

(b) By which physiological process did the cell lose water molecules? **(1 mark)**

……

9. Study the flow diagram below.



Name the substance **U**, **V** and **W**. **(3 mks)**

U:……

V:……

W:……..

10 a) State the deficiency diseases of each of the following vitamins. **(3 marks)**

(i) **B_1** …….

(ii) **B_2** …….

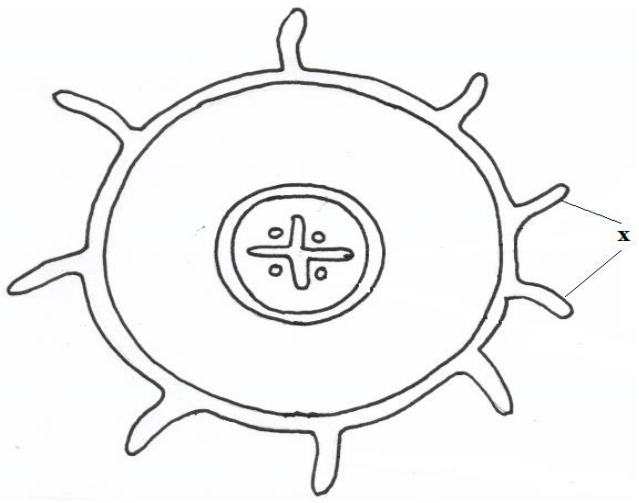
(iii) **B_6** ……

(b) What is the role of roughage in a diet? **(1 mark)**

……

……

11. The diagram below represents a transverse section of a plant part. Study it and answer the questions that follow.



a) Name the class in which the plant belongs. **(1mark)**

……

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

……

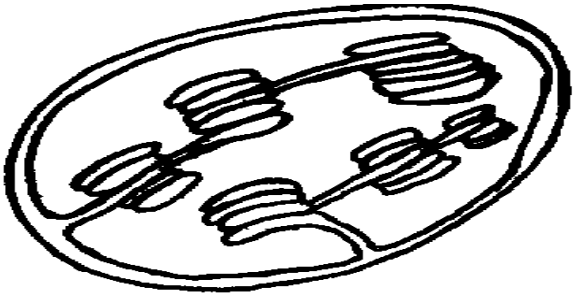
……

c) State **one** adaptation for the structures labeled X to their functions. **(1mark)**

……

……

12. Below is a diagram of an organelle.



(a) State the function of the organelle drawn above. **(1mark)**

……

……

(b) Name the parts of the organelle where :

(i) Oxygen gas is produced as a byproduct. **(1mark)**

……

(ii) Carbon (IV) oxide is utilized. **(1mark)**

……

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

Amino Acids ⟶ Organic + Urea

Compounds

(a) Name the process **(1 mark)**

……

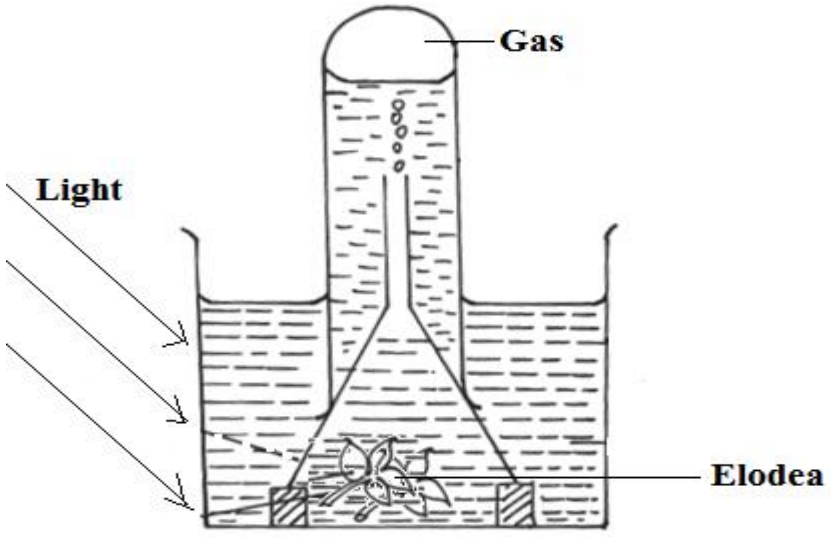
(b) What is the importance of the process to the mammal? **(2mrks)**

……

……

……

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



(a) State the process that was being investigated. **(1 mark)**

……

(b) Other than the factors shown, state two factors that would affect the process named in (a) above.

(2 marks)

……

……

15. a) Name the causal organism for amoebic dysentery. **(1 mark)**

……

b) State three preventive measures of schistosomiasis in human beings **(3 mrks)**

……

……

……

16. (a) Why is the wall of the left ventricle thicker than that of the right ventricle. **(1mark)**

……

……

(b) State **three** adaptations of xylem to water transportation **(3mrks)**

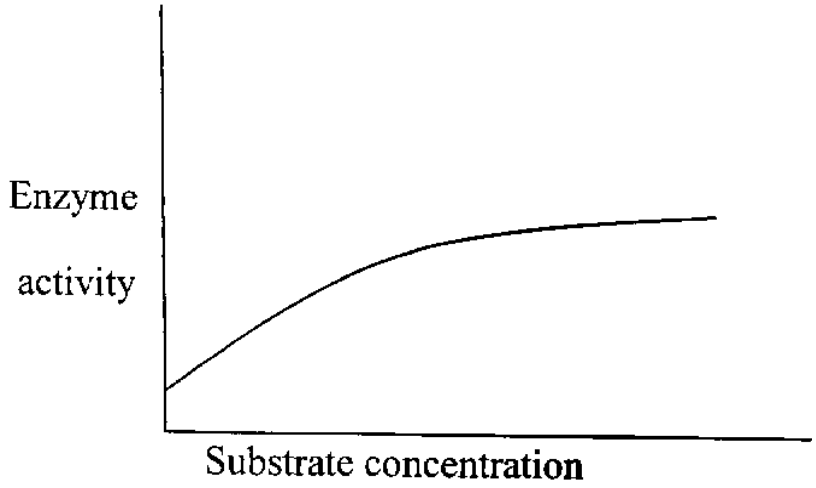
……

……

……

……

17. Use the graph below to answer the following questions.



(a) Why does the activity of the enzyme become constant after a while? **(1mark)**

……

……

(b) State how the activity of the enzyme may be increased in (a) above. **(1mark)**

……

……

18. Describe capture - recapture method of estimating population. **(3mrks)**

……

……

……

……

19. What is meant by self sterility with reference to flowers? **(1mark)**

……

……

20. Why do plants lack complex excretory system? **(3mrks)**

……

……

……

……

21. State **three** advantages of asexual reproduction in plants. **(3 mrks)**

……

……

……

22. How does sunken stomata help in lowering transpiration? **(3mrks)**

……

……

……

……

23. State the importance of active transport in living organisms. **(3maks)**

……

……

……

24. Why does carboxyhaemoglobin lead to death? **(2mrks)**

……

……

……

25. Name **two** gaseous exchange sites in higher plants. **(2marks)**

……

……

26. What causes apical dominance? **(1mrk)**

……

27a) What type of circulatory system is found in members of class insecta? **(1 mark)**

……

b) Name the blood vessel that transports blood from:

(i) Small intestine to liver. **(1 mark)**

……

ii) Lungs to heart **(1 mark)**

……

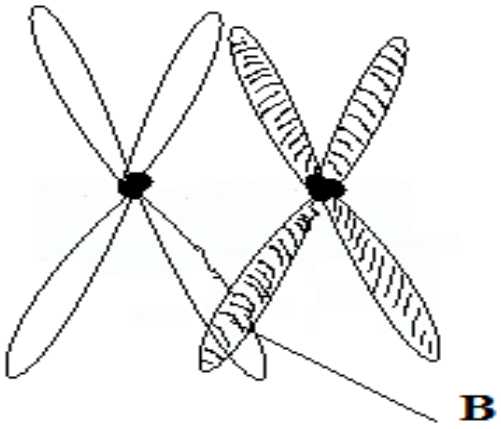
28. Distinguish between natural and acquired immunity. **(2 mrks)**

……

……

……

29. The diagram below shows a phenomenon which occurs during cell division.



a) Identify the stage of cell division in which this phenomenon occurs. **(1 mark)**

……

……

b) State the importance of the phenomenon taking place in the part labeled B. **(2 mrks)**

……

……

……

30. State **two** functions of ovaries in humans. **(2mrks)**

……

……

……

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

BIOLOGY

231/2

PAPER 2 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS TO CANDIDATES.

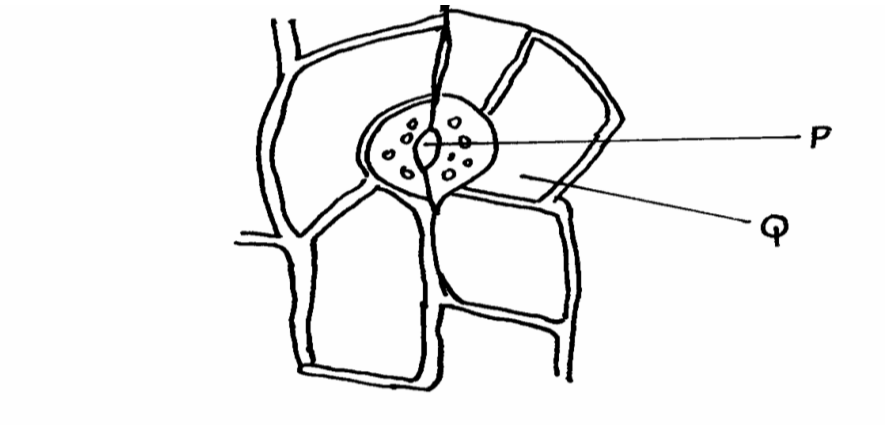
1) *Write **your name** and **index number** in the spaces provided above.*
2) *Sign and write the date of examination in the spaces provided above.*
3) *This paper consists of section **A** and **B**.*
4) *Answer **ALL** questions in section A in the spaces provided above.*
5) *In section **B** answer questions **6 (compulsory)** and either question **7** or **8** in the spaces provided after question **8.***

FOR EXAMINERS' USE ONLY.

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
	TOTAL	80	

Answer All the Questions

1. The diagram below shows a portion of a lower epidermis of a sukuma wiki leaf.



a) Name the parts labeled P and Q. **(2mks)**

P _____

Q _____

b) Briefly describe the photosynthetic theory of stomata opening. **(5mks)**

……

……

……

……

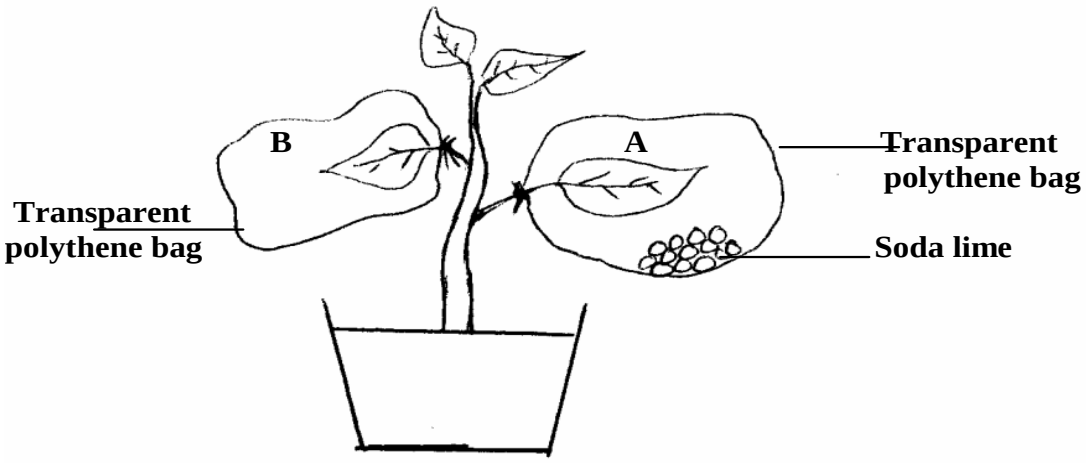
……

……

c) State one modification in the stomata of xerophyte plant other than being sunken and hairy. **(1mk)**

……

2. The diagram below represents an experimental set-up to investigate an aspect of photosynthesis.



The set up was placed in darkness for 24 hrs and then exposed to light for 5 hrs.

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

……

(b) Leaves **A** and **B** were tested for starch.

(i) What would be the expected results? **(2marks)**

……

(ii) Give reasons for your answer in **(b) (i)** above. **(2marks)**

……

……

……

(c) What was the role of leaf **B** in the experiment **(1mark)**

……

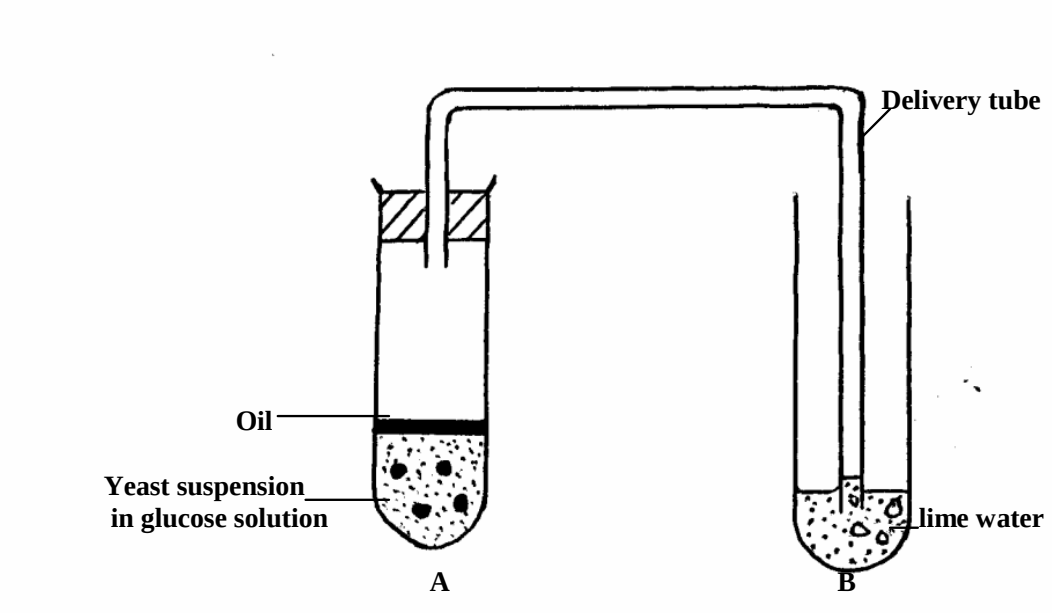
(d) Why was the set – up placed in darkness for 24 hours? **(1mark)**

……

(e) Name the organelle in a plant where photosynthesis takes place **(1mark)**

……

3. The diagram below illustrates an experiment to demonstrate a certain biological process.



Before adding yeast suspension in tube **A**, the glucose solution was first boiled and cooled.

a. What biological process was being demonstrated? **(1mark)**

……

(b) (i) What observation would be made in tube **B** after 20 minutes of the experiment?**(2marks)**

……

……

(ii) Account for the observations made in **(b) (i)** above **(2marks)**

……

……

……

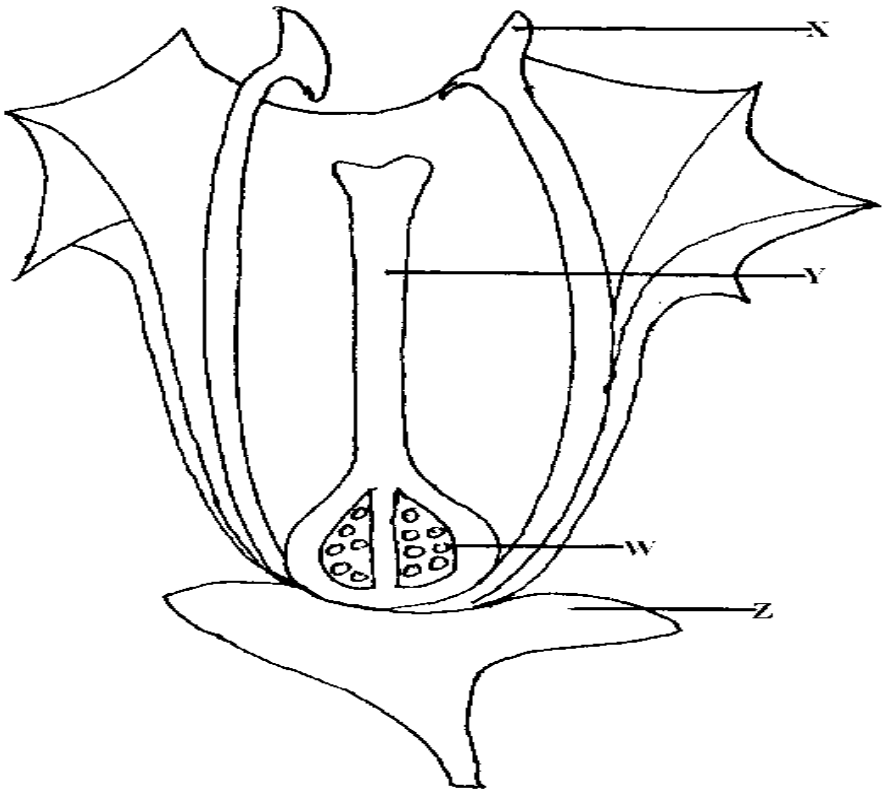
(c) Write down an equation to summarize the reaction taking place in tube **A**. **(1mark)**

(d) State two industrial applications of the chemical reaction taking place in tube **A**. **(2marks)**

……

……

4. The diagram below represents a flower.



(a) Name the parts labeled X and Y. **(2mks)**

X ……

Y ……

(b) Describe the ovary position. **(1mk)**

……

(c) (i) **Suggest** an agent of pollination of the flower above **(1mk)**

……

……

(ii) Give a reason for your answer above. **(1mk)**

……

(d) On the diagram above, which part do you expect to find haploid nucleus after meiosis? **(1mk)**

……

(e) In the flower above its sepals cell was found to have 20 chromosomes. **What** would be the number of chromosomes found in the endosperm cell of the flower embryo sac after fertilization? **(1mk)**

……

(f) State one way in which flowers prevent self – pollination. **(1mk)**

……

5. When the offspring of purple and white flowered pea plants were crossed, they produced purple and white flowered plants in the ratio of 3: 1

Using letter H to represent the gene for purple colour

(a) State the genotype of:

(i) Parents **(2 mks)**

……

……

(ii) F_1 Generation **(1 mk)**

……

(b) Work out the cross between plants in the F_1 generation **(4 mks)**

(c) Account for the colour the flowers in plants of the F_1 generation **(1 mk)**

……

……

SECTION B (40 marks)

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

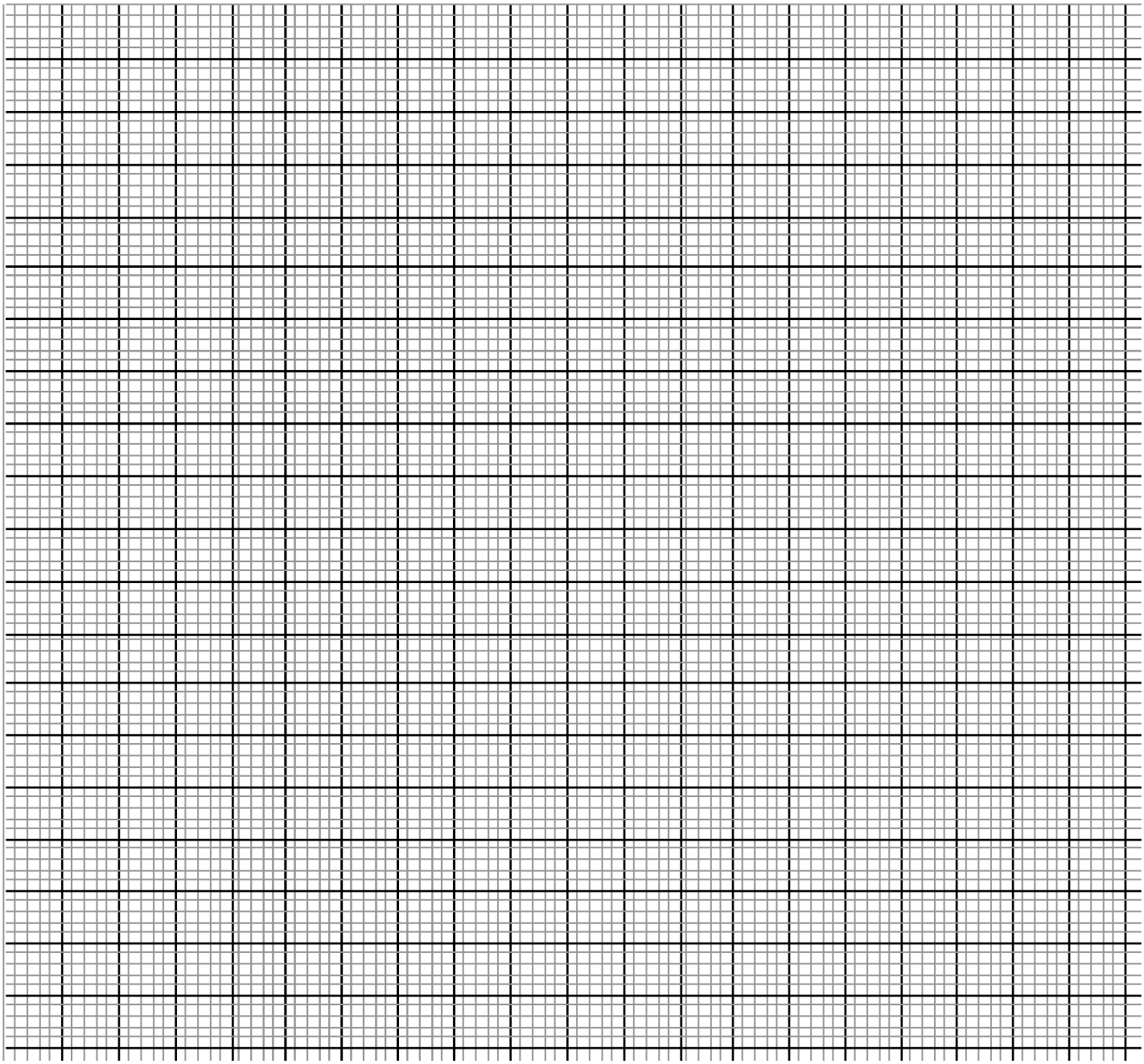
6. In an experiment to investigate the effect of temperature on the activity of salivary amylase enzyme, test tubes containing 5 cm^3 of starch solution were placed in water baths maintained at different temperatures. After 30 minutes, 0.1cm^3 amylase solution was added into each of the tubes.

At one minute intervals, a drop of the mixture in each tube was tested for presence of starch. The time taken for all the starch to be digested was taken and recorded. The results were as shown in the table below.

Temperature (^{0}c)	5	10	15	20	25	30	35	40	45
Time taken to digest all starch (mins)	80	60	48	26	18	9	3	14	75

(a) On the grid provided **plot** a graph of time taken to digest all the starch against temperature.

(6 marks



(b) What was the optimum temperature range for this enzyme? **(1mark)**

……

(c) Account for the results obtained at

(i) 5^0C **(2marks)**

……

……

……

(ii) 45^0C **(2marks)**

……

……

……

(d) Apart from temperature **name three** other factors that would affect the above reaction.**(3marks)**

……

……

……

……

(e) Name two regions in a human body where digestion of starch occurs. **(2marks)**

……

……

(f) (i) Give three metallic ions that act as enzyme co- factors in a human body. **(2marks)**

……

……

……

(ii) What is the role played by enzyme co- factors in the physiology of human body? **(1mark)**

……

(g) Name the major respiratory substrate in a mammalian body during severe starvation. **(1mark)**

……

7. How are leaves of mesophytes suited to their function? **(20mks)**

8. Describe the adaptations of the mammalian skin to its functions. **(20mks)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

BIOLOGY

231/3

PAPER 3 (PRACTICAL)

TIME: 1¾ HOURS

SCHOOL…… SIGN……

CONFIDENTIAL

Each candidate will require the following

- ***a)*** *A tablet labelled K-Vitamin C tablet*
- ***b)*** *Pestle and mortar*
- ***c)*** *2cm^3 Copper sulphate solution*
- ***d)*** *2cm^{3}Sodium hydroxide solution*
- ***e)*** *2cm^3 DCPIP solution*
- ***f)*** *3 test tubes*
- ***g)*** *3 droppers*

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

BIOLOGY

231/3

PAPER 3 (PRACTICAL)

TIME: 1¾ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education

231/3

BIOLOGY

Paper 3 (Practical)

TIME: 1 ¾ Hours

- *Answer ALL the questions*
- **FOR EXAMINER'S USE ONLY**

QUESTION	SCORE	CANDIDATES SCORE
1	11	
2	14	
3	15	
TOTAL	40	

1. You are provided with the following materials;

A tablet labelled K
Pestle and mortar
2cm^3 Copper sulphate solution
2cm^{3}Sodium hydroxide solution
2cm^3 DCPIP solution
3 test tubes
3 droppers

(a) Using a pestle and mortar, crush the tablet **K** then add 4cm^3 of distilled water to form a solution. Divide into two portions each containing 2cm^3. Carry out tests to determine the food substance (s) in **K** **(8mks)**

Substance	Food substance being tested	Procedure	Observations	Conclusion
K				
K				

(b) Give **one** deficiency disease brought by lack of the food substance identified in the table above in the human body **(1mk)**

……

(c) Identify **two** ways by which the food substance identified in the table above can be destroyed **(2mks)**

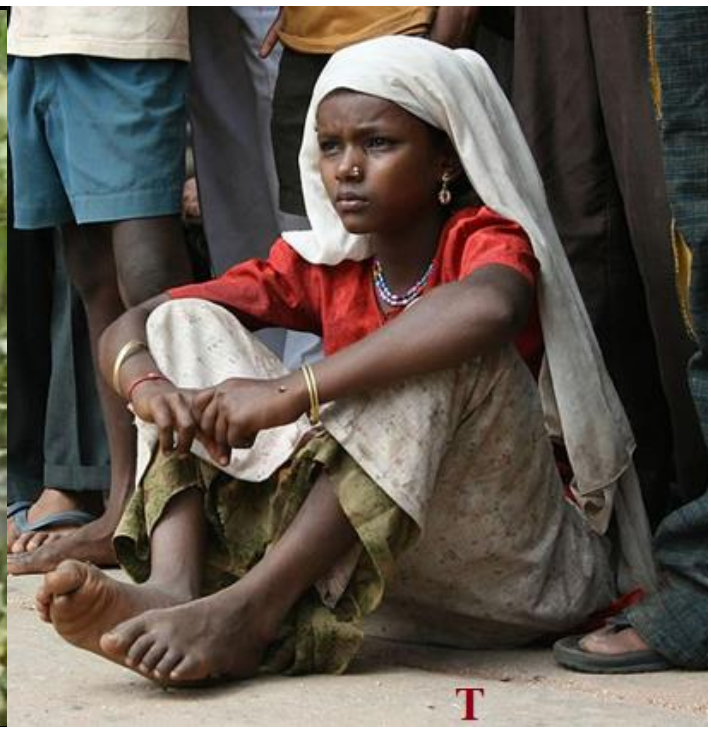
……

……

……

2. Observe the organisms below and answer the questions that follow.





(a) Give **two** structural differences between the organisms above **(2mks)**

S	**T**

(b) The photographs below show organisms that are closely related





(i) Identify the evidence for organic evolution exhibited by the two organisms above **(1mk)**

……

……

(ii) Give any other two evidence that supports **organic evolution** **(2mks)**

……

……

……

(c) Observe the **two** organisms interacting in an ecosystem.



(a)(i) Identify which of the two animals **M** and **L** will have the least biomass **(1mk)**

……

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

……

……

(b) Explain the concept of "Survival for the fittest" in relation to the organisms illustrated in the photograph**.** **(3mks)**

……

……

……

……

……

(c) Explain **two** visible survival adaptive features for the organisms illustrated in the photograph **(4mks)**

……

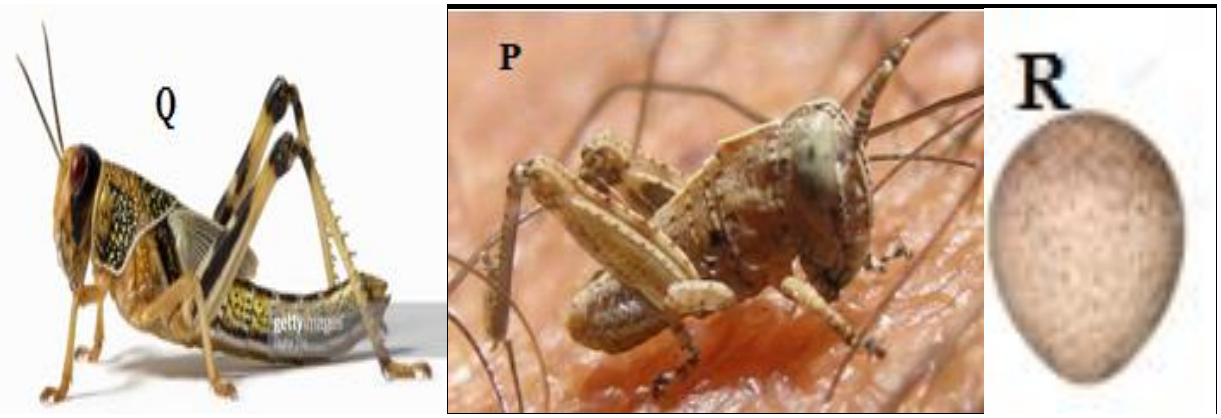
……

……

……

……

3. The photographs below show various developmental stages of an insect



(a) (i)Identify the stages labelled **P, Q** and **R** **(3mks)**

P ……

Q ……

R ……....

(ii) Give the differences between stage **Q** and **P** **(2mks)**

Q	**P**

(b) Hormones play a major role in insect metamorphosis. Identify two hormones and their roles **(4mks)**

Hormone	**Role**

(c) 'Hundreds of millions of locusts have swept over several counties in Kenya, devouring tens of thousands of hectares of crops. This massive destruction has threatened food security in Kenya…..' this is an extract from one of the local dailies dated 2nd February, 2023.







In view of the above statement, explain **any two observable** features that enable the organism **Q** above to be such a **menace** to **food security** in the country **(2mks)**

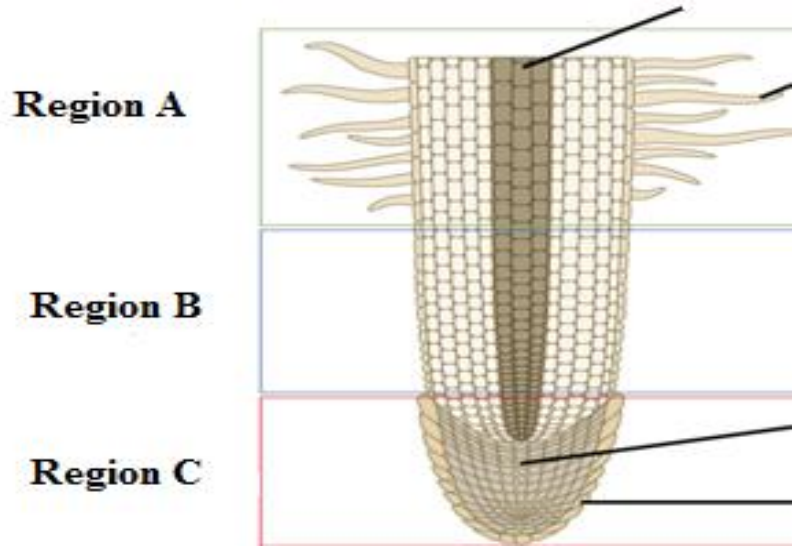
……

……

……

……

(d) The photograph below shows a longitudinal section through a root



(i) Identify the regions labelled **A** and **B** **(2mks)**

A ……

B ……..

(ii) Give two characteristics of cells found in region **C** **(2mks)**

……

……

……

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

CHEMISTRY

233/1

PAPER 1 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education

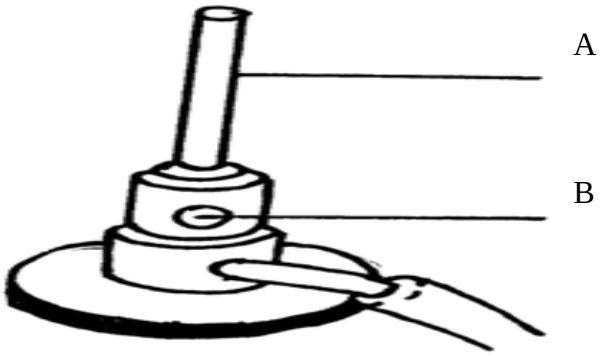
INSTRUCTIONS TO CANDIDATES

1. *Write your name and index number in the spaces provided above.*
2. *Sign and write the date of examination in the spaces provided above.*
3. *Answer all the questions in the spaces provided.*
4. *Mathematical tables and silent electronic calculators many be used.*
5. *All working must be clearly shown where necessary.*

FOR EXAMINER'SUSE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1 – 27	80	

1. The diagram below shows a Bunsen burner which is used as a source of heat in the laboratory.



a) Name the parts labeled: **(2 marks)**

A_____

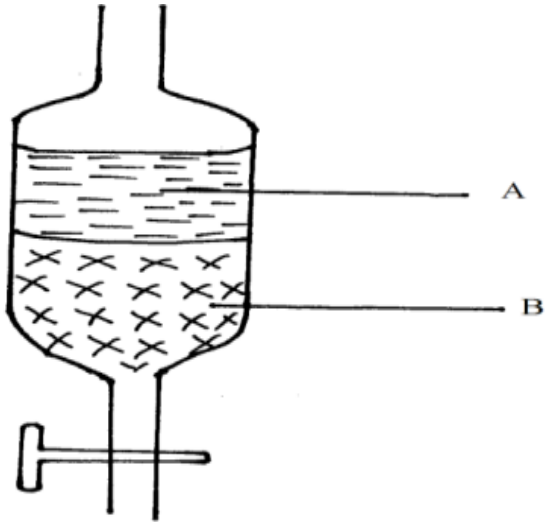
B_____

b) Explain how the hotness of a non-luminous flame can be increased. **(1 mark)**

……

……

2. In an experiment to separate a mixture of two immiscible liquids A and B, a form four student set the apparatus as shown below.



