F3 TERM 2 OPENER EXAMS

ALL SUBJECTS

Well organized Standard Set of Term 2 Opener Examinations for Our Current KCSE Pre-Candidates.

SUBJECTS COMPILED;

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

SERIES 1

For Marking Schemes

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MWALIMU CONSULTANCY

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

CHEMISTRY

PAPER 1

TIME: 2 HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

1. a) Distinguish between ionization energy and electron affinity. **(2mks)**

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b) The atomic number of A and B are 9 and 17 respectively. Compare the electron affinity of A and B. Explain . **(1mk)**

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2. Use the reaction scheme below to answer the questions that follow.



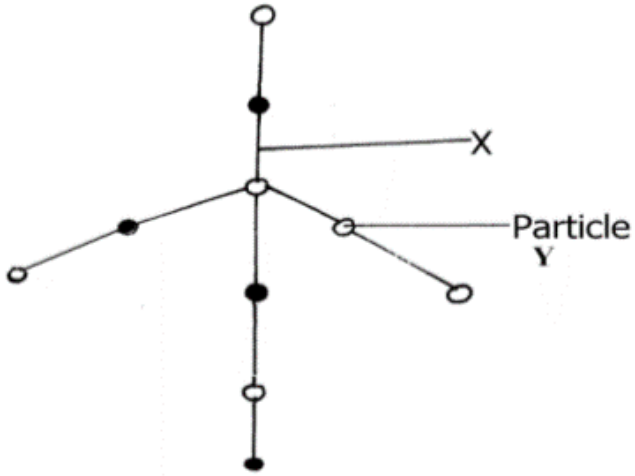
i) Draw the structure of alcohol X. **(1mk)**

ii) Name process Y. **(1mk)**

……

iii) Write the molecular formula of the 5^{th} member in which propene belong. **(1mk)**

3. Silicon (IV) oxide has a structure similar to that of diamond. Part of the structure is shown below.



a) What does x represent? **(1mk)**

……

b) What type of structure is shown by the diagram? **(1mk)**

……

c) Predict one physical property of silicon (IV) oxide and explain how it is related to its structure.

(1mk)

……

4.Describe how a dry solid sample of lead (II) chloride can be prepared using the following reagents dilute nitric (V) acid dilute hydrochloric acid and lead (II) carbonate. **(3mks)**

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A State Graham's law of diffusion. **(1mk)**

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b)Ammonia gas diffuses 1.41 times faster than gas XH_3.Determine the relative atomic mass of element X.(H = 1 , N = 14) **(2mks)**

6.An ore of iron wasfound to contain 7g of iron and 3g. of oxygen.(fe = 56 O =16)

a) Workout its emprical formula. **(2mks)**

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……

b) Write a balanced equation for reaction of the oxide in (a) with hot carbon. **(1mk)**

……

……

7. Carbon (iv) Oxide can undergo the changes below.

$CO_{2(s)} \underset{B}{\overset{A}{\rightleftharpoons}} CO_{2(g)}$

a) What are process A and B?

A..... **(1mk)**

B..... **(1mk)**

b)Suggest one use of carbon (iv) oxide that utilizes process A and B. **(1 mk)**

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8.The table sows the PH values of solutions A to E

Solution	A	B	C	D	E
PH	6	13	2	10	7

a) What is meant by the term PH? **(1mk)**

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b) Which of the solutions contains the largest number for hydroxide ions **(1mk)**

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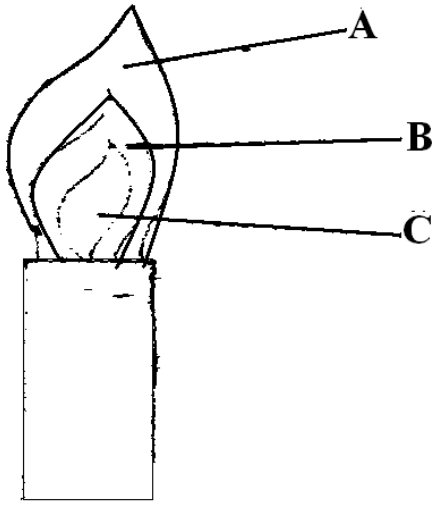
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c) What will be the PH value of the mixture of D and E. **(1mk)**

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……

9.The diagram below shows a Bunsen Burner when in use.



Which of the labeled parts is used for heating? Give a reason**.** **(2mks)**

……

……

……

10.The table below shows the atomic numbers of elements T, U, V and W. Study it and answer the questions that follow. The letters are not the actual symbols of the elements.

Element	T	U	V	W
Atomic number	13	16	17	20

(a) What type of bond would be formed between:-

(i) elements U and W **(1mk)**

……

……

(ii) elements V and U **(1mk)**

……

……

(b) Which of the elements are metals. **(1mk)**

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……

11. Oxygen gas can be prepared in the laboratory by catalytic decomposition of hydrogen peroxide.

(a) Write the chemical equation for the reaction. **(1mk)**

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(b) State the Name of the suitable catalyst used. **(1mk)**

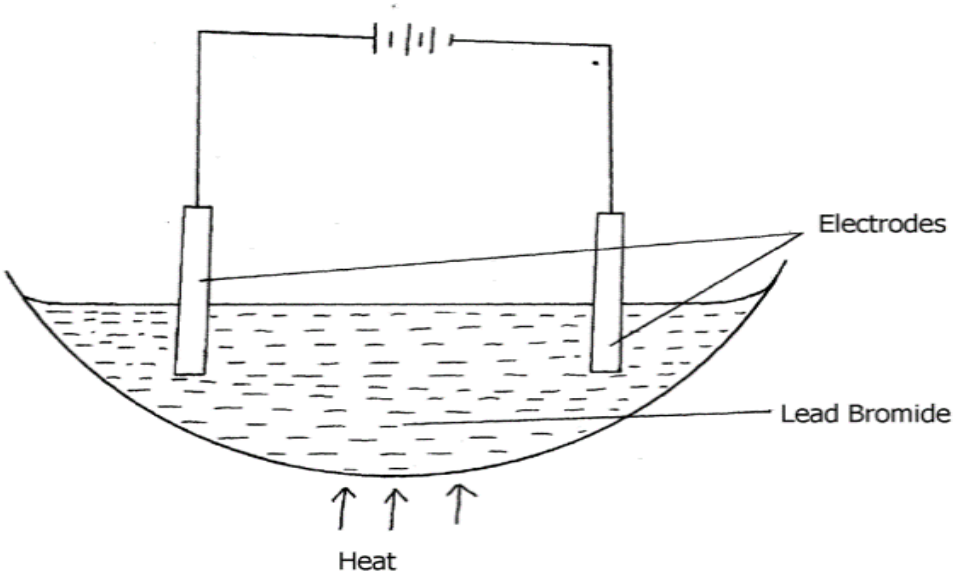
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(c) Give one industrial use of oxygen **(1mk)**

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……

12. The d diagram below shows electrolysis of lead bromide



a) Label the anode. **(1mk)**

b) Write half equations to shows reactions at cathode. **(1mk)**

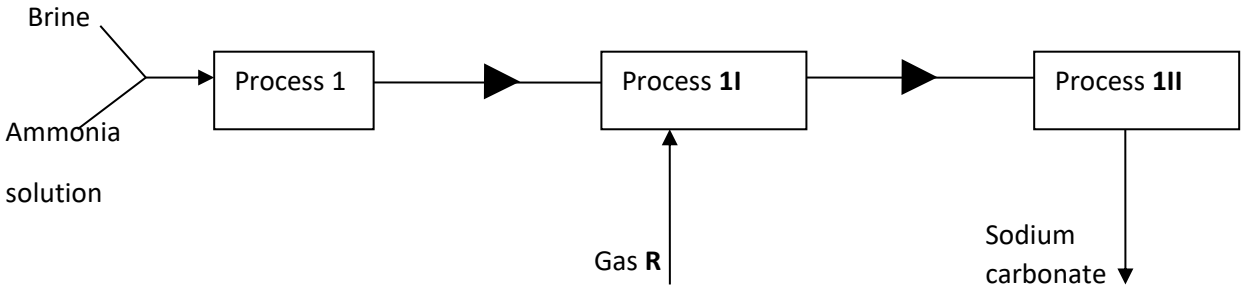
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c) State one application of electrolysis. **(1mk)**

……

13.Below is a simplified scheme of solvary process. Study it and answer the questions that follow:



(a) Identify gas **R**…….. **(1mk)**

(b) Write an equation for process **III** **(1mk)**

……

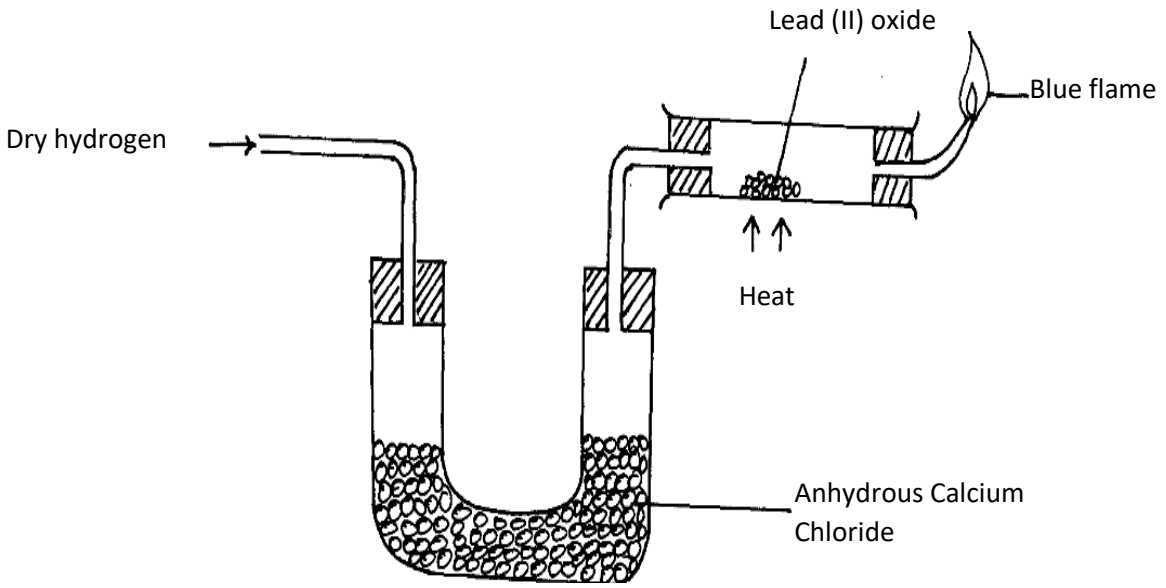
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Give **one** use of sodium carbonate **(1mk)**

……

……

14. The set-up below was used to investigate the properties of hydrogen



(i) State the observations that was made in the combustion tube as the reaction progressed to completion **(2mks)**

……

……

……

(ii) Write equations for the reactions ;

I) In the combustion tube **(1mk)**

……

……

II) At the jet of the delivery tube **(1mk)**

……

……

III) State the properties of hydrogen that were investigated **(2mks)**

……

……

15. Classify the process below as chemical or physical changes **(2mks**

Process	**Physical or chemical change**
(a) Fractional distillation	
(b) Displacement reaction	
(c) Sublimation	
(d) Neutralization	

16. Iron reacts with oxygen in the presence of moisture to form hydrated iron (III) oxide.
$Fe_2O_3.2H_2O$

(a) What name is given to the process that produces hydrated iron (III) oxide? **(1 mk)**

……

(b) What does the term 'hydrated' mean? **(1 mk)**

……

……

(c) Name one method used to prevent corrosion of iron. **(1 mk)**

……

17. The table **below** gives elements represented by letters which are not the actual symbols.

Element	U	V	W	X	Y	Z
Atomic No.	8	12	13	15	17	20

(i) Select an element that can form divalent anion. **(1 mark)**

……

(ii) What is the structure of the oxide of **W**? **(1 mark)**

……

……

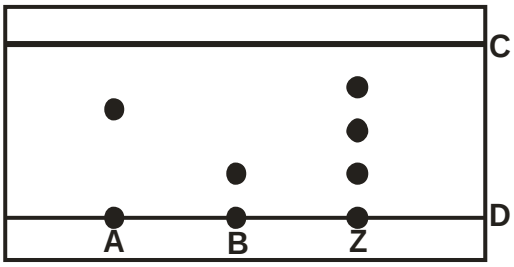
(iii) Compare the atomic radius of **W** and **X**. **(1 mark)**

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18.Spots of three pure pigments A,B and mixture Z were placed on a filter paper and allowed to dry. The paper was then dipped in a solvent. The results obtained were as on the paper chromatogram.