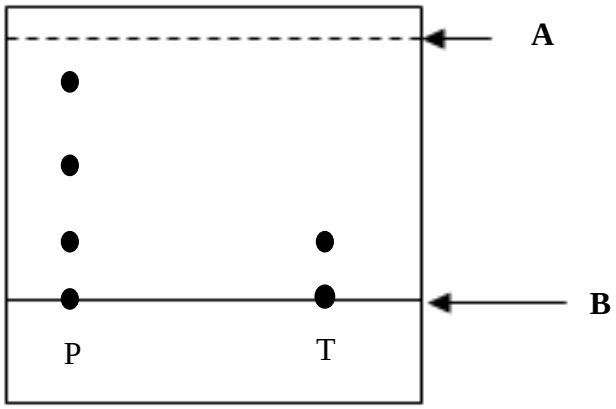
a) Name the above apparatus._____ **(1 mark)**

b) Which liquid is denser? _____ **(1 mark)**

c) Name one other method that can be used to separate the above mixture**.** **(1 mark)**

……

3. The following chromatogram shows the results obtained after separating substances P and T.



a) Name lines; **(1 mark)**

A_____

B_____

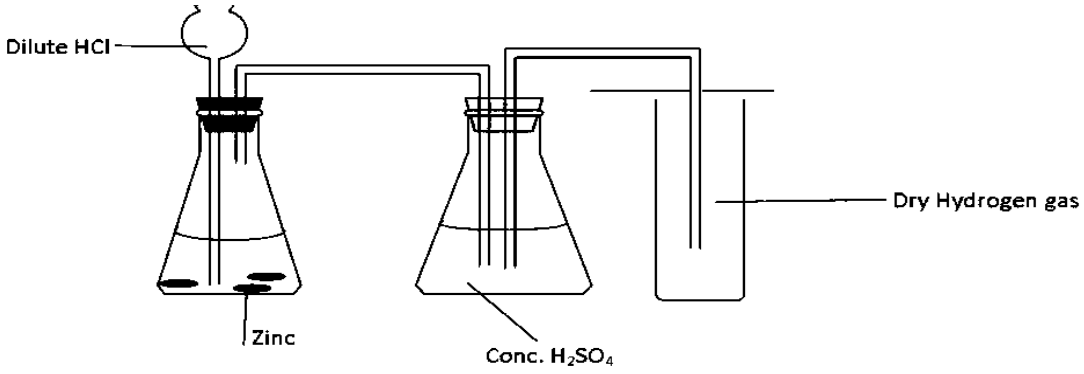
b) Name the possible solvent that can be used in the above process**.** **(1 mark)**

……

c) Which of the two substances is pure? **(1 mark)**

……

4. A form four student arranged the apparatus as shown below with the aim of collecting dry hydrogen gas.



Identify with reasons two mistakes in the above set-up. **(3 marks)**

……

……

……

5. The table below shows elements and their atomic numbers. The letters do not represent the actual symbols of the elements.

Element	A	B	C	D	E	F	G
Atomic number	11	10	20	13	14	6	8

a) From the given letters, select two elements with the same chemical properties**.** **(1 mark)**

……

b) Write the formula of the compound formed when element E reacts with element G. **(1 mark)**

……

c) Identify the most stable element and give a reason for your answer. **(1 mark)**

……

……

6. When magnesium burns in air, it forms two products. When one of the products dissolves in water, a colorless gas that turns red litmus paper blue is formed.

a) Name the product that dissolves in water to produce a colorless ga**s.** **(1 mark)**

_____

b) Write an equation for the formation of the colorless gas. **(1 mark)**

_____

_____

c) State any one use of the colorless gas. **(1 mark)**

_____

_____

7. A student was given a mixture ammonium chloride, copper (II) oxide and sodium chloride. Describe how the student would separate the mixture. **(3 marks)**

……

……

……

……

8. When small amount of carbon (IV) oxide is passed through lime water, a white precipitate is formed. When excess carbon (IV) oxide is bubbled through, the white precipitate dissolves to form a colorless solution.

a) Name the white precipitate. **(1 mark)**

_____

b) Explain using chemical equations why the white precipitate dissolves in excess of carbon(IV) oxide. **(1 mark)**

……

……

c) What will happen of the above colorless solution is boiled. **(1 mark)**

……

9. Write equations to show the effect of heat on each of the following.

(a) Sodium hydrogen carbonate. **(1 mark)**

_____

_____

(b) Silver nitrate **(1 mark)**

_____

_____

(c) Sodium nitrate **(1 mark)**

_____

_____

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

……

……

(b) A sample of unknown gas Z was shown by analysis to contain sulphur and oxygen. The gas requires 28.3 seconds to diffuse through an aperture into a vacuum. An identical amount of oxygen gas passes through the same aperture in 20 seconds. Determine the molar mass of gas Z. **(O=16, S=32).** **(2 marks)**

……

……

……

……

11. When a hydrated sample of $CaSO_4 .XH_2O$ was heated until there all the water was lost, the following data was obtained.

Mass of the crucible = 30.296g

Mass of crucible + hydrated salt = 33.111g

Mass of crucible + anhydrous salt = 32.781g

Determine the empirical formula of the hydrated salt. (Ca=40, S=32, O=16, H=1) **(3 marks)**

……

……

……

……

12. The empirical formula of a compound is C_2H_5. When 11.6g of the compound was allowed to evaporate; it occupied 4.8 dm^3 at room temperature and pressure. What is its molecular formula? (MGV = 24dm^3) **(3marks)**

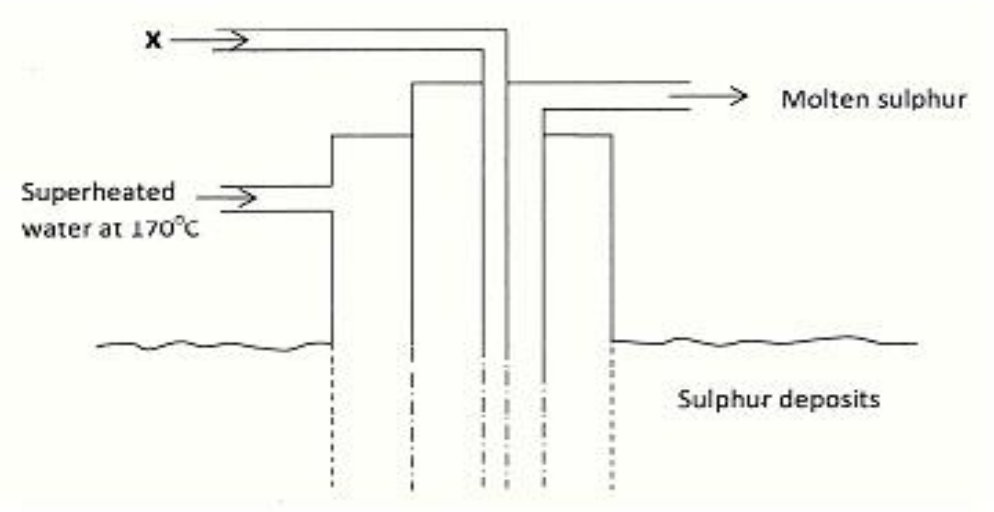
……

……

……

……

13. The diagram below shows an industrial process that is used in extraction of sulphur.



a) What is the name given to the above industrial process? **(1 mark)**

……

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

……

c) What is the role of super-heated water? **(1mark)**

……

……

14. a) Give the systematic names for the following compounds.

i) $CH_3CH_2CHCH_2$ _____ **($^1/_2$ mark)**

ii) $CH_3CH_2CH_3$ _____ **($^1/_2$ mark)**

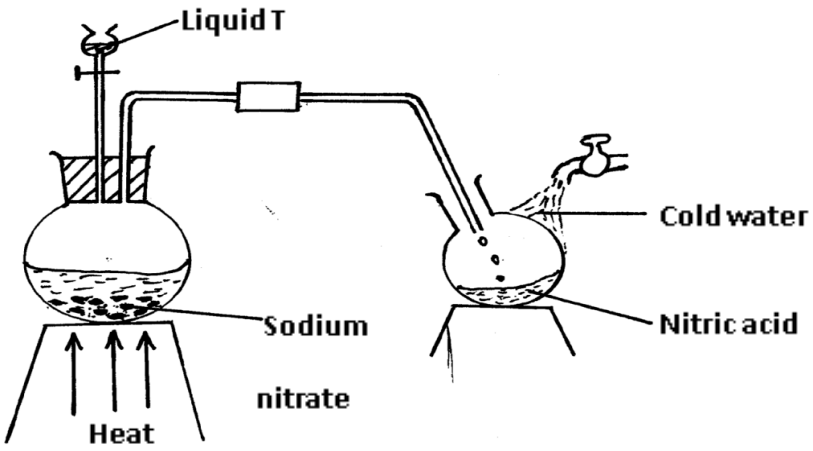
b) Describe one chemical process that can be used to distinguish between the substances named in (a) above. **(2 marks)**

……

……

……

15. The set-up below was used to prepare Nitric(V) acid in the laboratory.



a) Name liquid T. **(1 mark)**

……

b) Write an equation for th reaction taking place in the flask. **(1 mark)**

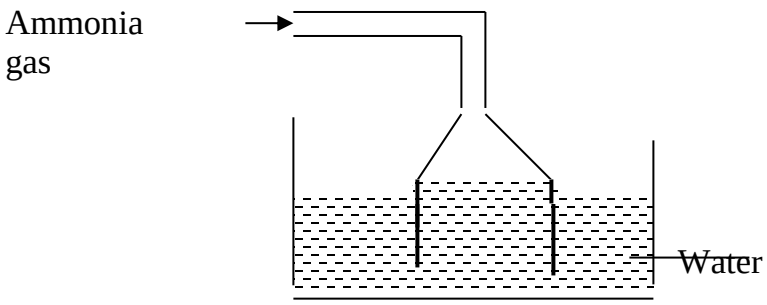
……

c) State the reason why nitric(V) acid collected is brown in colour and explain how the brown colour can be removed. **(1 mark)**

……

……

16. Ammonia gas was passed into water as shown below.



a) What is the use of the inverted funnel? **(1 mark)**

……

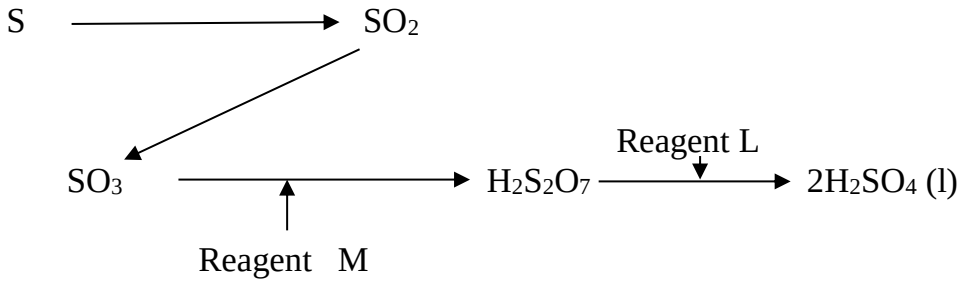
b) State and explain the observation made when a red litmus paper is dipped into the above solution.

(1 mark)

……

……

17. Study the flow chart below showing the reaction involved in the preparation of sulphuric (IV) acid and answer the questions that follow.



a) Name the reagents.

L_____ **(1/2mk)** **M**_____ **(1/2mk)**

b) Write the equation for the reaction between reagent M and $H_2S_2O_7$ **(1mk)**

_____

c) State one industrial use of sulphuric(VI) acid. **(1 mark)**

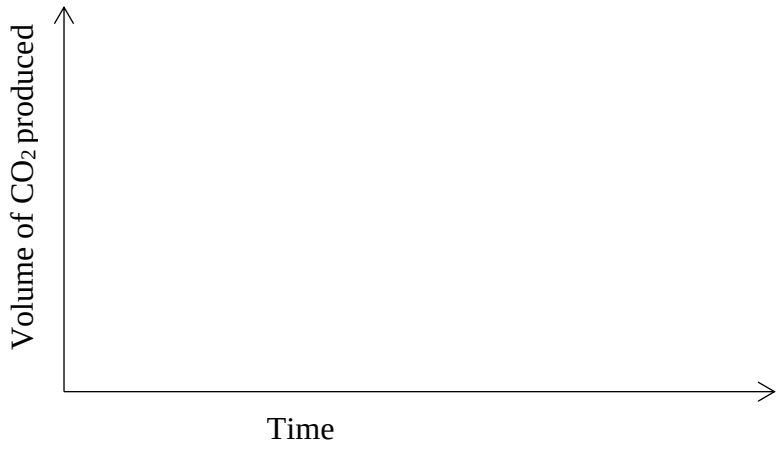
_____

18. a) What is meant by the term strong acid? **(1 mark)**

……

……

b) In an experiment, 40cm^3 of 0.5M sulphuric (VI) acid was reacted with excess sodium carbonate and the volume of cabon (IV) oxide produced recorded with time. In another experiment, 40cm^3 of 0.5M ethanioc acid was reacted with excess sodium carbonate and the volume of carbon (IV) oxide produced recorded with time. On the grid below, sketch and label the curves if the volumes of carbon (IV) oxide were plotted against time on the same axis. **(2 marks)**



19. Hydrogen chloride gas is soluble in both water and methylbenzene. State and explain the observation made when a small piece of magnesium ribbon is placed in each of the solutions.

a) Solution of HCl(g) in methylbenzene **($1\frac{1}{2}$ marks)**

……

……

……

……

b) Solution of HCl(g) in water. **($1\frac{1}{2}$ marks)**

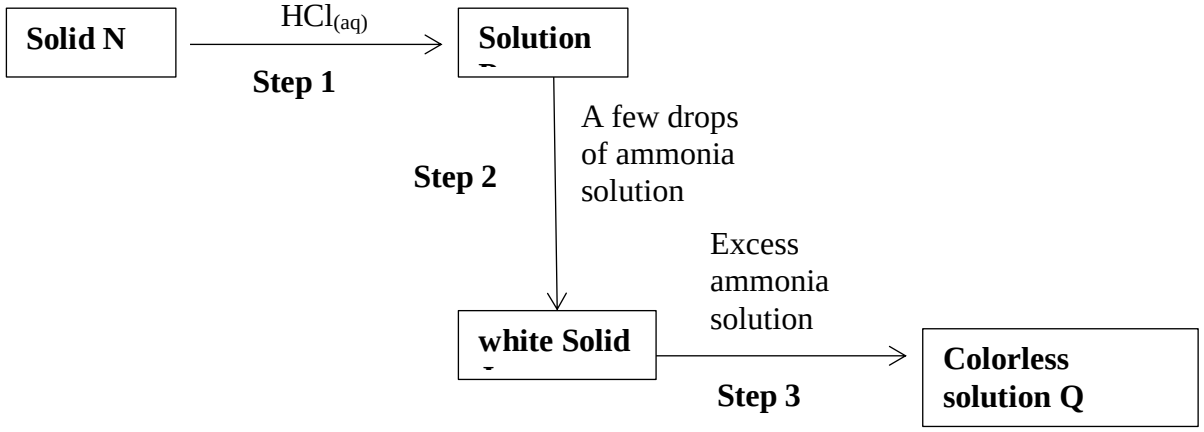
……

……

……

……

20. The scheme below shows a reaction sequence starting with solid N. study it and answer the questions that follows.



a) Name the cation present in solid N. **(1 mark)**

_____

_____

b) Write the formula of the complex ion in the colorless solution Q. **(1 mark)**

_____

_____

c) Write an ionic equation for the reaction in step 2. **(1 mark)**

_____

_____

21. Reagent bottles labelled H_2SO_4 solution, K_2CO_3 solution and NaCl solution had labels accidentally removed. A packet of blue litmus paper is lying near a long with a rack of test-tubes, without using any other material explain how you would go about labeling the bottles correctly.

(3marks)

……

……

……

……

……

22. Some bond energies are given below;

Bond	**Energy ($kJmol^{-1}$)**
C-C	348
C-H	414
Cl-Cl	243
C-Cl	432
H-Cl	340

Calculate the energy change for the reaction below. **(3 marks)**

$\mathbf{C_2H_{6(g)} + Cl_{2(g)} \longrightarrow CH_3CH_2Cl_{(g)} + HCl_{(g)}}$

……

……

……

……

……

23. a) What is fractional crystallization? **(1 mark)**

……

……

(b) The solubility of copper (II) sulphate is 55g/100g of water at 75°C and 19g/100g of water at 15°C. What mass of crystals would be deposited, if 150g of a saturated solution is cooled from 75°C to 15°C. **(2 marks)**

……

……

……

24. Study the equation below and answer the question that follows.

$NH_{3(g)} + H_20_{(l)} \rightleftharpoons NH_4^+{}_{(aq)} + OH^-{}_{(aq)}$

Identify two species that acts as an acid. Give a reason for your answer. **(3 marks)**

……

……

……

25. Using well labeled diagrams, explain how water hardness can be removed by ion exchange method. **(3 marks)**

26. Substances X and Y consists of molecules X_2 and Y_2 respectively. When the two elements react, they form a molecule of XY. The X-X bonds are as strong as Y-Y bonds. But the X-Y bond is stronger than both X-X and Y-Y bonds.

$$\mathbf{X_{2(g)} + Y_{2(g)} \longrightarrow 2\,XY_{(g)}}$$

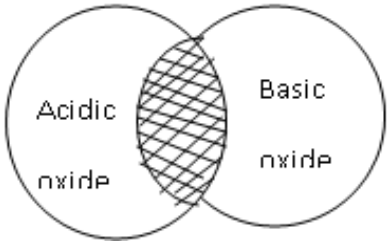
a) Is the above reaction exothermic or endothermic? Give a reason for your answer**.** **(2 marks)**

……

……

b) Draw an energy level diagram for the reaction in (a) above. **(1 mark)**

27. The diagram below shows acidic and basic oxides fit in a general family of oxides.



a) State the name given to the type of oxides that would be placed in the shaded region**.** **(1 mark)**

……

b) Name two oxides that could be placed on the shaded region. **(2 marks)**

……

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

CHEMISTRY

233/2

PAPER 2 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS TO CANDIDATES

- ***a)*** *Write your name and index number in spaces provided.*
- ***b)*** *Sign and write date of examination in spaces provided above*
- ***c)*** *Answer all the questions in the section*
- ***d)*** *Mathematical tables and electronic calculators may be used.*
- ***e)*** *All working MUST be clearly shown where necessary.*

FOR EXAMINERS USE ONLY

Question	Maximum score	Candidates score
1	14	
2	13	
3	11	
4	10	
5	11	
6	11	
7	10	
Total	80	

1. The table below shows part of the Periodic table. The letter of the elements do not represent the actual symbols of the elements: -

X			**Y**					**Z**
U						**W**		

(i) How do the electrical conductivities of elements X and Y compare? Explain**.** **(2mks)**

……

……

……

(ii) Element W has two melting points. Explain this observation. **(1mk)**

……

……

(iii) When 1.15g of element U was reacted with cold water 0.6dm^3 of hydrogen was produced at r.t.p. Calculate the relative atomic mas of U. (Molar gas volume = 24dm^s at r.t.p) **(3mks)**

(iv) Element V has atomic number 15. Show its position in the grid. **(1mk)**

(v) State **<u>one</u>** use of element Z. **(1mk)**

……

(vi) Oxide of element Y react with both acids and bases. What property is shown by element Y?**(1mk)**

……

……

(vii) Explain (vi) above using chemical equations. **(2mks)**

……

……

……

(viii) Write down the equation for the reaction between element Y and Oxygen. **(1mk)**

……

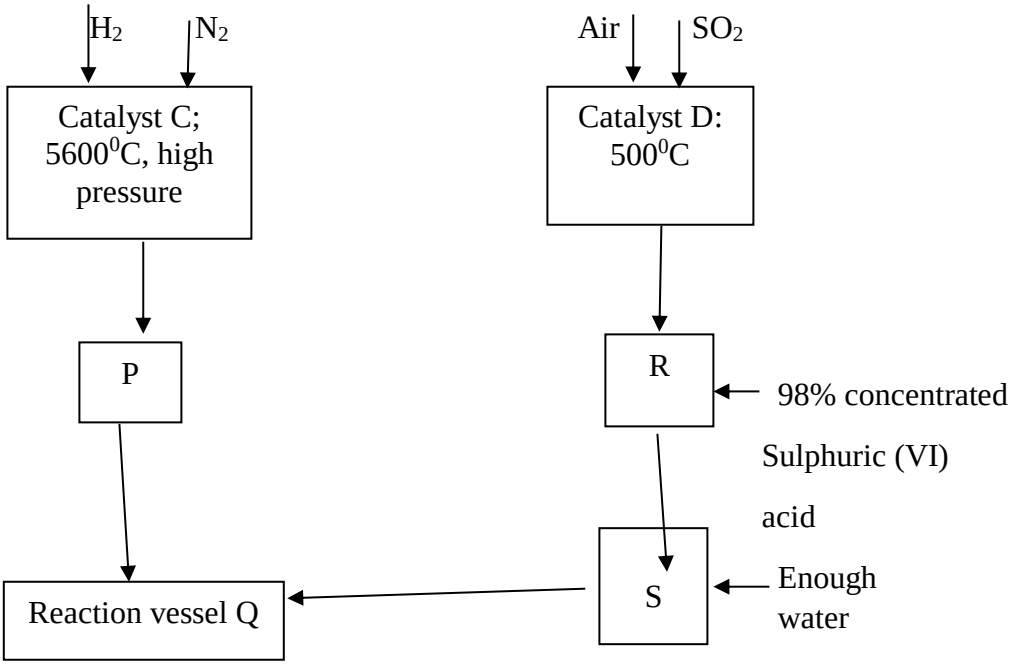
(ix) Explain how the reactivity of elements X and U with chlorine compare. **(2mks)**

……

……

……

2. The flow chart below shows how a fertilizer can be manufactured. Use it to answer the questions that follow.



I. (a) Name catalyst C and catalyst D

C …….. **(1mk)**

D ……. **(1mk)**

(b) Give the identities of substance: **(1 ½ mks)**

P ……

S ……

R ……

(c) Give the identity of the fertilizer formed. **(½ mk)**

……

(d) Write an equation for the reaction at vessel Q. **(1 mk)**

……

……

(e) Explain why substance R is absorbed in 98% sulphuric (VI) acid first before adding water.**(1 mk)**

……

……

(f) Name two methods by which pollution is controlled in contact **process** **(1mk)**

……

……

(g) Which industry can be set next to the plant **(1mk)**

……

II. (a) When hydrogen sulphide gas was bubbled into an aqueous solution of Iron (III) chloride, a yellow precipitate was deposited.

(i) State another observation that was made. **(1 mk)**

……

……

(ii) Write an equation for the reaction that took place. **(1 mk)**

……

III. **(a)** Explain why old newspapers slowly turn brownish when exposed to air and sunlight.

(1 mk)

……

……

(b) Describe a chemical test that can be used to distinguish sodium sulphate and sodium sulphite.

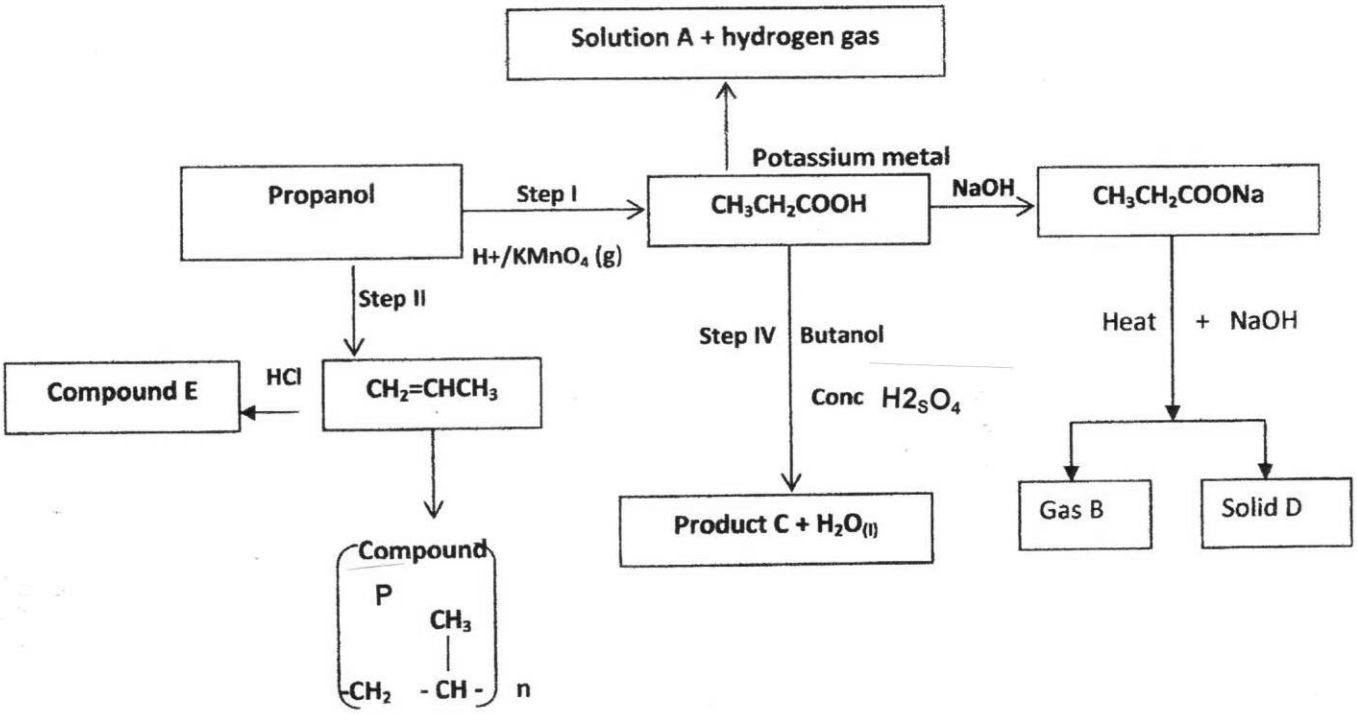
(2 mks)

……

……

……

3. The scheme below shows a series of reactions starting with Propanol. Study it and answer the questions that follow:-



a. Name the type of reaction in steps I and II.

Step I …….... **(1mk)**

Step II ……. **(1mk)**

b. Identify :-

gas B **(1mk)**

solid D. **(1mk)**

c. Name the substances labeled A and E.

A …… **(1mk)**

E …… **(1mk)**

d. Draw the structural formula of product C. **(1mk)**

e. Name the process in Step (IV) **(1mk)**

f. Name compound P and state the type of reaction involved in its formation. **(1mk)**

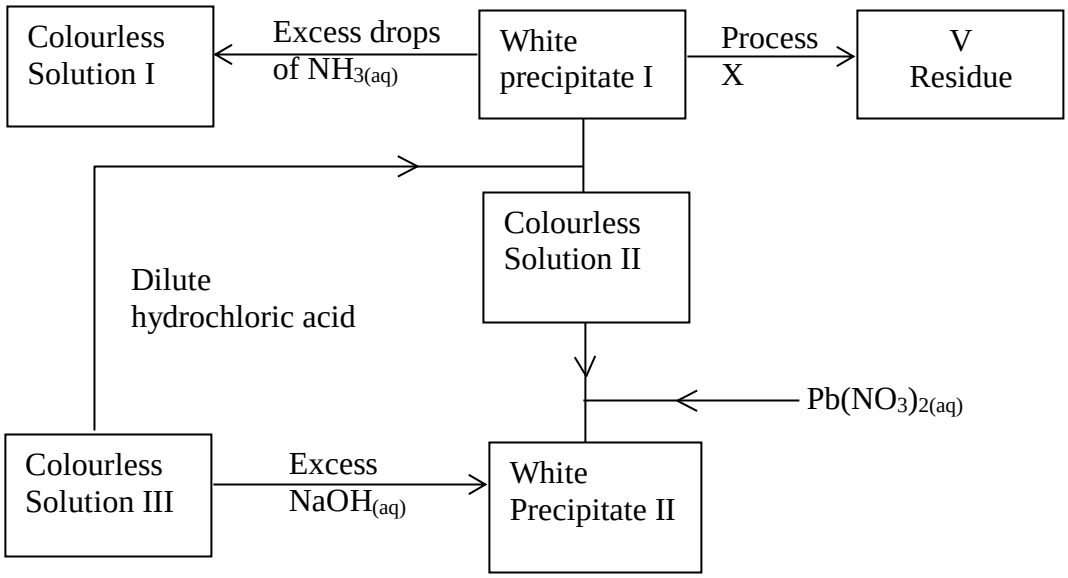
Name of compound P: ……

Type of reaction: ……

g. If the relative molecular mass of P is 35,700 determine the value of n. **(2mks)**

(C = 12, H = 1)

4. (a) Study the flow chart **below** and answer the questions that follow.



Residue **V** was yellow when hot and white when cold.

(i) Identify :-

I White Precipitate **I**. **(½ mk)**

II Solution **II**. **(½ mk)**

III Residue **V**. **(½ mk)**

(ii) Write an ionic equation for the reaction of solution **II** with $Pb(NO_3)_{2(aq)}$. **(1mk)**

……

……

(iii) Write observations that would be made when ammonia solution is added drop wise till in excess to the colourless solution II. **(1mk)**

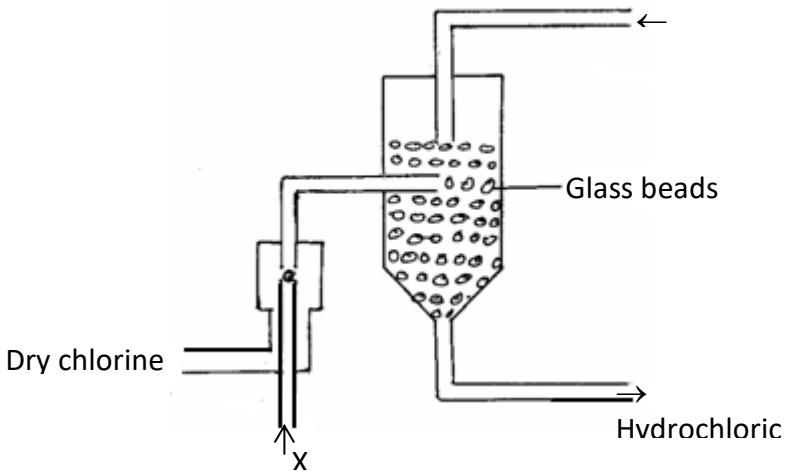
……

……

(iv) Identify process **X** **(½ mk)**

(v) Write an equation for the formation of solid **V** **(1mk)**

(b) The diagram **below** represents a set-up for large scale manufacture of hydrochloric acid. Study it and answer the questions that follow:



(i) Name substance **X**. **(1mk)**

……

(ii) What is the purpose of glass beads? **(1mk)**

……

……

(iii) Give **two** sources of substance X used in the above process. **(1mk)**

……

……

(iv) Give **two** use of hydrochloric acid. **(2mks)**

……

……

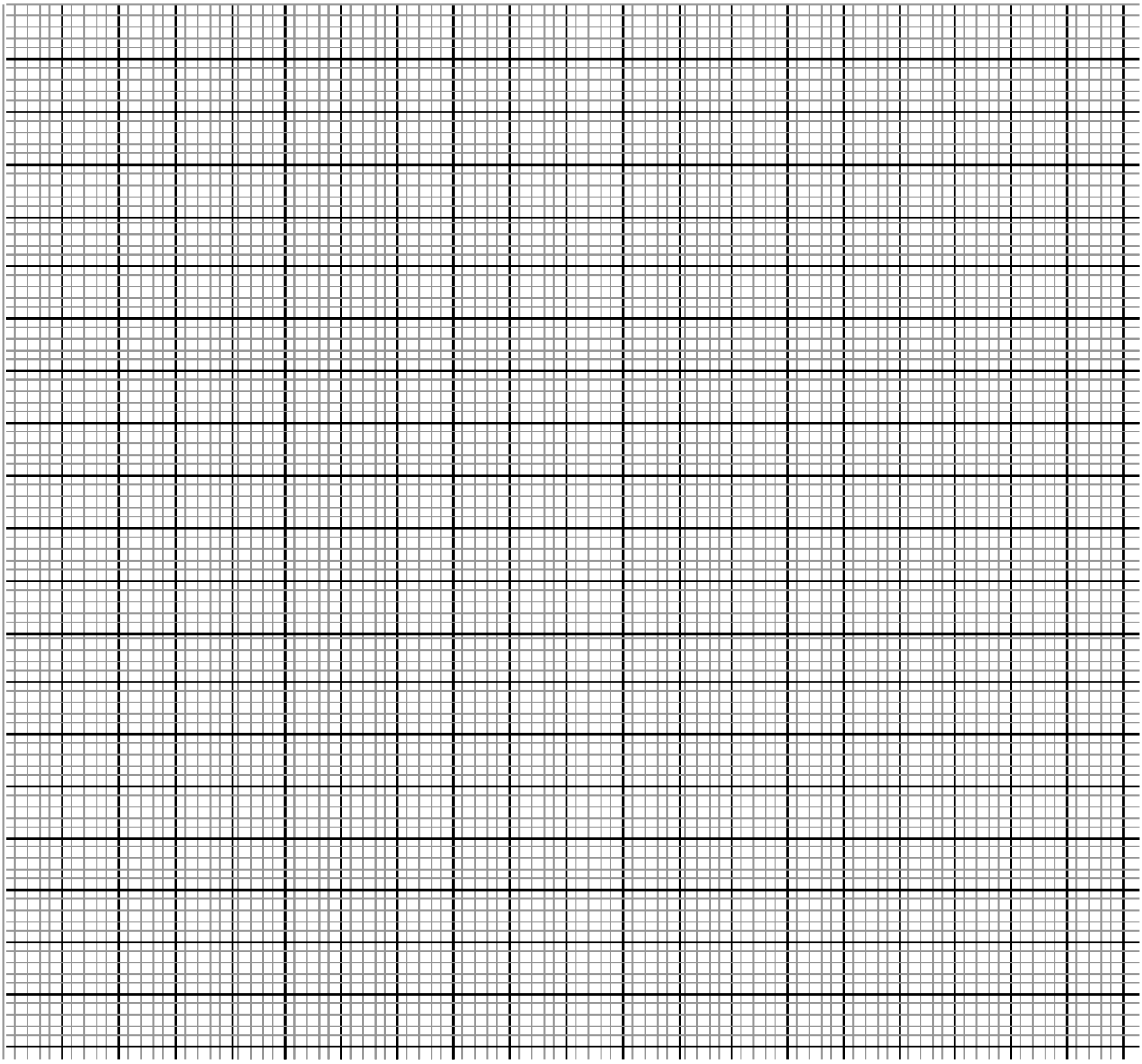
5. Sodium thiosulphate solution reacts with dilute hydrochloric acid according to the following equation.

$S_2O_3^{2-}{}_{(aq)} + 2H^+{}_{(aq)} \longrightarrow H_2O_{(l)} + SO_2 + S_{(s)}$

In an experiment to study how the rate of reaction varies with concentration, $10cm^3$ of 0.4M sodium thiosulphate was mixed with $10cm^3$ of 2M hydrochloric acid in a flask. The flask was placed in a white paper marked with across X. The time taken for the cross X to become invisible when viewed from above was noted and recorded in the table below. The experiment was repeated three times at the same temperature using the volumes in the table and the results recorded as shown in the table below.