i) Identify;

a) Baseline. **(1mark)**

……

b) Solvent front. **(1mark)**

……

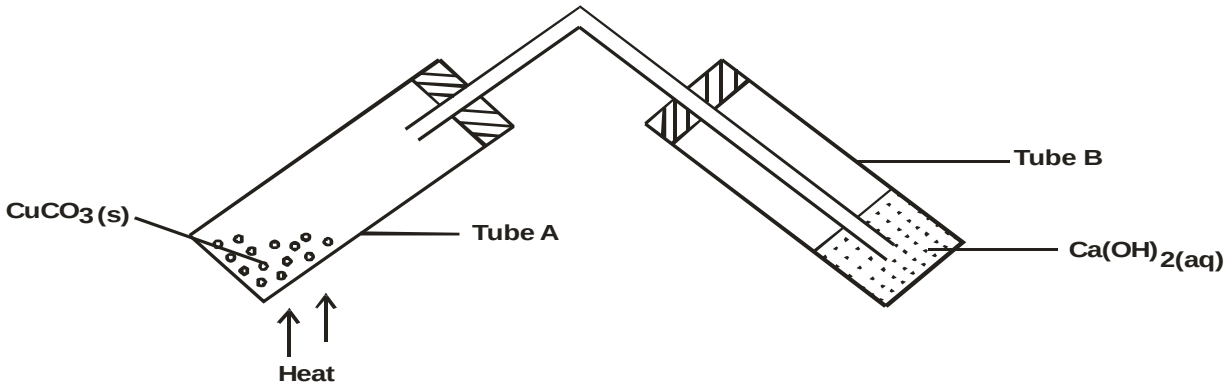
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ii) Which pure pigment was component of Z.? **(1mark)**

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……

19. The following was used to investigate the effect of heat on a sample of Copper(II) Carbonate.



a) State the observation made in test tube. **(2 marks)**

A ……

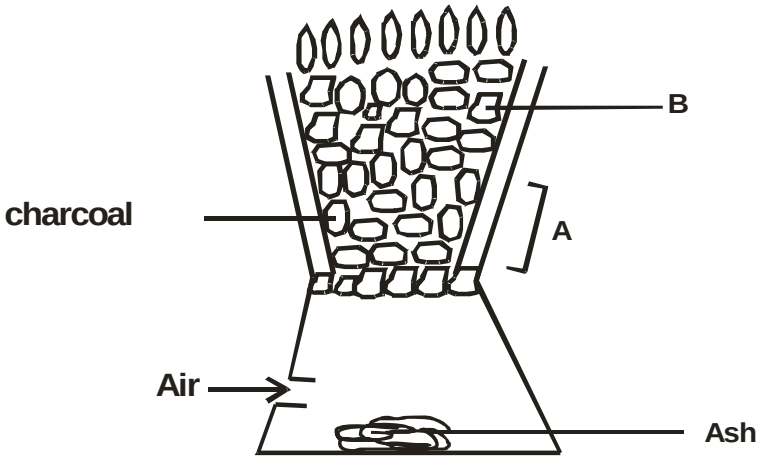
B……

b) Write equation for the reaction that occurs in tube A. **(1mark)**

……

20. Sketch a graph of temperature time for a pure substance A with a melting point of 20^0C and boilingpoint of 90^0C and it is heated from 0^0C to 100^0C. **(2marks)**

21. The diagram below shows a burning "jiko" in a room which has sufficient supply of oxygen.



i) Using chemical equations, explain what happens at A and B. **(2marks)**

……

……

……

ii) State the main danger of emitting excess carbon (IV) oxide into the atmosphere. **(1mark)**

……

……

22. 3.22g of hydrated Sodium Sulphate, Na_2SO_4ºX H_2O were heated to a constant mass of 1.42g, determine the value of X in the formula. (Na = 23, S = 32, O = 16, H=1)**.** **(2 mks)**

23.a) The atomic number of Sulphur hydrogen and oxygen are 16, 1 and 8 respectively. Write the electron arrangement of Sulphur in the following substances.

(i) **H_2S…… (1 mk)**

(ii) **SO_3^{2-}…… (1 mk)**

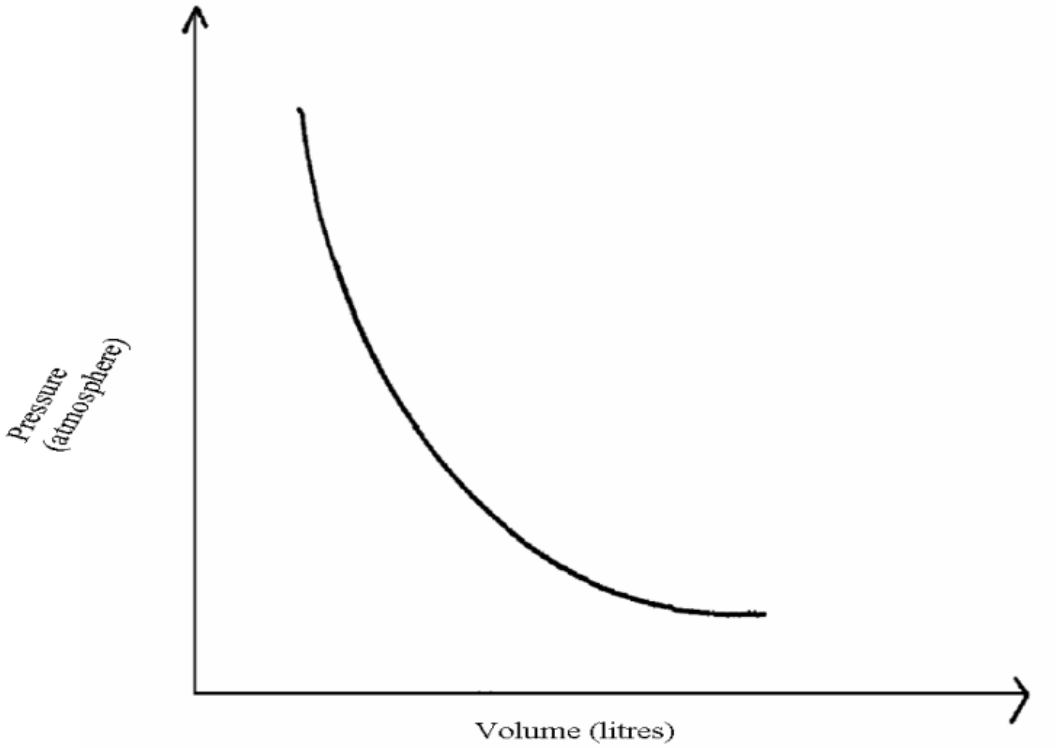
(b) State the number of neutrons and electrons in the species of Aluminum shown below:

$^{27}_{13}Al^{3+}$

Neutrons ……..(1mk)

Electrons …….(1 mk)

24. The graph below shows the behaviour of a fixed mass of a gas at constant temperature.



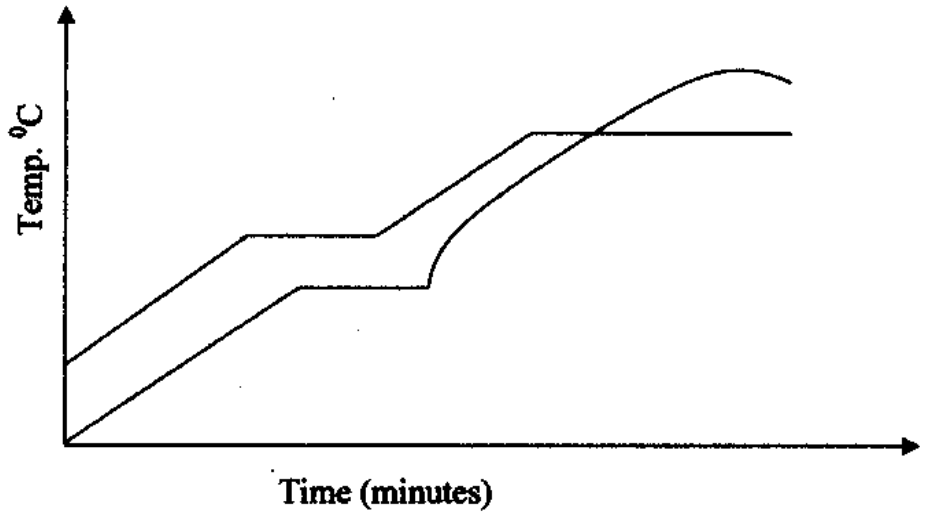
(i) What is the relationship between the volume and the pressure of the gas. **(1 mk)**

……

……

(ii)12 litres of oxygen gas at one atmosphere pressure were compressed to 2.5 atmospheres pressure at constant temperature. Calculate the volume occupied by the oxygen gas**.** **(2 mks)**

25. Two samples of a similar substance from different containers were investigated. The graph below represents the variation of temperature with time when heated.



a) Explain the variation in the curves of:

Sample

I……..(1mk)

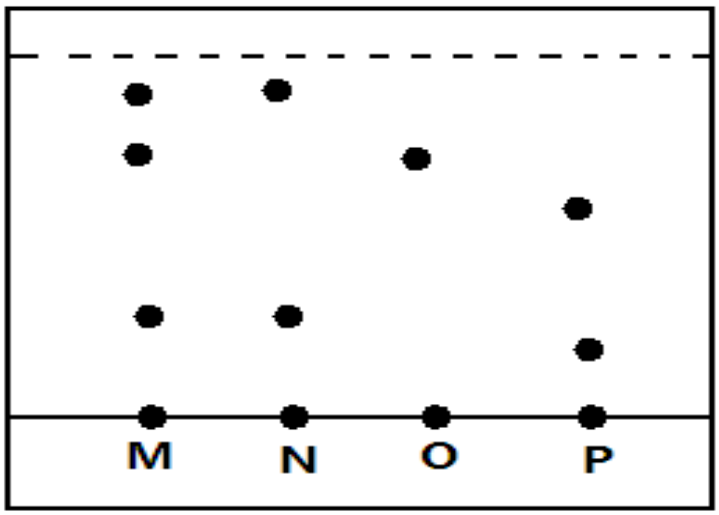
Sample II…… (1mk)

b) Common salt is sprinkled on roads during winter in temperate countries. Explain. **(1mk**

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26.Study the diagram below and answer the questions.

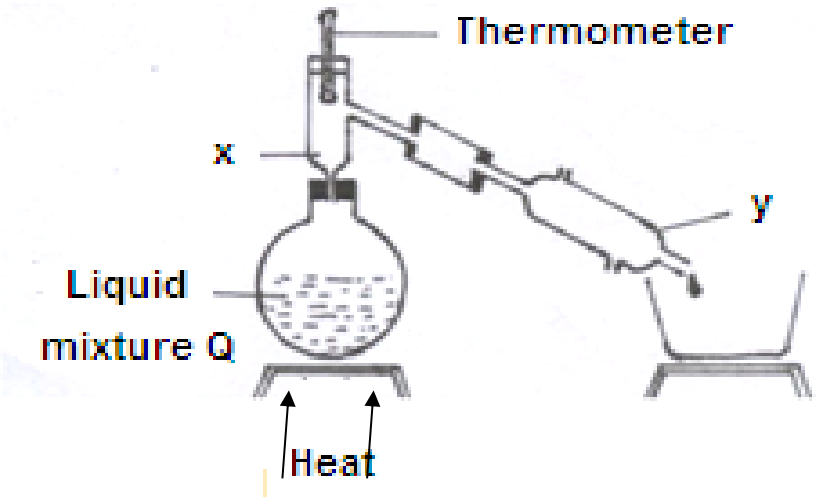


a) On the diagram mark the base line. **(1mk)**

b) Name the dyes which are in M. **(1mk)**

c) Which mixture of dyes has the dye with lowest solubility? Explain. **(1mk)**

27. Study the diagram below and answer the questions that follow. The diagram shows the method used to separate components of mixture Q.



a) Name X and Y. **(1mk)**

X……

Y……

b) What is the purpose of apparatus X? **(1mk)**

c)Show the direction of flow of cold water used for cooling the vapour **formed.** **(1mk)**

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

CHEMISTRY

PAPER 2

TIME: 2 HOURS

NAME……. ADM NO; ……

CLASS…… DATE……

INSTRUCTIONS TO CANDIDATES:

1) *Answer ALL the questions*

2) *Mathematical tables and electronic calculations may be used*

3) *All working MUST be clearly shown where necessary*

1. (a) Study the following part of periodic table chart and use it to answer the questions that follow. The letters are not the actual symbols of the elements.

						A		
	S		C			D	E	
F	G							
							H	

(i) Which elements form ions with charge of -2?Explain **(2mks)**

……

……

……

(ii) If the oxides of B and D are separately dissolved in water, what effect will their aqueous solution have on litmus. **(2mks)**

……

……

……

(iii) How would you expect the ionic reactions of C and E to compare? **Explain** **(2mks)**

……

……

……

(iv) Write the formula of the compounds formed between elements G and H **(1mk)**

……

(v) In terms of structure and bonding, explain why the oxide of D has a lower melting point than the oxides of B. **(2mks)**

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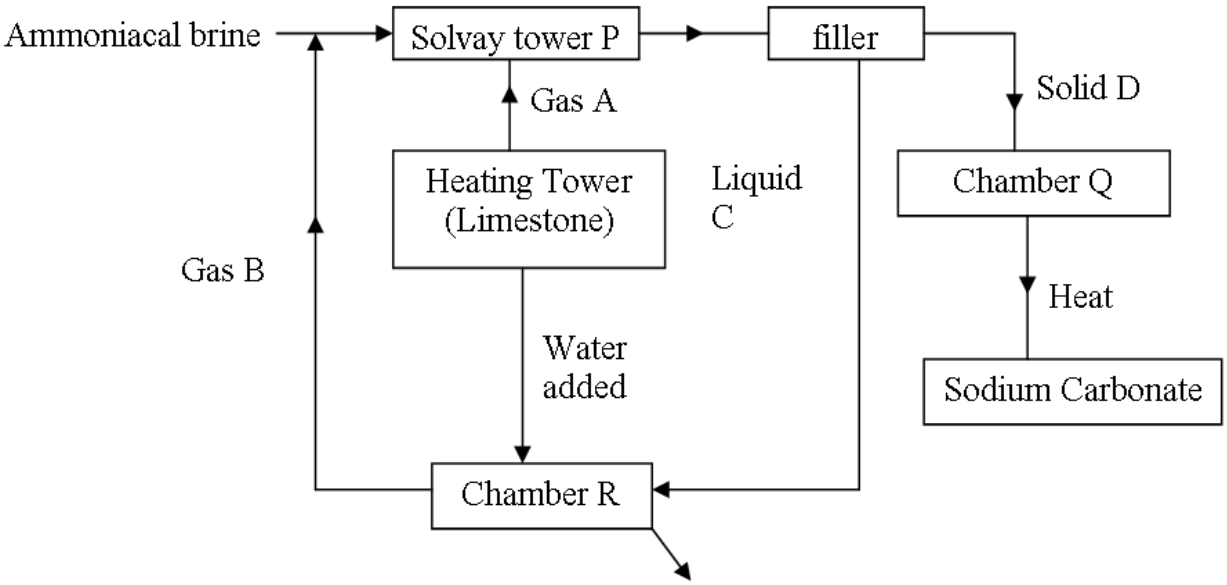
(vi) Write an equation to show the action of heat on the carbonates with element G **(1mk)**

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……

(b) When 1.5litres of chlorine gas were completely reacted with element B 5.937g of the product were formed. Determine the relative atomic mass of element B. (Atomic mass of chlorine = 35.5 Molar gas volume = 24litres) **(3mks)**

2.The scheme below shows the manufacture of sodium carbonate by the Solvay process. Study it and use it to answer the questions that follow.



(a) Name (i) gases **A and B** **(1mark)**

……

……

(b) Name liquid C and Solid D **(1mark)**

……

(c) Write equations for the reactions taking place in tower P and chamber R **(2marks)**

……

……

(d) Name the product formed in chamber at chamber R and give one of its uses **(2marks)**

……

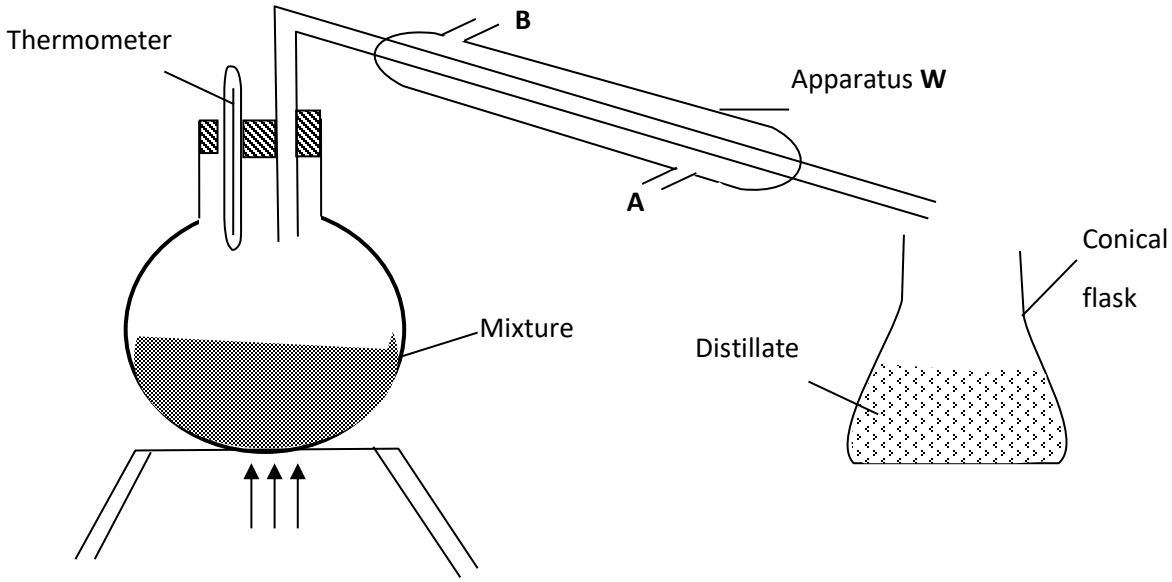
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(c) State two uses of sodium carbonate **(1mark)**

……

……

3. A student left some crushed fruit mixture with water for some days. He found the mixture hadfermented. He concluded that the mixture was contaminated with water and ethanol with boiling point of 100^{o}C and 78^{o}C respectively. The set-up of apparatus below are used to separate the mixture.



(i) Name the piece of apparatus labelled **W** **(1mk)**

……

(ii) What is the purpose of the thermometer in the set-up? **(1mk)**

……

iii) At which end of the apparatus **W** should tap water be connected**?** **(1mk)**

……

(iv) Which liquid was collected as the first distillate? **Explain** **(2mk)**

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……

……

(v) What is the name given to the above method of separating **mixture?** **(1mk)**

……

……

vi)State **two** applications of the above method of separating **mixtures** **(1mk)**

……

……

(vi) What properties of the mixture make it possible for the component to be separated by the above methods**?** **(2mk)**

……

……

4. I. In an experiment, a piece of magnesium ribbon was cleaned with steel wool. 2.4g of the clean magnesium ribbon was placed in a crucible and completely burnt in oxygen. After cooling the product weighed 4.0g

a) Explain why it is necessary to clean magnesium ribbon **(1mks)**

……

……

b) What observation was made in the crucible after burning magnesium ribbon**?** **(1mk)**

……

……

c) Why was there an increase in **mass?** **(1mk)**

……

d) Write an equation for the major chemical reaction which took place in the **crucible** **(1mk)**

……

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e) The product in the crucible was shaken with water and filtered. State and explain the Observation which was made when red and blue litmus paper were dropped into the filtrate (3mks)

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II.Below is a list of oxides.

MgO, N_2O, K_2O, CaO and Al_2O_3

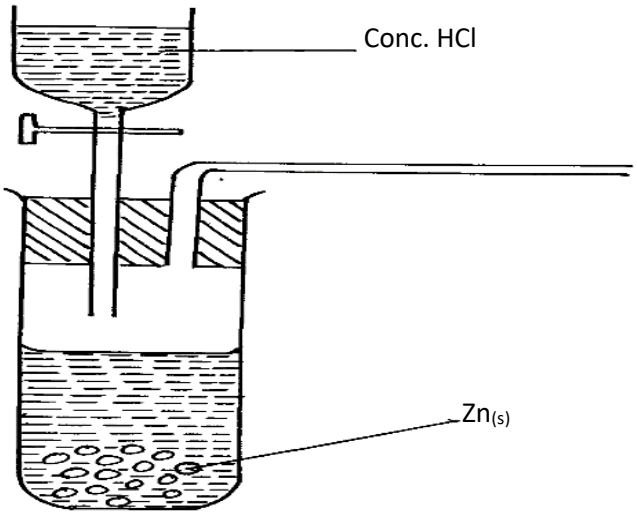
Select:-

a) A neutral oxide**.** **(1mk)**

b) A highly water soluble basic oxide. **(1mk)**

c) An oxide which can react with both sodium hydroxide solution and dilute hydrochloric acid.**(1mk**

5. a) The set-up below was used by a form three student to prepare a dry sample of gas **M**. Study it and use it to answer the questions that follow:-



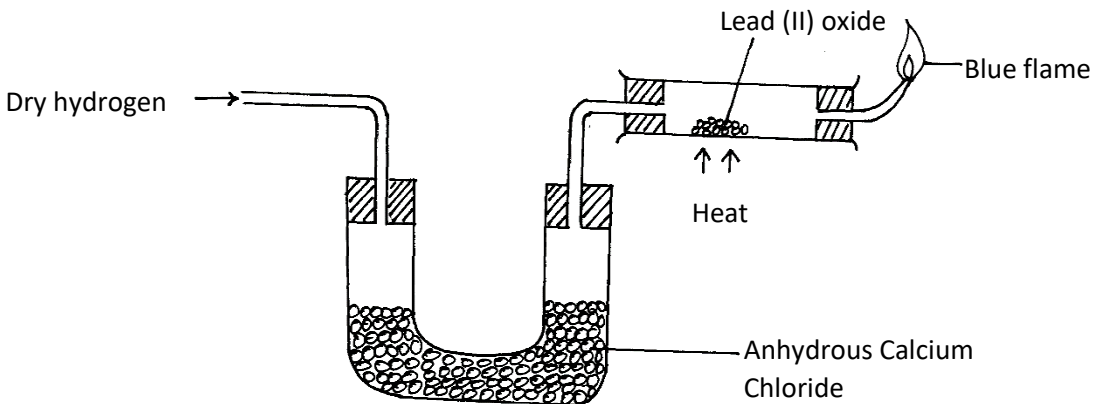
(i) Complete the diagram to show how a dry sample of gas **M** can be collected **(3mks)**

(ii) State the identity of gas **M** **(1mk)**

iii) state two industrial uses of gas **M.** **(2mks)**

b)What property of concentrated sulphuric acid is being employed in the above preparation? **(1mk)**

The set-up below was used to investigate the properties of hydrogen



(i) State the observations that was made in the combustion tube as the reaction progressed to completion **(2mks)**

……

……

……

(ii) Write equations for the reactions ;

I) In the combustion tube **(1mk)**

……

……

II) At the jet of the delivery tube **(1mk)**

……

……

Naturally occurring boron exists as two isotopes, boron-10 B with a relative abundance of 20% and boron-11 B with a relative abundance of 80%.

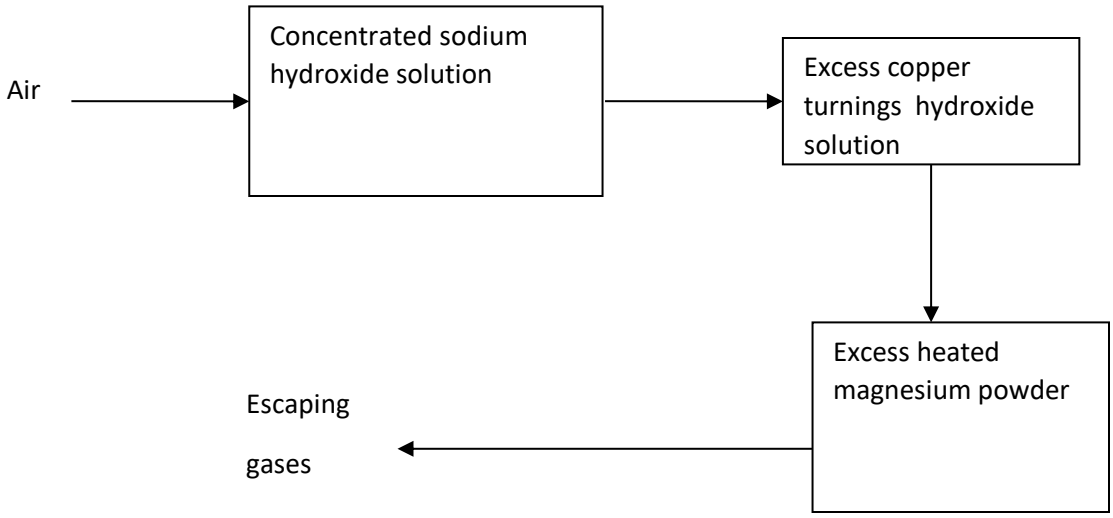
(a) How many electrons does each atom of boron contain? **(1mk)**

(b) How many neutrons does each atom of the most abundant isotope contain**?** **(1mk)**

(c) Calculate the relative atomic mass of boron. **(2mks**

(d) Make a diagrammatic representation of an atom of the least abundant isotope of boron showing the distribution of electrons and composition of the nucleus. **(2mks)**

II.Air was passed through several reagents as shown below:



(a) Write an equation for the reaction which takes place in the chamber containing Magnesium powder **(1mk)**

……

……

(b) Name **one** gas which escapes from the chamber containing magnesium powder. Give a reason for your answer **(1mk)**

……

……

(c) State two industrial uses of hydrogen gas **(1mk)**

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6.In the preparation of magnesium carbonate, magnesium was burnt in air and the product collected. Dilute sulphuric acid was then added and the mixture filtered and cooled. Sodium carbonate was added to the filtrate and the contents filtered. The residue was then washed and dried to give a white powder.