Experiment	Volume of 0.4M thiosulphate (cm3)	Volume of water (cm3)	Volume of 2M HCl(cm3)	Time (Sec)
1	10	0	10	16
2	7.5	2.5	10	23
3	5.0	5.0	10	32
4	2.5	7.5	10	72

a) i) On the grid below, plot a graph of the volume of thiosulphate (Vertical axis) against time taken for the cross (X) to become invisible**)** **(3mks)**



ii) From the graph determine how long it would take for the cross to become invisible if the experiment was done.

i) Using 6cm3 of the 0.4M thiosulphate **(1mk)**

ii) Using 6cm3 of 0.2M thiosulphate solution **(1mk**)

b) Using values for experiment I Calculate

i) Moles of thiosulphate used **(1mk)**

ii) Moles of hydrochloric acid used **(1mk)**

iii) which of the two reactants in experiment I controlled the rate of the reaction? Explain **(2mk)**

……

……

……

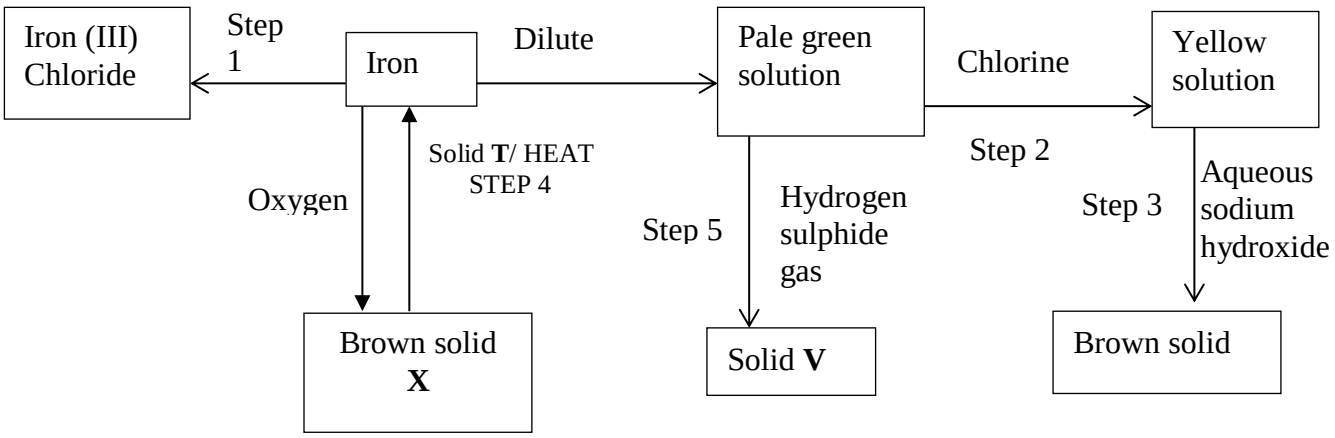
c) Give two precautions which should be taken in experiment I controlled the rate of the reaction? **Explain** **(2mks)**

……

……

……

6. The flow chart below shows a sequence of reactions starting with iron. Study it and answer the questions that follow.



(a)Write balanced chemical equations and conditions where necessary for the reaction that takes place; **(i) Step 1** **(1mk)**

(ii) Step 2 **(1mk)**

(iii) Step 3 **(1mk)**

(b) State the observation that will be made in step 5 **(1mk)**

……

(c) Give a reason for the color change in Step 2. **(1mk)**

……

……

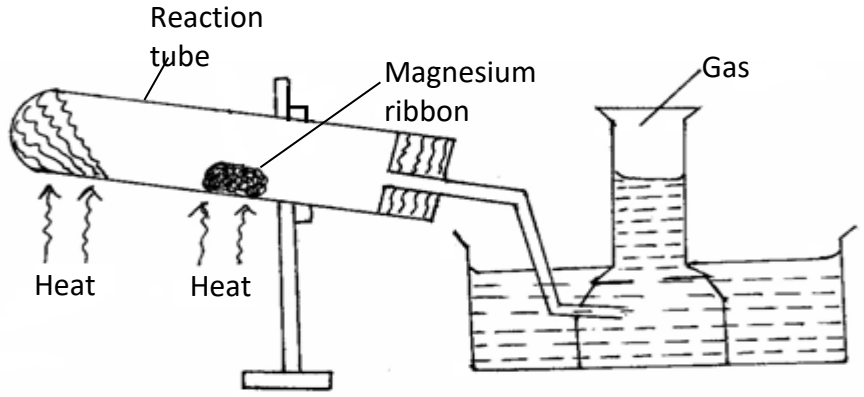
(d) Identify **X** ……..…… **(1mk)**

V …… **(1mk)**

T …….. **(1mk)**

(e) The mass of the product formed in step 1 was 2.0g. Calculate the volume of the gas used at r.t.p. (Fe =56. Cl = 35.5 and molar gas volume at r.t.p is 24 dm^3) **(3mks)**

7. The set-up **below** was used to prepare and collect gas **X.** During the experiment cleaned magnesium ribbon was strongly heated before heating the wet glass wool.



(a) Name gas X **(1 mk)**

(b) Why is magnesium ribbon cleaned before it is used? **(1 mk)**

(c) State **one** observation that would be noted in the reaction tube. **(1 mk)**

(d) Write the equation for the reaction in the reaction tube. **(1 mk)**

(e) State **one** industrial use of the solid product formed in the reaction tube. **(1 mk)**

(f) What precaution should be taken at the end of experiment? Explain. **(2 mks)**

(g) At the end of the experiment 96.0cm³ of gas X were collected at 10°C and 1 atmosphere pressure. (Mg = 24, M.G.V = 22.4, T = O°C at stp, P = 1 atmosphere at stp).

(i) Determine the volume gas X would occupy at s.t.p? **(2 mks)**

(ii) Calculate the mass of magnesium ribbon used Mg = 24. **(2 mks)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

CHEMISTRY

233/3

PAPER 3 (PRACTICAL)

TIME: 2¼ HOURS

CONFIDENTIAL

1. *Exactly 5g of solid P*
2. *About 100cm^3 of solution Z*
3. *80cm^3 of solution X*
4. *100ml measuring cylinder*
5. *250ml beaker*
6. *Stirring rod*
7. *250ml volumetric flask*
8. *Distilled water*
9. *Label*
10. *A burette*
11. *Pipette*
12. *Pipette filler*
13. *2 conical flasks*
14. *Exactly 4.0g of solid Q*
15. *A boiling tube*
16. *A thermometer*
17. *About 1g of solid T*
18. *4 test tubes*
19. *About 1g of solid R*
20. *About 0.2g of solid A*
21. *2 pieces of red litmus papers*
22. *2 pieces of blue litmus papers*

Access to

1. *Phenolphthalein indicator*
2. *2M NaOH*
3. *Source of heat*
4. *2M ammonia solution*
5. *2M sulphuric (VI) acid*
6. *Bromine water*
7. *Acidified potassium manganate VII*
8. *Acidified barium nitrate solution*

NOTE

- Solid P is a mixture of exactly 3.0g of anhydrous sodium carbonate and 2g sodium chloride.
- Solution Z is 2M hydrochloric acid
- Solution X is 0.4M sodium hydroxide solution.
- Solid Q is Oxalic acid
- Solid T is hydrated Aluminium ammonium sulphate
- Salid R is maleic acid
- Solid A is sodium hydrogen carbonate.

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

CHEMISTRY

233/3

PAPER 3 (PRACTICAL)

TIME: 2¼ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS TO CANDIDATES

- *Answer ALL questions in the spaces provided for each question*
- *Use the first 15 minutes to read through your paper and ensure you have all the chemicals and apparatus needed.*
- *Check the question paper to ascertain that all the pages are printed and no questions are missing.*

FOR EXAMINERS USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1	23	
2	09	
3	08	

1. (a) You are provided with

- 0.4M sodium hydroxide solution labeled solution x
- 2M Hydrochloric acid labeled as solution Z
- 5.0g of impure anhydrous sodium carbonate labeled solid P

You are required to determine the percentage purity of solid P.

Procedure

- Using 100ml measuring cylinder, measure 80cm3 of solution Z and place it in a 250ml beaker.
- Add all the solid P to the acid in the beaker and stir with a glass rod until effervescence stops.
- Transfer the content of the beaker carefully into a 250ml volumetric flask and add distilled water upto the mark.
- Label this solution Y
- Fill a burrete with solution Y.
- Using a clean pipette and pipette filler, put 25cm ^{3} of solution X into a conical flask.
- Add three drops of phenolphthalein indicator and titrate using solution Y.
- Repeat the titration two more times and complete the table below

Table 1

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

a) Calculate

i. Average volume of solution Y used **(1mk)**

ii. Number of moles of solution X in $25cm^3$ **(1mk)**

iii. Concentration of solution Y in moles per litre. **(2mks)**

iv. Number of moles of HCl in 250cm^3 of solution **(1mk)**

v. Original number of moles in 80cm^3 of solution Z **(1mk)**

vi. Number of moles of HCl that reached with the carbonates **(1mk)**

vii. Number of moles of sodium carbonate **(1mk)**

viii. Mass of sodium carbonate used **(1mk)**

ix. The percentage purity of solid P **(1mk)**

b) You are provided with 4.0g of oxalic acid labeled solid Q. You are required to determine the solubility of solid Q at different temperature.

Procedure

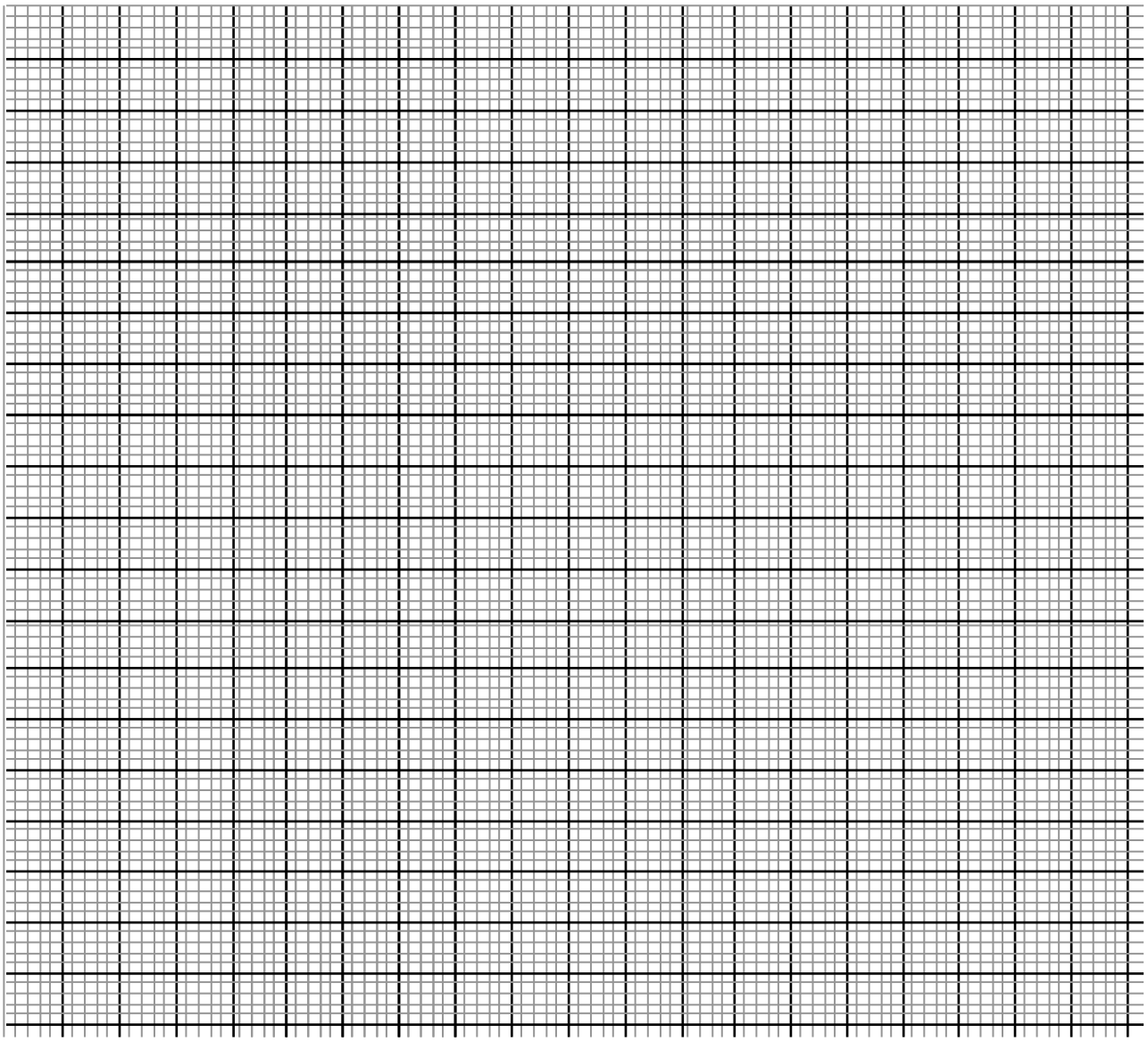
- Transfer all solid Q into a clean dry boiling tube.
- Using a burette add 4cm^3 of distilled water to solid Q in the boiling tube.
- Heat the mixture while stirring with the thermometer until all the solid dissolves.
- Allow the solution to cool while stirring with the thermometer and note the temperature at which crystals start to appear record the temperature in table 2.
- Add 2cm^3 of water into the mixture in the boiling tube and repeat the procedure. Continue adding 2cm^3 portions of water until total volume of water is 12cm^3. Note the temperature at which crystallization occurs in each case and record the temperature in table 2.

Table 2

Volume of distilled water in the boiling tube (cm^3)	Temperature on ^0c at which crystals first appear	Solubility of solid Q in g/100g of water
4		
6		
8		
10		
12		

a) Complete the table 2 by calculating the solubility of solid Q in g/100g of water **(5mks)**

b) On the grid provided plot a graph of solubility of solid Q against temperature **(3mks)**



c) Determine the solubility of solid Q at 55^0c. **(1mk)**

2. You are provided with solid T. Carry out the tests below and record your observations and inferences in the spaces provided.

a) Place about a third of solid T in a dry test tube and heat it strongly. Test any gas produced with most red and blue litmus paper

Observations	inferences
(1mk)	(1mk)

b) Dissolve the remaining solid in distilled water and divide the solutions in to four portions

Observations	inferences
(½ mk)	(½ mk)

i. To the 1st portion, add sodium hydroxide drop wise until in excess

Observations	inferences
(1mk)	(1mk)

ii. To the second portion, add ammonia solution drop wise until in excess

Observations	inferences
(1mk)	(1mk)

iii. To the third portion, add a few drops of dilute sulphuric (vi) acid

Observations	inferences
(½ mk)	(½ mk)

iv. To the fourth portion, add a few drops of acidified barium nitrate solution

Observations	inferences
(½ mk)	(½ mk)

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

Place all solid R into a boiling tube. Add $10cm^3$ of distilled water and shake well. Use $2cm^3$ portions of the mixture for the following reactions.

a). Test the first portion with blue and red litmus papers.

Observations	**inferences**
(1mk)	(1mk)

b).To the second portion, add three drops of bromine water

Observations	**inferences**
(1mk)	(1mk)

c) . To the third portion, add 2 drops of acidified potassium manganese (vii) and shake well

Observations	**inferences**

(1mk)	(1mk)

1. Warm the fourth portion slightly and add a little solid A, sodium hydrogen carbonate

Observations	**inferences**
(1mk)	(1mk)

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

PHYSICS

232/1

PAPER 1 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

a) *Write your name and index numbers in the spaces provided above.*

b) *This paper consists of TWO sections: A and B*

c) *Answer All the questions in section A and B in the spaces provided*

d) *ALL working MUST be clearly shown*

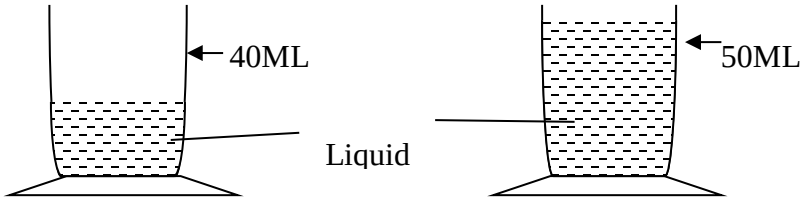
e) *Mathematical tables and electronic calculators may be used.*

FOR EXAMINERS USE ONLY

Section	question	Maximum score	Candidate's score
A	1-14	25	
B	1516	13	
	16	12	
	17	12	
	18	18	
	Total Score	**80**	

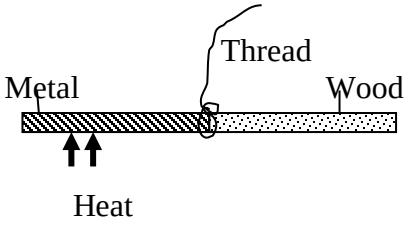
SECTION A: 25 MARKS

1. A stone of mass 40g was completely immersed in a liquid. The level of liquid are shown in the figure



Determine the density of the stone in SI units **(2mks)**

2. The following figure 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 **(2mks)**

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3. Estimate the size of an oil molecule if a drop of oil of volume 6.0×10^{-10} m^3 forms a patch of 32 on a water surface. **(2mks)**

4. Other than oil patch being monolayer, sate any one other assumption in the oil drop experiment. **(1mk)**

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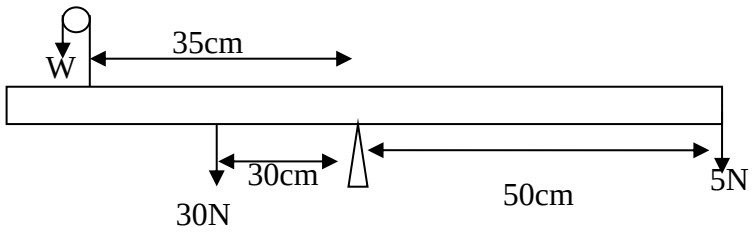
5. An immersion heater rated at 180W is placed in a liquid of mass 2kg. When the heater is switched on for 7.5 minutes the temperature of the liquid rises by 400C. Determine the specific heat capacity of the liquid. **(3mks)**

6. Other than temperature state one other factor that affects the surface tension of water. **(1mk)**

……

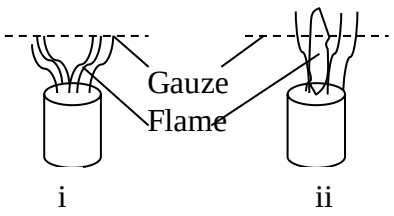
7. The figure below shows a uniform bar pivoted at its centre and is at equilibrium.



Determine the value of w. **(3mks)**

8. When a Bunsen burner is lit below wire gauze, it is noted the flame initially burns below he gauze as shown in

(i) After sometime, the flame burns below as well as above the gauze as shown in



(ii) Explain this observation **(2mks)**

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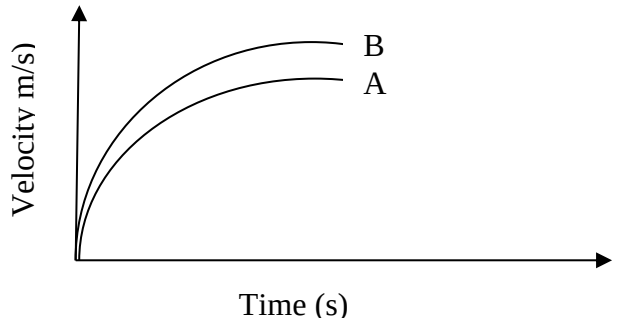
9. The figure shows the velocity time graph of two identical spheres released from the surfaces of two liquids A and B.



Give a reason why the terminal velocity of the sphere In B is higher than in A. **(1mk)**

……

……

10. A box of mass 500g is dragged along a level ground at a speed of 12m/s. if the force of friction between the box and the floor is 2000N, calculate the power developed. **(2mks)**

11. State how heat losses by convection and radiation are minimized in a thermos flask. **(2mks)**

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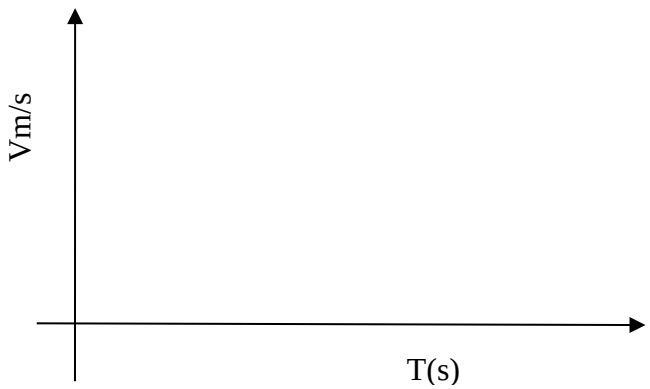
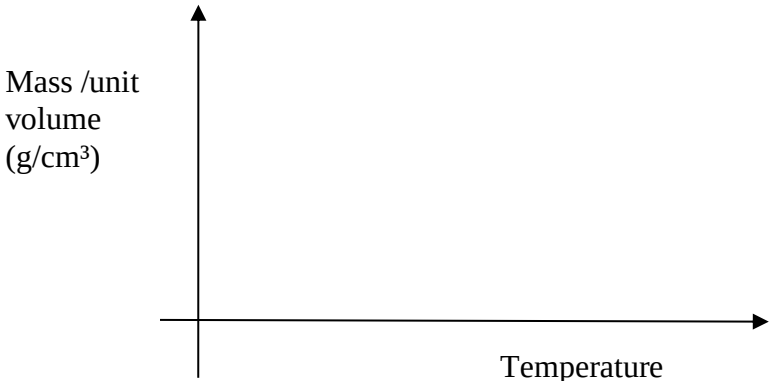
12. On the axes provided sketch a graph of velocity (v) verses time (t) for uniformly accelerated motion given that t=0,v is greater than zero. (1mk)



13. Sketch on he axes provided a graph to show how mass per unit volume of water varies with temperature when water is heated from 0^0 to 20^0 **(2mks)**



14. State how the velocity of a moving fluid varies with pressure. **(1mk)**

……

……

SECTION B (55 MARKS)

15. (a) When a fountain pen is taken in a high aero plane, it leaks. A ball point pen does not have this problem. Explain how the ball point is able to overcome this problem. **(1mk)**

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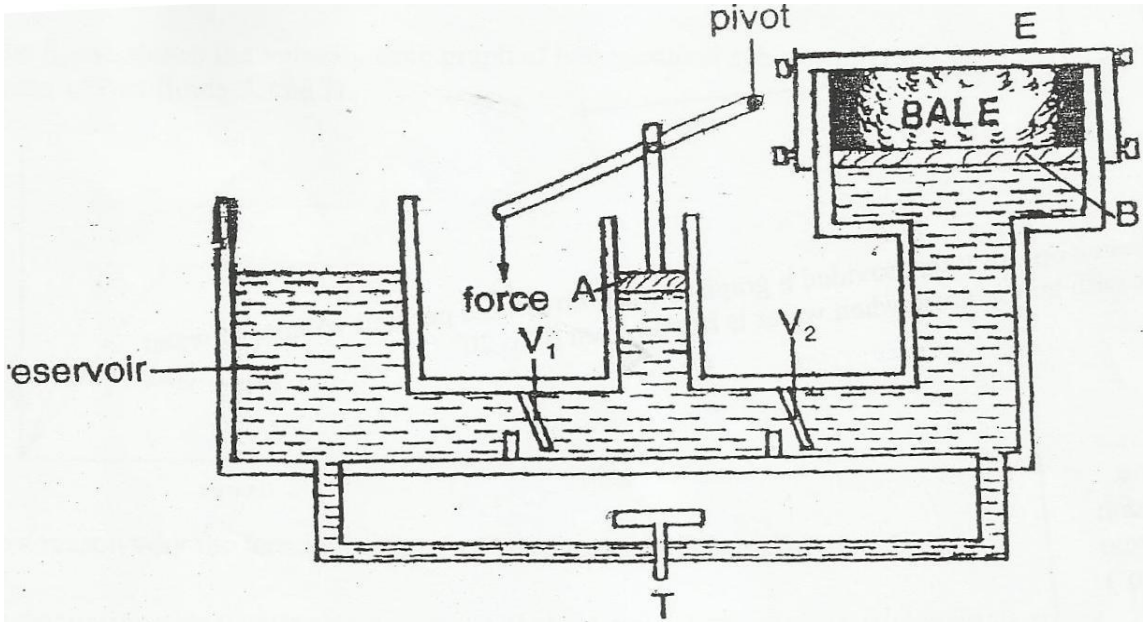
(b) The fig below shows a hydraulic press used to compress a bale



(i) Explain briefly ho a force applied on the lever compresses the bale. **(4mks)**

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……

(ii) Given that the area of piston B is $18cm^2$ and that of piston A $3.0cm^3$. A force of 2N is applied to piston A, find the force produced on the larger piston B that compresses the bale. **(2mks)**

(c) A 180W heater is immersed in a copper calorimeter of mass 100g containing 200g of alcohol. When he heater is switched on after 36 seconds the temperature of calorimeter and its contents rises t $12^{0}\cdot$ If S.H.C of water and copper is 4200 J/kgk and 400j/Kgk respectively.

Determine:

(i) Heat lost by the heater **(2mks)**

(ii) Heat gained by calorimeter and alcohol, if the specific heat capacity of alcohol C_u. (**2mks)**

(iii) The value of specific heat capacity of alcohol **(1mk)**

16. (a) State the pressure law for an ideal gas **(1mk)**

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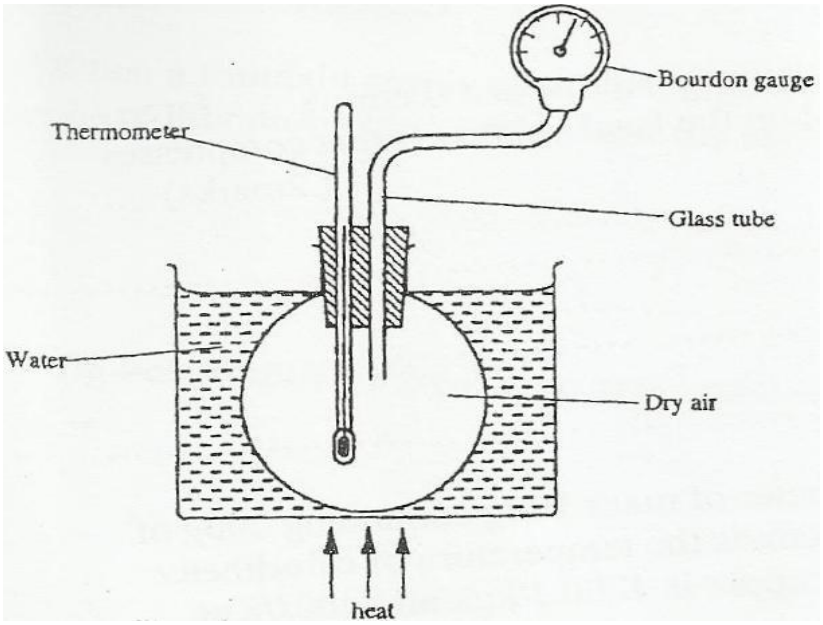
……

(b) The set up shows an arrangement to determine the relationship between temperature and pressure of a gas constant volume.



(i) Describe how pressure measurements are obtained in the experiment. **(3mks)**

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(ii) Explain how the result form the experiment can be used to determine the relationship between temperature and pressure. **(2mks)**

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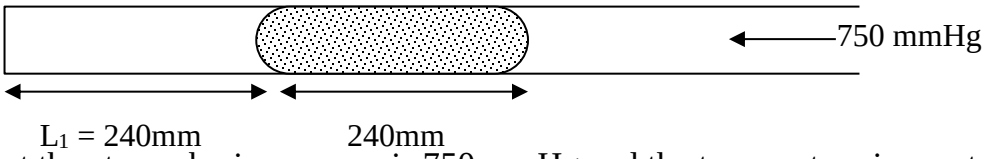
(c) A bicycle tire is pumped to a pressure of 2.2×10^5pa at23^0C. After a race the pressure is found to be 2.6×10^0 pa. Assuming the volume of the tire did not change, what is the temperature of the air in the tire. **(3mks)**

(d) Air is trapped inside a glass tube by a thread of mercury 240 mm long. When the tube is held horizontally the length of the air column is 240mm.



Assuming that the atmospheric pressure is 750mm Hg and the temperature is constant; calculate the length of the air column when the tube is vertical with open end down. **(3mks)**

17. (a) Define the term work **(1mk)**

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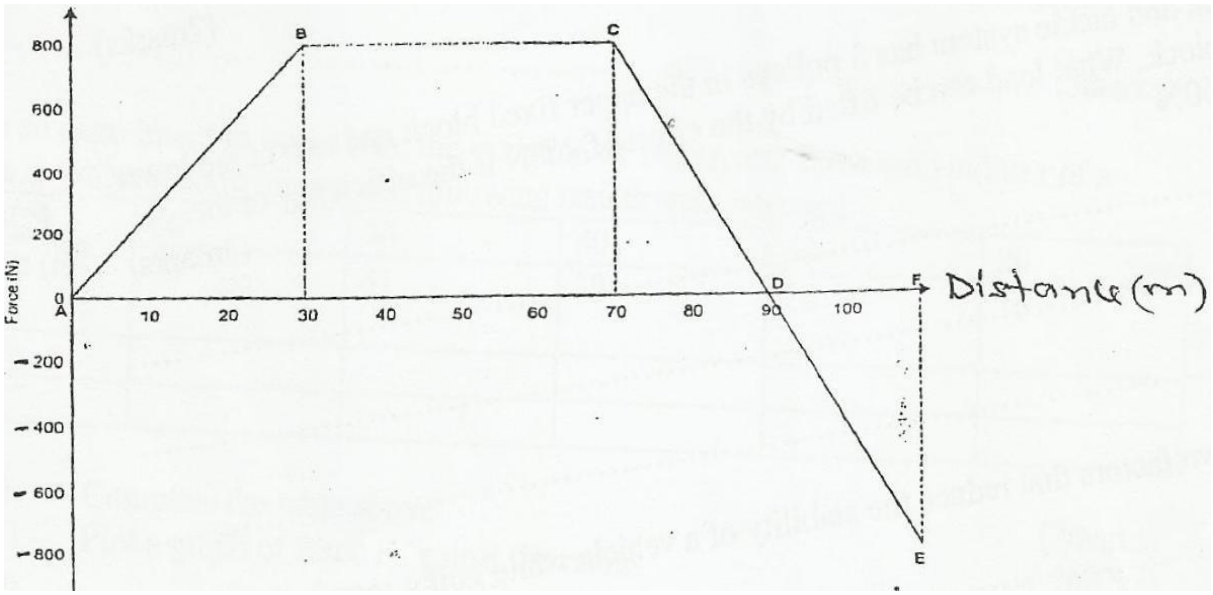
……

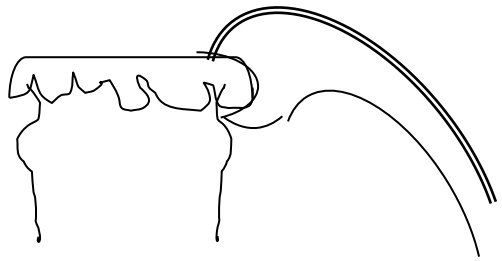
(b) The figure shows a force-distance graph for a car towed on a horizontal ground



(i) Calculate the total work done **(3mks)**

(ii) If the velocity just before reaching point C is 0.6m/s, calculate the power developed by the agent providing the force at this point. **(3mks)**

(c) The figure below shows a bottle top opener



Indicate on the diagram the direction of the load and effort. **(2mks)**

(d) A block and tackle system has 3 pulleys in the upper fixed block and two in the lower movable block. What load can be lifted by the effort of 200N if the efficiency of the system is 60%**(3mks)**

18.(a) State two factors that reduce the stability of a vehicle while going round a banked bend.**(2mks)**

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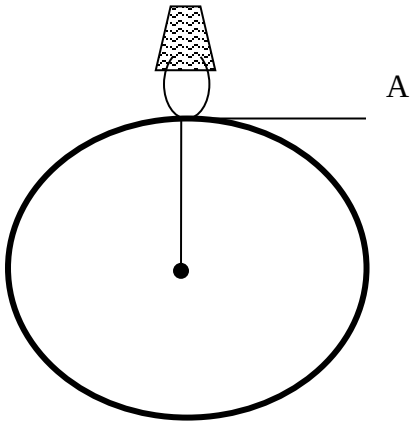
(b) The figure shows a bucket filled with water of mass 5kg tied on a string 2.0 m long being rotated in a vertical circle with a constant speed V m/s.



Calculate the minimum speed the bucket takes to rotate in position A so that the water remains in the bucket. **(3mks)**

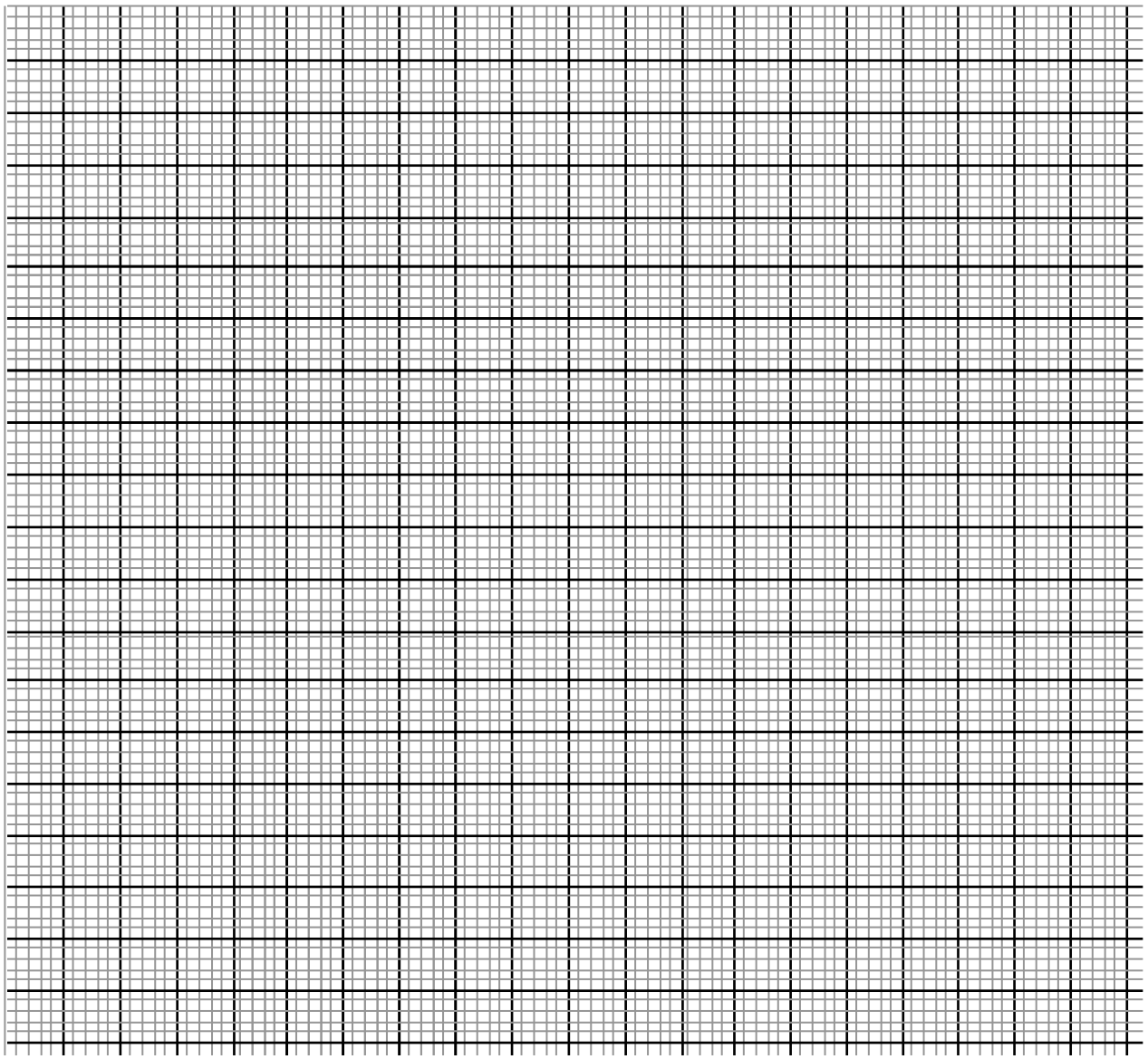
(c) A car of mass 6000kg is driven round a horizontal curve of radius 250m. if the force of friction between the tyres and the road is 21000N, what is the maximum speed that the car can be driven at on the curve without going off the road. **(3mks)**

(d) In an experiment to investigate the variation of centripetal force with radius r of a circle in which a body rotates, the following results were obtained.