(a) Give the name of the produ**ct** **(1mk)**

……

(b) Write the chemical equation for the formation of the product **(1mk)**

……

……

(c) (i) Name the filtrate collected after sodium carbonate was added. **(1mk)**

……

……

(ii) Write down the chemical formula of the white powder **(1mk)**

……

……

(d) Write a chemical equation for the reaction between product in **(a)** and the acid **(1mk)**

……

……

(e) Write an ionic equation to show the formation of the white **powder** **(1mk).**

……

……

(f) Write an equation to show what happens when the white powder is strongly heated. **(1mk)**

……

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(g) Identify the ions present in the filtrate after addition of sodium carbonate. **(1mk)**

……

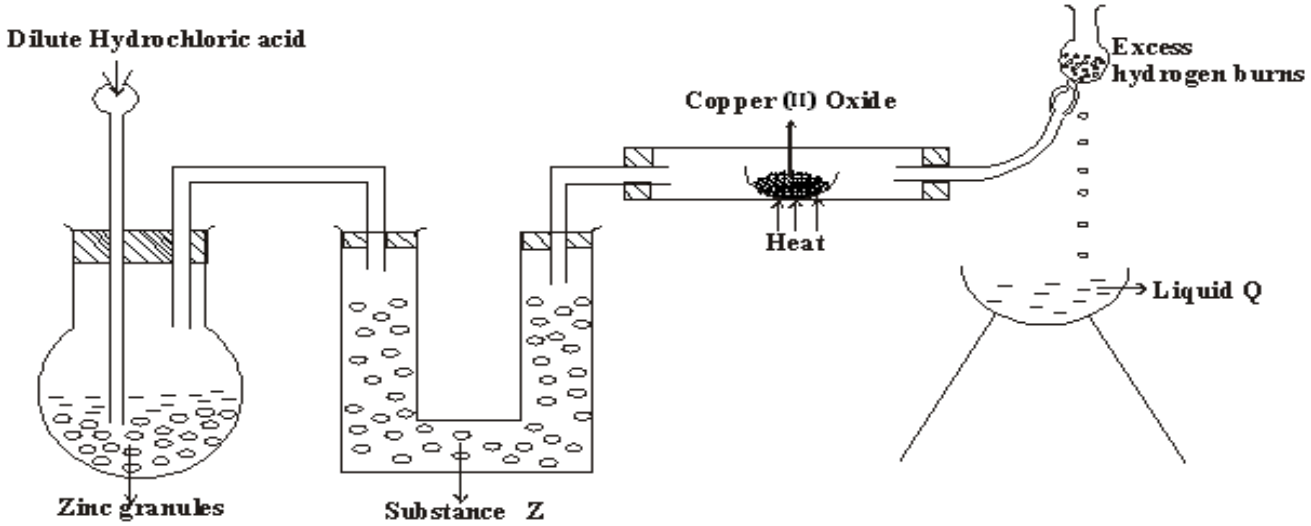
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(h) What is the name given to the reaction that takes place when sodium carbonate was Added to the filtrate? **(1mks)**

……

……

7.(a) In an experiment to investigate the properties of hydrogen, a student set up as follows.



(i) Name substances **(2 marks)**

Z **Q**

……

(ii) State two properties of hydrogen that were being investigated. **(2marks)**

……

……

(iii) Give two precautions that should be taken towards the end of the experiment. **(2marks)**

……

……

(iv) State two reasons why it is not suitable to use dilute nitric (V) acid in the preparation of hydrogen with zinc. **(2marks)**

……

……

b) Water molecule (H_2O) combines with H^+ to form hydroxonium ion. (H_3O^+) explain. **(2marks)**

……

……

……

c) Give TWO reasons why hydrogen is used to fill meteorological balloons**.** **(2mark)**

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FORM 3 TERM 2 OPENER EXAMS

SERIES 1

CHEMISTRY

PAPER 3

Confidential

Each candidate requires;

- ✓ *About 100cm$_3$ of Solution A containing 21.2g per litre of anhydrous sodium carbonate ($Na_2CO_{3(s)}$.*
- ✓ *About 150 cm$_3$ of 0.3M Nitric (V) acid solution B*
- ✓ *About 100cm^3 of 0.2M sodium hydroxide solution C.*
- ✓ *50cm^3 burette*
- ✓ *25cm^3 pipette*
- ✓ *A clamp, boss and stand*
- ✓ *Methyl range indicator*
- ✓ *3 conical flasks*
- ✓ *White tile.*

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

CHEMISTRY

PAPER 3

TIME: 2 HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

INSTRUCTIONS TO THE CANDIDATES:-

1) *Write your* ***name*** *and admission* ***number*** *on the spaces provided.*

2) *Answer* ***all*** *the questions in the spaces provided.*

3) *Mathematical tables and electronic used calculators may be*

4) *All working* ***MUST*** *be clearly shown where necessary.*

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	20	

1. You are provided with:

- Solution A – containing 21.2g per litre of anhydrous sodium carbonate ($Na_2CO_{3(s)}$)
- Solution B – Nitric (V) acid solution
- Solution C – metal hydroxide $M(OH)_x$

Procedure 1

i) Fill the burette with solution B

ii) Using a pipette, transfer 25cm^3 of solution A into a clean conical flask and add 1-2 drops of methyl orange indicator.

iii) Titrate with solution B from burette.

iv) Repeat the titration to obtain accurate results and record the data in the table below.

(4 marks)

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

a) Find the average volume of solution B used. **(1 mark)**

b) Given that the equation for the reaction is

$Na_2CO_{3(aq)} + HNO_{3(aq)} \quad NaNO_{3(aq)} + H_2O_{(l)} + CO_{2(g)}$

Calculate;

(i) The number of moles of sodium carbonate in 25 cm^3 of solution A **(3 marks)**

(ii) The number of moles of the acid in the titre volume obtained. **(1 mark)**

c) Hence find the molarity of nitric (V) acid solution B. **(1 mark)**

PROCEDURE II

i) Pipette 25cm^3 of solution C into a clean conical flask.

ii) Add 1-2 drops of methyl orange indicator.

iii) Titrate with solution b.

iv) Repeat the titration to obtain accurate results and fill the table below. **(4 marks)**

Table II

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

a) Find the average titre volume of solution B used. **(1 mark)**

b) Calculate;

i) The number of moles of solution B used in the reacting volume. **(1 mark)**

ii) The number of moles of solution C in 25cm^3 of the the solution. **(1 mark)**

c) Determine the equation for the reaction between the hydroxide $M(OH)_x$ and nitric (V) acid.

(2marks)

d) What is the value of x in $M(OH)_x$? **(1 mark)**

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

BIOLOGY

PAPER 1

TIME: 2 HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

Answer all questions in the space provided.

1.Name the organelle that performs the following functions in a cell. **(4marks)**

a)Transport of cell secretions

……

b)Proteins synthesis.

……

c) Formation of ATP.

……

d) Fixation of carbon (IV) oxide.

……

2. a. Distinguish between taxonomy and taxon **(2marks)**

……

……

……

b. Arachnids and crustaceans belong to the same phylum. Name the phylum **(1mark)**

……

……

3.

a. State three characteristics that makes them to be classified in the phylum you stated in (b)above **(3marks)**

……

……

……

b. Give one structural feature that can be used to differentiate crustaceans and arachnids **(1mark)**

……

……

4.In a certain experiment the field of view of the microscope was determined as 4 MM.If 16 cells were found to span across the diameter of the field of view of the microscope….

a. Calculate the size of one cell in micrometers **(3marks)**

b) If 100 epidermalcells were viewed under magnification * 150,how many cells will be observed at magnification * 450 using the same slide? **(2marks)**

5.Guard cells are specialized epidermal cells.

a. State two structural features which suit them to their functions **(2marks)**

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……

b.Apart from gaseous exchange;give one other function of the stomata **(1mark)**

……

……

6. State three ways by which a baby may acquire immunity **(3marks)**

……

……

……

7. Distinguish between residual capacity and vital capacity **(2marks)**

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……

8. Suggest the most suitable biological tool for collecting

a. Ants from a tree trunk **(1mark)**

……

b.Grasshoppers from grassland **(1mark)**

……

9. a.State the functions of the condenser in a light microscope. **(1mark)**

……

……

b.Why is it not likely to use an electron microscope in a school laboratory? **(3marks)**

……

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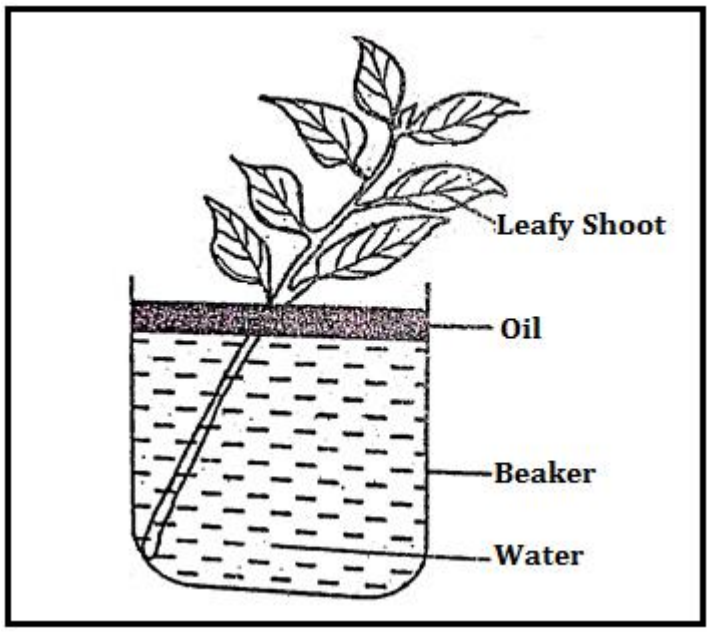
10. Explain why plant cells do not burst when immersed in distilled water. **(2marks)**

……

……

……

11. An experiment shown below was a set up to investigate a certain physiological processes in plants.



a.What process was been investigated? **(1mark)**

……

b.What effect will the following have on the observation made in (a) above?

……

……

Í)Fanning the shoot **(1mark)**

……

……

Íí)Removing all the leaves from the shoot **(1mark)**

……

……

……

Ííí) Placing the set up in the dark. **(1mark)**

……

……

……

12.a) State the role of light in the process of photosynthesis **(2marks)**

……

……

b) Name the product of the dark stage in photosynthesis **(1mark)**

……

c) State two minerals elements that are necessary in synthesis of the chlorophyll **(2marks)**

……

……

13. a)In an investigation, the pancreatic duct of a mammals was blocked, it was found that blood sugar regulation remains normal while food digestion was impaired. Explain these observations **(3marks)**

……

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……

……

b) State the functions of the bile juice in digestion **(3marks)**

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c) State the role of the tongue in mammalian digestion **(2marks)**

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d) The action of ptyalin stops at the mouth. Explain **(2marks)**

……

……

……

14. Give reasons for each of the following ;

a) Constant body temperature maintained in mammals **(2marks)**

……

……

……

b) Effects of low blood sugar in the body **(2marks)**

……

……

……

15. People can die when they inhale gases from burning charcoal in a poorly ventilated room.

Explain **(3marks)**

……

……

……

……

16. a) Name the compound found in the root nodule of the leguminous **plants** **(1mark)**

……

……

b) State the association of the bacteria named in (a) **above** **(1mark)**

……

……

17. Name the features that increases the surface area of the mammalian small intestine **(3marks)**

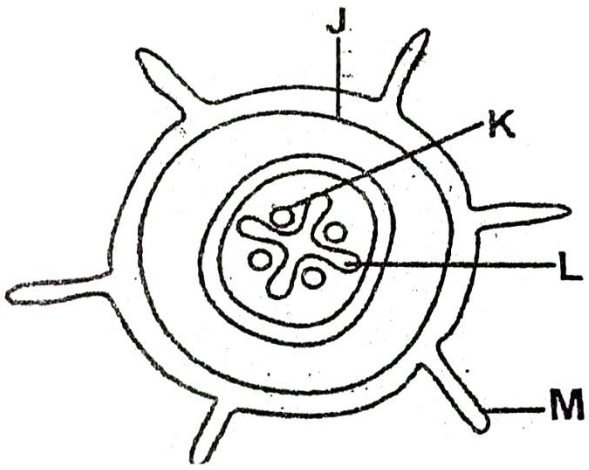
……

……

……

……

18. The diagram below represents a transverse section of a plant organ



a) From which plant organ was the section obtained ? **(1mark)**

……

b) Give reason for your answers in (a) **above** **(2marks)**

……

……

c) Name the part labelled J, K and L **(3marks)**

……

……

……

d) State the functions of the part labelled **M** **(4marks)**

……

……

……

……

19. State two ways of preventing malaria **(3marks)**

……

……

……

20. Name the stage in meiosis where chromosome number is reduced by a half. **(1mark)**

……

21. Name;

a) The protein secreted by the blood platelets necessary for blood clotting **(1mark)**

……

……

b) The vitamin involved in blood clotting **(1mark)**

……

……

22. State two ways in which the tracheal system in an insect is adapted for gaseous exchange**(2mks)**

……

……

……

23. What are the importance of reproduction? **(2marks)**

……

……

……

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

BIOLOGY

PAPER 2

TIME: 2 HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

INSTRUCTIONS TO CANDIDATES

1. *Write your name, Admission and Class*

2. *This paper consists of Two sections; Section A and B*

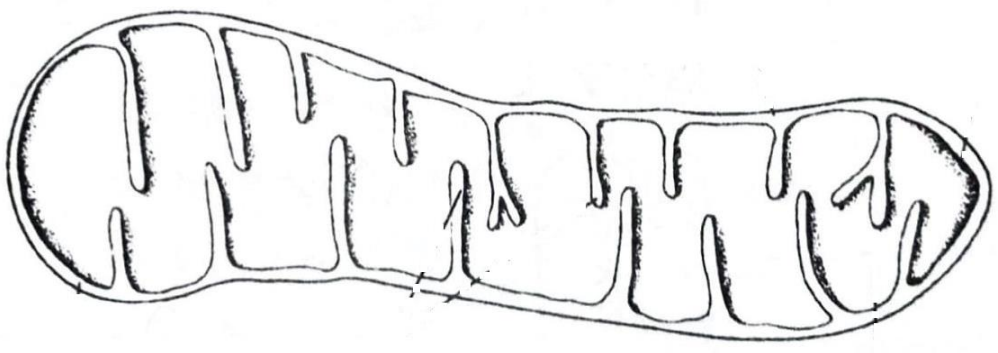
3. *Answer All questions in section A in the spaces provided*

4. *In section B answer question (6) compulsory and either question 7 or 8*

SECTION A (40 MARKS)