Mass(g)	60	50	40	30	20
Radius® cm	50	41	33	24	16
F(N)					
R(m)					

(i) Complete the table above **(2mks)**

(ii) Plot a graph of force F against the radius **(5mks)**



(iii) Given that mass of the body is 100g, use the graph to determine the angular velocity.

(3mks)

(e) State one application of circular motion **(1mk)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

PHYSICS

232/2

PAPER 2 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

232/2

PHYSICS

(THEORY)

PAPER 2

TIME: 2 HOURS

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

INSTRUCTIONS TO CANDIDATES:

1. Write your name, school, admission number and index number is the spaces provided above.
2. Sign and write the date of examination in the spaces above.
*3. Answer **ALL** the questions in section A and B in the spaces provided.*
*4. All working **MUST** be clearly shown.*
5. Non-programmable silent electronic calculators and KNEC mathematical tables may be used.

SECTION A: (25 MARKS)

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

1. What property of light is suggested by the formation of shadows? **(1mark)**

……

2. Why are audio recording hall walls covered with soft materials. **(1mark)**

……

……

3. A highly negatively charged rod is gradually brought close to the cap of a positively charged electroscope. It is observed that the leaf collapses initially and then diverges. Explain this observation. **(3marks)**

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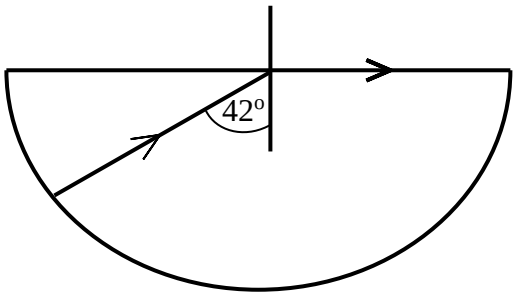
4. The figure **below** shows a ray of light incident on a face of semicircular prism. Determine the refractive index of the glass prism. **(3marks)**



5. Explain why repulsion is the only sure test for polarity of a magnet. **(1mark)**

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……

6. State the use of manganese (IV) oxide in a dry cell. **(1mark)**

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……

7. A lamp of height 6cm stands infront of pin-hole camera at a distance of 24cm from the pin-hole. The camera screen is 8cm from the pinhole. Calculate the height of the image formed on the screen. **(3marks)**

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8. A car accumulator is rated 40Al and is expected to supply a constant current for 120 minutes. Calculate the amount of current delivered. **(2marks)**

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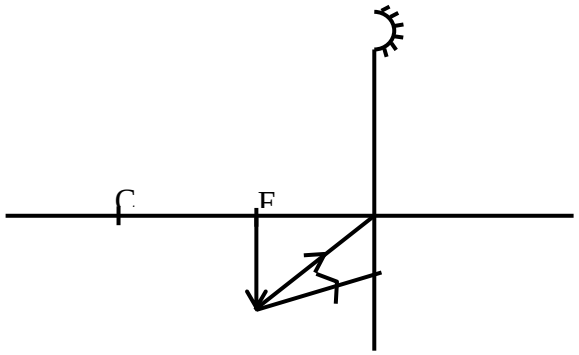
9. The figure **below** shows two incident rays on a concave mirror from the top of an object. Complete the ray diagram showing the reflected rays. **(2marks)**



10. An electric bulb rated 40W is operated on240V mains. Determine the resistance of its filament. **(3marks)**

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

12. **(i)** Distinguish between transverse and longitudinal waves. **(1mark)**

……

……

(ii) Give **one** example of a transverse wave and one example of a longitudinal wave. **(2marks)**

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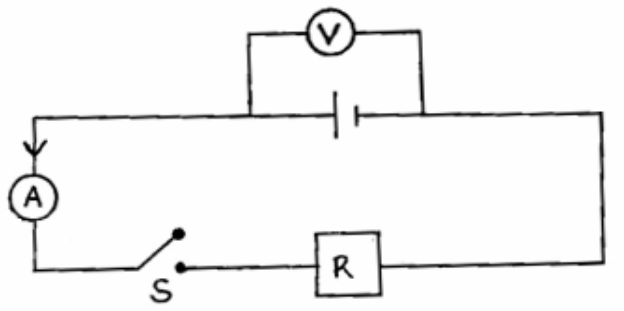
SECTION B: (55 MARKS)

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

13. **(a)**In an experiment to determine the internal resistance of a cell, the following circuit was used.



It was noted that when S is open, the voltmeter reads 1.5V and when S is closed the voltmeter reads 1.3V and ammeter reads 0.2A.

(i) What is the e.m.f of the cell. **(1mark)**

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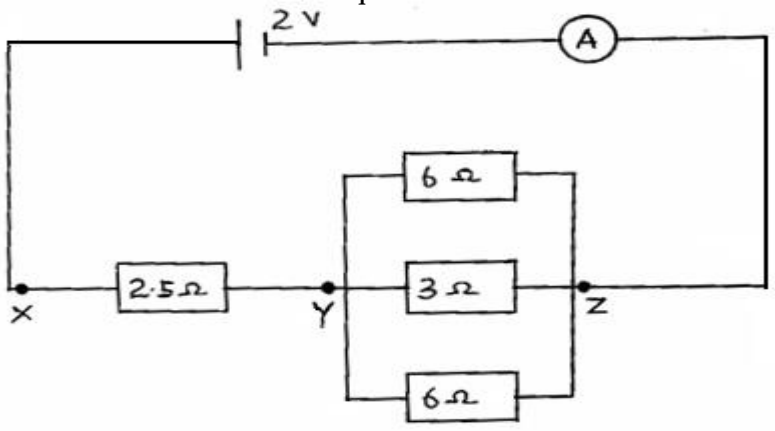
……

(ii) Determine the lost voltage. **(1mark)**

(iii) Find the value of R. **(2marks)**

(iv) Find the internal resistance of the cell. **(2marks)**

(b) Study the circuit **below** and answer the questions that follow.



(i) Determine the effective resistance of the circuit. **(2marks)**

(ii) Find the ammeter reading. **(2marks)**

(iii) Find the p.d between X and Y. **(2marks)**

(iv) State the factors that affect the resistance of a conductor. **(3marks)**

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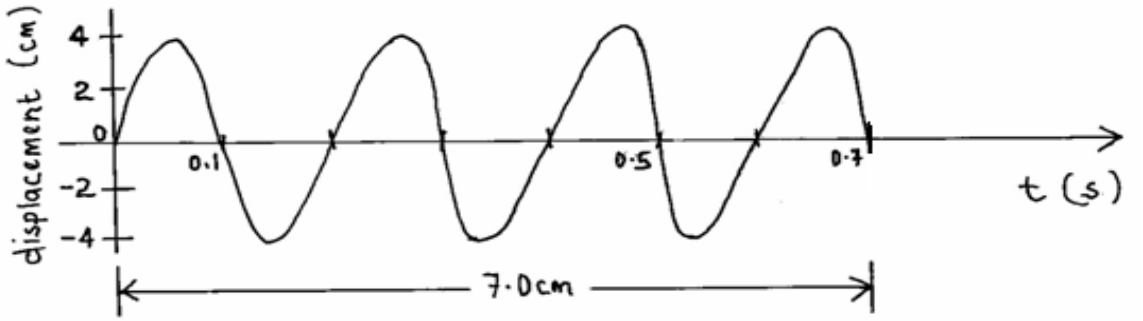
14. The diagram **below** represents a wave motion.



(i) What is the amplitude of the wave in metres. **(1mark)**

(ii) How many cycles are made. **(1mark)**

(iii) Calculate the wavelength, λ, of the wave. **(2marks)**

(iv) Calculate the frequency of the wave. **(2marks)**

(v) Calculate the velocity of the wave. **(2marks)**

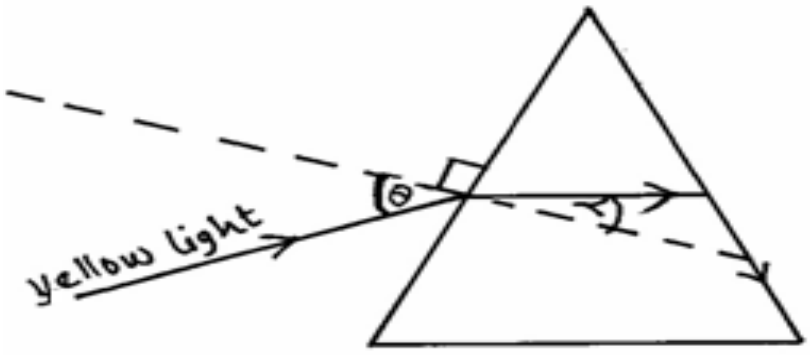
(b) **(i)** The echo sounder of a ship receives the reflected wave from a sea-bed after 0.2 seconds. What is the depth of the sea bed if the velocity of sound in water is 1450m/s. **(3marks)**

(ii) State **two** factors that affect the speed of sound in air. **(2marks)**

15. (a) State **two** conditions necessary for total internal reflection to occur. **(2marks)**

(b) Define the term critical angle as used in refraction of light. **(1mark)**

(c) The figure **below** shows the path of a ray of light through a glass prism. The speed of yellow light in the prism is 1.88×10^8m/s.



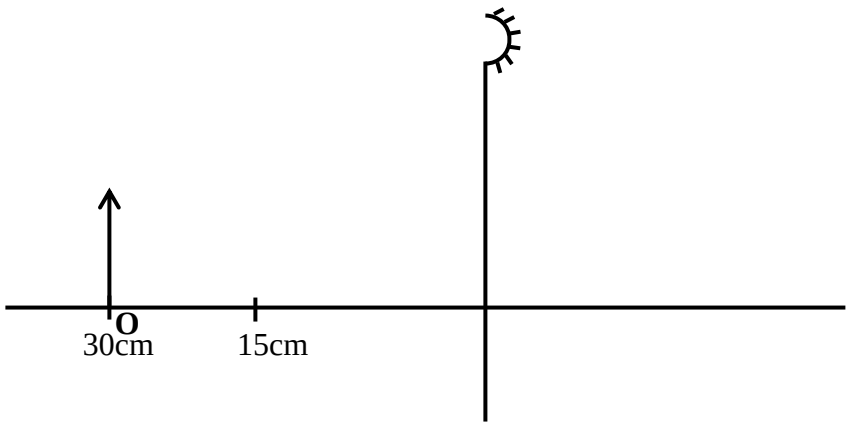
(i) Determine the refractive index of the prism material for the light (speed of light in vacuum, c = 3.0×10^8m/s. **(3marks)**

(ii) Show on the figure, the critical angle, c, and determine its value. **(4marks)**

(iii) Given that r = 21.2º, determine the angle θ. **(3marks)**

16. (a) State the advantages of using a convex mirror as a driving mirror. **(2marks)**

(b) The figure **below** shows an object **O** placed infront of a converging mirror of local length 15cm.

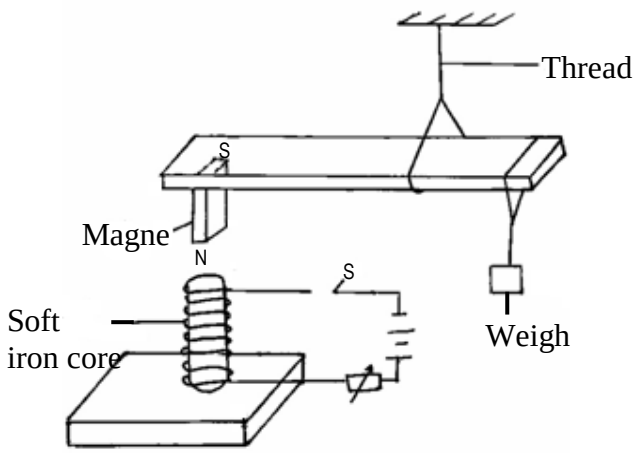


Draw on the figure a ray diagram to locate the image formed. (**3marks)**

(c) State why parabolic reflection is used in car headlights.

17. (a) State **three** factors that affect the strength of an electromagnet. **(3marks)**

(b) In the set up **below**, the suspended metre rule is in equilibrium balanced by the magnet and the weight shown. The iron core is fixed to the bench:



(i) State and explain the effect on the metre rule when the switch S, is closed**.** **(2marks)**

(ii) What would be the effect of reversing the battery terminals? **(1mark)**

(c) The figure **below** shows two parallel current carrying conductors **A** and **B** placed close to each other. The direction of the current is into the plane of the paper.



On the same figure.

(i) Sketch the magnetic field pattern. **(1mark)**

(ii) Indicate the force F due to the current on each conductor. **(1mark)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

PHYSICS

232/3

PAPER 3 (PRACTICAL)

TIME: 2½ HOURS

SCHOOL…… SIGN……

CONFIDENTIAL INSTRUCTIONS TO SCHOOLS

PHYSICS PAPER 3 (232/3) (PRACTICAL)

INSTRUCTIONS TO SCHOOLS:

1. The information contained in this paper is to enable the head of school and the teacher in charge of Physics to make adequate preparation for this Physics practical examination. **NO ONE ELSE** should have access to this paper or acquire knowledge of its contents. Great care **MUST** be taken to ensure that the information herein does not reach the candidates either directly or indirectly.
2. The apparatus required by each candidate for the Physics Practical examination are set out on below. It is expected that the ordinary apparatus of a Physics laboratory will be available.
3. The **Physics teacher** should note that it is his/her responsibility to ensure that each apparatus acquired for this examination agrees with the specifications as indicated on the list of apparatus below.
4. The question paper will not **be** opened in advance.
5. The Physics teacher is **not** expected to perform the experiments.

NB:Any use of apparatus other than the ones specified may lead to candidates being penalized.

QUESTION ONE

2 new dry cell size **D**
A cell holder for two cells
A switch
A milliameter of range **0** – **1mA**
A capacitor labelled **C - 2200µF** and **25V**
8 connecting wires at least four with crocodile clips on one end
A stop watch
A carbon resistor labelled **R – 4.7KΩ** or **4700Ω**

QUESTION TWO

a) *A convex lens – Focal length **10cm***
b) *A lens holder*
c) *A candle*
d) *A white screen*
e) *A screen with crosswire*
f) *A meter rule*
g) *A half meter rule*
h) *One stand, one clamp and one boss*
i) *Lump of Plasticine weighing 50g*
j) *A stop watch (to use the same one in question one)*
k) *Two pieces of threads each **50cm** long*

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

PHYSICS

232/3

PAPER 3 (PRACTICAL)

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS TO CANDIDATES

*1. Write your **name, index number, class, date** and **signature** in the spaces provided above.*
*2. This paper consists of two questions **1** and **2.***
3. Answer all questions in the spaces provided.
4. Non-programmable calculators and mathematical tables may be used.
5. Show all your workings.

QUESTION 1	c	g	h	i	j	k	l
Maximum score	1	8	5	2	1	2	1
Candidates score							

QUESTION 2	c	d	e	k	l	GRAND TOTAL
Maximum score	6	3	7	2	2	
Candidates score						

QUESTION ONE

You are provided with the following

2 new dry cell size **D**

A cell holder

A switch

A milliameter of range **0** – **1mA**

A capacitor labelled **C**

8 connecting wires at least four with crocodile clips on one end

A stop watch

A carbon resistor labelled **R**

Proceed as follows

a) Connecting the circuit as shown in the **figure 1** below, where **P** and **Q** are crocodile clips

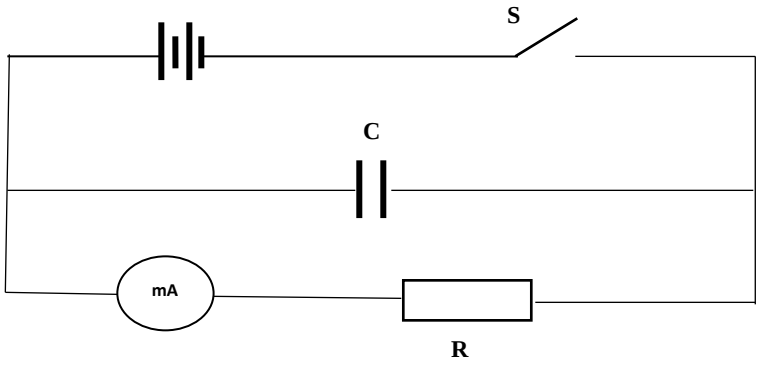


Figure 1

b) Close the switch **S**

c) Record the highest reading of the milliammeter $\mathbf{I_o}$ and then open the switch.

$\mathbf{I_o}$ =…… **(1mark)**

d) Use $\mathbf{I_o}$ above to calculate $^{4}/_{5}\mathbf{I_o}$, $^{3}/_{4}\mathbf{I_o}$, $^{2}/_{3}\mathbf{I_o}$, $^{1}/_{2}\mathbf{I_o}$, $^{2}/_{5}\mathbf{I_o}$, $^{1}/_{3}\mathbf{I_o}$ and $^{1}/_{4}\mathbf{I_o}$. Record in the **table 1** below.

e) Close switch **S** for a second time and observe the deflection in the milliammeter (*the pointer should rise back to the same initial value* $I_{o.}$)

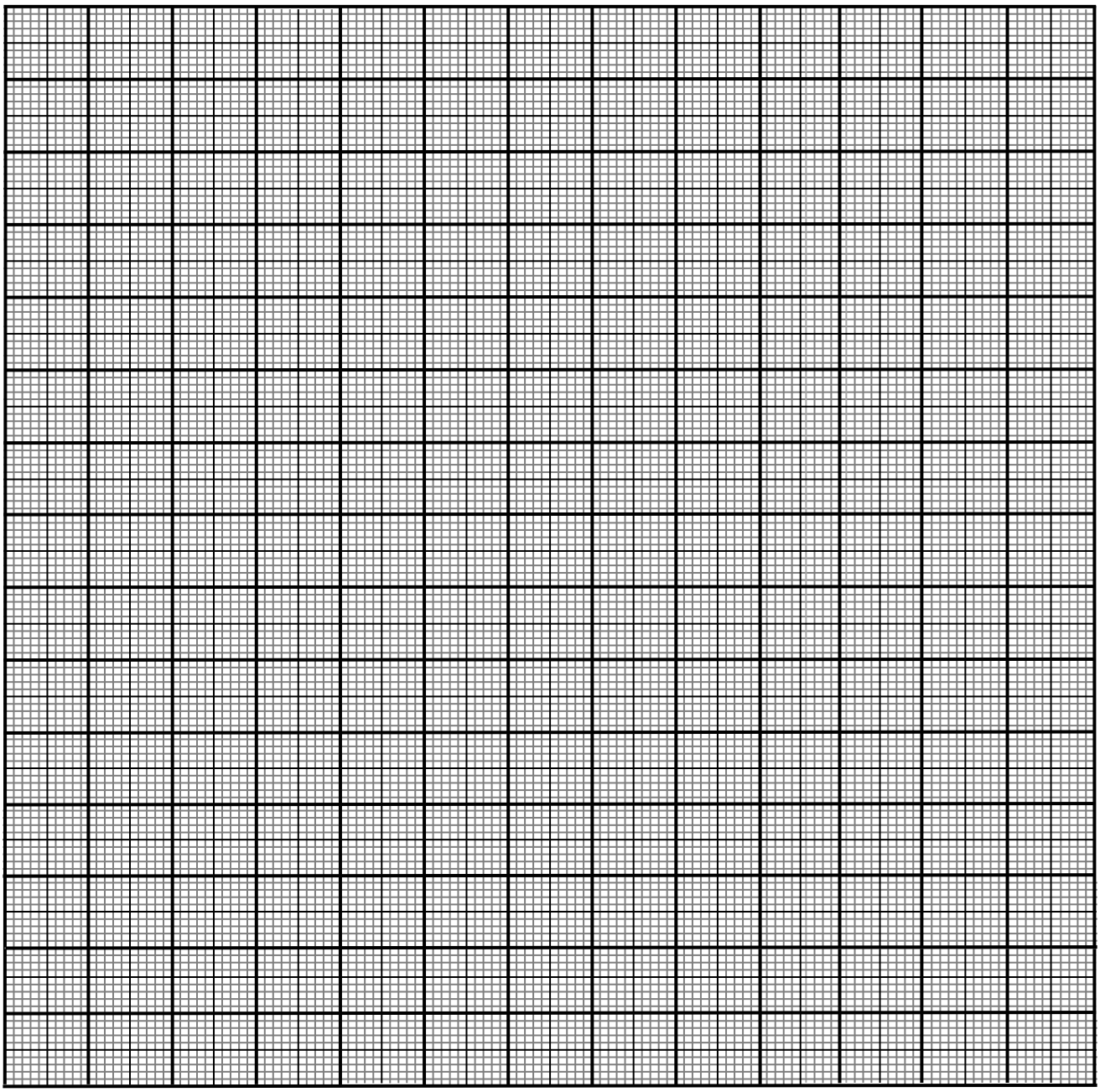
f) Open switch **S** and at the same time start the stop watch to measure the time taken for the current to decrease to four fifth the value of $\mathbf{I_o}$. i.e. $^{4}/_{5}\mathbf{I_o}$. Record your value in the **table 1** below.

g) Repeat steps **e** and **f** for other values of current as shown on the **table 1** below

Current **I** (**mA**)	$\mathbf{I_o}$	$\mathbf{^4/_5 I_o}$	$\mathbf{^3/_4 I_o}$	$\mathbf{^2/_3 I_o}$	$\mathbf{^1/_2 I_o}$	$\mathbf{^2/_5 I_o}$	$\mathbf{^1/_3 I_o}$	$\mathbf{^1/_4 I_o}$
Your calculated fraction of $\mathbf{I_o}$ (**mA**)								
Time **t** (**s**)								

(8marks) **Table 1**

h) Plot a graph of current **I** (y-axis) (**mA**) against time **t** (**s**) **(5marks)**



i) From your graph, find **W** the value of **I** when **t** = **7.00s** in **SI** units. **(2marks)**

j) Given that **A** = **10W**, determine the value of **A**. **(1mark)**

k) Determine the voltage across **R** at **t** = **7.00s** given that **R** = **4.7 KΩ** **(2marks)**

l) State the quantity represented by the area under the graph **(1mark)**

QUESTION TWO

PART A

You are provided with the following

A convex lens

A lens holder

A candle

A white screen

A screen with cross wire

A meter rule

a) Set up the apparatus as shown in the **figure 2** below

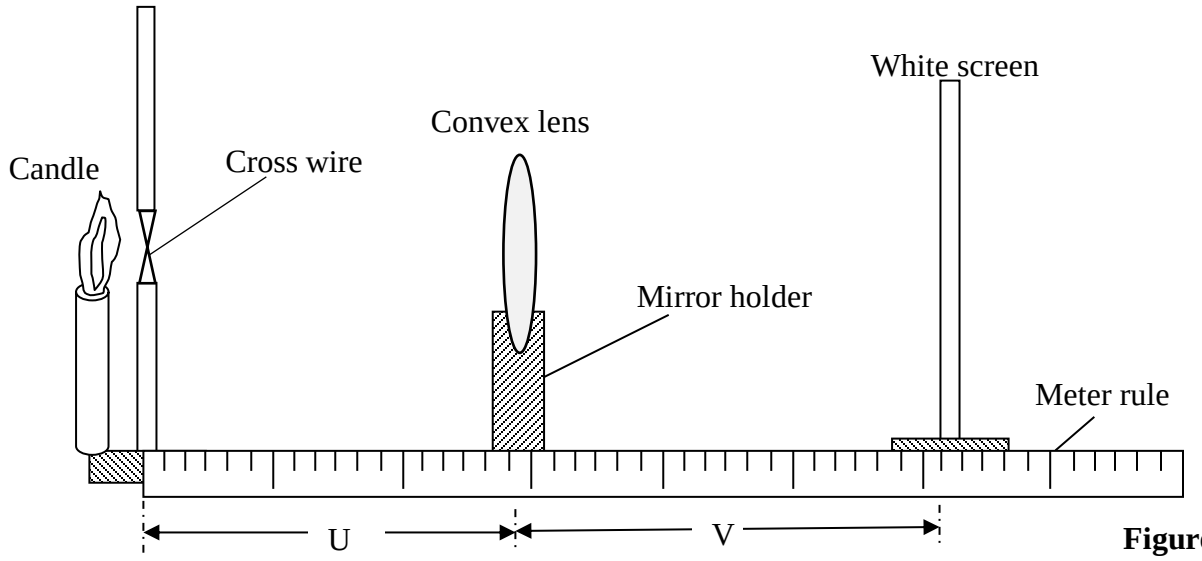


Figure 2

b) Starting with **U** = **22.5cm**, adjust the position of the screen to obtain a sharp image of the cross wire being illuminated by the candle. Record the value of **V** in the **table 2** below.

c) Repeat the procedure in (b) for **U** = **35.0cm** and **40.0cm**. Complete the **table 2**

U (cm)	**V (cm)**	**$m = \frac{V}{U}$**	**$f = \frac{V}{m+1}$**
22.5			
35.0			
40.0			

(6marks) **Table 2**

d) Determine the average value of **f** the focal length of the lens **(3marks)**

PART B

You are provided with the following:

A meter rule

A half meter rule

One stand, one clamp and one boss

Lump of Plasticine

A stop watch

Two pieces of thread

Proceed as follows

a) Suspend the half meter rule by the threads such that the distance between the meter rule and the half meter rule is **30cm** as shown in the **figure 3** below.

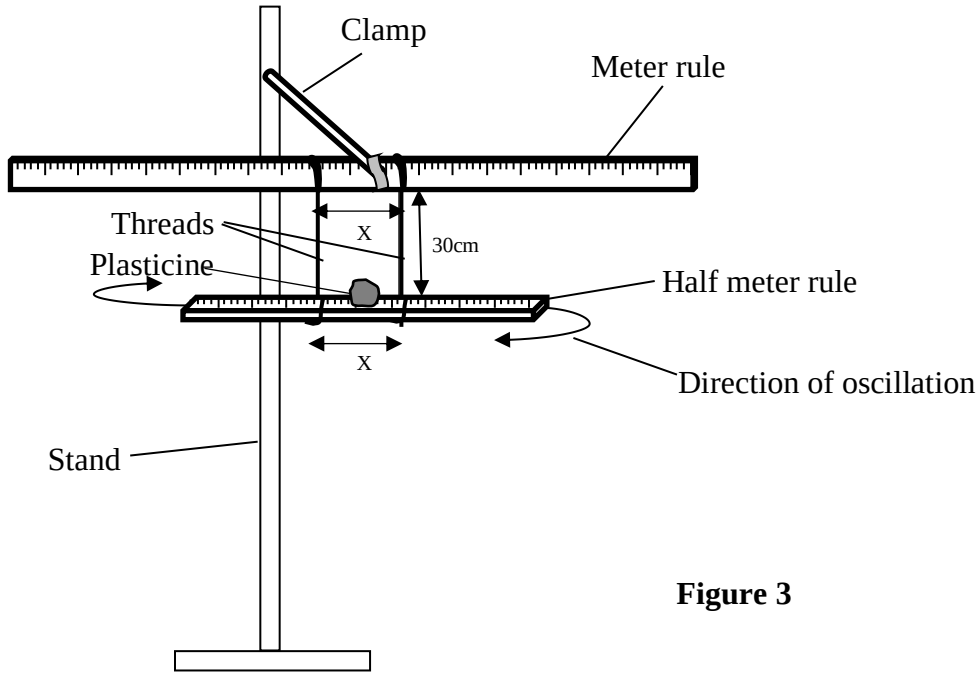


Figure 3

b) Stick the plasticine at the center of the half meter rule. See the **figure 3** above. This plasticine should remain there throughout the experiment.

c) Set the distance between the threads **X** = **6cm** and ensure that the half meter rule lies horizontally.

d) Displace the rule slightly as shown in the **figure 3** above so that it performs oscillations in a horizontal plane about a vertical axis.

e) Measure and record in the table provide the time, **t**, for **10** oscillations. Determine the period **T**.

f) Repeat (b), (c), and (d) above for other values of **X** shown on the table. Complete the table .

X (cm)	**6.0**	**8.0**	**10.0**
X (m)			
Time t, for 10 oscillations			
Periodic time T (s)			
T^2 (s^2)			
$S = \frac{T^2(s^2)}{X(m)}$			

(7marks) **Table 3**

g) Find the average value of **S** **(2marks)**

h) Given that average value $S = \frac{4\pi^2}{0.03C}$ determine the value of constant **C**. **(2marks)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

AGRICULTURE

443/1

PAPER 1

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

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 the spaces above.*
c. *This paper consists of THREE sections A, B and C.*
d. *Answer ALL questions in section A and section B and Any Two questions in section C.*

EXAMINER'S USE ONLY

Section	Questions	MaximumScore	andidates Score
A	1-19	30	
B	20-23	20	
C		20	
		20	
Total Score		90	

SECTION A (30 MARKS)

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

1. Define organic farming **(1mark)**

……

……

2. List THREE soil constituents **(1 ½ mark)**

……

……

……

3. Give **FOUR** benefits of crop rotation **(1mark)**

……

……

……

……

4. State TWO disadvantages of using hydram pumps in pumping water in the farm **(1mark)**

……

……

5. List FOUR benefits of land consolidation in farming **(2marks)**

……

……

……

……

6. Name a crop weed that is:

a) Parasitic to maize crop **(1/2 mark)**

……

b) Alternate host for rusts **(½ mark)**

……

c) Aquatic **(½ mark)**

……

d) Has medicinal value **(½ mark)**

……

7. State THREE ways in which nitrogen is lost from the soil **(1½ marks)**

……

……

……

8. State FOUR benefits of mulching in soil and water conservation **(2marks)**

……

……

……

……

9. Give FOUR disadvantages of using organic manures in crop production **(2marks)**

……

……

……

……

10.(a) Define opportunity cost **(1mark)**

……

……

(b) Name Two types of inventory records kept by farmers **(1mark)**

……

……

11. Give TWO importance of sub-soiling **(1mark)**

……

……

12. Give THREE ways in which nutrients can be lost from silage in a silo **(1½ mark)**

……

……

……

13. (a) Give TWO destructive effects of moles in crop production **(1mark)**

……

……

(b) Apart from moles, name TWO other rodent pests **(1mark)**

……

……

14. Give THREE characteristics of fixed inputs **(1½ marks)**

……

……

……

15. List FOUR financial documents kept by farmers **(2marks)**

……

……

……

……

16. State FOUR field pests that attack maize **(2marks)**

……

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……

……

17. Differentiate between apiculture and aquaculture as used in Agriculture **(1mark)**

……

……

18. State TWO ways in which burning leads to loss of soil fertility **(1mark)**

……

……

19. State TWO benefits of hardening off seedlings before transplanting . **(1mark)**

……

……

SECTION B (20 MARKS)

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

20. The photograph below shows a farming practice. Study it and answer the questions that follow.



(a) Name the practice **(1mark)**

……

(b) Name one crop to which the practice is applicable **(1mark)**

……

(c) Give TWO benefits of the practice above **(2marks)**

……

……

21.Study the farm record below and use it to answer the questions that follow.

Dat	Amount sold	Price per unit (Kshs.)	Total Value (Kshs)	Where Sold	Remarks
19/5/201	120 Kg	30	3600	Mkulima Agrovet	Fair price
20/5/201	150 Kg	32		Nyahururu Agrovet	To supply more

(a) Name the type of farm record above **(1mark)**

……

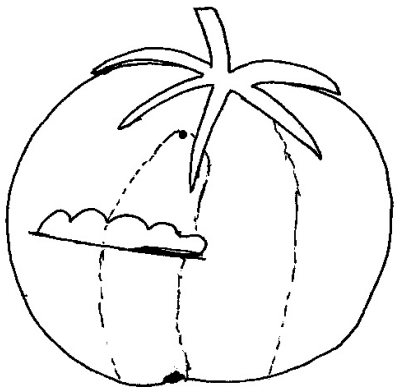
……

(b) On the record fill the missing values **(1mark)**

(c) Give a farm statement that heavily depends on information extracted from the farm record named above **(1mark)**

……

22. The diagram **below** illustrates a tomato fruit infested by a certain pest.



(a) Identify the pest **(1 mark)**

……

(b) State the damage caused by the pest on the fruit. **(1 mark)**

……

……

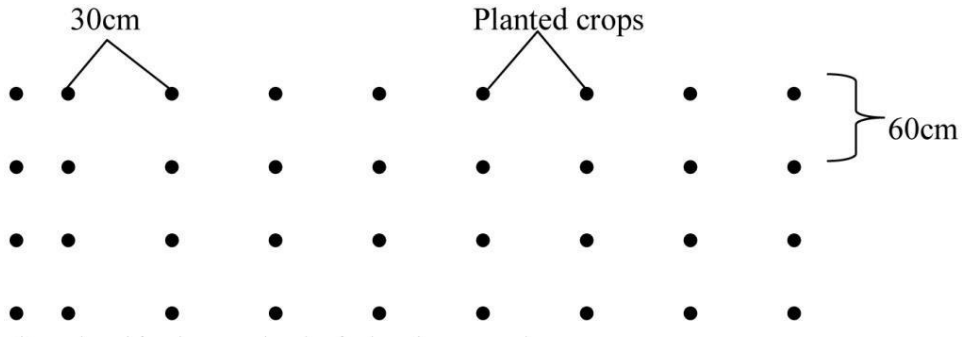
(c) Name **one** alternate host of the pest in the diagram. **(1 mark)**

……

(d) State **one** methods of controlling the pest. **(1 marks)**

……

23. The diagram below shows a method of planting used to establish a certain variety of crop



(a) Identify the method of planting u**sed** **(1mark)**

……

(b) Give the spacing followed ab**ove** **(1mark)**

……

(c) Give THREE advantages of the above method of planting crops **(3marks)**

……

……

……

(iv) The spacing above was used to establish a crop on an area of land measuring 6m by 3m.

Calculatethe crop population. Show your working **(4marks)**

……

……

……

……

……

……

SECTION C (40 MARKS)

Answer ANY TWO questions from this section in the spaces provided.

24. (a) Explain challenges faced by Kenyan vegetable farmers in the production of crops **(10mks)**

(b) Discuss various safety precautions observed when using herbicides **(5mks)**

(c) Describe the benefits of minimum tillage in crop production **(5mks)**

25. (a) Outline various ways in which land fragmentation increases the cost of food production in **Kenya(5mks)**

(b) Describe the importance of top dressing in pasture establishment **(5mks)**

(c) Explain FIVE factors that influence soil erosion **(10mks)**

26. (a) Describe the importance of any FIVE nursery management practices in crop production **(10mks)**

(b) Explain various management practices that can be carried out by a farmer to maintain soil fertility onhis farm. **(10 marks)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

AGRICULTURE

443/2

PAPER 2

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS TO CANDIDATES

- ***a)*** *This paper consists of three sections,* ***A,B*** *and* ***C****.*
- ***b)*** *Answer all questions in sections A and B and any two questions in section* ***C.***
- ***c)*** *All answers be written in the spaces provided after every question.*
- ***d)*** *Candidates should write their names and index numbers in the spaces provided above.*

FOR EXAMINER'S USE ONLY

Section	Question	Maximum Score	Candidates Score
A	1 -15	30	
B	16 -19	20	
C		20	
		20	
		90	

SECTION A (30 marks)

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

1. State **four** disadvantages of Natural method of servicing cattle. **(2mks)**

……

……

……

……

2. State **four** maintenance practices carried out on workshop tools and equipments. **(2mks)**

……

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……

……

3. Give **four** reasons for castrating male calves not required for breeding in a farm. **(2mks)**

……

……

……

……

4. Give **four** factors considered when siting a fish pond in a farm. **(2mks)**

……

……

……

……

5. Give **four** causes of cannibalism in poultry production. **(2mks)**

……

……

……

……

6. State **four** factors to consider when selecting breeding stock in livestock production. **(2mks)**

……

……

……

……

7. Give **four** reasons of using litter in a poultry house. **(2mks)**

……

……

……

……

8. (a) Give **four** reasons why identification of livestock is an important rearing practice in a farm. **(2mks)**

……

……

……

……

(b)Explain any **two** harmful effects of branding as a method of identification in cattle. **[2mk)**

……

……

……

……

9. Name **four** breeds of sheep reared in Kenya. **(2mks)**

……

……

……

……

10. Distinguish between each of the following terms as used in livestock rearing practices.

(a)Steaming up and flushing. **(1mk)**

……

……

(b) Kindling and farrowing. **(1mk)**

……

……

11. What is **quarantine** as a preventive measure of livestock diseases? **(1mk)**

……

……

12. State **four** factors considered during sorting out and grading eggs for marketing. **(2mks)**

……

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……

13. State **two** ways by which an animal acquire water in its body. **(1mk)**

……

……

……

14.State four control measures of round worm (Ascaris lumbricoides) infestation in livestock.**(2mk)**

……

……

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……

……

15. State the function of the following ingredients in the preparation of artificial colostrum for calves.

(a)Castor oil –……..(1/2mk)

……

(b)Warm water…….(1/2mk)

……

(c) Eggs- ……..(1/2mk)

……

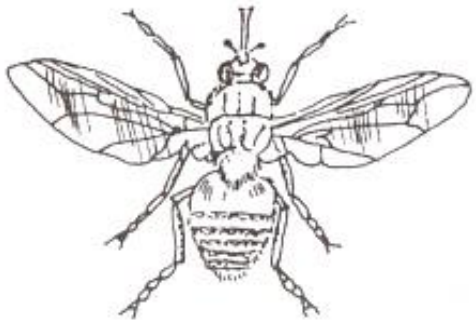
(d) Cod liver oil- ……..……(1/2mk)

…….

SECTION B (20 marks)

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

16. The diagram below shows a livestock parasite.



(a)Identify the parasite shown above.

(1mk)

…….

(b) State **two** harmful effects of the above parasite on livestock. **(2mks)**

……

……

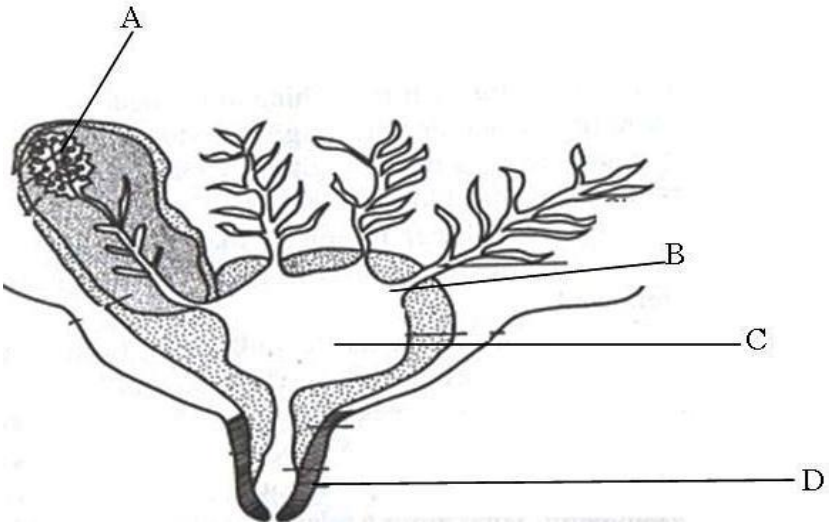
(c) Explain any **two** methods used in the control of the above parasite. **(2mks)**

……

……

……

17. The diagram below represents the structure of a quarter of the cow's udder. Study it and answer the questions that follow.



(a)Name the parts labeled **B** and **C.**

B …… **(1mk)**

C…… **(1mk)**

(b) Name the process that takes place in the part labeled **A** and the hormone that controls it. **(2mks)**

Process –**……**

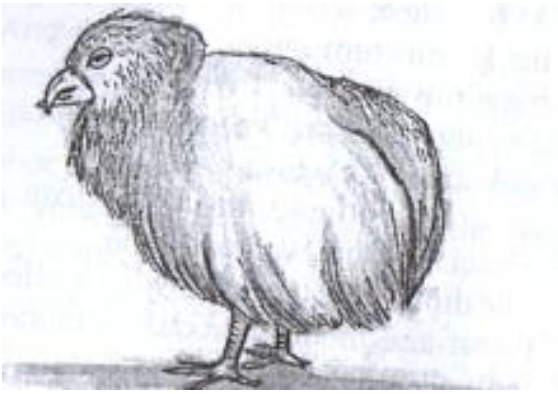
- Hormone ……..

(c) State the function of the muscle labeled **D**. **(1mk)**

……

……

18. Study the photograph below and answer the questions that follow.



(a) Identify the disease the animal is suffering from **(1mk)**

……

(b) Give **three** observable symptoms that can be identified from the diagram. **(3mks)**

……

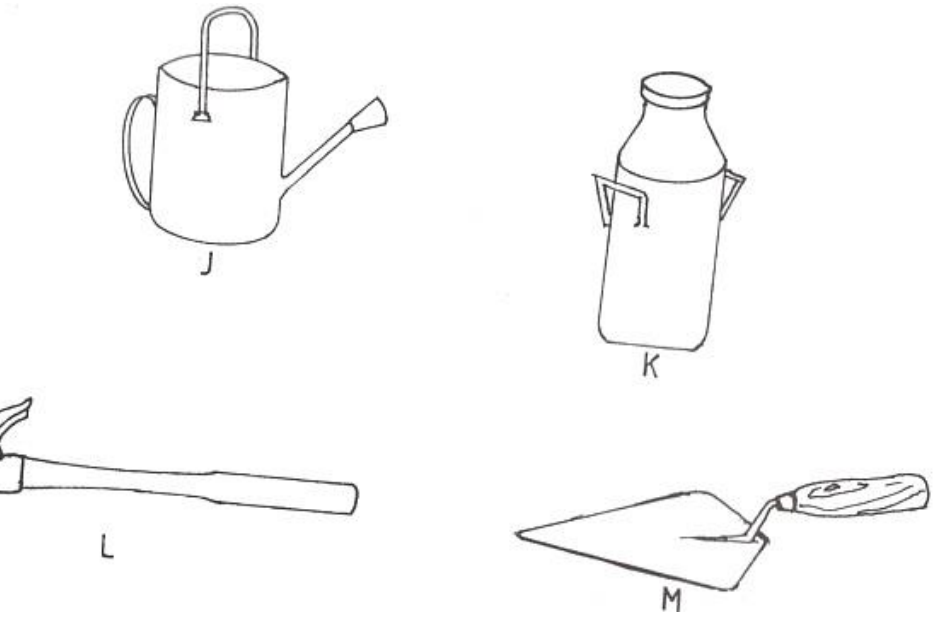
……

……

(c) State **one** control measure of the above disease. **(1mk)**

……

19. The diagram below represents farm tools and equipments. Study them and answer the questions that follow.



(a) Identify tool/equipment labeled J, K, L and M.

J…… **½ mk**

K…….. **½ mk**

L. ……. **½ mk**

M……. **½ mk**

(b)State **one** use of each of the tool/equipment labelled K and L **(2mk)**

K……

L……

Give **one** maintenance practices for the equipment labelled K. **1mk)**

……

……

SECTION C (40 marks)

Answer any two questions from this section in the spaces provided after question 22.

20. (a) Describe Anthrax disease under the following sub-headings:

(i) Causal organism **(1mk)**

(ii) Signs of infection/symptoms. **(6mks)**

(iii) Control measures. **(3mks)**

(b) (i) State and explain condition necessary for artificial incubation. **(8mks)**

(ii) State **two** advantages of artificial incubation. **(2mks)**

21. (a) Describe the feeding practices in artificial rearing of a dairy calf. **(10mks)**

(b)State the differences between digestion in Ruminants and non-ruminants. **(5mks)**

(c) State **five** signs of parturition in cattle. **(5mks)**

22. (a) Explain **five** factors that affects the digestibility of a feed material. **(5mks)**

(b) Describe the causes of stress in poultry management. **(10mks)**

(c) State **five** characteristics of clean and high quality milk. **(5mks)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

BUSINESS STUDIES

565/1

PAPER 1

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

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 the spaces provided above.*

(c) *Answer all questions.*

(d) *All answers should be written in the spaces provided in this booklet.*

(e) *Candidates should answer the questions in English.*

For Teacher's Use Only

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

Question	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**
Marks												

TOTAL MARKS

QUESTIONS

1. State four characteristics of human wants **(4mks)**

……

……

……

……

2. Outline four ways in which utility of a good is created in production **(4mks)**

……

……

……

……

3. State four benefits that a farmer may derive from being a member of producer co-operative **society** **(4mks)**

……

……

……

……

4. Highlight four ways in which consumers may protect themselves against exploitation **(4mks)**

……

……

……

……

5. Highlight four factors a firm must take into account when deciding on the product(s) to produce **(4 mks)**

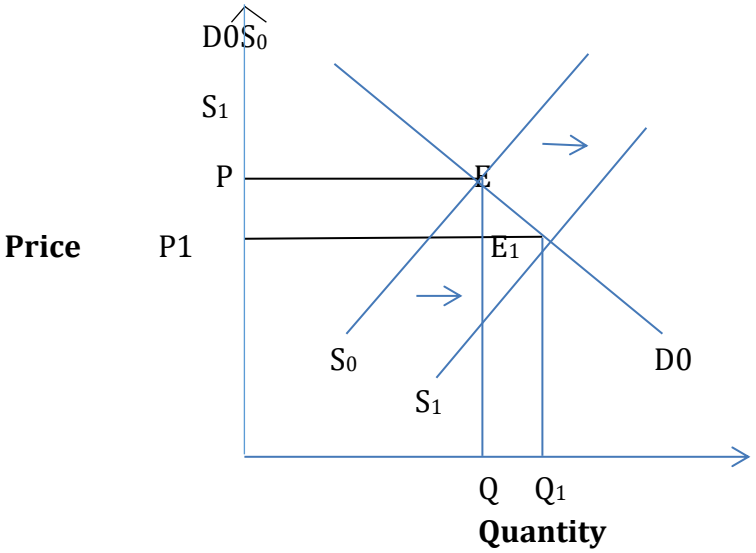
……

……

……

……

6. Below is a diagram of demand and supply curve



Highlight four factors that may have led to the above behavior **(4mks)**

……

……

……

……

7. Mention four characteristics of good money **(4mks)**

……

……

……

……

8. State four ways in which human resource can positively influence the internal environment of a business **(4mks)**

……

……

……

……

9. State four benefits that Kenya will derive from the completion of Standard gauge railway (SGR) **(4mks)**

……

……

……

……

10. State four characteristics of a successful entrepreneur **(4mks)**

……

……

……

……

11. Name four documents required by the registrar of companies in order to register a Public Limited Company **(4mks)**

……

……

……

……

12. State four circumstances under which cash with order (CWO) may be used by a business **(4mks)**

……

……

……

……

13. Outline four challenges that may be encountered in measuring National income using the output approach **(4mks)**

……

……

……

……

14. Highlight four factors to be considered when choosing a method of product promotion **(4mks)**

……

……

……

……

15. Identify the source documents into which the following information would be recorded **(4mks)**

Information	**Source document**
Payment received from debtors	
Purchases made on credit	
Validating payments made by cashier	
Sale of a fixed asset on credit	

16. For each of the transaction state the account to be debited and the account to be credited **(4mks)**

Transaction	**Account debited A/C credited**
Deposited cash into the bank	
Owner withdrew cash for personal use	
Purchased goods on credit	
Sold furniture by cheque	

17. The following information was obtained from Wamwangi traders as at 31st December 2018

	Shs
Stock 1/1/2018	20000
Stock 31/12/2018	30000
Mark up	20%
Rate of stock turn over	7 times

Required

Prepare Wamwangi's trading account for the year ended 31/12/2018 **(4mks)**

18. Muriuki prepared a trial balance for his business but it failed to balance. Help him prepare a correct one **(4mks)**

MURIUKI TRIAL BALANCE AS AT 31ST DEC 2017

Fixed Assets	**Liabilities**
Land 110,000	Debtors 80,000
Creditors 60,000	Machinery 90,000
Capitals 230,000	Prepaid rent 10,000
400,000	180,000

19. State the kind of information recorded in the following ledger accounts

i. Sales Ledger

ii. Private Ledger

iii. Nominal Ledger

iv. Cash book

20. State four components of a Business plan **(4mks)**

……

……

……

……

21. State four roles of Insurance Industry in Kenya **(4mks)**

……

……

……

……

22. Outline four measure used by the Central Bank to control supply of money in the economy **(4mks)**

……

……

……

……

23. Highlight four features of perfect competition market **(4mks)**

……

……

……

……

24. Mention the four elements of transport . **(4mks)**

……

……

……

……

25. State the type of unemployment described below **(4mks)**

i. Experienced where demand for goods and services is seasonal

……

ii. Occurs when a person seems to be employed but is mainly under utilized

……

iii. Occurs when jobs are available but one does not have the required qualifications

……

iv. Caused by Economic factors leading to poor performance of the Economy

……

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

BUSINESS STUDIES

565/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS FOR CANDIDATES:

a) *This paper consists of **six** questions*

b) *Answer any **five** questions.*

c) *Write your answers in the answer booklet provided.*

d) *All questions carry equal marks.*

FOR EXAMINERS USE ONLY

	1	2	3	4	5	6
a)						
b)						

QUESTIONS

1.a]Explain five characteristics of economic resources. **[10 mks]**

b]Explain five merits of using audio visual means of communication**.** **[10 mks]**

2. a]Explain five circumstances under which a partnership may be dissolved. **[10 mks]**

b]The following balances were extracted from the books of Kasuku traders on 30th June 2018.

Furniture	18,000	Debtors	40,000
Motal van	40,000	Creditors	50,000
Capital	75,000	Cash	4,000
C.F.C Loan	50,000	Bank	19,000
Stock	54,000.		

The following transactions took place in the month of July 2018.

July 10 Kasuku traders received ksh. 15,000 from a debtor by cheque.

July 15 Bought more furniture worth ksh. 2,500 and paid in cash.

July 20 Took goods worth 14,000 for home use.

Required.Prepare a balance sheet as at 30th July 2018**.** **[10 mks]**

3. a]Describe five principles that guide insurance businesses in Kenya**.** **[10 mks]**

b]The following information relates to Rose holdings for May 2015.

May 1.Sold goods to Garry at ksh. 660.

May 5.Bought goods from K.N.T.C for ksh. 7500.

May 10 Bought three office machines at ksh 2,500 each on credit from Fine elecronics.

May 15 Goods worth ksh.1,850 were sold to Jack on credit.

May 18 She sold old furniture on credit to Twiga motols at KSH. 1,500 whose book value was ksh.1000.

Required.Record the above transactions in appropriate journals. **[10 mks]**

4. a]Explain five features of monopolistic competition. **[10 mks]**

b]Outline five differences between public and private warehouses. **[10 mks]**

5 .a]Explain five documents used in home trade that are prepared by the buyer**.** **[10 mks]**

b]Explain five ways in which the central bank of Kenya controls the operations of commercial banks. **[10mks]**

6.a]The following transactions were extracted from the books of Furaha retailers.

April 1.Balance brought forward cash ksh 1,900 cash at bank ksh. 6500.

April 3.Sold goods in cash ksh. 1,200.

April 5. Paid transport by cheque ksh. 2,050.

April 7.Bought goods worth ksh.2,500 in cash less 5% cash discount.

Apri l 10.Paid postage charges by cheque ksh.3,000.

April 12.Furaha deposited ksh.600 from cash till to the business bank account.

April 13.Bought goods ksh .8400 by cheque.

April 15. Sold some old furniture for ksh 3,900 and received the money by cash.

April 17.Brought a table to be used in the business whose value was ksh.1,800.

April 18.Paid electricity bill by cheque ksh.2,100.

April 20.Sold goods goods against a cheque for ksh.6,600 whose value was ksh.6,850.

April 21.Took cash ksh 400 for family use..

April 26.Sold goods on credit to Kamani valued at ksh 4,500.

April 28.Received cash ksh.1,500 from Bidii stores.

April 30.Deposited all cash with the bank exceptksh.3,525.

Required to prepare a three column cash book duly balanced**.** **[10 mks]**

b]Draw a well labeled diagram to show the effect of increase in demand and increase in supply on equilibrium point, equilibrium price and equilibrium quantity. **[10mks]**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

CHRISTIAN RELIGIOUS EDUCATION

313/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS TO CANDIDATES

1. *Write your name and index number in the spaces provided above.*
2. *This paper consists of **SIX** questions.*
3. *Answer any **FIVE** questions.*
4. *This paper consists of 2 printed pages.*
5. *Candidates should answer all the questions in English.*
6. *Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*
7. *Answer all the answers in English*

Marks	1	2	3	4	5	6
Total						

QUESTIONS

1. **(a)**Explain why Christian Religious Education is taught in Kenya schools today. **(7 marks)**

(b) Give reasons why the Bible is referred to as the "Word of God" **(6 mks)**

(c) What lessons do Christians learn about work from the Genesis stories of creation.**(7 marks)**

2. **(a)**Explain the meaning of the symbolic objects used by the Hebrews on the night of Passover. **(8 marks)**

(b) Identify the attributes of God the Israelites learn from the ten plagues. **(7 marks)**

(c) What are the similarities between the Jewish Passover and the Christian Easter. **(5 marks)**

3. **(a)**Explain why idolatry was widespread in Israel at the time of prophet Elijah. **7 marks)**

(**b)Outline** the activities of King Jeroboam which made the Israelites in the Northern kingdom to turn away from God. **(7 marks)**

(c) In what ways in church worship abused today. **(6 marks)**

4. **(a)** ***Discuss*** how the prophetic message were written. **(5 marks)**

(b) Describe Amo's teaching on the day of the lord. **(8 marks)**

(c) State ways in which the church is carrying out its prophetic role. **(7 marks)**

5. **(a)** ***Describe*** the call of Jeremiah. **(7 marks)**

(b) ***Describe*** the fall of Jerusalem and the exile of the Israelites. **(8 marks)**

(c) Identify ways in which Christians can help to reduce human suffering. **(7 marks)**

6. **(a)** Explain the meaning of life and its wholeness in traditional African Communities. **(6 marks)**

(b) Outline ways in which traditional African Communities show appreciation to God as the source of life. **(7 marks)**

(c) How can Christians show respect for life today. **(7 marks)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

CHRISTIAN RELIGIOUS EDUCATION

313/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS TO CANDIDATES

1. *Write your name and index number in the spaces provided above.*
2. *This paper consists of **SIX** questions.*
3. *Answer any **FIVE** questions.*
4. *This paper consists of 2 printed pages.*
5. *Candidates should answer all the questions in English.*
6. *Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*
7. *Answer all the answers in English*

Marks	1	2	3	4	5	6
Total						

Answer any five questions

1a. Outline the message of Isaiah's prophecy about the Messiah, which Jesus read in the synagogue of Nazareth (**Luke4:16-19)** **(6mks)**

b. Describe Zechariah's vision in the temple (**Luke 1:8-23)** **(8mks)**

c. What lessons do Christians learn about family relationships from the incident when Jesus accompanied His parents for the **Passover festival** **(6mks)**

2a. With reference to the sermon on the plain, state five teachings of Jesus on how human beings should relate to each **other** **(5mks)**

b. Describe the healing of the woman with a persistent flow of blood (**Luke 8:43-48)** **(8mks)**

c. How can a Christian eradicate cases of discrimination in t**he society** **(7mks)**

3a. Narrate the parable of the rich fool (**Luke 12:16-21)** **(7mks)**

b. What are the teachings of Jesus on material possessions as drawn from the parable of the rich fool **(7mks)**

c. How do Christians use their resources to glorify **God** **(6mks)**

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

b. What is the criteria for discerning the gifts of the Holy **Spirit** **(5mks)**

c. Explain ways in which Christians use the fruit of the Holy Spirit to spread the **gospel** **(7mks)**

5a. Explain seven similarities between traditional African and Christian teachings on marriage**(7mks)**

b. Give guidelines that can help boys and girls to lead responsible sexual **lives** **(7mks)**

c. In what ways has the family planning brought conflicts in modern **families** **(6mks)**

6a.Explain the relationship between work and leisure in Christian **context** **(7mks)**

b. Give six reasons why a Christian should not resort to strike action as a way of presenting **grievances** **(6mks)**

c. State seven ways in which church can promote self -employment in modern **society** **(7mks)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

HISTORY AND GOVERNMENT

311/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS TO THE CANDIDATES:-

- *This paper consists of **three** sections; **A, B, & C***
- *Answer **all** questions in section **A**, **three** questions in section **B** and any **two** questions in section **C**.*
- *Answers to all questions **must** be written in the separate sheets provided.*
- *Candidate should answer the questions in English.*

FOR EXAMINER'S USE ONLY:

SECTION	QUESTIONS	CANDIDATE'S SCORE
A	1- 17	
B	18	
	19	
	20	
	21	
C	22	
	23	
	24	
	TOTAL	

SECTION A (25MKS)

Answer all the questions in this section.

1. Identify the main source of information used to gather information about Kenyan communities. **(1mk)**

2. Give **one** example of the Maa speakers in Kenya. **(1mk)**

3. State **two** ways in which the Mijikenda intensified their security in the pre-colonial colonial period. **(1mk)**

4. Identify **two** natural factors that enabled the early visitors to come to the East African coast by 1500 A.D . **(2mks)**

5. Give **one** economic duty of a Kenya citizen. **(1mk)**

6. State one level of conflict. **(1mk)**

7. State **two** problems facing Nairobi as a modern urban centre. **(2mks)**

8. Outline **two** factors that determine the type of a constitution in a country **(2mks)**

9. Highlight **two** characteristics of human rights. **(2mks)**

10. Name **two** groups of people whose rights and fundamental freedoms are protected by the constitution. **(2mks)**

11. Identify **two** rights of workers in Kenya according to the new constitution(2010). **(2mks)**

12. Give **two** reasons for the construction of Kenya Uganda Railways during colonialism**.** **(2mks)**

13. What is the main contribution of Tom Joseph Mboya in the development in Kenya. **(1mk)**

14. State **one** roles of Mekatilili wa meza during the Agiriama resistance. **(1mk)**

15. Name **one** method used to elect leaders in Kenya. **(1mk)**

16. What is the symbol of authority of parliament in Kenya. **(1mk)**

17. Identify the last stage in the law making process in Kenya. **(1mk)**

SECTION B (45 MARKS)

Answer any three questions in this section

18(a) Outline **five** reasons for the migration of the Luo from their original homeland. **(5mks)**

(b) Describe the Political Organization of the Borana in the Pre – colonial Period.

19(a) Name **three** Missionaries at work in East Africa during the 18th and 19th Centuries. **3mks)**

(b) Describe the challenges encountered by Missionaries in East Africa during the Pre-colonial period**.** **(12mks)**

20(a) Identify **three** Communities in Kenya who offered mixed reaction against the British during colonization. **(3mks)**

(b) Explain **six** causes of Maasai collaboration. **(12mks)**

21(a) Give reasons why Africans were not allowed to grow Cash crops during colonialism**.** **(3mks)**

(b) What were the results of the Mau Mau **uprising** **(12mks)**

SECTION C (30 MARKS)

Answer any two questions in this section

22(a) State **five** circumstances under which freedom of movement may **be limited** **(5mks)**

(b) Discuss **five** functions of Kenya National Human rights and Equality commission **(10mks)**

23(a) How can one lose citizenship acquired by birth in Kenya? **(3mks)**

(b) Explain **six** challenges encountered by the Kenyans while coming up with a new constitution. **(12mks)**

24.(a) Identify **three** factors that may necessitate the holding of a by-election in Kenya **.** **(3mks)**

(b) Discuss **six** functions of the Kenya Defence forces(K.D.F). **(12mks)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

HISTORY AND GOVERNMENT

311/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS TO THE CANDIDATES:-

- *This paper consists of **three** sections; **A, B, & C***
- *Answer **all** questions in section **A**, **three** questions in section **B** and any **two** questions in section **C**.*
- *Answers to all questions **must** be written in the separate sheets provided.*
- *Candidate should answer the questions in English.*

FOR EXAMINER'S USE ONLY:

SECTION	QUESTIONS	CANDIDATE'S SCORE
A	1- 17	
B	18	
	19	
	20	
	21	
C	22	
	23	
	24	
	TOTAL	

SECTION A (25MARKS)

Answer **All questions** from this section.

1. What is political history as an area of study in History and Government? **(1mark)**
2. Give two chemical dating methods used by Archaeologists to reconstruct History**. (2marks)**
3. Give the main reason why early agriculture developed in Egypt**. (1mark)**
4. Identify two scientific discoveries during the nineteenth century which contributed to food preservation. **(2marks)**
5. State two ways in which Africans participated in the Trans-Atlantic T**rade. (2marks**)
6. Give two results of the development of the steamship in **Europe. (2marks)**
7. Give one reason why coal was used as the main source of industrial power in Britain during the Industrial **Revolution. (1mark)**
8. Identify two social functions of the Ancient city of Athens in **Greece. (2marks)**
9. State the main function of the Golden stool in the Asante Empire during the pre-colonial **period. (1mark)**
10. Give one contribution of religion in the Maji Maji **rebellion. (1mark)**
11. Why was Ethiopia not colonized by the Europeans in the nineteenth **century? (1mark)**
12. Identify two ways in which Samori Toure acquired fire arms during the Mandinka Resistance. **(2marks)**
13. Identify one political reform introduced by President de Klerk that led to the achievement of black majority rule in South **Africa. (1mark)**
14. Give the main reason why the League of Nations was formed in **1919. (1mark)**
15. Name two agencies of the United Nations Organisation which deal with the problem of health. **(2marks)**
16. Identify one military alliance formed during the cold **war. (1mark)**
17. Give two non-British colonies who are members of the Common**wealth. (2marks)**

SECTION B (45 MARKS)

Answer only **three questions** from this section

18. a) Give three species of **Australopithecus. (3marks)**

b) Explain six ways in which Homo erectus attempted to improve his wa**y of life. (12marks)**

19. a) Identify three major Trans-Continental railways in the **modern world. (3marks)**

b) Explain six ways through which the invention of the invention of the railway speeded up industrialization in **Europe. (12marks)**

20 a) Give three methods used by European powers to establish colonial rule in **Africa. (3marks)**

b) Explain six effects of the partition of Africa on the African **communities. (12marks)**

21. a) State three methods used by the nationalists in Ghana to fight for their independence. **(3marks)**

b) Explain six factors that led to the development of African Nationalism in Ghana. **(12marks)**

SECTION C (30MARKS)

Answer only **two questions** from this section.

22. a) Identify five main organs of the United Nations **Organization. (5marks)**

b) Discuss five ways through which the United Nations Organization promotes peace in the world**. (10marks)**

23. a) Give five reasons why the First World War was referred to as the greatest war ever fought in the **world by 1914. (5marks)**

b) Explain five effects of the cold war that emerged after the Second World **War. (10marks)**

24. a) Give five factors for the growth of Pan-**Africanism. (5marks)**

b) Discuss five reasons why the Pan-African Movement had not established itself in the African continent before 1**945. (10marks)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

GEOGRAPHY

312/1

PAPER 1

TIME: 2¾ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS TO CANDIDATES

- *This paper has two sections **A** and **B.***
- *Answer **all** the questions in section **A**, in section **B** answer question 6 and any other two questions.*
- *All answers must be written in the answer sheets provided.*

FOR EXAMINER'S USE ONLY

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1 – 5	25	
B	6	25	
		25	
		25	
Total score			

SECTION A

1. a) Explain the origin of the earth and the solar system according to the Nebular cloud theory. **(4mks)**

b) Name **two** other theories that explain the origin of the earth and the solar system apart from the Nebular cloud theory. **(2mks)**

2. a) List **two** zones of transition in the atmosphere. **(2mks)**

b) Give **three** evidences that the interior of the earth is hotter. **(3mks)**

3. a) Define the following terms.

i) River divide **(1mk)**

ii) A confluence **(1mk)**

iii) A river profile **(1mk)**

b) List **three** factors that influence the formation of a river. **(3mks)**

4. How is an oasis formed? **(4mks)**

5. List **four** characteristics of Mediterranean climate. (4mks)

SECTION B

Answer Question 6 And Other Two Question From This Section

Study the map of **Nyeri (1:50,000) sheet 120/4** provided and answer the questions that follows

6. a) i) Give the latitudinal and the longitudinal position of the south west corner of the map extract **(2mks)**

ii.) Calculate the magnetic declination of the map extract **(2mks)**

b. i) Which adjoining sheet is to the S.E of the area covered by the map**?** **(1mk)**

ii.) What is the general flow of river Chanya **(2mks)**

iii.) Give three social function of Nyeri town **(3mks)**

c.) Calculate the area of Nyeri Forest to the East of Easting 69 and North of Northing 56. (Give your answer in Kilometre squared($Km^{2)}$ **(2mks)**

d.) Citing evidence from the map. Give

i.)Two reasons why the area is covered by the map is suitable for coffee growing **(4mks)**

ii.) Two factor that favor saw milling in the area covered by the map **(4mks)**

e.) Describe drainage of the area covered by the map **(5mks)**

7. a)i) What is faulting? **(1mk)**

ii)With the use of a well labeled diagram explain how a reverse fault occurs. **(5mks)**

iii) State **two** other types of faults apart from reverse faults. **(2mks)**

b) Describe how a rift valley forms through tensional forces. **(4mks)**

c) Explain **three** ways in which features resulting from faulting are of economic importance to man. **(6mks)**

d)You intend to carry out a field study of the landforms around your school.

i. State **two** hypotheses you are likely to formulate for the study. **(2mks)**

ii. Apart from dividing your class into groups, in what three other ways will you prepare for the study. **(3mks)**

iii. In what **two** ways is dividing the class into groups important? **(2mks)**

8. a) i) Differentiate between intrazonal and azonal soils. **(2mks)**

ii) Give **three** examples of a zonal soils **(3mks)**

b) i) Explain **four** factors that influence soil formation. **(8mks)**

ii) Give **two** factors that determine the colour of soil **(2mks)**

c) i) What is soil erosion. **(2mks)**

ii) Explain **four** ways in which vegetation prevents soil erosion. **(8mks)**

9. a)i) Name a country in Africa where temperate grassland is found. **(1mk)**

ii) State **four** characteristics of temperate grasslands. **(4mks)**

b) i)Explain **four** ways in which trees in the coniferous forests have adapted to the environmental conditions of the region**.** **(8mks)**

c) You are required to carry a field study on a forest near your school.