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

1. The diagram below shows an organelle that is found in most cells. Study it and answer the questions that follow



a. (i) Name the organelle **(1mk)**

……

(ii) State the function of the organelle in (a) (i) **above** **(1mk)**

……

……

b. (i) Give the full name of the major chemical compound that is found in the organelle **(1mk)**

……

……

(ii) Identify the gas that is required in order to form the compound you have stated in (b) (i) above **(1mk)**

……

c) Give the name of the structure labeled H and state its **function** **(2mks)**

……

……

d) (i) In which cells between spermatozoa or ova would you expect to find a high number of the organelle named in (a) (i) above**?** **(1mk)**

……

……

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

……

……

2. (a) Name the gaseous exchange structure in the following organisms

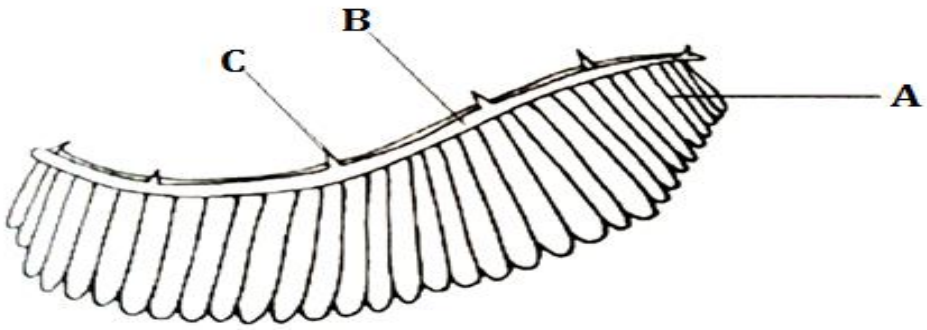
(i) Amoeba **(1mk)**

……

(ii) Grasshopper **(1mk)**

……

(b) The diagram below illustrates the structure of a gill from a bony fish



(i) Name the parts labeled A, B, and **C** **(3mks)**

……

……

……

(ii) State the function of the part labeled **C** **(1mk)**

……

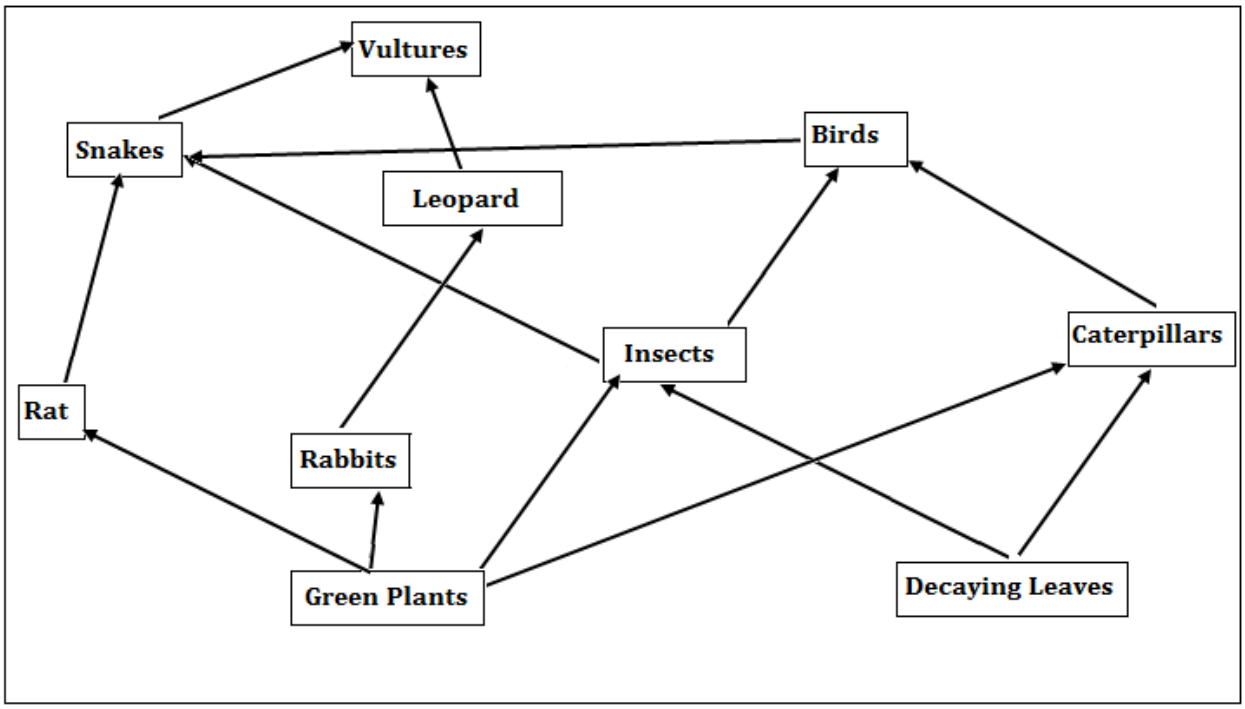
……

(iii) How is part A adapted to carry out its functions **(2mk)**

……

……

3. Study the illustration below



a. Identify the **ecosystem** **(1mk)**

……

b. (i) Which organism has the least biomass in the food web? **(1mk)**

……

(ii) Explain your answer in (b) (i) **above** **(1mk)**

……

……

c) Name the tropic level occupied by the following organisms

(i) Insects **(1mk)**

……

……

(ii) Leopards **(1mk)**

……

……

d) Construct a food chain in which the vulture is a quaternary consumer **(1mk)**

……

……

……

e) (i) Name one group of organism not shown in the food web but play an important role in the ecosystem **(1mk)**

……

……

(ii) What is the role of the organism you named in (d) (i) above **(1mk)**

……

……

4. During a biology practical lessons, the teacher provided students with the following apparatus.

-A pooter

-A scalpel

-Specimen bottle

-A pair of forceps

-Sweep net

-Chloroform

(a) Give the precautions the biology teacher gave the student before the practical when collection of specimen **begun** **(3mks)**

……

……

……

(b) What was the function of the following apparatus?

(i) Pooter **(1mk)**

……

……

(ii) Sweep net **(1mk)**

……

……

(iii) Chloroform **(1mk)**

……

……

(b) Other than observation, name other two scientific skills developed by studying biology **(2mks)**

……

……

……

5. Complete the table below by placing the organism, tick, shrimp, millipede, praying mantis, tsetsefly, crab and spider in the right class and giving a reason in each case (8mks)

Class	Organisms	Reasons
Diplopoda		
Insecta		
Crustacea		
Arachnida		

SECTION B

Answer question 6 (compulsory) and either question 7 or 8

6. An experiment was carried out to investigate the effect of temperature on the rate of a reaction catalysed by salivary amylase. The Ph was slightly alkaline. The results are shown in the table below

Temperature	5	10	20	25	30	35	38	45	50
Rate of reaction	0.3	0.5	1.25	2.0	3.5	4.8	4.8	2.5	0.8

a) On a grid draw a graph of rate reaction against **temperature** **(6mks)**

b) What is the optimum temperature of the **enzyme** **(1mk)**

……

……

c) At what temperature was the rate of the reaction 1.4 **(2mks)**

……

……

d) Account for the shape of the graph between

(i) 5°C and 35° **C** **(2mks)**

……

……

……

(ii) 38° C and 50° **C** **(3mks)**

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……

……

e) How is the hydrochloric acid from the stomach neutralized and where does this occur **(2mks)**

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……

……

f) Name one digestive enzyme in humans that works best in acidic **conditions** **(1mk)**

……

……

g) Apart from temperature and pH name other 3 factors that affect enzyme controlled reactions **(3mks)**

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……

……

7. (a) Describe the adaptation of hydrophytes to their photosynthetic **function** **(10mks)**

(b) Explain how mammalian ileum is adapted to perform its **function**

8. Explain how seeds and fruits are adapted to the various methods of **dispersal** **(20mks)**

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

BIOLOGY

PAPER 3

CONFIDENTIAL

1. X - *Onion bulb (Each student* $^1/_4$ *)*

Y – *Distilled water*

Z – *concentrated sodium chloride*

-scalpel

-labels

Petri- dishes / beakers

2. Q *– sukuma wiki*

K *– maize leaf*

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

BIOLOGY

PAPER 3

TIME: 2 HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

INSTRUCTIONS TO CANDIDATES

Answer ALL the questions in the spaces provided.

1. You are provided with

Spécimen X

Solution Y

Solution Z

a) Examine the outer and inner leaves then record your **observations** **(4mks)**

……

……

……

……

……

b) Using a scalpel, cut and measure 6strips of 3cm length of the specimen X. Place 3 strips into a solution labeled Y, another 3 strips into a solution labeled Z. The experimental set up is allowed to stand for 20 minutes.

i) What observations would be made after 20 minutes when the strips are **touched** **(2mks)**

Strips in solution Y

Strips in solution Z

ii) Account for the observations recorded in (b) (i) **above** **(4mks)**

……

……

……

……

……

2. You are provided with actual specimens of plant parts Q and K

a) (i) Using external features only identify the part of the plants **(2mks)**

……

……

……

(ii) Give three reasons for your answer in (a) (i) **above** **(3mks)**

……

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……

b) With reasons state the class to which the plants from which the specimens were obtained belong **(4mks)**

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c) State two observable features that adapt specimen Q for gaseous exchange **(2mks)**

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……

d) Using the dichotomous key provided, identify the identity of the specimens Q and K in each case show the sequence; the steps in the key that you followed to arrive at the identity. **(4mks)**

1. (a) Leaf parallel veined……..go to 2

(b) Leaf net veined ……go to 4

2. (a) Leaf purple in colour……..……Tradescantia spp

(b) Leaf green in colour …… …….go to 3

3. (a) Leaf with thorns on margin…… ……Kalanchoe spp

(b) Leaf smooth on the margin…… ……Zea mays

4. (a) Leaf sample…… …….go to 5

(b) Leaf compound……go to 8

5. (a) Leaf margin entire ……go to 6

(b) Leaf margin serrated……..Habiscus

6. (a) Leaf texture rough…….go to 7

(b) Leaf texture smooth…….……..Brassica spp

7. (a) Leaf blade Lanceolate…….……..Solanum spp

(b) Leaf blade broad……Lantana camara

3. The photography below shows four specimens labeled P, Q, R and S, which were obtained from the same animal. Examine them

a) With reasons identify P and Q **(4mks)**

P-

Reason-

Q-

Reason-

b) Based on their structure, suggest the functions of specimens P and **Q** **(2mks)**

P-

Q-

c) In specimen P, name the four parts labeled A to D **(4mks)**

A **B** **C** **D**

d) Using observable features, state the differences between R and S **(3mks)**

……

……

……

……

e) Explain how specimen S is adapted for its **functions** **(2mks)**

……

……

……

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

ENGLISH

PAPER 1

TIME: 2 HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

INSTRUCTIONS:

Answer all the questions in the spaces provided

1. FUNCTIONAL WRITING.

You are a member of a committee that has been assigned the duty of planning the annual prize day at your school.

a) Write a letter of invitation to the local member of your County Assembly (MCA). **(12mks)**

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b) Design a card that would be used to invite guests to the ceremony. **(8mks).**

2. Cloze test (10mks)

Fill in the blank spaces in the following passage with the most suitable word.

Imagine that while walking along a road, you saw a large, shiny bag sitting _____ unattended. You look around you and there is no one else. _____ would you do? Would you walk _____ from the bag as most cautious people would? Maybe your curiosity would get the _____ of your caution, and the urge to know what the _____ of the bag are, might overwhelm you. If you did not look into the bag and found it full of crisp new _____, would you make attempts to find _____ owner of the bag? Might you be tempted to keep the money _____ yourself? After all, there is always so much in our lives that we can buy or pay for. _____ you chose to keep the bag, would you do so with a _____ conscience, or would you forever be plagued by the idea that you kept money which was not yours, which is basically stealing?

3. ORAL COMMUNICATIVE SKILLS.

Read the following poem and answer the questions that follow.

I'm a keen dog, a keen dog, a wild dog, and alone;
I'm a rough dog, a tough dog hunting on my own;
I'm a bad dog, a mad dog, teasing silly sheep;
I love to sit and bay at the moon, to keep fat souls from sleep.

I'll never be a lap dog, licking dirty feet,
A sleek dog, a meek dog, cringing for my meat;
Not for me the fireside, the well filled plate,
But shut door, the sharp stone, cuff and kick and hate.

Not for me the other dogs, running by my side;
Some have run short while, but none of them would bide;
O mine is still the lone trail, the hard trail, the best,
Wide wind, and wild stars and the hunger of the quest!
(Irene Rutherfold Mclfod)

Questions

1. Describe the rhyme scheme in the poem above. **(2mks)**

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……

……

2. Identify two other sounds used in the poem. **(4mks)**

……

……

……

……

3. How would you perform the following poem for a live audience? **(2mks)**

……

……

……

2. ***Give examples of the following sound devices.*** **(4mks)**

i. Onomatopoeia

ii. Assonance

iii. Ideophones

iv. Alliteration

3. ***Identify the silent letters in the following words.*** **(2mks)**

i. Island

ii. Fasten

4. Study the below genre of oral literature and answer the questions that follow.

Kiiru: Oyiete, (are you ready?)
Audience : E-euo, (we are ready)
Kiiru: Mmm-mh!
Audience: Ilomonlatalaendaanaisho. (The visitors for whom I have no food)

Questions.

i. Identify the above genre. **(1mk)**

ii. Explain the features present in the above genre. **(3mks)**

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……

iii. How many participants does the above genre involve? Identify their roles. **(2mks)**

……

……

……

5. *The underlined word indicators the stressed word in the sentences below. Explain the meaning brought out when the underlined word is stressed in each sentence.* **(3mks)**

i. We worked for him.

ii. We worked for him.

iii. We worked for him.

6. The following is a telephone conversation between Basweti and the receptionist of Mambo Kubwas General Stores. Insert the missing speech lines. **(7mks)**

Receptionist: Mambo Kubwa General Stores, good morning.
Basweti: _____
Receptionist: May I help you, Mr. Basweti?
Basweti: May I please speak to your sales manager:
Receptionist: _____
Basweti: How come? Is she very busy?
Receptionist: _____
Basweti: In that case, I might be forced to call some other time.
Receptionist: Why is that? Perhaps someone else in the office could be of help to you.
Basweti: _____
Receptionist: Why not? Is it something personal?
Basweti: _____
Receptionist: Okay, I understand. Can I take a message for her?
Basweti: _____
Receptionist: I have taken it down for her. I will also personally remind her to call you. Bye for now and thank you for calling.
Basweti: _____

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

ENGLISH

PAPER 2

TIME: 2½ HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

QUESTION 1. COMPEREHENSION PASSAGE(20 MARKS)

Read the following passage and answer the questions that follow

You may think that expecting food to change your life is too much to ask. But have you considered that eating the right food at the right time will increase your energy, help you manage weight and ward off major illness?

Researchers have found that eating a meal with plenty of protein leaves you feeling more satisfied for longer when compared to a meal loaded with low-quality carbohydrates. your body takes longer to digest protein, leading to a gradual increase in blood sugar. The high protein breakfast will therefore carry you through the morning and ,more importantly ,through your tea break. Many high-carbohydrate meals are absorbed quickly and send blood sugar on a roller coaster ride, taking your appetite with it and depleting your energy.

Many foods contain antioxidants neutralize molecules known as free radicals before they damage arteries and body cells. This protects you from heart diseases, high blood pressure, cancer and diabetes; you can now see why antioxidant foods should be consumed in generous portions. Actually, forget pills-antioxidants work best when consumed in foods. In fact, nutritionists recommend that we eat five portions of fruit and vegetables a day. Its less daunting than it sounds: a portion equals a piece of fruit, three tablespoons of cooked vegetables or a glass of flesh juice.

And do you desire to relieve yourself of some baggage? calcium is the latest weight –loss star to appear on the scene. Scientists stumbled on its magic by accident. From a study that measured the blood pressure of obese people, it was discovered that those who took one large tub of yoghurt a day in their diet lost an average of eleven pounds of body fat in one year, even though they did not eat less.

A follow-up study found that people high-calcium diet lost more weight and fat than did people on a low calcium diet- and again, both consumed the same number of calories.

Researcher*believe calcium encourages fat cells to stop "getting fatter". Instead, the cells burn extra fat without you having to go anywhere near a gymnasium.

It probably sounds strange to say that you can eat more in order to lose weight .Obviously, the question you should ask immediately is, “Eat more of what?”We are talking about foods rich in fibre . They have what is refer to as low energy density; that translates to few calories relative to weight. This means that you can down a mountain without fear of calorie overload.

Fibre also aids weight loss because its filling. Most high fibre foods take a lot of chewing triggering your bodies fullness sensors. Moreover, you absorb the food more slowly so you feel full longer. Will the wonders of food ever cease? Not if researchers in nutrition keep up their pace. Let them keep the good news flowing-such as the fact we don’t have to starve ourselves to lose weight and keep disease at bay.

QUESTIONS

a. From the information given in the first paragraph, how can you improve your life? **(2 marks)**

……

……

……

b. In not more than 35 words, summarize the effects of eating carbohydrates**.** **(4 marks)**

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c. Explain how free radicals contribute to the occurrence of high blood pressure and cancer.**(2 mks)**

……

……

……

d. In what two forms can antioxidants- be consumed? **(2 marks)**

……

……

……

e. "In fact nutritionists recommend that we eat five portions of fruits and vegetables a day."

Rewrite the sentence above as a question without changing the meaning, beginning:

Don't…….. **(1 mark)**

……

……

f. What is the attitude of the author towards calcium calcium as a weight –cutting measure?**(2 mks)**

……

……

……

g. According to the passage, how can you use up excess fat? **(2 marks)**

……

……

……

h. Identify an instance of irony in the passage. **(2 marks)**

……

……

……

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

i. Daunting-

ii. Baggage-

iii. Down a mountain-

QUESTION 2

Read the excerpt below and answer the questions that follow (25 marks)

"Believe me, officer," he told the youth. "Without this medicine, I couldn't live a day."
"Is that right?" The youth yawned, making even more obvious his indifference to what he hadjust heard.
"I wouldn't know, sir," he added, meaning he could not be any less interested, his interestbeing zero already. Then, suddenly, he snapped to alert. He had remembered something. "Hey! You could hurt other people with that."
"With this needle?"
"Yes, with that needle."
"And what would I use for my next shot?" "Just as I thought. What next shot?""Officer, let me ask you something. How old do you think I am? seventy?" "Yes, plus or minus five."
"That's correct. Now, out of every one hundred people in that age range, thirty of us are diabetic. We are unable to regulate the sugar level in our blood, and that kills most of us. Thismedicine is what keeps those of us who survive alive." He brandished his cellophane pouch again. "We shoot it into our veins with needles like that one."
"That may be so, sir. But you cannot take that stuff in. Leave it here with me.""I'll do no such thing if I have to wait here until the cows come home."
"What cows? Sir, you are holding up the line." "This needle is my life, officer."

QUESTIONS

a) Place the excerpt in its immediate **4 marks**

.....

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.....

b) Discuss three major issues in this excerpt **6 marks**

.....

.....

.....

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.....

c) Discuss two-character traits of Comrade Melusi in this excerpt. **(4 marks)**

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……

d) "I wouldn't know, sir." Add a question tag. **(1 mark)**

……

……

e) Discuss any three aspects of style in this excerpt. **(6 marks)**

……

……

……

……

……

……

f) Explain the meaning of the following expressions from the excerpt. **(4 marks)**

i) Yearned

ii) Brandished

iii) Holding up

iv) Indifference

Read the poem below and answer the following questions that follow.

A TAXI DRIVER ON HIS DEATH BED (By Timothy Wangusa)

When with prophetic eye I peer into the future
I see that I shall perish upon this road
Driving men that I do not know
This metallic monster that I now dictate,
This docile elaborate horse,
That in silence, seems to simmer and strain
Shall surely revolt some tempting day.
Thus I shall die: not that I care
For any man's journey,
Nor for the proprietor's gain.

Nor yet the love of my own.
Not for these do I attempt the forbidden limits.
For these defy the traffic man and the cold cell,
Risking everything for the little, little more.

They shall say, I know, who pick up my bones,
"Poor chap, another victim to the ruthless machine"
Concealing my blood under the metal.

Questions

a) What is the poem about? **(3mks)**

……

……

……

b) What is the attitude of the persona towards his fate? **(2mks)**

……

……

……

c) With illustrations, identify the persona in the poem **(2mks)**

……

……

……

d) What is the irony in the poem? **(2mks)**

……

……

……

e) With illustrations, identify and comment on any other two stylistic devices used in the poem **(6mks)**

……

……

……

……

……

……

f) Comment on the following line **(2mks)**

"Poor chap, another victim to the ruthless machine"

……

……

……

g) How will the persona's death come about? **(2mks)**

……

……

……

h) Give the poem another title **(1mk)**

GRAMMAR

a. After each of the following words, write a word that is gender sensitive. **(3 marks)**

i. Spokesman-

ii. Airhostess-

iii. Cleaning lady-

b. Use the correct form of the word in brackets to complete each of the following sentences. **(3 marks)**

i. Owino did not know that a tree had…….(strike) his house

ii. Nobody expected the company to make ……..(lose)

iii. The three……..(passer-by)were arrested.

c. Fill in the blank spaces below with the correct form of the verb in brackets**.** **(3 marks)**

i. The team was…….…..…... for coming late.(qualify)

ii. They were……..…..……attacked by the gangsters.(vicious)

iii. The ……..of the matter brought the president to their county.(grave)

d. Fill each blank space in the following sentences with the correct preposition**. (6 marks)**

i. Sometimes it is quicker to go……..……..foot than……..bus.

ii. Sign your name……..…the dotted line……...the bottom of the page.

iii. There is something exciting……...…football.

Throughout Kenya, football matches are played……..…..capacity crowds.

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

ENGLISH

PAPER 3

TIME: 2½ HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

INSTRUCTIONS TO THE CANDIDATES

1. *Write your details in the spaces provided at the top of this page.*
2. *Answer **three** questions only.*
3. *All questions are compulsory*
4. *In question **three** choose only **one** of the optional texts you have prepared for.*
5. *Each of your essays must **not** exceed **450** words (2 pages)*
6. *Candidates should check to ascertain that no questions are missing.*
7. *Candidates must answer the questions in English.*

FOR EXAMINER'S USE ONLY

Question	Maximum score	Candidate's score
1	20	
2	20	
3	20	
Total	**60**	

Answer All Questions

1) Imaginative composition **(20 mks)**

Write a composition ending with "……If only I was given another chance, I would do things differently."

2) Expository essay **(20 mks)**

Write an essay on the role of the youth in helping to fight corruption.

3) Compulsory Set Text **(20 mks)**

The Samaritan by John Lara

Discuss the theme of ***Ethnicity and Social class prejudice*** as depicted in the **play, *The Samaritan,* by John Lara** **(20 marks)**

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

GEOGRAPHY

PAPER 1

TIME: 2½ HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

INSTRUCTIONS

1. *The paper comprises of 2 sections. A and B.*
2. *Attempt all questions in section A.*
3. *In section B, answer question 6 and choose any other two questions.*

SECTION A:

Answer all questions from this section.

1. (a) Describe the plate tectonic theory. **(2 mks)**

(b) Identify three results of the movement of plates along the boundaries. **(3 mks)**

2. (a) Define the term hydrological cycle. **(2 mks)**

(b) Describe two ways in which the atmosphere is heated. **(4 mks)**

3. (a) Define vegetation. **(1 mk)**

(b) Outline three conditions that influence the distribution of vegetation. **(3 mks)**

(c) Name two types of vegetation likely to be found beyond 60^{o}N of the equator. **(2 mks)**

4. Define an earthquake. **(2 mks)**

5. State the negative effects of faulting on the human environment. **(6 mks)**

SECTION B:

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

6.Study the map of Taita Hills (1:50,000) sheet 189/4 provided and answer the following questions .

(a) (i) What is the bearing of peak of Mwatunga hill in grid square 3214 from the water tank in grid square 2619 **(2mks)**

ii)What is the length in kilometres of the section of Mwatate-Voi railway line in the south eastern part of the map **(2mks)**

b) Draw a rectangle measuring 16cm by 12 cm to represent the area enclosed by the Eastings 24 and 40cm and Northings 20 and 30 (1mrk)

On the rectangle ,mark and name the following features

- Mgange hills **(1mk)**
- A rock outcrop **(1mk)**
- All weather road,bound service **(1mk)**
- River Ruhia **(1mk)**
- Ronge forest **(1mk)**

(**a) (i)**Describe the distribution of settlements in the area covered by the map (5mks)

(ii)Citing evidence from the map, give two economic activities carried out in the area covered by the map other than sisal farming **(5mks)**

(d)(i) Name three types of natural vegetation in the area covered by the map(3mks)

(ii) What is the magnetic variation as of January 1991 **(2mks)**

7. (a) (i) Define mass wasting. **(2 mks)**

(ii) Explain how the following factors influence mass wasting. **(8 mks)**

i)Nature of materials

ii)Angle of slope

iii)Climatic factors

iv)Vegetation cover

(b) Using well labeled diagrams, describe rockfall as a process of mass wasting. **(6 mks)**

(c) Explain ways in which mass wasting influences the natural environment. **(10 mks)**

8. (a) State two differences between plutonic and volcanic rocks. **(4 mks)**

(b) (i) Explain how mechanically formed sedimentary rocks are formed**.** **(5 mks)**

(ii) Give three characteristics of intrusive igneous rocks. **(3 mks)**

(c) (i) Fill in the table below. **(4 mks)**

Original rock	Metarmorphic rock
W	Slate
Granite	X
Coal	Y
Z	Marble

(ii) State the uses of rocks. **(5 mks)**

(d) You are planning to carry out field study on rocks within your school.

(i) State why you would need the following:- **(3 mks)**

Lenses –

Paper Bag –

Geological hammer –

(ii) Give three problems you might encounter during the field study. **(3 mks)**

9. (a) (i) Differentiate between river regime and river discharge. **(2 mks)**

(ii) Explain three factors that influence the rate of river erosion. **(6 mks)**

(b) Using a well labeled diagram, describe the formation of an arcuate delta**.** **(5mks)**

(c) Give three ways in which a river transports materials. **(3 mks)**

(d) You carried out field study on a river in its youthful stage.

(i) Explain how abrasion could have led to the formation of the features in this stage**.** **(4mks)**

(ii) Identify three features of erosion formed by the river in this stage. **(3 mks)**

(iii) Give two challenges you could have faced while carrying out the study. **(2 mks)**

10. (a) (i) Distinguish between secondary vegetation and planted vegetation**.** **(2 mks)**

(ii) Explain how the following factors influence the distribution of vegetation. **(4 mks)**

- Precipitation
- Soil

(iii) State four ways in which vegetation is of significance to the physical and human environment. **(4 mks)**

(b) Explain three factors that led to the decline of natural vegetation in Kenya. **(6 mks)**

(c) State three ways in which savanna type of vegetation is adapted to the climatic conditions. **(3 mks)**

(e) Students from Anestar secondary school carried out field study across the slope.