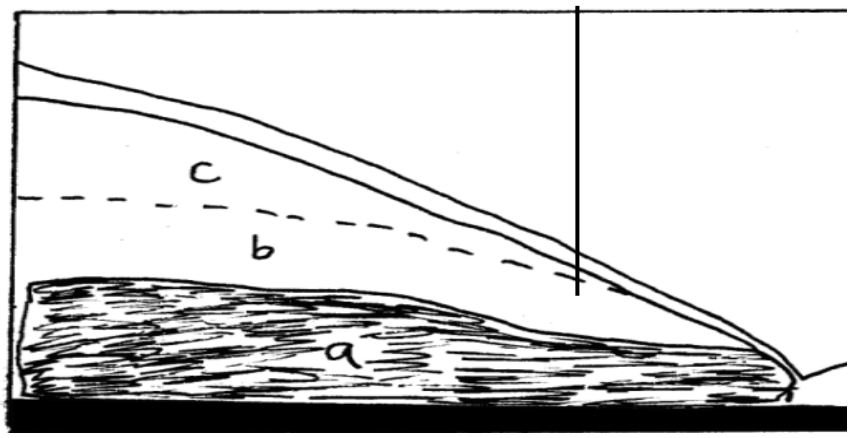
Describe the methods you would use to determine each of the following aspects of the trees in the forest.

i) Age of the trees. **(3mks)**

ii) Height of the trees. **(3mks)**

iii) Tree species **(3mks**

10. The figure below shows underground zones of saturation. Use it to answer question a (i)



a) i) Identify the zones marked a, b, and c. **(3mks)**

ii) Name **four** sources of groundwater. **(4mks)**

b) Explain **four** ways in which groundwater is of significance to human activities. **(8mks)**

c) i) Give **two** examples of lakes in East Africa that have formed due to crustal warping. **(2mks)**

ii) Describe how the process of crustal warping leads to formation of lakes. **(5mks)**

iii) State **three** other processes that lead to formation of lakes apart from crustal warping. **(3mks)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

GEOGRAPHY

312/2

PAPER 2

TIME: 2¾ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS TO CANDIDATES

- *This paper has two sections **A** and **B.***
- *Answer **all** the questions in section **A**, in section **B** answer question 6 and any other two questions.*
- *All answers must be written in the answer sheets provided.*

FOR EXAMINER'S USE ONLY

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1 – 5	25	
B	6	25	
		25	
		25	
Total score			

SECTION A

ANSWER ALL QUESTIONS

1(a) Define the term mining. **(2 marks)**

(b) Identify three problems facing Gold mining in South Africa. **(3 marks)**

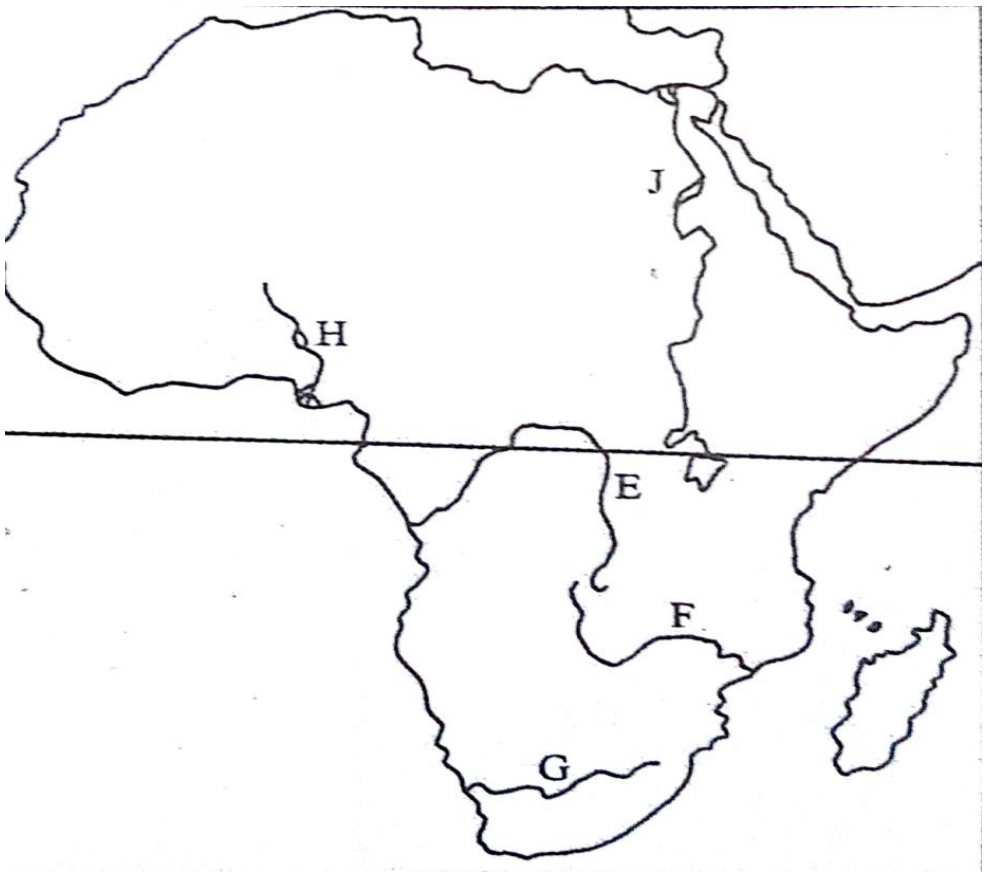
2(a) What is agroforestry. **(2 marks)**

(b) Give four reasons why agroforestry is encouraged in Kenya. **(3 marks)**

3(a) Name two exotic breeds of dairy cattle reared in Kenya. **(2 marks)**

(b) Give three reasons why Nomadic pastoralists keep large herds of **animals.** **(3 marks)**

4. Use the map below to answer the following questions.



(a)Name the rivers marked E,F, and G**.** **(3marks)**

(b) State two reasons why most African rivers are not **navigable.** **(2marks)**

5. Give two reasons why some industries are located near the source of raw materials. **(2 marks)**

(b) Give three characteristics of Jua kali Industries in Kenya**.** **(3 Marks)**

SECTION II

Answer Question 6 And Any Other Two

6. The table below shows the number of tourists that visited Kenya from year 2010 to 2013 in '000' thousands.

Year / Countries	**2010**	**2011**	**2012**	**2013**
Britain	25	20	30	35
France	15	15	20	15
Germany	10	20	20	25

(i) Using a scale of 1 cm represent 10,000 tourist, construct a cumulative bar graph to represent the data above. **(11 marks)**

Graph Paper attached at the End

(ii) State two advantages of using this method to present data. **(2 marks)**

(iii) Outline two conclusions from the graph presented. **(2 marks)**

(b) Give four reasons why domestic tourism is being encouraged. **(4 marks)**

(c) Explain three measures that Kenya should take in order to attract more tourists **(6 marks)**

7(a)(i) Define the term land reclamation. **(2 marks)**

(ii) Apart from irrigation, give two methods used to reclaim land in Kenya**.** **(2 marks)**

(b)(i) Name two rivers that supply water to Mwea irrigation scheme**.** **(2 marks)**

(ii)State three benefits of the scheme to the local people. **(4 marks)**

C(i)Name two crops grown in the polders in Netherlands. **(2 marks)**

(ii)Explain four differences between land reclamation in Kenya and the Netherlands. **(8 marks)**

You intend to carry out a field study on irrigation farming in Perkerra Irrigation Scheme.

(i)Identify two objectives you would develop for the study. **(2 marks)**

(ii) State three physical factors that could have led to the establishment of the scheme.**(3 marks)**

8(a) Differentiate between Fishing and Fisheries. **(2 marks)**

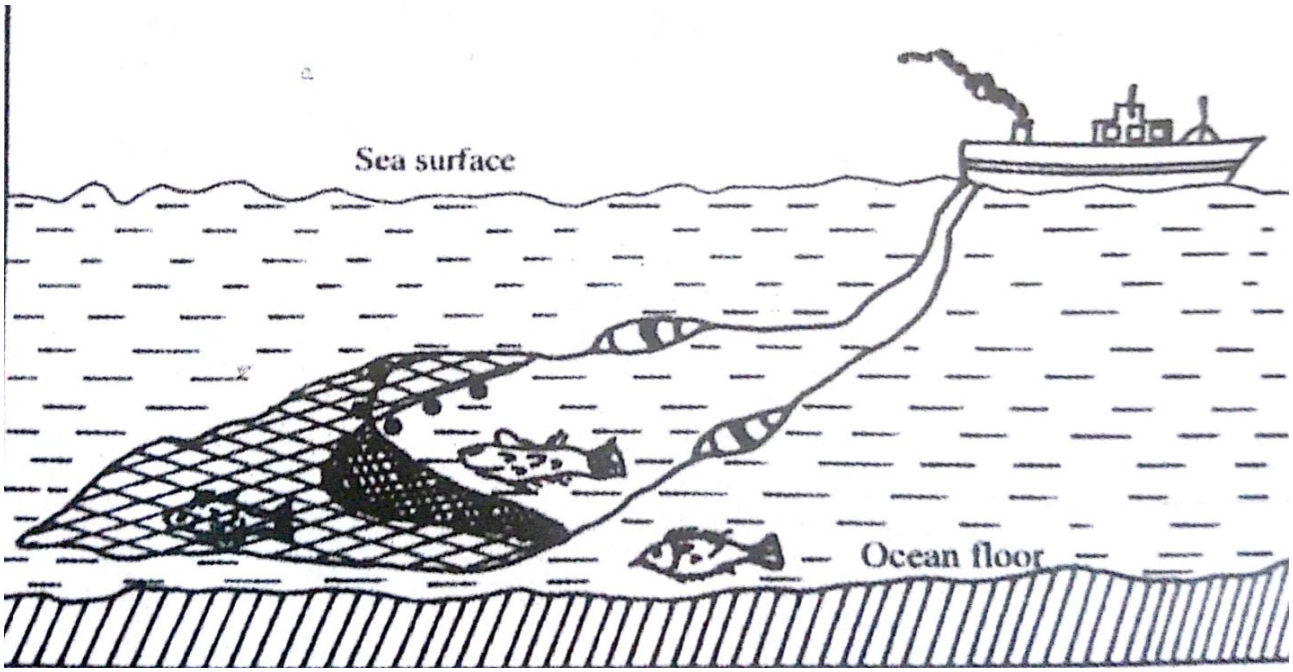
(**b)** Explain how the following physical factors influence fishing. **(6 marks)**

(**i)** Shallow waters

(ii) Cool waters

(iii) Convergence of cold and warm ocean currents.

(c) Use the diagram below to answer question (i) and (ii)



(i)Identify the method of fishing illustrated above. **(2 marks)**

(ii) Briefly explain how the fishing exercise is carried out through the above method. **(6 marks)**

(iii) Give three characteristics of demersal fish. **(3 marks)**

(d) Give two differences between fishing in Kenya and Japan, under the following Subtopics. **(4 marks)**

(i)Climate

(ii) Ocean currents

(e) Name two inland fishing in Kenya. **(2 marks)**

9(a)(i) Define the term population. **(2 marks)**

(ii) Give two primary sources of population data. **(2 marks)**

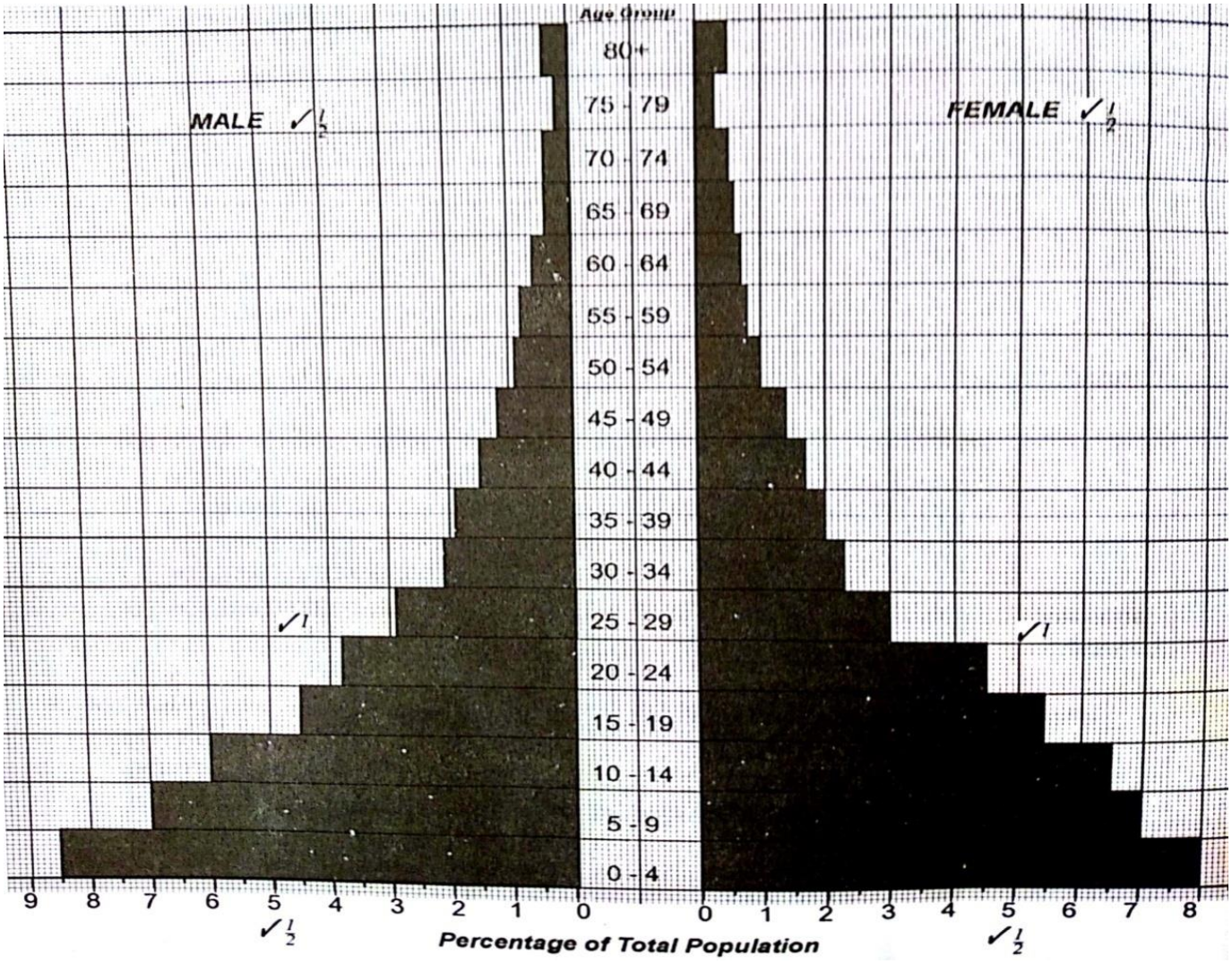
b.Explain how the following factors influence population growth. **(4 marks)**

(i)Mortality

(ii) Migration

c Explain four causes of rural to rural migration in Kenya. **(8 marks)**

(d) The Pyramid below represents population structure in Kenya.



(**i)Describe** the characteristics of the population as represented by the **pyramid.** **(4 mks**)

(**ii) State** three factors that may have led to large population increase in K**enya.** **(3mks)**

(iii) Outline two forms of information that can be derived from a **population pyramid.(2 marks)**

10(a)(i) Differentiate management and conservation of the environment**.** **(2 marks)**

(ii) List three environmental hazards. **(3 marks)**

(b) Explain four reasons for environmental conservation. **(8 marks)**

(c) Explain three effects of land pollution on the environment. **(6 marks)**

(d) A Field study was conducted on noise pollution.

(i)List three common causes of noise pollution the students would have studied**.** **(3mks)**

(ii) List three effects of noise pollution the students would have studied. **(3 marks)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

ENGLISH

101/1

PAPER 1

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INSTRUCTIONS TO CANDIDATES

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

b) *Answer **all** questions in this paper.*

c) *All your answers must be written in the spaces provided in this question paper.*

FOR EXAMINER'S USE ONLY

Question	Maximum Score	Candidate's Score
1	20	
2	10	
3	30	
TOTAL SCORE		

QUESTION 1. FUNCTIONAL WRITING **(20 Marks)**

Imagine that your class went on a five day school trip to Mombasa City. Write a personal journal that you kept for the five days spent.

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QUESTION 2: CLOZE TEST (10 Marks)

Fill in each blank space in the passage with the most appropriate word.

The issue of birth certificates as a (1) ……..for registration of candidates has ignited a lot of concern for parents with students sitting for this year's examinations. Whereas we are concerned about the issue of foreigners in this country, this directive has (2) …….. many parents and students alike unprepared (3) …… instance, most students sitting this year's K.C.S.E. were born in the late 90s and if they happen not to have even birth certificates, which is (4) …… likely, it also means that they don't have even their birth notification cards. (5) …… birth certificates under these circumstances, and within the given time frame, is (6) …….. . The authorities (7) …….. with the issuance of these documents (8) …….. process them urgently. (9) ……..is a serious matter. Candidates have been given a very short time to (10) …… these documents.

QUESTION 3: ORAL SKILLS(30 MARKS)

(a) Read the oral narrative below and answer the questions that follow. (10 marks)

The Stupid Monkey

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

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

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

QUESTIONS

i. What feature of oral narratives would you use to prepare your audience to listen to the above story? **(2 marks)**

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ii. What **two** devices of performance would you use in narrating this story effectively? **(4 marks)**

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iii. Which **three** things would indicate to you that the audience is following the narration? **(3 marks)**

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(b)**Underline**the silent letters in the following words**: (5 marks)**

i) Rapport

ii) Rendezvous

iii) Poignant

c) Your friend attended an interview but was not successful. Mention **four** things that he/she may have

failed to do before and during the interview. **(4 marks)**

Before

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During

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d) Give a homophone for each of the following words**.** **(2 marks)**

i) Gate ……..

ii) Forward ……

iii) Medal ……

iv) Sweet ……

e) State the **four** points to consider when giving instructions to a person about how to get from one point to the other**.** **(4 marks)**

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……

f) ***Read the conversation below between a student and a teacher and then answer that questions that follow.***(8 marks)

Student: (*knocking the door loudly and getting in)* I am told you called me.

Teacher: *(motioning him to seat)* please have a seat Rono and don't be anxious.

Student: *(still standing).*Don't tell me you have sum…

Teacher: *(interrupting).* Please relax. It is not an indiscipline issue again. No cause for alarm.

Student: So then, why do you want to see me?

Teacher: Calm down Rono. On the contrary, it is a positive note.

Student: *(looking a bit controlled and sliding into a seat*). Sorry sir, May I know what it is about.

Teacher: *(Smiling broadly).* That's better. I called you to discuss your progress in academics lately.

Student: *(With a lightened up face and more reassured).*Yes sir.

Teacher: Looking at your trend of performance especially in languages and mathematics, I am very impressed. (Pointing *at Maths and English columns)* See, from D+ to B in Maths and D to C+ in English is commendable!

Student: *(Rubbing his hands and slightly smiling)* Thanks sir. I am grateful for your kind guidance.

Teacher: *(In affirmative note)* Yes. This is the result of change of attitude, obedience and determination.

Student: (Sighs) Thank you once more for your concern. I will be able to face my dad courageously now.

Teacher: Yes, that's how it should be. Always work to impress your parents. Never look back again. Forward ever.

Student: Thanks Sir. I promise never to let you and my parents down ever again.

Teacher: Good. You can now go back to class.

Student: *(Stands up and shakes hands with the teacher).* Thanks once more and good day sir.

QUESTIONS

i) How does the teacher establish good rapport with the student**?** **(2 marks)**

……

……

ii) What good conversational skills are displayed by:

a) The teacher**?** **(2 marks)**

……

……

……

b) The student**?** **(2 marks)**

……

……

……

iii) Identify **two** shortcomings in the student's speech**.** **(2 marks)**

……

……

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NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

ENGLISH

101/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Instructions to candidates

(a) Write your name and index number in the spaces provided at the top of this page.

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

(c) Answer ALL the questions in this question paper.

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

For Examiner's Use Only

Question	Maximum Score	Candidate's Score
1	20	
2	25	
3	20	
4	15	
TOTAL		

1. <u>Read the following passage and answer the questions that follow: (20 Marks)</u>

When in early 1970s ultrasound confronted me with the sight of the embryo in a womb, I simply lost my faith in abortion on demand. I did not hold onto my old convictions. The change was in its way a clean and surgical conversion. I am by nature one that works out the conflicting data, weighs the opposing argument with great care, makes a decision and then acts upon it with no lingering backward glances.

By 1984 however, I had begun to ask myself more questions about abortion: What actually goes on in an abortion? I had done many but abortion is a blind procedure. The doctor does not see what he is doing. He puts an instrument into a uterus and he turns on a mortar and a suction machine goes on and something is vacuumed out; it ends up as little pile of meat in a gauze bag. I wanted to know what happened, so in 1984 I said to a friend of mine who was doing fifteen or maybe twenty abortions a day:' Look ,do me a favour,Jay .Next Saturday when you are doing all these abortions put an ultra sound on the mother and tape it on me."

He did, and when he looked at the tapes with me in the editing studio, he was so affected that he never did another abortion. Although I had not performed an abortion in five years, I was shaken to the very roots of my soul by what I saw. The tapes were shockingly amazing. Some of the tapes weren't of very good quality but I selected one that was of better quality than the others and began to show it at pro- life gatherings around the country.(I had my first contact with pro-life movement in 1981 when the then president of the National Right to Life Committee, Carolyn Gerster, had gotten in touch with me).

At the time, I was speaking at a pro-life meetings around the country in weekends, and the response to the tape was so intense and dramatic that finally I was approached by a man named Don Smith, who wanted to make my tape into a film. I agreed that it would be good idea. That is how *The Silent Scream*, which was to generate so many furore, came to be made. We showed it for the first time in Fort Lauderdale, Florida, on January3, 1985. The reaction was instantaneous. Everybody was up in arms because *The Silent Scream* represented an enormous threat to the abortion forces, and because it escalated the war (it is not really a debate- we don't debate with each, we scream at one another). For the first time, we had the technology, and they had nothing.

The *Silent Scream* depicted a twelve- week- foetus being torn to pieces in the uterus by the combination of suction and crushing instrumentation by the abortionist. It was so powerful that pro choicers trotted out their heaviest hitters to denounce the tape. They very cleverly deflected the impact of the film into an academic cul- de- suc: a dispute regarding whether the foetus feels pain during an abortion. The impetus for the debate came from an on – the- record musing by the then President, Ronald Reagan, as to how much pain the foetus feels during an abortion.

(Source: The hand of God: A journey from death to life by the Abortion doctor who changed his mind- Bernard N. Nathanson, MD)

a) Based on your understanding of the entire passage, comment on the nature of the writer's 'old convictions'**.** **(2 marks)**

……

……

……

b) Explain why it was easy for doctors such as the writer to carry out abortions prior to introduction of ultrasound technology**?** **(2 marks)**

……

……

……

c) What are the names that are commonly used to refer to the two opposing groups mentioned in the pas**sage** **(2 marks)**

……

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……

d) Briefly describe, in your own words, how those who supported abortion tried to undermine the impact of ' ***The Silent Scream'*.** **(2 marks)**

……

……

……

e) " I was shaken to the very roots of my soul by what I saw''. Rewrite this sentence beginning: **(What…)** **(1 mark)**

……

……

f) Make notes on the way abortion is carried out according to this passage **(4 marks)**

……

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……

g) Identify and illustrate the use of parenthesis in the passage, give two examples**.** **(2 marks)**

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h) Provide one example from the passage to illustrate the need for leaders to weigh their words carefully**.** **(2 marks)**

……

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……

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

i)convictions……

ii)escalated……

iii)impetus……

The Play,Henrik Ibsen, ***A Doll's House.***

2. Read the excerpt below and then answer the questions that follow. (25 marks)

Mrs. Linde: Listen to me Nora you are still very like a child in many things, and I am older than you in many ways and have a little more experience. Let me tell you this-you ought to make an end of it with Doctor Rank.

Nora : What ought I to make an end to?

Mrs. Linde: Of two things I think. Yesterday you talked some nonsense about a rich admirer who was to leave you money-

Nora : An admirer who doesn't exist, unfortunately! But what then?

Mrs. Linde: Is Doctor Rank a man of means?

Mrs. Linde: And comes here every day?

Nora : Yes, I told you so.

Mrs. Linde: But how can this well-bred man be so tactless?

Nora : I don't understand you at all.

Mrs. Linde:Don't prevaricate, Nora.do you suppose I don't guess who lent you the two hundred and fifty pounds?

Nora :Are you out of your senses? How can you think of such a thing? A friend of ours, who comes hereevery day! Do you realize what a horribly painful position that would be?

Mrs. Linde: Then it really isn't he?

Nora : No, certainly not. It would never have entered into my head for a moment. Besides, he had no money to lend then; he came into his money afterwards.**Mrs. Linde**: Well I think that was lucky for you, my dear Nora.

Nora :No, it would never have come into my head to ask Doctor Rank. Although I am quite sure if I had asked him-

Mrs. Linde: But of course you won't.

Nora : Of course not. I have no reason to think it could possibly be necessary. But I am quite sure that if I told Doctor Rank-

Mrs. Linde: Behind your husband's back?

Nora : I must make an end of it with the other one, and that will be behind his back too, I must make an end of it with him.

Mrs. Linde: Yes, that is what I told you yesterday, but-

Nora : (*walking up and down*) a man can put a thing like that straight much easier than a woman.

Mrs. Linde: One's husband , yes.

Nora : Nonsense!(*standing still*) When you pay off a debt you get your bond back, don't you?

Mrs. Linde:Yes, as a matter of course.

Nora : And can tear it into a hundred thousand pieces and burn it up- the nasty dirty paper.

Mrs. Linde:(*looks hard at her, lays down her sewing and gets up slowly*.) Nora you are concealing something from me.

Nora : Do I look as if I were?

Mrs. Linde: Something has happened to you since yesterday morning. Nora, what is it?

(a) Briefly explain what happens before the events in this extract**.** **(4marks)**

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(b) Explain why Mrs. Linde says "…I am older than you in many ways and have a little more experience? **(3 marks)**

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……

(c) From the dialogue, what do we learn about Nora's character? **(4 marks)**

……

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……

(d) What is Mrs. Lindes' view about Doctor Rank and Nora's relationship? **(2 marks)**

……

……

(e) Identify and explain the use of hyperbole in this excerp**t.** **(2 marks)**

……

……

g) What does Mrs. Linde thinks Nora is concealing from her? Is Mrs. Lindes right? **(3 marks)**

……

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……

(f) Explain the meaning of the following words as used in the extract. (3 marks)

i)A man of means……

ii)Prevaricate……

iii)nasty……

(h) Describe what happens immediately after the events presented in this **extract** **(4 marks)**

……

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3***. Read the narrative below and answer the questions that follow.*** (20 marks)

Long ago, there was famine in Gikuyu land. This famine had made the cows and goats to die. Only human beings were left and even them, it could be seen that they were not going to live much longer. Now the people asked themselves, "What shall we do?" It was decided that the most beautiful girl, one called Wanjiru should be sacrificed to god so that the rain could fall. She was brought to a place where there was a big river. She started to sing:

Rain fall and make this ridge green
Make this ridge green
My father said I should be lost. I should be lost
My mother said I should be lost. I should be lost

Rain fall and make this ridge green
Make this ridge green
She went down on her knee, she sang:
Rain fall and make this ridge green
Make this ridge green
My father said I should be lost, I should be lost
Rain fall and make this ridge green
Make this ridge green
The water reached the waist, she sang
Rain fall and make this ridge green
Make this ridge green
My father said I should be lost, I should be lost
My mother said I should be lost, I should be lost
Rain fall and make this ridge green
Make this ridge green

The water reached the neck, she sang
Rain fall and make this ridge green
Make this ridge green
My father said I should be lost, I should be lost
My mother said I should be lost, I should be lost
Rain fall and make this ridge green
Make this ridge green
The head went in

Very heavy rains fell on this land. The grass grew, a lot of food and the people began to feel better. Now where Wanjiru went she found her people who had died before her. These people had a lot of cows and goats. Now they asked her what she would like. She said she wanted cows and goats. She was given many goats and cows and then she was told to lie down in a place. When she woke up she found that she had returned back to her people. She woke up at a place where there was a river and she had her cows and goats. Now when the people saw her they rejoiced greatly.

The story ends there.

Adapted from: The Oral Literature of the Gikuyu by WanjikuKabira and Karega Mutahi.

(a) Why do you think this community makes the choice of a beautiful girl such as Wanjiru to sacrifice to god so as to get rain? **(1 mark)**

……

……

(b) Which functions does this song serve in this narrative? **(2mark)**

……

……

……

(c) Describe one character trait of the villagers in this narrative**.** **(2 marks)**

……

……

……

(d) In point form, list how events follow each other in this story. **(3 marks)**

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(e) Identify and explain **two** features of oral narration employed in this narrative. **(4 marks)**

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(f) Identify two elements of fantasy in this story. **(2 marks)**

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……

(g) Describe Wanjiru's tone in the song. **(3marks)**

……

……

……

(h) Which social/cultural practices of the Gikuyu are brought out in this narrative? **(2 marks)**

……

……

……

(i)What does this phrase mean? "My father said I should be lost." **(1 mark)**

……

……

4(a) Rewrite the following sentences according to the instructions. Do not alter the meaning**.(3mks)**

(i) Muli could have passed the examination. Muli was regularly absent from school. (Join into one sentence beginning: Were it not.....)

……

(iii)The nurses agreed to work after signing an agreement with the government. (Begin: Only…)

……

(ii) This is the boy. His father is a generous man. (Join into one sentence using a relative pronoun).

……

(b) Replace the phrasal verbs underlined in the sentences below with one word that means the same.

(3marks)

i)It is wrong to look down on students from other schools.

……

(ii) Teachers should not give into their students' unreasonable demands.

……

(iii) The delegates came up with ten rules to guide our response to globalization.

……

(c)Complete the following passage with the most appropriate forms of the words in brackets.

(3marks)

The Tsunami ……(cruel) destroyed lots of lives and property. For days, the survivors …….. (agony) searched for their missing relatives. The whole experience was ……. (horrible) traumatizing.

(d)Fill in the blanks with the appropriate prepositions**. (2 marks)**

(i) He was charged …….forging property inheritance document.

(ii) Kamau deals…….groceries

(e)Fill the blank spaces with the correct article**(2 marks)**

i) The students said they wanted……union.

ii) What is ……. Ewe?

(f)Explain the meaning of the following sentences **(2marks)**

i. Lydia found the empty room.

……..…

…….

ii. Lydia found the room empty.

……..…

……

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NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

ENGLISH

101/3

PAPER 3

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

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

INSTRUCTIONS TO THE CANDIDATES:-

- *Answer THREE QUESTIONS in this paper*
- *Question 2 is a compulsory question*
- *Where a candidate presents work on more than one optional text, only first one to appear will be marked.*
- *All answers to be written in the answers booklet provided.*

For Examiners Use Only.

Question	Maximum	Candidate's score
1	20	
2	20	
3	20	
Total Score	**60**	

QUESTIONS

1. **Either**

(a) Write a story entitled "Pride comes before a fall" **(20 marks)**

Or

(b) Write a story beginning with the words:

The whole neighbourhood was full of shouts… **(20 marks)**

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. **Either:**

(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. **(20 marks)**

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. **(20 marks)**

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**. **(20 marks)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

KISWAHILI

102/1

KARATASI YA 1

MUDA: SAA 1¾

NAME ……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

102/1

KISWAHILI

Karatasi ya kwanza

Insha

MUDA:SAA 1 ¾

Maagizo.

*a) Andika Insha **mbili**.Insha ya kwanza ni ya **lazima**.*
b) Kisha chagua insha nyingine moja kati ya hizo tatu zilizobaki.
*c) Kila insha isipungue maneno **400**.*
*d) Kila insha ina alama **20**.*
*e) Kila insha **lazima** iandikwe kwa lugha ya Kiswahili.*
*f) Insha zote **sharti** ziandikwe katika kijitabu cha majibu ulichopewa.*
g) Karatasi hii ina kurasa mbili zilizopigwa chapa.
h) Watahiniwa ni lazima wahahakikishe kwamba kurasa zote za karatasi hii zimepigwa chapa sawasawa na kuwa maswali yote yamo.

1. **Lazima.**

Umepata tangazo la nafasi ya kazi ya uhariri katika shirika la uchapishaji wa vitabu vya fasihi andishi kwenye gazeti la Taifa Leo. Andika barua ya kuomba nafasi hii na uambatanishe na wasifu kazi wako kwa maelezo zaidi. **(Alama 20)**

2. Utelekezaji wa mtoto wa kiume nchini ni janga kuu. Jadili. **(Alama 20)**

3. Andika insha inayoafikiana na methali Baniani mbaya kiatu chake dawa. **(Alama 20)**

4. Andika insha itakayomalizikia kwa;

…walipofungua mlango huo hatimaye,wengi hawakuweza kuzuia hisia zao.Waliangua vilio kwa maafa waliyoyashuhudia. **(Alama 20)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

KISWAHILI

102/2

KARATASI YA 2

MUDA: SAA 2½

NAME ……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

MAAGIZO

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

(b)Tia sahihi yako kisha uandike tarehe ya mtihani

(c) Jibu maswali yote.

KWA MATUMIZI YA MTAHINI PEKEE

Swali	Upeo	Alama
1	15	
2	15	
4	40	
4	10	

1.UFAHAMU (alama 15)

Soma kifungu kifuatacho kisha ujibu maswali

Suala la mahusiano ya wanadamu katika jamii, uainishaji wake na udhihirikaji wake limewashughulisha wataalamu wa elimu jamii kwa dahari ya miaka. Suala hili huwatafakarisha wataalamu hao kutokana na umuhimu wake katika maisha ya binadamu. Msingi mkuu wa uainishanji wa mahusiano hayo ni kukichuza kipindi cha mahusiano yenyewe. Yapo mahusiano bainaya waja ambayo yanachukua muda mfupi, kwa mfano saa au dakika chache na mengine ambayo huenda yakachukua miaka ayami.

Mahusiano ya muda mrefu kabisa ni yale yanayojulikana kama mahusiano ya kudumu. Inamkinika kudai kuwa miundo ya kijamii, kisiasa na kiuchumi huweza kuyadhibiti mahusiano hayo kwa kiasi kikubwa. Watu wengi huitakidi kuwa uhusiano uliopo baina ya mtu na jamaa yake utachukua muda mrefu, na kwa hiyo ni uhusiano wa kudumu. Hali hii hutokana na uhalisi kuwa tunahusiana na jamaa zetu kwa kipindi kirefu labda tangu ukembe hadi utu uzima wetu. Uhusiano huuhautarajiwi kuvunjwa na umbali wa masafa baina yetu;tunaendelea kuwasiliana kwa barua au, katika enzi hii ya utandawazi,kwa kutumia nyenzo za teknohama kama mtandao na simu za mkononi na kudumisha uhusiano wetuwa kijamaa. Hata hivyo, inawezekana baadhi ya mahusiano ya kijamaa yasiwe ya kudumu. Mathalan, uhusiano uliopo baina ya mke na mume, na ambao unatarajiwa kuwa wa kudumu au wa kipindi kirefu,unaweza kuvunjwa kwa kutokea kwa talaka. Talaka hiyo inavunja ule uwezekano wa uhusiano wa kudumu unaofumbatwa na sitiari ya pingu za maisha.

Katika ngazi ya pili,mahusiano ya kipindi cha wastani,kuna mahusiano yanayohusisha marafiki zetu maishani, shuleni au kwenye taasisi zozote zile, majirani zetu, wenzetu katika mahali mwa kazi,washiriki kwenye sehemu za ibada au za burudani na wenzetu kwenye vyama tofauti na makundi ya kujitolea. Inawezekanakudahili kuwa baadhi ya mahusiano haya,hususan baina ya marafiki na majirani huweza kuwa ya miongo na daima. Hali hii huweza kutegemea muundo na mfumo wa jamii. Kwa mfano, kwa wanajamii waoishi kwenye janibu fulani mahsusi, na kwa miaka tawili bila ya kuhajiri,uhusiano wao na majirani huweza kuwa wa kudumu. Hali hii **inasigana** na hali iliyoko kwenye maisha ya mijini. Maisha ya mijini yana sifa ya kubadilikabadilika. Isitoshe,kutokana na mfumo wa maisha ya kibepari **yameghoshi** ubinafsi mwingi. Mawimbi ya mabadiliko na ubinafsi huweza kuumomonyoaukuta wauhusiano wa kudumu.

Mwelekeo wa maisha ya siku hizi ya uhamaji kutoka maeneo au viambo walikoishi watu unasababisha kupombojea kwa mahusiano ya kudumu baina yao na majirani zao. Uhusiano katiya wenza katika mazingira ya kazi unahusiana kwa kiasi fulani na ule wamajirani. Vimbunga vya ufutwaji kazi, ubadilishaji wa kazi, hali zisizotegemewa na mifumo ya kimataifa pamoja na hata mifumo ya kisiasahuweza kuathiri mshikamano wa wanaohusika kazini.

Kiwango cha mwisho cha mahusiano ni uhusiano wa mpito au wa muda mfupi. Mahusiano ya aina hii hujirikatika muktadha ambapo pana huduma fulani. Huduma hizi zinaweza kuwa za dukani, kwenye sehemu za ibada,kwenye kituo cha mafuta,kwa kinyozi, kwa msusi na kadhalika. Kuna sababu kadha zinazotufanya kuyazungumzia mahusiano ya aina hii kama ya mpito. Kwanza, uwezekanowa mabadiliko ya anayeitoa huduma hiyo ni mkubwa. Si ajabu kuwa unaporudi kwa

kinyozi au msusi unatambua aliyekushughulikia hayupo. Hata hivyo, kuna **vighairi** hususa pale ambapo mtoa huduma anayehusika ni yule yule mmoja.

Mahusiano ya mpito yanatawaliwa na‘uhusiano wa chembe chembe.’ Uhusiano wa chembe chembe, bidhaa ya mfumo wa kibepari, unamaanisha kuwa kinachoshughulisha mtu ni chembe ndogo tu ya mwenzake. Chembe hiyo inaweza kuwa huduma, kwa mfano, gazeti analokuuzia mtu, viatu anavyokushonea,nguo anazokufulia,ususi anokufanyia na kadhalika. Mahussiano ya aina hii yametovukwa na hisia za utu na ni zao la mifumo ya kisasa ya kiuchumi na kijamii. Mtu anayehusiana na mwenzakekwa misingi ya chembe ndogo tu, huenda asijali kama mwenzake amekosa chakula,amefutwa kazi,amefiliwa,ameibiwa na kadhalika.