(i) State the methods they are likely to have used to collect data. (6 mks)

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

GEOGRAPHY

PAPER 2

TIME: 2½ HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

INSTRUCTIONS TO STUDENTS

1) *This paper has TWO Sections A and B*

2) *Answer All the questions in section A*

3) *Answer questions 6 and any other Two questions from Section B.*

4) *Answer must be written in the spaces provided.*

5) *Students should check the questions paper and ascertain that all the pages are printed as indicated and that no questions is missing,*

6) *Students should answer the questions in English.*

SECTION A

1. (a) What is practical Geography? **(2mks)**

(b) State THREE practical aspects we study in Geography. **(3mks)**

2. Identify FIVE activities that may be undertaken in your school to conserve trees. **(5mks)**

3. Outline the advantages of using photographs in learning geography. **(5mks)**

4. (a) Name THREE major categories of minerals **(3mks)**

(b) Give TWO examples of fossil fuels. **(2mks)**

5. (a) What is Agro-forestry? **(2mks)**

(b) State THREE reasons for encouraging agro-forestry in Kenya. **(3mks)**

SECTION B

ANSWER Question 6 and any other two questions in the section.

6. (a) The table below shows land use in Nairobi area in 2003. Use it to answer questions that follow.

Land use	Area in '000' km^2	Length of portions in cm
Settlement	110	
Grass	30	
Horticulture	50	
forest	10	
TOTAL	200	

i) Calculate the length of each portion in the divided bar graph. **(4mks)**

(c) (i) Name the TWO types of statistical data **(2mks)**

(ii) Give FOUR characteristics of statistical data. **(4mks)**

7. a(i) What is mining? **(2mks)**

(ii) Why is mining termed as a 'robber' industry? **(2mks)**

b) Identify THREE factors that influence the exploitation of minerals. **(3mks)**

c) Explain how the following factors influence the exploitation of minerals. **(3mks)**

(ii) level of technology or skills, **(5mks)**

(d) (i) Explain THREE problems associated with the shaft method of mining. **(6mks)**

(ii) Apart from shaft method of mining, name other methods of underground mining. (**3mks)**

8. (a) Distinguish between:

(i) Forestry and a forest. **(2mks)**

(ii) Afforestation and re-afforestation. **(2mks)**

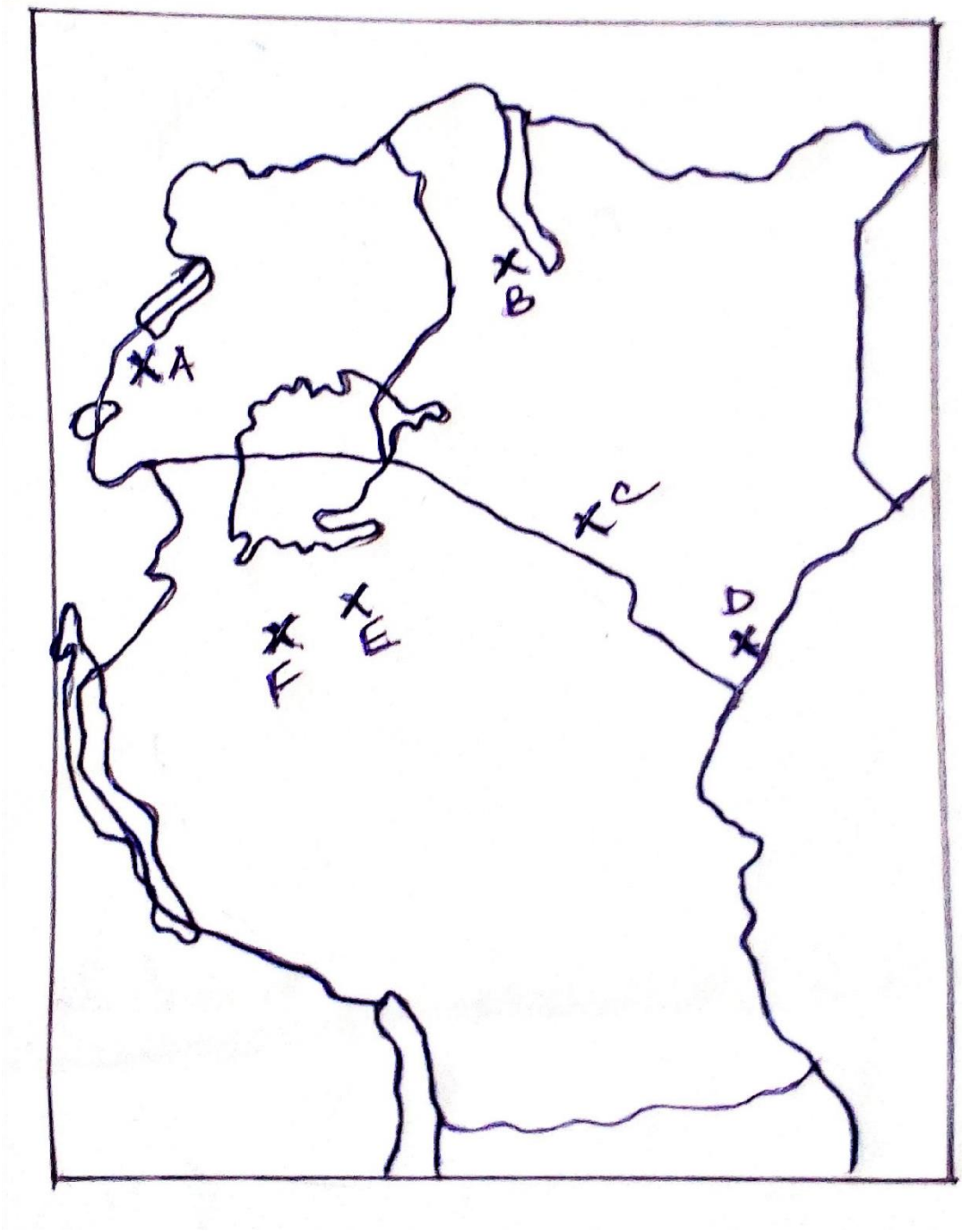
(b) Apart from coniferous forests, name FIVE other types of natural forests. **(5mks)**

© List FIVE factors that influence the distribution of forests in Kenya. **(5mks)**

d)(i) Explain THREE factors that favour the growth of natural forests on the slopes of Mt. Kenya. **(6mks)**

(ii) Outline the steps taken in forest exploitation **(5mks)**

9. (a) Use the map of East Africa below showing the distribution of major minerals to answer the question that follows.



Name the major minerals mined in the areas marked A- F. **(6mks)**

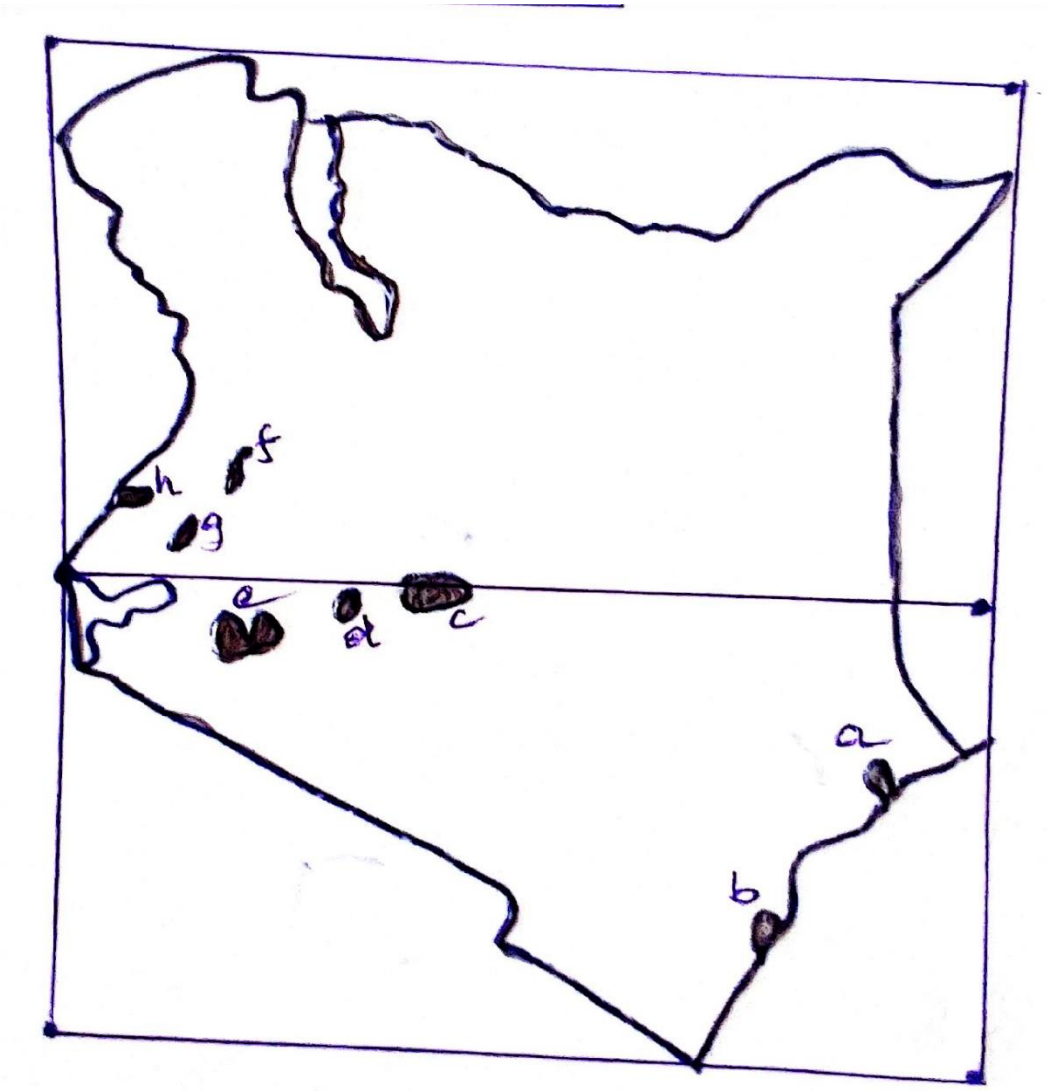
(b) Give reasons why coal in Tanzania is underexploited. **(5mks)**

(c) Explain THREE negative effects of mining to the environment. **(6mks)**

(d) (i) Give THREE uses of Soda ash. **(3mks)**

(ii) Name FIVE major Oil producing countries in Africa. **(5mks)**

10. (a) The map of Kenya below shows some forested areas. Name the forest reserves marked a-h. **(8mks)**



(b) State FIVE ways in which clearing of forests has affected the natural environment in Kenya. **(5mks)**

© **i)** Name THREE softwood tree species grown in forests of Canada**.** **(3mks)**

(iii) Give FIVE characteristics of softwood forests of Canada**.** **(5mks)**

(d) Give the differences between softwood forests in Kenya and Canada under the following sub-headings:

(i) Period of harvesting**.** **(2mks)**

(ii) Period of growth **(2mks)**

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

HISTORY & GOVERNMENT

PAPER 1

TIME: 2½ HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

INSTRUCTIONS: SECTION A:

Answer All Questions in This Section. (25 MKS)

1. What is the difference between a Pongidae and a Hominidae? **(1 mark)**

2. Identify the community that displaced the Pokomo from Shungwaya. **(1 mark)**

3. List **two** roles of warriors among the pre-colonial Miji-Kenda. **(2 marks)**

4. State **two** roles of the Orkoiyot among the pre-colonial Nandi community. **(2 marks)**

5. Who was the first European to see Mt. Kenya in 1849? **(1 mark)**

6. Name **two** constitutional amendments which were done in 1982 in Kenya. **(2 marks)**

7. Define the term "Scorched earth policy". **(1 mark)**

8. Which was the **main** war method used by Africans in their resistance? **(1 mark)**

9. Identify the agreement signed to end partitioning of East Africa. **(1 mark)**

10. List **two** ways the Akamba displayed their resistance against the colonial administration.**(2 mks)**

11. Identify the basis of the political organization of African communities in Kenya during the pre-colonial period. **(1 mark)**

12. Name **one** political parties that existed in Kenya at Independence. **(1 mark)**

13 Mention **two** duties of a chief during the colonial administration in Kenya**. (2 marks)**

14 State **one** group that provided education in Kenya during the colonial period. **(1 mark)**

15 Name **one** community in Kenya that showed mixed reaction towards British colonization in Kenya. **(1 marks)**

16. State two methods which were used by the British to establish their rule in Kenya. **(2 marks)**

17. State two development rights of children. **(2 marks)**

SECTION B

Answer three questions in this section.(45 marks)

18. (a) State **five** economic activities of the Agikuyu during the pre-colonial period**. (5 marks)**

(b) Describe the political organization of the pre-colonial Somali community. **(10 marks)**

19. (a) List **five** reasons for the coming of the missionaries to **Kenya.** **(5 marks)**

(b) Explain **five** positive results of the Omani rule along the Kenyan Coast. **(10 marks)**

20. (a) Identify **three** terms of the Devonshire Whitepaper 1923. **(3 marks)**

(b) Explain **six** methods used by the colonial government to promote settler farming in Kenya.