Suala kuu tunalopaswa kujiuliza ni: je, tunahusianavipi na jamaa zetu, marafiki zetuna majirani zetu? Je, uhusianowetu na raia wenzetu ni wa aina gani? Je, uhusiano wetu na nchi yetu ni wa mpito au ni wa kudumu?

(a) Taja kigezo cha kuzungumzia mahusiano. **(alama 1)**

……

……

(b) Eleza imani ya watu kuhusu mahusiano ya watu. **(alama 1)**

……

……

(c) Fafanua athari ya teknolojia kwenye mahusiano ya watu. **(alama 2)**

……

……

……

(d) Eleza sababu nne kuu za kuharibika kwa mahusiano katika maisha ya leo**.** **(alama 2)**

……

……

……

(e) Taja sifa kuu za mahusiano ya muda mfupi. **(alama2)**

……

……

……

(f) Je, kifungu hiki kina ujumbe gani mkuu? **(alama2)**

……

……

……

(g) Eleza maana ya maneno yafuatayo kama yalivyotumiwa katika kifungu. **(alama 3)**

(h) (i) inasigana**……**

(ii)yameghoshi**……**

(iii)vighairi**……**

2 UFUPISHO (alama 15)

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

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

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

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

Sifa nyingine muhimu ya maarifa ni kuwa yanaweza kuwasilishwa kwa njia au mitindo mingine ya kidhahania. Ikiwa unataka kukihamisha chombo fulani kutoka sehemu moja hadi nyingine, lazima uwazie ukubwa wake, uzito wake na labda hata umbali wa panapohusika. Maarifa huweza kubadilishwa au kugeuzwa na kuwa ishara ambazo huyafanya kuwasilishswa kwa njia nyepesi kuliko kwa mfano ikiwa mtu atayawasilisha katika muundo wa, kwa mfano,kitabu.

Maarifa yana sifa ya uhusianaji. Kipengele fulani cha maarifa huwa na maana kinapowekwa sambabmba au kugotanishwa na kipengele kingine cha maarifa. Huo huwa muktadha mzuri wa kueleweka au kuwa na maana kwa mfano, neno ‘mwerevu’ huweza kuwa na maana kwa kuwekwa katika muktadha wa ‘mjinga’, ‘ mjanja’, ‘hodari’ na kadhalika.

Maarifa huweza kunifadhiwa katika nafasi ndogo sana. Suala hili linaeleweka kwa njia nyepesi tunapoangalia maarifa katika muktadha wa teknolojia. Data zinazowahusu mamilioni ya watu,ambazo zingehitaji maelfu ya maktaba na lukuki ya vitabu, huweza kuhifadhiwa kwenye kifaa kidogo kinachoweza kutiwa mfukoni.

Maarifa hayawezi kuthibitiwa au kuzuiliwa mahali fulani yasisambae. Maarifa huenea haraka sana. Maarifa ni kitu kinachoepuka pingu za watu wanaopenda kuwadhibiti binadamu wenzao. Hata pale ambapomfumo wa kijamii au wa kisiasa unafanya juu chini kuwadhibiti raia au watu wenyewe,ni muhali kuyadhibiti maarifa yenyewe. Inawezekana kuzidhibiti njia fulani za uenezaji wa maarifa lakini maarifa hayo yatapata upenyu wa kusambaa. Ni kweli kuwa maarifa ni nguvu inayozishinda nguvu zote.

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

Matayarisho

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Nakala safi

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

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

Matayarisho

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Nakala safi

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3 MATUMIZI YA LUGHA (alama 40)

(a) Taja vipasuo sighuna **(alama 2)**

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(b) Tunga sentensi yenye muundo ufuatao:

kirai nomino, kirai tenzi, kirai husishi **(alama 2)**

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(c) Bainisha shamirisho na chagizo katika sentensi **(alama 2)**

Vibarua wamefanya kazi haraka ipasavyo .

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(d) Sahihisha

Mwalimu mwenye alikuja jusi anafudisha Kiswahili vizuli. **(alama 2)**

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(e) Yakinisha sentensi ifuatayo **(alama 2)**

Hakuwapiga wala kuwalaghai.

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(f) Eleza viambishi katika neno lifuatalo **(alama 3)**

Walichokilalia

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(g) Bainisha vivumishi vilivyo katika sentensi ifuatayo**:** **(alama 2)**

Wanafunza wote wenye nidhamu watapewa tuzo kubwa na mwalimu wao.

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(h) Changanua sentensi ifuatayo ukitumia mistari au mishale **(alama 4)**

Yohana na Otieno hucheza kandanda.

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(i) Andika sifa tatu zinazobainisha sentensi changamano. **(alama 3)**

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(j) Geuza sentensi ifuatayo iwe katika usemi halisi. **(alama 2)**

Askari jela alimwuliza Kendi kama alidhani hapo ni kwao. Alimwamuru aende kwake mara moja.

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(k) Toa mfano wa neno lenye muundo ufuatao wa silabi. **(alama 1)**

IK+KI+KI+KI

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(l) Onyesha matumizi ya viakifishi vifuatavyo**.** **(alama 2)**

(i) kibainishi

.....

(ii)parandesi

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(m) Tumia neno –baya kama**:** **(alama 2)**

(**i)** kiwakilishi

.....

(ii)kielezi

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(n) Tunga sentensi sahili ukitumia kitenzi ‘la’ katika kauli ya tendewa. **(alama 2)**

.....

(o) Badilisha maneno yaliyopigiwa mstari yawe vitenzi. **(alama 2)**

Yunis amepata faida kutokana na ukulima.

.....

(p)Kwa kuzingatia maagizo andika upya sentensi ifuatayo: **(alama2)**

Tinga amewafanya ng’ombe wake wanywe maji.

(Anza kwa : Mifugo wangu ……..usitumie ‘amewafanya’)

……

(q) Onyesha miundo miwili ya nomino za ngeli ya U-U. **(alama 2)**

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(r) Bainisha maana mbili zinazojitokeza kutokana na sentensi hii. **(alama 2)**

Umu alimwandikisha mkewe.

.....

(s) Tunga sentensi katika wakati uliopo hali isiyodhihirika. **(alama 1)**

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4.ISIMU JAMII (Alama 10)

(a) Lahaja huainishwa katika makundi mawili. Yataje **(alama 2)**

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(b) Eleza sifa zozote nne za lugha ya taifa. **(alama 4)**

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(c) Tolea ushahidi namna nne kwamba Kiswahili ni lugha ya kimataifa. **(alama 4)**

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NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

KISWAHILI

102/3

KARATASI YA 3

MUDA: SAA 2½

NAME ……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Hati Ya Kuhitimu Kisomo Cha Sekondari Kenya (K.C.S.E)

MAAGIZO

- Jibu maswali manne pekee. Swali la kwanza ni la lazima
- Maswali hayo mengine yachaguliwe kutoka sehemu zilizobaki
- Usijibu maswali mawili kutoka sehemu moja

KWA MATUMIZI YA MTAHINI PEKEE

SWALI	UPEO	ALAMA
1	20	
2	20	
3	20	
4	20	
JUMLA	80	

SEHEMU YA A: RIWAYA

Assumpata K. Matei: Chozi la Heri

LAZIMA

1. "Haiwezekani! Hili haliwekazi! Itakuwa kama kile kisa cha yule kiongozi wa kiimla wa kike"

(a) Eleza muktadha wa dondoo hili. **(alama 4)**

(b) Eleza kwa kifupi yaliyowapata wahafidhina baada ya usemi huu. **(alama.4)**

(c) Riwaya ya chozi la heri inaonyesha maovu yanayotamalaki katika jamii.Thibitisha**. (alama 12)**

SEHEMU B: TAMTHILIA

Bembea ya Maisha.

Jibu swali la 2 au la 3

2.Elimu ni mafundisho muhimu yanayotolewa katika jamii. Jadili kwa kurejelea tamthilia ya ***Bembea ya maisha.***

(alama20)

AU

3.Fafanua mabadiliko yanayojitokeza katika tamthilia ya **Bembea ya maisha (alama20)**

SEHEMU YA C: HADITHI FUPI

4. Ukombozi wa wanawake unakumbwa na vizingiti vingi sana. Jadili ukweli wa kauli hii ukirejelea hadithi ya sabina. **(alama 20)**

SEHEMU D: SHAIRI

WASIA

5. Huno wakati mufti, vijana nawausia
Msije juta laiti, mkamba sikuwambia
Si hayati si mamati, vijana hino dunia
Uonapo vyang`aria, tahadhari vitakula

Japo aula kushufu, na machoni vyavutia
Dunia watu dhaifu, yaugua nasikia
Vijana nawasarifu, falau mkisikia
Uonapo vyang'aria, tahadhari vitakula.

Jepusheni na zinaa, mlale penye sheria
Msije andama baa, makaa kujipalia
Jepusheni na zinaa, madhara kukadiria
Uonapo yyang'aria, tahadhari vitakula.

Ngawa waone wazuri, nadhifu kukuvalia
Wajimwaie uturi, na mapoda kumichia
Si mlango nyumba nzuri, ngia ndani shuhudia
Uonapo vyang'aria , tahadhari vitakula.

Wawapi leo madume, anasa walopapia?
Wamepita ja umeme, leo yao sitoria
Shime enyi wana shime, bora kumcha Jalia
Uonapo vyang'aria, tahadhari vitakula

Nambie faida gani, nambie ipi fidia
Upatayo hatimani, waja wakikufukua
Ila kufa kama nyani, kasoro yako mkia
Uonapo vyang`aria, tahadhari vitakula.

Vyatiririka tariri, vina vyanikubalia
Alo bora mshairi, pa tamu humalizia
Nahitimisha shairi, dua ninawapigia
Uonapo vyang'aria , tahadhari vitakula.

Ewe Mola mtukuka, si shaka wanisikia
Wakingie wanarika, na anasa za dunia
Amina wangu Rabuka, dua yangu naishia
Uonapo vyang'aria, tahadhari vitakula.

MASWALI:

a) Ni ujumbe gani wanaopewa vijana kupitia shairi?. **(alama 4)**

b) Bainisha tamathali mbili za usemi katika shairi hili. **(alama 2)**

c) Eleza bahari ya shairi hili kwa kuzingatia vigezo vifuatavyo. **(alama 2)**

i)idadi ya vipande katika mshororo

ii) mpangilio wa vina katika beti.

d) Eleza mbinu zozote mbili za kishairi zilizotumika katika shairi hili. **(alama 2)**

e) Andika ubeti wa pili kwa lugha nathari **(alama 4)**

f) Eleza toni ya shairi hili. **(alama 1)**

g) Tambua: **(alama 2)**

i) Nafsi neni

ii) Nafsi nenewa

h) Eleza umuhimu wa mbinu ya kimtindo iliyotumika katika ubeti wa tano. **(alama 2)**

i) Eleza maana ya msamiati: 'aula' **(alama 1)**

SEHEMU YA E: FASIHI SIMULIZI

6. a) Eleza maana ya miviga. **(alama.2)**

b) Eleza sifa tano za miviga. **(alama.5)**

c) Miviga ina udhaifu gani. **(alama.3)**

d) Fafanua umuhimu wa ngomezi katika jamii. **(alama.6)**

e) Eleza vizingiti viwili vinavyokumba ngomezi. **(alama.4)**

Huu ni ndio ukurasa wa mwisho

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

MATHEMATICS

121/1

PAPER 1

TIME: 2½ HOURS

NAME ……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS TO CANDIDATES

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

b) *This paper consists of TWO sections I & II*

c) *Answer ALL the questions in section I and only FIVE questions from section II*

d) *All answers and working must be written on the question paper in the spaces provided below each question.*

e) *Show all the steps in your calculations giving your answers at each stage in the spaces below each question.*

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 EXAMINERS USE ONLY

SECTION I

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

SECTION II

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

GRAND

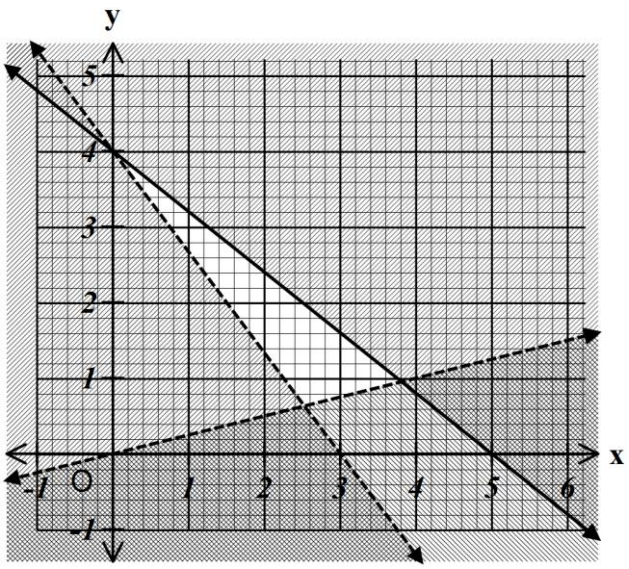
SECTION I (50 MARKS)

Answer ALL Questions in this section in the spaces provided.

1. Use the table of logarithms to evaluate. **(4 marks)**

$$\left(\frac{6.79 \times 0.391}{\log 5}\right)^{\frac{3}{4}}$$

2. Form the three inequalities that satisfy the unshaded region in the diagram below**. (3 marks)**



3. Form the quadratic equation whose roots are $x = -\frac{5}{3}$ and $x = 2$.Give your answer in the form $ax^2 + bx + c = 0$ **(2 marks)**

4. Given that $\frac{5}{\sqrt{11}-\sqrt{7}} + \frac{3}{\sqrt{11}+\sqrt{7}} = a\sqrt{11} + b\sqrt{7}$ Where a and b are rational numbers, find the values of a and b. **(3marks)**

5. Mwangi truncated 7/9 to 3 decimal places. Calculate the percentage error resulting from the truncating. **(3 marks)**

6. Expand $(1 + 2x)^8$ in ascending powers of x up to and including the term in x^3. Hence evaluate $(1.02)^8$ **(3 marks)**

7. $\text{Log}_{27}(x + 5) - \log_{27}(x - 3) = 2/3$ **(3 marks)**

8. (a) Find the inverse of the matrix. $\begin{pmatrix} 1 & 1 \\ 3 & 1 \end{pmatrix}$ **(1 mark)**

(b) Hence determine the point of intersection of the lines**.** **(2 marks)**

$y + x = 7$

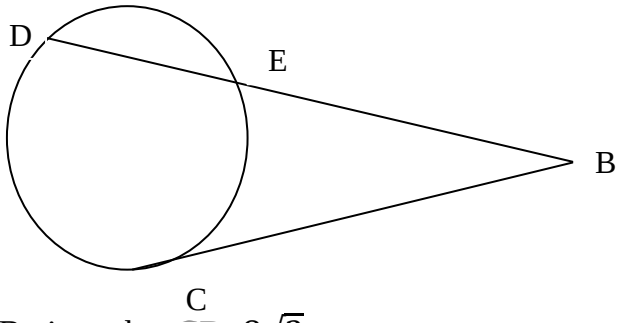
$3x + y = 15$

9. The first term of an arithmetic sequence is (2x+1) and the common difference is (x+1) if the product of the first and the second terms is zero, find the first three terms of the two possible sequences. **(4 marks)**

10. Machine A can complete a piece of work in 6 hours while machine B can complete the same work in 10 hours. If both machines start working together and machine B breaks down after two hours, how long will it take machine A to complete the rest of the work. **(3 marks)**

11. An item that costs sh 24000 cash can be bought on hire purchase. A customer pays sh 6000 as deposit and then makes 6 monthly instalments of sh 3500 each. Calculate the monthly rate of compound interest, giving your answer to 1 d.p. **(3 marks)**

12. In the figure below CB is a tangent to the circle, DEB is a straight line DE:EB=1:3



Find BD and EB given that CB=$8\sqrt{3}$cm **(4 marks)**

13. Make N the subject of the formula. $T = \frac{1}{4}\sqrt{\frac{AN - A^2}{N-1}}$ **(3 marks)**

14. An arc subtends an angle of 0.9 radians. If radius of circle is 13cm, find the length of the arc. **(3 marks)**

15. The masses of 40 children being interviewed to join Std 1 by a certain school were as recorded in the table below.

Mass(kg)	9 - 11	12 - 14	15 - 17	18 - 20	21 - 23	24 - 26
No of children	4	7	9	10	8	2

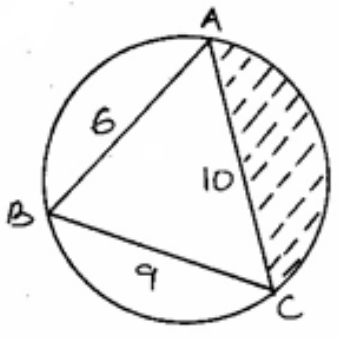
Calculate the mean mass of the students giving your answer to 4 S.F**.** **(3 marks)**

16. The equation of a circle is given by $2x^2 + 8x + 2y^2 - 10 = 0$. Determine the centre and the radius of the circle. **(3 marks)**

SECTION II (50 MARKS)

Answer ONLY 5 Questions in this section in the spaces provided.

17. The figure below shows a triangle inscribed in a circle. AB = 6cm, BC = 9cm and AC = 10cm.



Calculate

(a) The interior angles of ΔABC. **(5 marks)**

(b) The radius of the circle. **(2 marks)**

(c) The area of the shaded part. **(3 marks)**

18. The table alongside shows the rates of taxation in a certain year.

Income in $K£p.a$	Rate (Sh. Per $K£$)
$1-3900$	2
$3901-7800$	3
$7801-11700$	4
$11701-15600$	5
$15600-19500$	7
$Above\ 19500$	9

In that year Mr. Kariuki a civil servant was earning a basic salary of Ksh. 27 000 per month. In addition he was entitled to other taxable allowances totalling to Ksh 11 000 per month and a personal relief of Ksh 1056 per month. He lives in a government house where he is paying a nominal rent of Ksh. 3 500 per month.

(a) Calculate how much income tax Mr. Kariuki pays per month (in sh) **(7 marks)**

(b) Mr. Kariuki's other deductions per month were co-operative society contribution of sh 2500 and loan repayment of sh. 3000, calculate his net salary per month. **(3 marks)**

19. A group of young men decided to raise Ksh.480000 to start a business. Before actual payment was made four members pulled out and each of the remaining had to pay an additional Ksh.20000. Write an expression in terms of P for.

(a) (i) Original contribution of each member. **(1 mark)**

(ii) Contribution after withdrawal of four members. **(1 mark)**

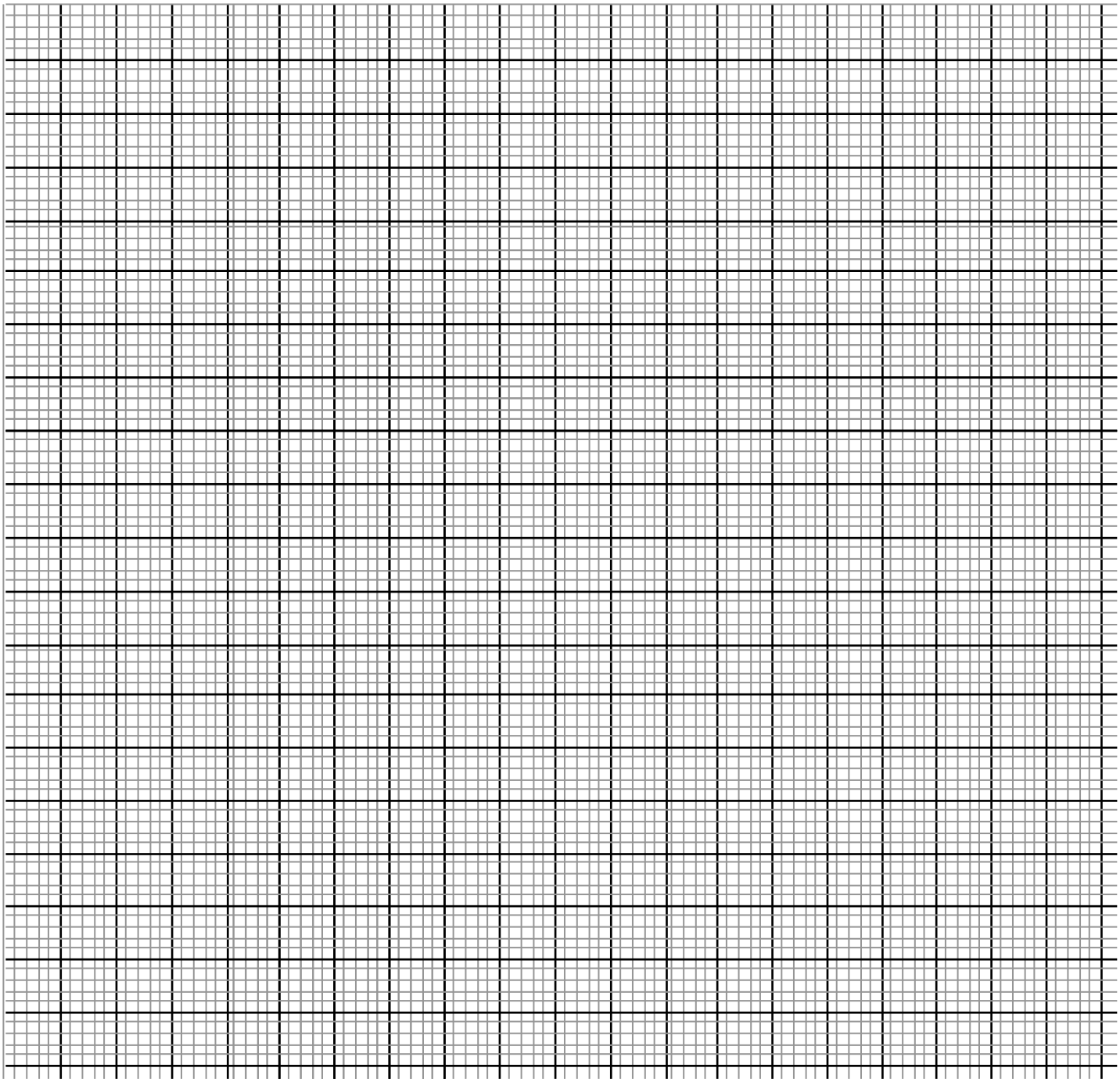
(b) Form an equation in P and hence determine the number of initial members. **(5 marks)**

(c) Three men Kamau, James and Hassan shared Shs.480000 such that Kamau: James is 3: 2 and James: Hassan is 4: 2. Find how much each got. **(3 marks)**

20. Draw a cumulative frequency curve for the following data which shows the marks obtained by 80 form four students in a school. **(5 marks)**

Marks	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
Frequen	3	5	5	9	11	15	14	8	6	4

Use your graph to find:



a) The lower quartileQ1), median(Q2) and upper quartile(Q3) **(3 marks)**

b) The pass mark if 85% of these student are to pass **(2 marks)**

21. In chemistry form 4 classes, $^{1}/_{3}$ of the class are girls and the rest boys, $^{4}/_{5}$ of the boys and $^{9}/_{10}$ of the girls are right handed while the rest are left handed. The probability that a right-handed student breaks a conical flask in any practical session is $^{3}/_{10}$ and the corresponding probability of a left-handed student $^{4}/_{10}$. The probabilities are independent of the students gender.

(a) Represent the above information on a tree diagram with independent probabilities. **(2 marks)**

(b) Determine the probability that student chosen at random form the class is left handed and does not break a conical flask in simplest form. **(3 marks)**

(c) Determine the probability that a conical flask is broken in any chemistry practical session in simplest form**.** **(3 marks)**

(d) Determine the probability that a conical flask is not broken by a right-handed student in the simplest form**.** **(2 marks)**

22. Two straight lines l_1 and l_2 intersect at a point P.Q and R are on the lines l_1 and l_2 respectively such that PQ=5cm, PR=7cm and $\angle RPQ=50^0$

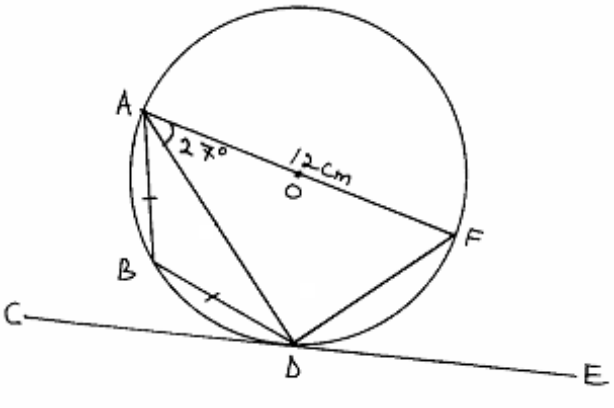
(a) Draw the two lines. **(2 marks)**

(b) Using a ruler and pair of compasses only, draw a circle which is a tangent to line PR at R and passes through Q. **(3 marks)**

(c) The line l_1 cuts the circle again at point S. Mark the point S and measure QS. **(2 marks)**

(d) Locate a point T on the minor arc such that QT<TS **(3 marks)**

23. In the figure below, circle ABDF has centre O. CE is a tangent to the circle at D and AF = 12cm is the diameter, AB = BD and angle DAF = 27º.



(a) Find the size of

(i) Angle ADE. **(2 marks)**

(ii) Angle ADB. **(2 marks)**

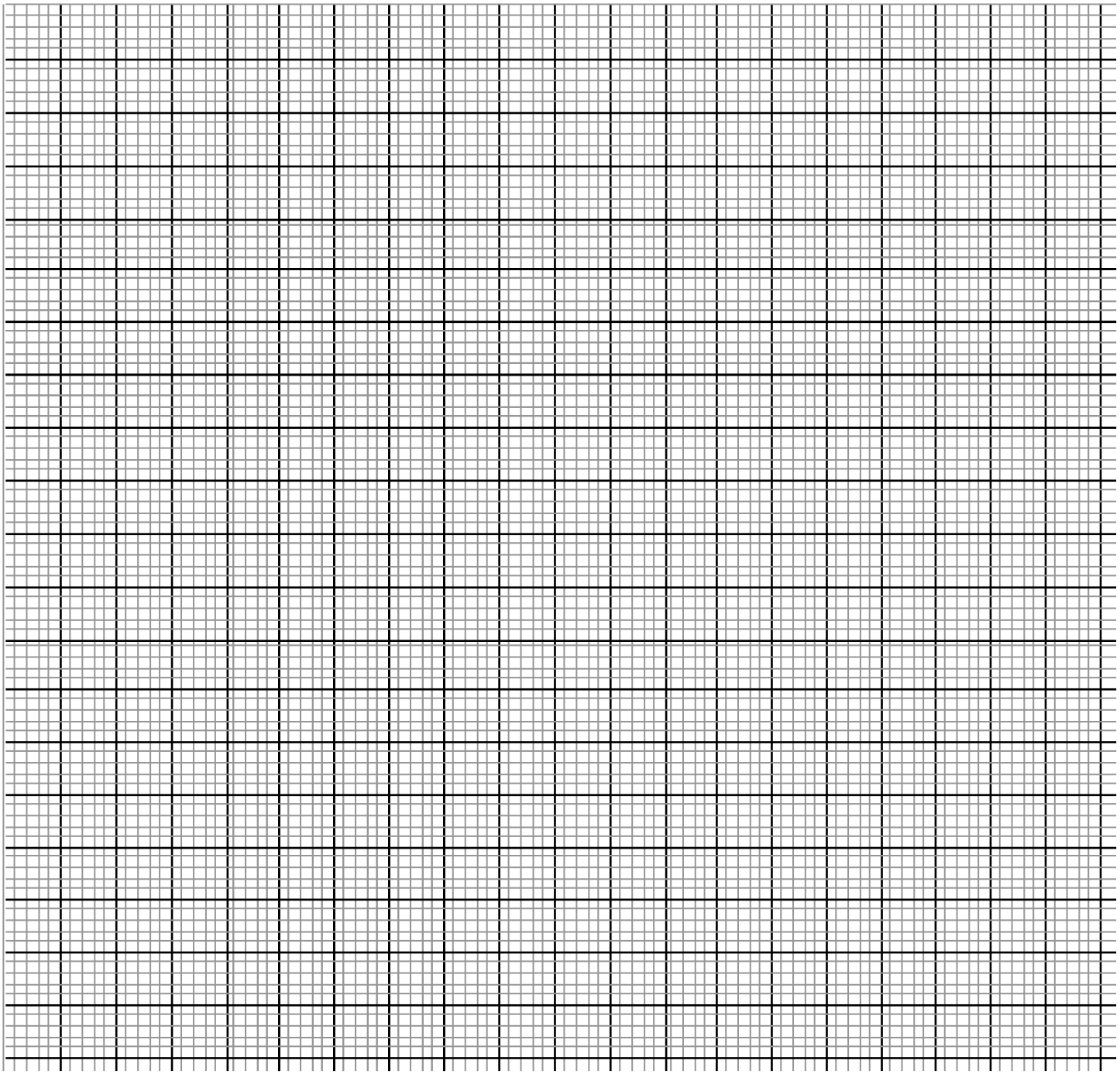
(b) Find the length of

(i) AD. **(2 marks)**

(ii) BD. **(4 marks)**

24. ABCD is a quadrilateral with vertices A (3, 1), B (2, 4), C (4, 3), D (5, 1).

(a) On the grid provided draw the image $A^1B^1C^1D^1$ image of ABCD under transformation matrix $M\begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix}$ and write down the co-ordinates. **(4 marks)**



(b) A transformation represented by $P\begin{pmatrix}1 & 0\\ 0 & -1\end{pmatrix}$ maps $A^1B^1C^1D^1$ onto $A^{11}B^{11}C^{11}D^{11}$ determine the co-ordinates of the image and draw $A^{11}B^{11}C^{11}D^{11}$. **(3 marks)**

(c) Determine the single matrix of transformation which maps ABCD onto $A^{11}B^{11}C^{11}D^{11}$ and describe the transformation fully. **(3 marks)**

This is the last page printed.

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

MATHEMATICS

121/2

PAPER 2

TIME: 2½ HOURS

NAME ……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS TO CANDIDATES

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

b) *This paper consists of TWO sections I & II*

c) *Answer ALL the questions in section I and only FIVE questions from section II*

d) *All answers and working must be written on the question paper in the spaces provided below each question.*

e) *Show all the steps in your calculations giving your answers at each stage in the spaces below each question.*

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 EXAMINERS USE ONLY

SECTION I

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

SECTION II

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

GRAND

SECTION 1 (50 marks) Answer all questions in this section

1. Use logarithms to evaluate , **(4marks)**

$$\sqrt[3]{\frac{24.36\ x\ 0.066547}{1.48^2}}$$

2. Make d the subject of the formula **(3marks)**

$$a^2 = \sqrt{\frac{1-d^2}{b^2} - \frac{b}{3}}$$

3. Simplify the following surds leaving your answer in the form a+ b$\sqrt{c}$

(3marks)

$$\frac{\sqrt{5}}{2\sqrt{2}-\sqrt{5}} + \frac{\sqrt{2}}{2\sqrt{2}+\sqrt{5}}$$

4. (a) Expand the binomial expression $\left(x - \frac{1}{x}\right)^4$ up to the third term. **(1mark)**

(b) Use the expansion above (where x > 1) to estimate the value of $(99)^4$ to 3 s.f. **(2marks)**

5. A(3,2) and B(7,4) are points on the circumference of a circle. Given that chord AB passes through the centre of the circle determine the equation of the circle. **(4marks)**

6. Without using logarithms tables of calculator: Evaluate. **(3marks)**

$\log_{10} 96 + \frac{3}{4}\log_{10} 625 - \log_{10} 12$

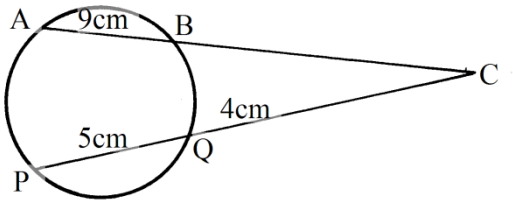
7. Solve for x given that the following is a singular matrix. **(3mks)**

$$\begin{pmatrix} 1 & 2 \\ x^2 & x+3 \end{pmatrix}$$

8. The sides of a triangle were measured and recorded as 8.4 cm, 10.5 cm and 15.32 cm.Calculate the percentage error in it's perimeter 2d.p. **(3marks)**

9. Given that 64, b, 4…. are in continued proportion, find the value of b**.** **(3marks)**

10. The figure below shows a circle centre O. AB and PQ are chords intersecting externally at a point C. AB=9cm, PQ=5cm and Qc =4cm, find the length BC. **(3marks)**



11. Two variables x and y are such that y varies directly as x^n where n is a constant. Given that y=320 when x=16 and y = 2560 when x = 64. Find the value of n. **(3marks)**

12. A man sold a motor cycle at 84000. The rate of depreciation was 5% per annum. Calculate the value of the motor cycle after 3 years to 1d.p**.** **(3marks)**

13. Vector **r** has a magnitude of 14 and is parallel to vector **s**. Given that **s** = 6**i** – 2**j** +3**k**, express vector **r** in terms of **i, j** and **k**. **(3marks)**

14. Solve for x in the range $0 \leq x \leq 360^0$
If $2\sin^2 x + \sin x - 1 = 0$ **(4marks)**

15. The prefects body of a certain school consists of 7 boys and 5 girls. Three prefects are to be chosen at random to represent the school at a certain function at Nairobi. Find the probability that the chosen prefects are boys**.** **(2mks)**

16. A trigonometric function is given **as** **(4mks)**
$y = 0.5 \cos (2x - 40)^0$
Determine (a) Amplitude

(b) Period

(c) Phase angle

SECTION B(50 MARKS)

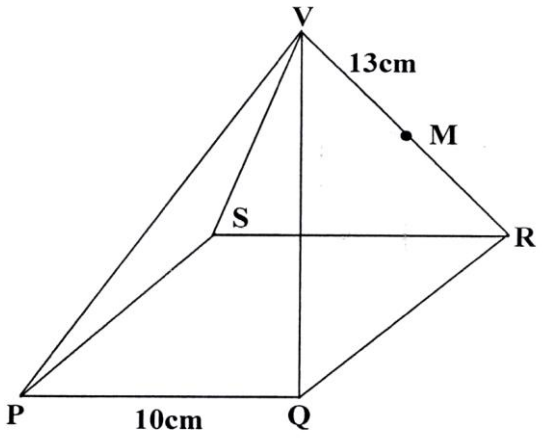
Answer any five questions from this section in the spaces provided.

17. (a) (i) Taking the radius of the earth, R=6370km and $\pi = \frac{22}{7}$, calculate the shortest distance between two cities P(60^0N, 29^0W) and Q(60^0N, 31^0E) along the parallel of latitude. **(3marks)**

(ii) If it is 1200hrs at **P**, what is the local time at **Q** **(3marks)**

(b) An aeroplane flew due south from a point A(60^0N, 45^0E) to a point B, the distance covered by the aeroplane was 8000km, determine the position of B. **(4marks)**

18. The diagram below shows a square based pyramid **V** vertically above the middle of the base. PQ=10cm and **VR**=13cm. **M** is the midpoint of **VR.**



Find

(a) (i) the length **PR.** **(2marks)**

(ii) the height of the pyramid **(2marks)**

(b) (i) the angle between **VR** and the base **PQRS** **(2marks)**

(ii) the angle between **MR** and the base **PQRS** **(2marks)**

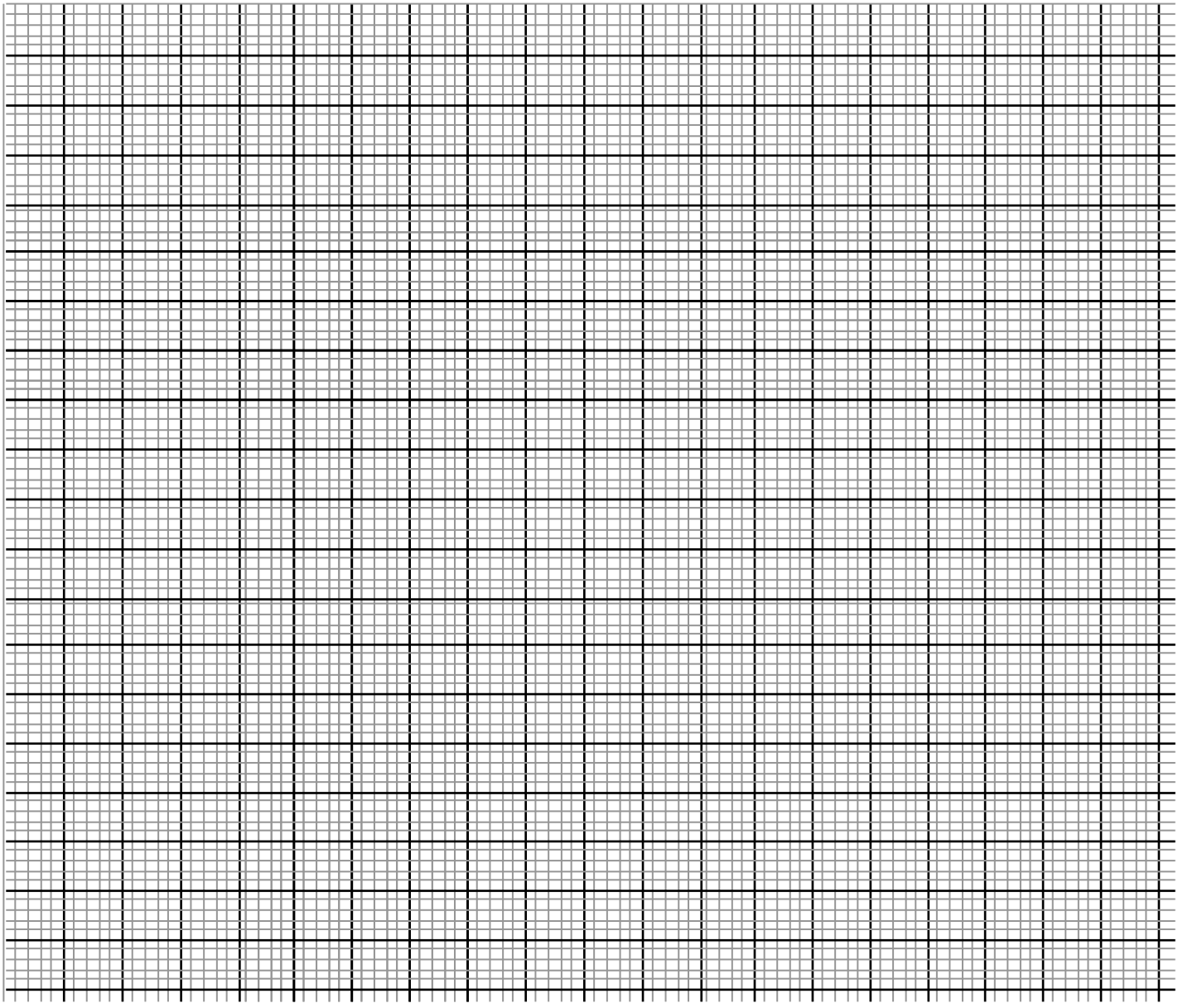
(iii) the angle between the planes **QVR** and **PQRS**. **(2marks)**

19. Complete the following table for the equation

$y = 2x^3 + 3x^2 - 6x - 4$ for the values $-3 \leq x \leq$ **2** **(2marks)**

x	-3	-2	-1	0	1	2
$2x^3$		-16		0	2	16
$3x^2$	27		3	0		12
-6x		12		0		-12
-4	-4	-4	-4	-4	-4	-4
y		4		-4		12

On the grid provided draw the graph of $y=2x^3 + 3x^2 - 6x -$ **4** **(3marks)**

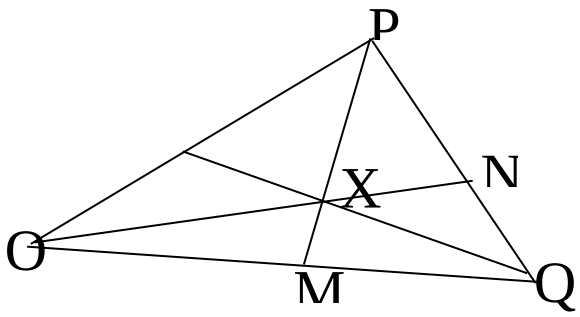


c)By drawing a suitable straight lines use your graph to solve the equations

(i) $2x^3 + 3x^2 – 4x – 2 = 0$ **(2marks)**

(ii) $2x^3 + 3x^2 – 6x – 4 = 0$ **(3marks)**

20. The diagram below shows a triangle **OPQ** in which **M** and **N** are points on **OQ** And **PQ** respectively such that **OM**= $\frac{2}{3}$ **OQ** and **PN** = $\frac{1}{4}$**PQ**. Lines **PM** and **ON** meets at **X.**



(a) Given that **OP** = **p** and **OQ**= **q** express in term of **p** and **q** the vectors.

(i) **PQ** **(1mark)**

(ii) **PM** **(1marks)**

(iii) **ON** (**1marks)**

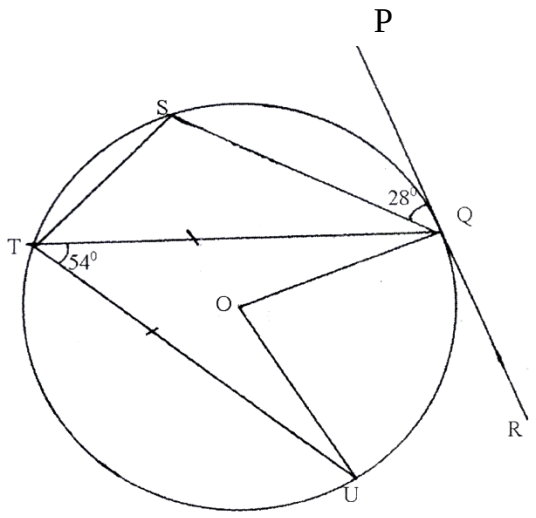
(b) You are further given that **OX**=**KON** and **PX**=**hPM**.

(i) Express **OX** in terms of P and q in two different ways. **(2marks)**

(ii) Find the value of h and **K**. **(4marks)**

(iii) Find the ratio **PX**:**XM** **(1mark)**

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



Giving reasons, determine the size of

(a) Angle STQ **(2mks)**

(b) Angle TQU **(2mks)**

(c) Angle TQS **(2mks)**

(d) Reflex angle **UOQ** **(2mks)**

22. Mr. Kimutai a teacher from Tuiyotich Secondary School earns K£12000 per annum and lives in a house provided by the employer at a minimum rent of Ksh2000 per month. He gets a family relief of K£1320p.a and is entitled to a relief of 10% of his insurance of K£800p.a.

(a) Calculate his annual tax bill based on the table below**.** **(6mks)**

Income slab in k£p.a	Rate
1 – 2100	10%
2101 – 4200	15%
4201 – 6300	25%
6301 – 8400	35%
Over 8400	45%

(b) Kimutai other deductions include.

- W.C.P.S = sh600.00pm
- NHIF = sh500.00pm

Calculate Kimutai's net salary monthly**.** **(4mks)**

23. (a) Use the mid-ordinate rule with five strips to estimate the area bounded by the curve $y = x^2 + 1$, the x–axis, lines x=1 and x=**6** **(4mks)**

(b) Find the exact area of the region in (a) **above** **(3mks)**

(c) Calculate the percentage error in area when mid-ordinate rule is used. **(3mks)**

24. An arithmetic progression AP has the first term a and the common difference d.

(a) Write down the third, ninth and twenty fifth terms of the AP in terms of a and d. **(2mks)**

(b) The AP above is increasing and the third, ninth and twenty fifth terms form the first three consecutive terms of a geometric progression (G.P). The sum of the seventh and twice the sixth term of AP is 78. Calculate

(i) The first term and common difference of the A.P **(5mks)**

(ii) The sum of the first 5 terms of the G.**P** **(3mks)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

COMPUTER STUDIES

451/1

PAPER 1

TIME: 2½ HOURS

NAME ……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTION TO CANDIDATES

a) *Write your name and index number in the space 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**.*
d) *Answer **all** the questions in section **A.***
e) *Answer question **16** and any other **three** questions from section **B.***
f) *All answers should be written in the space provided in the question paper.*

For Examiner's Use Only

Section	Question Number	Candidate's Score
A	1-15	
B	16	
	17	
	18	
	19	
	20	
Total		

SECTION A (40 MARKS)

Answer ALL questions in the spaces provided

1. Differentiate between embedded computer and dedicated computer **(2 marks)**

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2. The current monitor technology uses LED back lit technology. Give **two** advantages of using TFT monitors over CRT monitors **(2 marks)**

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3. A Form four student wants to send a large document to a printer.

a) State the name for the area of memory that the document is sent to immediately from RAM. **(1 mark)**

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b) As the printer runs out of paper during printing, the operating system sends a signal back to the computer to stop temporarily. Name this function of the operating system **(1 mark)**

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4. a) Differentiate between a flash memory and compact disk as used in computer storage devices. **(2 marks)**

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b) People like using DVDs overcompact disks yet they are of the same physical size. State **three** reasons that justifies this. **(3 marks)**

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5. For a monitor to display images, it must be connected through video port to a video adapter or controller mounted on the mother board. What is the role of a **video adapter**? **(2 marks)**

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6. Name four categories of input devices **(2 marks)**

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7. State any **two** physical measures taken to protect a computer laboratory from unauthorized access. **(2 marks)**

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8. Most word processors have some automated features such as word wrap and type over modes. Describe these features **(2 marks)**

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9. Differentiate between proofreading and formatting a document as used in word processing **(2 marks)**

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10. Most computerized systems in different organizations face a lot of unauthorized access such as **Eavesdropping**, **Surveillance**and **Industrial espionage**. State a control measure against each vice. **(3 marks)**

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11. A world wide web is a vast virtual space in the internet where information is made available such as web portals and blogs. Different between a **web portal** and a **blog.** **(2 marks)**

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12. Differentiate between **filtering** and **hiding** of rows/columns as used in spreadsheets**(2 marks)**

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13. Industrial plants use computer systems in different ways such as **Computer Aided design**, **manufacturing**, **Simulation** and **process control**. Explain how computers are used in the mentioned areas above. **(4 marks)**

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14. a) Differentiate between **Job displacement** and **Job replacement**. **(2 marks)**

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b) State **three** advantages of using automated production in manufacturing plants. **(3 marks)**

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15. Due to high demand and dynamic nature of computers and information systems, there is need for qualified computer trainers. What are the roles of computer trainers? **(3 marks)**

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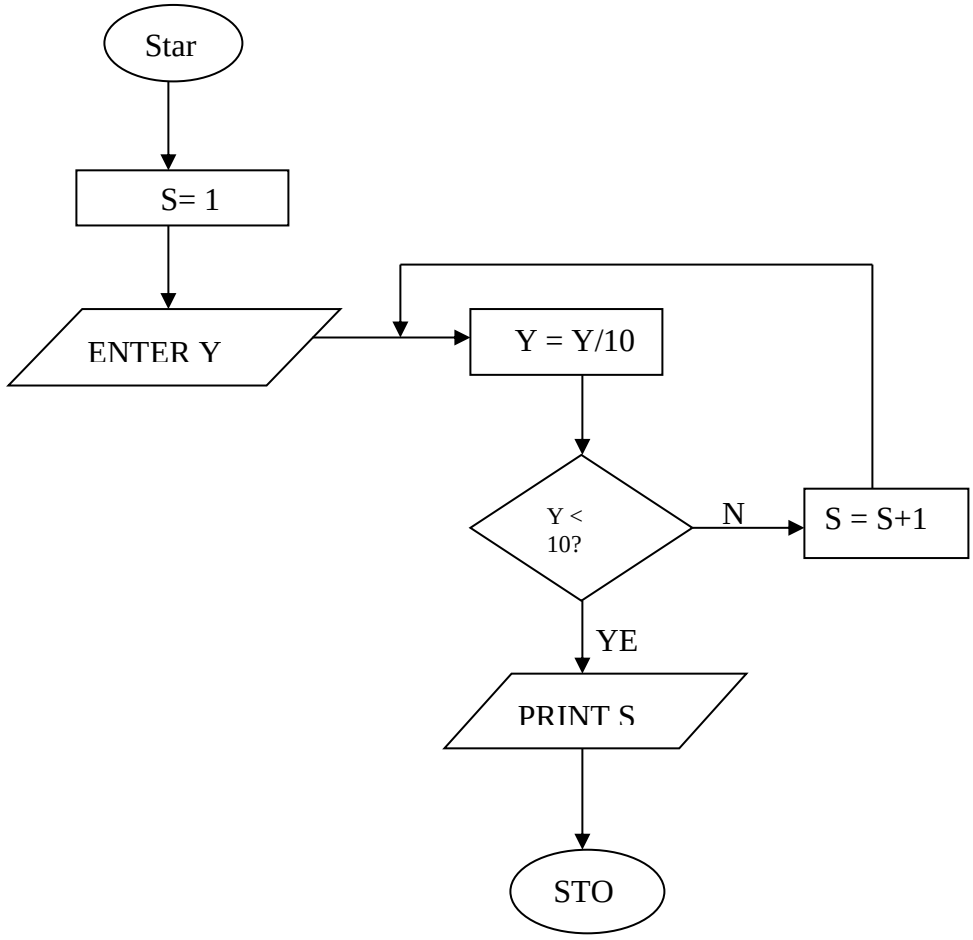
SECTION B (60 MARKS)

Answer question 16 (compulsory) and any other THREE questions from this section.

16. a) By use of a Flowchart construct, differentiate between a **while loop** and FOR **loop(4 marks)**

b) Study this flowchart and use it to answer the questions that follow



c) Give the expected output from the flowchart when the value of Y is: **(4 marks)**

i) 48

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ii) 800

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d) Write the pseudocode that can be used to create a program represented by the above f**lowchart.**
(7 marks)

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17. a) Differentiate between **a primary key** and **a foreign key** as used in databases. **(2 marks)**

b) State **four** factors to be considered when designing a good database **(4 marks)**

c) Explain the use of each of the following field datatypes as used in database **(3 marks)**

i) OLE object

ii) Lookup wizard

iii) Memo

d) Kibet has been experiencing a lot of problems in his computer. As a result, he decided to format his computer and re-installed a new operating system.

i) What is **formatting** in relation to the above context **(2 marks)**

ii) What precaution must Kibet observe before formatting his computer **(1 mark)**

e) You are required to purchase an operating system. State **three** factors that you should consider before acquiring the software. **(3 marks)**

18. a) Define the following terms as used in networking **(3 marks)**

i) Broadband

ii) Bandwidth

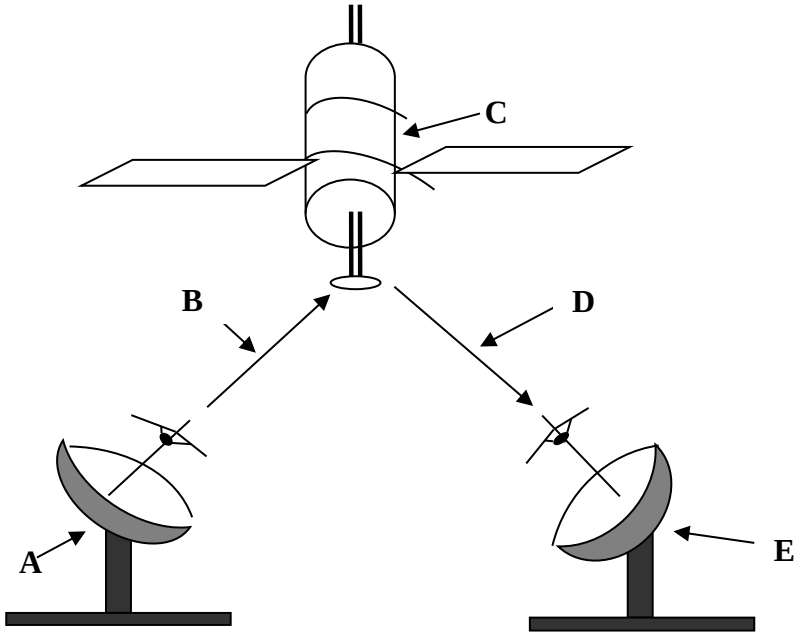
iii) Multiplexing

b) List **four** elements of networking **(2 marks)**

d) Most institutions are moving towards the use of fibre optic cables. State **three** reasons why fibre optic is preferred **(3marks)**

e) Differentiate between **Hub** and **Bridge** as used in networking. **(2 marks)**

f) The diagram below represents a signal transmission from point A to point E. Name the parts labeled A, B, C, D, E **(5 marks)**



19. a) Binary systems have been used to develop most electronic devices. Give **three** advantages of using binary. **(3 marks)**

b) Convert the following number systems **(4 marks)**

i) 37.625_{10} to binary

ii) $BCD.EF_{16}$ to Octal

c) Using twos complement, perform the following arithmetic operation leaving your answer in decimal notation. **(4 marks)**

$39_{10} - 19_{10}$

d) A student was developing a file. List any **four** attributes that the operating system will assign the file **(2 marks)**

20. a) A system analyst in Changamwe preferred using phased changeover to implement a new system. State **three** reasons for this preference. **(3 marks)**

b) State **three** reasons why an organization may change an information system. **(3 marks)**

c) Different students were asked to state the characteristics of a system. The responses were:

i. They are holistic

ii. They are open or closed systems

iii. They have a boundary and environment.

Explain each of the above responses. **(3 marks)**

d) Explain the following data collection stages as used in data processing **(3 marks)**

i) Data preparation

ii) Media conversion

iii) Input validation

e) State **three** ways a data entry clerk may use to reduce threats to data integrity **(3 marks)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

COMPUTER STUDIES

451/2

PAPER 2

TIME: 2½ HOURS

NAME ……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS TO CANDIDATES

- Write your name, school and ADMNOnumber in the spaces provided above.
- No passwords should be used when saving your work.
- **Save your work in one folder with your Adm.no and full name.**
- All questions carry equal marks. **Answer all the questions.**

Question	Marks	AWARDED
1	50	
2	50	
TOTAL		

1. Create the following Publication using a DTP package and save it as **MCHANGO_1** and Set **paper size**: **A4 portrait** margins **2cms all round**. (5 marks)

i) Create the front page in page 1 and back page in page 2 of your publication (25 marks)

FRONT PAGE

HARAMBEE FOR SCHOOL FEES FOR OUR SON JAMRICK KUSOMA

TO MR, MRS, MISS,MS, DR ………

The family of Mr&MrsMchango wish to invite you for a harambee to raise college fees

for our son JamrickKusoma to be held on12/12/2014 at Kirimiti PCEA church from 2: 30 pm

CONTACTS US:
MRS MCHANGO
P.O. BOX 1655 MARAIGUSHU

CONTACTS US:
MR. KK MCHANGO
P.O. BOX 1655 MARAIGUSHU

There is a blessing for giving than receiving – LUCK DUBE

TITLE	*NAME*	*DATE*	*AMOUNT*	*AVAILABILITY*
There is a blessing for giving than receiving – LUCK DUBE				

THE BACK SIDE

ii) Using the **master page** insert the heading **"EDUCATION IS THE KEY TO LIFE"(5 Marks)**

iii) Insert thefooter of your names and index no. (2 marks)

iv) Insert page 3 and 4,then copy the front page publication to appear as 4 objects in one page one after the other. Rather fit four front page publications in one page (page 3). Using page 4 fit the back page publication to appear as **4 publications** in a single page (page 4) **(10 marks)**

v) Print the **entire publication** above **(3 marks)**

2. 2Queens ICT Services is a company with numerous branches in Kenya. In order to monitor the performance of the branches and that of the cities in which the branches are located, a database to organize the information is required.

a. Create a **database** file and name it **TeamEretria_dbms**. **(2 marks)**

b. (i) Create a table containing the following fields. **(4 marks)**

Field Name	**Field Type**
Warehouse_NO	Number/Numeric
Location	Text/Character
County	Text/Character
noOfEmployees	Number/Numeric

(ii) Make the field **Warehouse_NO**the primary key and save the tables as **MafisiT.**
(2 marks)

c. (i) Create a form from the**MafisiT**table and save it as **Jazia_1**. **(5 marks)**

(ii) Use the form to enter the records below. **(5 marks)**

Warehouse_NO	**Location**	**County**	noOfEmployees
10	Alihahr co	Garissa	100
20	Turkana ltd	Turkana	142
30	Kiawagogi org	Nairobi	210
40	Karura ltd	Kiambu	150
50	Komorocks	Mombasa	90
60	Kogallo	Kisumu	16
70	Moshi	Nairobi	89
80	Tanamwanga	Kakamega	700
90	Mogotio sisal	Nakuru	120
100	Chebunye	Bomet	600

d. (i) Modify the **MafisiT**table to include an additional field with the heading **SALES (USHS)** **(3 marks)**

(ii) Enter the information below for each of the stores. **(2 marks)**

Warehouse_NO	**SALES(USHS)**
10	789,300
20	685,400
30	376,958
40	255,420
50	457,800
60	682,458
70	541,000
80	235,420
90	152,415
10	133, 443

(iii) Apply **USHS as** currency symbol and **two decimal** places to all monetary value**. (2 marks)**

e. (i) Create a query from the **MafisiT** table to display the fields **Location, County, noOfEmployees** and **SALES (USHS)** for stores whose sales are less than **400,000 and Location starts with letter K. Name it as: Start_K** **(3 marks)**

(ii) Sort the records in **the query** above in alphabetical order of **Location** field and save it as **Marudio.** **(2 marks)**

f. (i) Create a tabular report with **landscape orientation** from the **MafisiT** table to display the fields in the following order. **Warehouse, Location, SALES (SHS) and <u>compute the total sales.</u> Save the report** as **MY DETAILS** **(4 marks)**

(ii) Sort records in the report in alphabetical order of the **Location** field. **(1 mark)**

(iii) Insert auto **number 1, 2, 3-10** at the end **right side** of the details. Label it **RANKS**. **(5 marks)**

(IV). Place**two straight lines** cutting across the page, one above and one below the sales total. **(2 marks**)

g. (i) Insert a header **2QUEENSSERVICES PERFORMANCE** in the report having font size 19 and centre it across the page. **(3 marks)**

(ii) Remove the report pagination and insert **your name and index number**in **MY DETAILS report.** **(2 marks)**

h. Print **MafisiT** table, **Marudio** query and **MY DETAILS** report. **(3 marks)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

HOME-SCIENCE

441/1

PAPER 1

TIME: 2½ HOURS

NAME ……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

INSTRUCTIONS

1. *This paper consist of three sections A, B & C*
2. *Answer all questions in section A in the spaces provided.*
3. *Answer the question in section B in the spaces provided.*
4. *Choose ANY two questions in section C and answer in the spaces provided.*

SECTION	QUESTION	MAX SCORE	STUDENTS SCORE
A	1-20	40 MKS	
B	21	20MKS	
C	22	20MKS	
	23	20MKS	
	24	20MKS	

SECTION A (40 MARKS)

Answer all questions in this section in the spaces provided

1. State four methods of removing loose dirt from surfaces. **(2mks)**

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2. Suggest any two reasons for laundering clothes. **(2mks)**

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3. Give two negative effects of bicarbonate of soda in wheat flour. **(2mks)**

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4. Mention two reasons for blanching vegetables during preservation. **(2mks)**

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5. Suggest two reasons why knots should not be used when making permanent stitches. **(2mks)**

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6. State two principles of wise buying. **(2mks)**

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7. Differentiate between essential and non essential amino acids. **(2mks)**

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8. List four qualities of a material suitable to make a floor cloth **(2mks)**

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9. What is the difference between regenerated and synthetic fibres. **(2mks)**

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10. Mention two disadvantages of relying on solar energy in the home. **(2mks)**

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11. Identify two properties of woolen fibres that make them suitable for making carpets **(2mks)**

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12. List four principles of food preservation. **(2mks)**

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13. State two effects of poor environmental hygiene in a school setting. **(2mks)**

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14. State two reasons why family meals should be served punctually. **(2mks)**

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15. Give two reasons why a kitchen should be well ventilated **(2mks)**

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16. List four methods of controlling fullness in garment construction. **(2mks)**

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17. Name two uses of vinegar in laundry work. **(2mks)**

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18. Suggest two merits of using self neatening seams in garment construction. **(2mks)**

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19. Mention two reasons to account for popularity of convenience foods in Kenya. **(2mks)**

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20. Give two negative effects of advertising. **(2mks)**

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SECTION B (COMPULSORY) 20MKS

21. You have decided to stay home and carry out some cleaning.

a) Explain how you will launder your woolen socks. **(10mks)**

b) Describe the procedure you will use to dry clean your father's silk tie. **(6mks)**

c) Explain briefly the procedure you will to clean a painted wooden stool in your bedroom **(4mk)**

SECTION C (40MKS)

Choose Two Questions from This Section

22. a) State and explain four causes of malnutrition **(8mks)**

b) Describe four nutritional needs of manual workers. **(4mks)**

c) Explain any four factors that influence consumer buying. **(8mks)**

23. a) State four preparations that should be made on a fabric before cutting out the garment. **(4mks)**

b) Describe the process of making a french seam without using diagrams. **(6mks)**

c) Give five causes of falls at home. **(5mks)**

d) Mention five factors that may affect the life of the unborn baby. **(5mks)**

24. a) Suggest four points to consider when choosing a colour scheme for a room. **(8mks)**

b) State four reasons for using facings on a garment. **(4mks)**

c) Mention four advantages of food preservation. **(4mks)**

d) Give four points to consider when choosing a sewing machine. **(4mks)**

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

HOME-SCIENCE

441/2

PAPER 2

TIME: 2½ HOURS

NAME ……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

A pattern of a child's dress bodice is provided. You are advised to study the sketches, instruction and the layout before you begin the test.

1. MATERIALS PROVIDED

A Front bodice

B Back bodice

C Sleeve

D Collar

E Cuff

F Neck binding

G Sleeve opening strip

NB: Use pattern piece D to cut interfacing for collar.

2. Light weight plain cotton fabric 65cm long by 90cm wide.

3. Sewing cotton thread to match the fabric

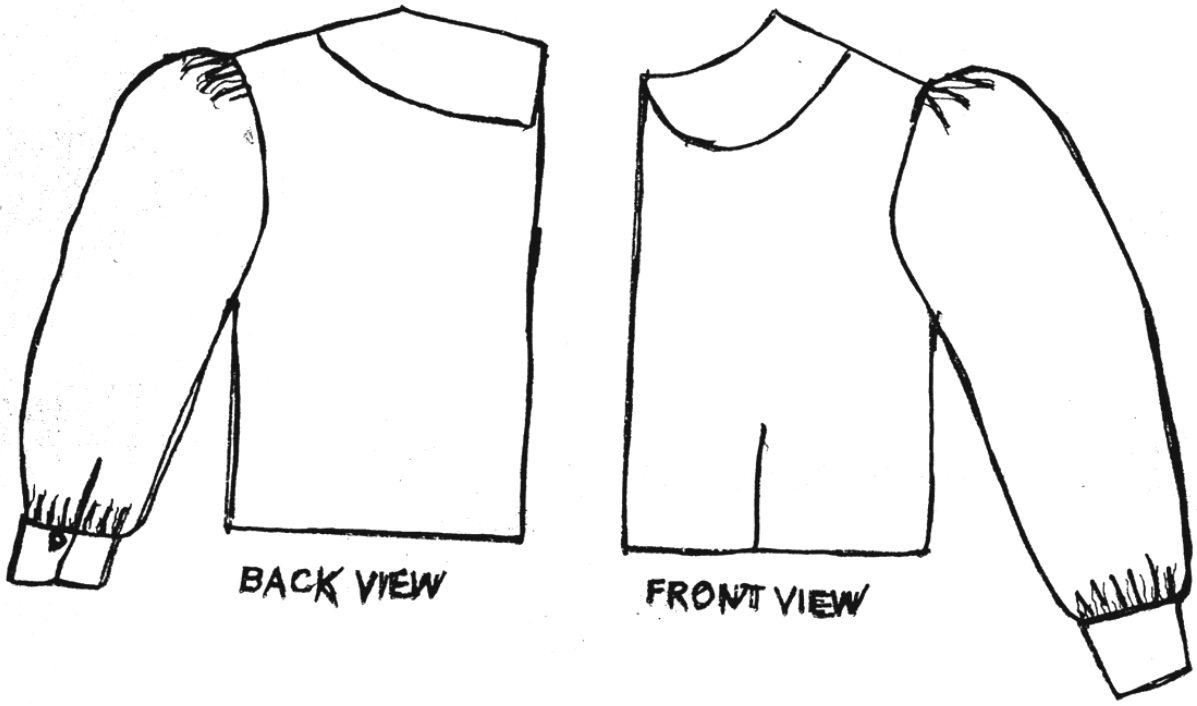
4. One button 1cm diameter.

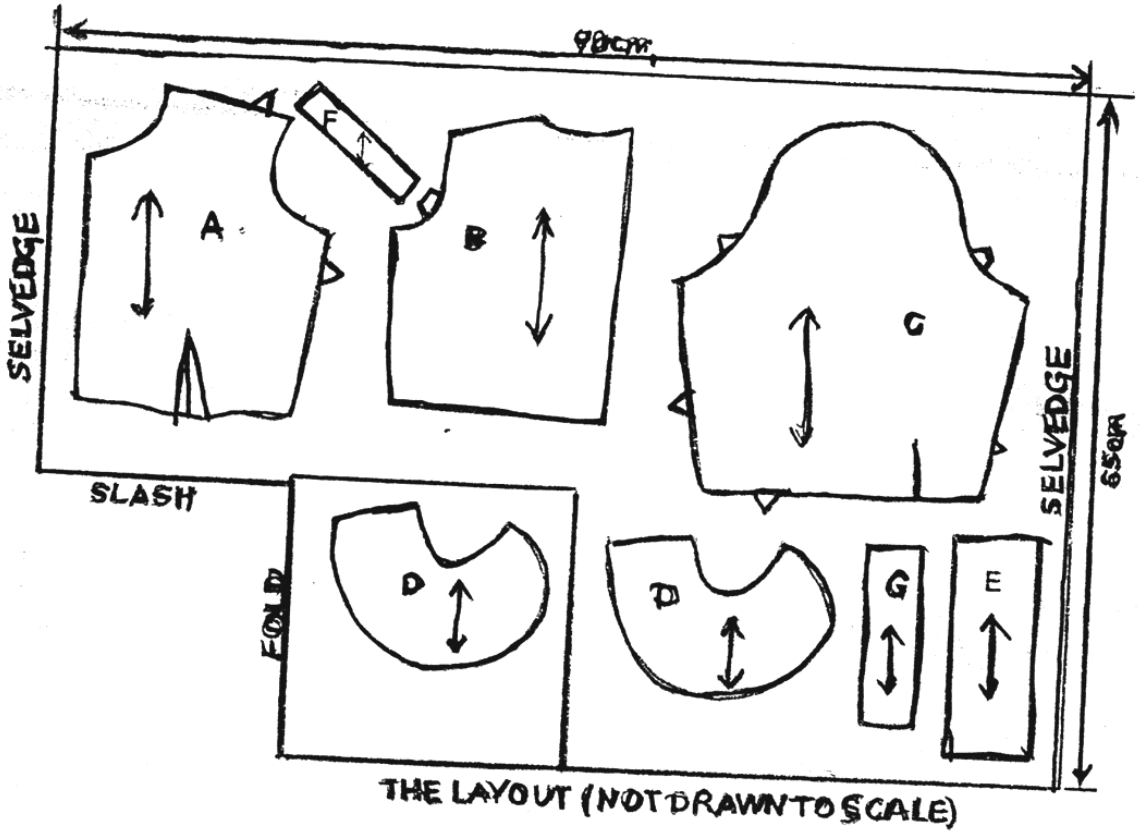
THE TEST

Using the materials provided, cut out and make the left half of a child's dress bodice to show the following:-

1. The working of the waist dart **(7mks)**
2. The working of a machine fell seam at shoulder **(8mks)**
3. The working of French seam at the side and underarm seam **(7 ½ mks)**
4. The preparation of an interfaced collar and attaching it to the bodice **(13 ½ mks)**
5. The making of the continuous straight strip opening at the sleeve. **(10mks)**
6. The attaching of the sleeve cuff. **(10mks)**
7. The preparation and attaching of the sleeve to the bodice and leaving the seam untrimmed and unneatened. **(10mks)**
8. The making of the button hole. **(3mks)**
9. The attaching of the button **(3mks)**

At the end of the examination, remove all pins & unnecessary temporary stitches from your work. Sew on the label bearing your name and admission number.


BACK VIEW
FRONT VIEW


90cm
SELVEDGE
A
F
B
C
SELVEDGE
65cm
SLASH
FOLD
D
D
G
E
THE LAYOUT (NOT DRAWN TO SCALE)

NATIONAL SCHOOLS' PREMOCK

KCSE 2023 SERIES 2

HOME-SCIENCE

441/3

PAPER 3

TIME: 2½ HOURS

NAME ……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

HOME SCIENCE PAPER 3

441/3

FOODS AND NUTRITION

Planning session 30 minutes

Practical Test session: 1hour 15Minutes

INSTRUCTIONS TO CANDIDATES

1. Read the test carefully

2. Write your name and index number on every sheet of paper used.

3. Text books and recipes may be used during the planning session as reference materials.

4. You will be expected to keep to your order of work during the practical session.

5. You are only allowed to take away your reference materials at the end of the planning session.

6. You are not allowed to bring additional notes to the practical session.

THE TEST

Your sister and her son who is 7 months old will arrive very early in the morning at your home for a weekend visit.

Using the ingredients listed below, prepare, cook and present breakfast for both of you and a weaning dish for the baby.

Ingredients

- Fat/oil
- Salt
- Eggs/sauges/smokies
- Milk
- Tea leaves/cocoa
- Sugar
- Bread
- Tomatoes
- Onions
- Sorghum/millet
- Margarine

Planning Session: 30 minutes

Use separate sheets of paper for each task listed below and a carbon paper to make duplicate copies then proceed as follows:-

a) Identify the dishes then write their recipes

b) Write down your order of work

c) Make a list of foodstuff and equipment you will require.

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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