(12 marks)

21. (a) Identify **five** reasons for the collaboration of the Maasai. **(5 marks)**

(b) Explain **five** reasons for failure of armed resistance by the Kenyan communities.

(10 marks)

SECTION C:

Answer any two questions in this section.(30 marks)

22. (a) State **three** factors that may cause revocation of citizenship by registration in Kenya

(3mks)

(b)Explain **six** rights that are guaranteed to an arrested person by the Bill of Rights in Kenya.

(12 marks)

23. a) State **five** non-violent methods of resolving a conflict. **(5 marks)**

b) Explain **five** factors that promote national unity. **(10 marks)**

24. (a) State **three** characteristics of indirect democracy. **(3mks)**

(b) Explain **six** principles of democracy. **(12mks)**

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

HISTORY & GOVERNMENT

PAPER 2

TIME: 2½ HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

SECTION A (25 MARKS)

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

1. Give the earliest form of art by early man. **(1mk)**

2. State two examples of Old wan tools. **(2mks)**

3. Identify two advantages of the land enclosure system in Britain during the Agrarian revolution. **(2mks)**

4. Give one result of the invention of the wheel in Mesopotamia. **(1mk)**

5. State two disadvantages of animal transport. **(2mks)**

6. Identify two trade goods that originated from Western Sudan during the Trans-Saharan trade. **(2mks)**

7. Identify two scientific inventions which contributed to food preservation in the 18th century. **(2mks)**

8. List two factors that led to the expansion of Mwene Mutapa Kingdom**.** **(2mks)**

9. Give the importance of the golden stool in the Asante Empire. **(1mk)**

10. Name one leader who led to the Maji Maji rebellion against the German**s.** **(1mk)**

11. Name one treaty that was signed between the Ndebele and Europeans**.** **(1mk)**

12. Give two functions of the Emirs in Northern Nigeria during the colonial administration. **(2mks)**

13. Identify two uses of copper in Africa during the 19th century**.** **(2mks)**

14. Give one negative impact of internet today. **(1mks)**

15. Name the leader of the British South African Company (BSACO.) in the 19th century. **(1mk)**

16. Identify one method of colonial administration used by the French in Africa **(1mks)**

17. State one reasons why early people domesticated crops and animals during the Neo-lithic period. **(1mks)**

SECTION: B

Answer three questions in this section.(45 marks)

18(a) Give five changes marking the Agrarian Revolution in Britain**.** **(5marks)**

(b) Explain the effects of the Agrarian Revolution in Britai**n.** **(10marks)**

19. (a) Give three factors that led to development of urban centers in Africa during the pre-colonial period**.** **(3marks)**

b) Explain six consequences of urbanization in Europe during the **19th century** **(12mks)**

20a). Give three reasons why the Ndebele were defeated by the British in 1893 **– 1894** **(3mks)**

(b). briefly describe the results of the Anglo-Ndebele war (Chimurenga) in 1893-1894. **(12mks)**

21a) Give three communities that were involved in the Maji Maii Rebellion**.** **(3 marks)**

b) What reasons led to the failure of the Maji Maji Rebellion in 1907 **(12 marks)**

SECTION C

Answer three questions in this section.(30 marks)

22a) State **three** economic effects of partition of Africa. **(Marks)**

b) Explain **six** causes of Lewanika's collaboration with the British in the 19th century**.(12 marks)**

23a) State **five** economic activities of the Shona in the 19th century. **(5 marks)**

b) Describe the political organization of the Buganda kingdom in the pre-colonial period.

(10 marks)

24a) Give five reasons why the British used Direct Rule in Zimbabwe**. (5mks)**

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

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

KISWAHILI

PAPER 1

TIME: 2½ HOURS

NAME……. ADM NO; ……

CLASS…… DATE……

MASWALI YA INSHA

- ***Jibu maswali mawili pekee.***
- ***Idadi ya maneno isipungue 400***
- ***Swali la kwanza ni la lazima***
- ***Chagua lingine kutoka kwa matatu yaliyobaki***

Swali la lazima

Wewe ni mwanahabari kutoka Gazeti la **'TAIFA LEO'**

Andika mahojiano yako na Mbunge kuhusu mpango wa miradi ya hazina ya eneo – bunge analowakilisha.

Swali la pili

Wewe ni wakili uliyefuzu kutoka chuo kikuu cha Nairobi. Andika barua ya kuomba nafasi ya kazi ikiandamana na wasifu kazi wako katika 'Mugoh Kangi Law firm'.

Swali la tatu

Mti ukifa shinale na tanzuze hukauka.

Swali la nne

Andika insha itakayoishia kwa maneno haya.

…… niliinua kichwa juu nikapiga magoti na kumshukuru Mungu kwa kuyanusuru maisha yangu.

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

KISWAHILI

PAPER 2

TIME: 2½ HOURS

NAME……. ADM NO; ……

CLASS…… DATE……

MAAGIZO KWA MTAHINIWA

- *Jibu maswali yote.*
- *Majibu yote yaandikwe katika nafasi zilizoachwa katika kijitabu hiki cha maswali.*
- *Tumia hati safi.*

KWA MATUMIZI YA MTAHINI PEKEE

Swali	Jumla	Tuzo
1	15	
2	15	
3	40	
4	10	
JUMLA	80	

1. UFAHAMU (Alama 15)

Soma makala yafuatayo kasha ujibu maswali

Huku ulimwengu unapoingia katika teknologia ya tarakilishi na sera ya utandaridhi, ukweli wa mambo ni kuwa akina mama wamezinduka. Suala la usawa wa kijinsia limeanza kushamiri kote duniani na ole wake mwanamume yeyote ambaye hajawa tayari kutembea na majira. Lakini hebu tuchunguze jambo hili kwa makini zaidi.

Usawa wa jinsia ni nini? Usawa wa kijinsia ni usawa wa binadamu wote; wawe wake au waume. Usawa huu unapaswa kudhihirika katika kugawa nafasi za kazi, utoaji wa elimu, nafasi za uongozi na nyanja nyinginezo zozote za maisha.

Ubaguzi wa aina yoyote ile hasa dhidi ya mwanamke ni jambo linalokabiliwa na vita vikali sana ulimwenguni kote.

Dahari na dahari, hasa katika jamii za kiafrika, kumekuwa na imani isiyotingisika kuwa mwanamke ni kiumbe duni akilinganishwa na mwanaume. Kwa hivyo mwanamke amekuwa akifanyiwa kila aina ya dhuluma ikiwepo kupigwa, kutukanwa, kudharauliwa, kunyimwa haki zake, kunyimwa heshima na mambo kama hayo. Lakini je, ni kweli kuwa mwanamke ni kiumbe duni asiyefaa kutendewa haki?

Tukichunguza jamii kwa makini tunaweza kuona mara moja kuwa hivyo ni imani potofu isiyo na mashiko yoyote. Ukiimulika familia yoyote ile iliyopiga hatua kimaendeleo, uwezekano mkubwa ni kuwa mume na mke wa familia inayohusika wana ushirikiano mkubwa. Mume anamthamini mke wake na hadiriki kufanya maamuzi muhimu yanayoweza kuathiri maendeleo ya familia bila kumhusisha mke. Mume kama huyo huketi na mkewe, wakishauriana na kufikia uamuzi bora.

Tukitoka katika muktadha wa kifamilia na kumulika ulimwengu wa kazi iwe ni katika afisi za kiserikali au kwenye makampuni binafsi, ukweli ni kwamba kiongozi yeyote yule aliyefaulu katika usimamizi wake mara nyingi huwa na mke nyumbani ambaye wanashauriana kila uchao kuhusu kazi anayofanya hata kama mke hafanyi kazi mahali pale. Hisia na mawaidha anayotoa mke kwa mume wake ni tunu na huenda asiyapate kwingineko kokote hata katika vitabu vya kupigiwa mifano. Hii ni mojawapo ya sababu ambayo huwafanya viongozi wa nchi mbalimbali kupenda sana kuwatambulisha wake na familia zao waziwazi kwa vile wanajua kuwa jamii inathamini sana msingi wa jamii. Kiongozi ambaye hana mke au familia au yule ambaye mke wake hatambuliki, hutiwa mashaka na jamii hata kama ni kiongozi aliye na azma ya kushikilia kazi ngumu ya kuongoza umma.

Tukirudi nyuma kidogo na kupiga darubini mataifa ya mbali, tunaweza kuwaona wanawake mashuhuri walio uongozini ambao hadi waleo unapigiwa mfano. Wanawake mashuhuri waliotoa uongozini ambao hadi waleo unapigiwa mfano. Wanawake hao walisimamia mojawapo ya mataifa yenye uwezo na ushawishi mkubwa zaidi duniani. Ingawa wengi wao sasa wameng'atuka, uongozi wao bado unakumbukwa hata baada ya miaka mingi ya wao kuamua kupumzika, Mifano ni kama: Bi Margaret Thatcher aliyekuwa waziri mkuu wa Uingereza, Bi Bandranaike wa Sri Lanka, Golda Meir wa Israel na wengine wengi katika mataifa kama Indonesia, Ufilipino, Bangladesh, Pakistani na kwingineko.

Katika kufikia tamati, tunapozungumza kuhusu jinsia, hatuna budi kugusia kitafsili masuala nyeti. Kwanza, imani ya kushikilia kikiki tamaduni zisizofaa, ni jambo linalofaa kuchunguzwa kw makini. Kwa mfano, kuna badhi ya jamii ambazo humlazimu mke kurithiwa baada ya kifo cha mumewe. Vile vile baadhi ya jamii za kiafrika zinashikilia kuwa mwanamke hana haki ya kurithi. Kutokana na imani hii, wanawake wengi huishi maisha ya taabu baada ya kutengana na waume zao kwa vile hawana haki ya kurithi chochote kutoka kwa wazazi wao hata kama wazazi hao wana mali nyingi kupindikukia. Mali ya wazazi ni haki ya watoto wa kiume wala si watoto wa kike! Hili ni jambo la kusikitisha mno.

Isitoshe, wanawake hukumbwa na kizingiti kingine wanapojaribu kumiliki mali ya waume zao baada ya waume hao kukata kamba. Sababu ni kuwa, baada ya hao wenda zao kuwekwa kaburini, vita vya umiliki wa mali huanza mara moja na mwishowe yule mke maskini hujikuta hana hata mahali pa kulala sembuse mali waliyochuma na mali yake yote kunyakuliwa na aila ya mumewe . Jambo hili linaonyesha namna tulivyoachwa nyuma na uhalisia wa mambo. Ni lazima jamii izinduke na itoke kwenye kiza hiki chenye maki nzito.

MASWALI

(a) Ina maana gani kusema kuwa wanaume hawana budi "kutembea na majira?" **(alama2)**

……

……

(b) Kabla ya uzinduzi huu kuhusu usawa wa kijinsia, wanawake wamekuwa wakitendewa dhuluma za kila aina. Taja tatu. **(alama 3)**

……

……

……

……

(c) Je, ni kwa nini viongozi wengi hupenda kujitambulisha na familia zao**?** **(alama 2)**

……

……

(d) Je, unaamini kuwa hisia na mawaidha anayotoa mke kwa mume wake ni tunu na huenda yasipatikane kwingineko? Fafanua **(alama 2)**

……

……

(e) Je licha ya kunyimwa haki yake ya kujiamulia, ni matatizo yapi mengine yanayoweza kumukumba mke anayelazimishwa kurithiwa? **(alama 3)**

……

……

……_

(f) Eleza maana ya maneno yafuatayo jinsi yalivyotumiwa katika muktadh**a.** **(alama 3)**

Kushamiri**……**

……

Hulka**……**

……

Azma**……**

……

MUKHTASARI (ALAMA 15)

Soma taarifa ifuatayo kasha ujibu maswali yatakayofuata.

Binadamu hupenda kujivika vilemba vingi mno.Tunapenda kuheshimiwa na kutukuzwa na kila mtu. Tunapenda kuombwa ushauri na wote ambao wanahitaji ushauri! Tunapenda kutambuliwa popote tuendapo.

Watu wengi hukataa kufanya jambo la halali kwa kuhofia kuitwa wajinga. Mfano mzuri ni pale ambapo mtu amekosea kidogo katika kutenda jambo; utaona kuwa mtu huyo anaona ugumu wa kuomba radhi au samahani ati kwa sababu ataonekana mjinga.

Je, ni mara ngapi mkurugenzi ameita mkutano na katika barua yake akatisha kuwaadhibu watakaochelewa na mwishowe ni yeye mwenyewe anayechelewa? Tena huwa haombi msamaha. Ataulaumu usingizi uliomchukua, au gari lililomleta.

Aghalabu tunapowakuza watoto wetu, tunawafunza maadili mema. Tunawahimiza wale wadogo kwamba ni vizuri kuomba radhi kwa wakubwa wako unapowakosea. Lakini kumbuka kwamba kukosea ni kwa binadamu wote. Mtu anaweza kukukosea kwa makusudi au kwa bahati mbaya. Kwa hivyo tunapaswa kufahamu kwamba, tunapofanya makosa ni lazima tuombe msamaha, iwe ni kwa wakubwa au kwa wadogo, ili kuondoa kero.

Waja wengi huogopa kusimama mbele za watu na kuwasilisha au kutenda jambo fulani. Kisa na maana, mtu hataki kutenda jambo fulani halafu akosee. Hajiamini na anaogopa kuwa huenda watu wakaona kasoro yake. Lakini kumbuka, kukosa njia ndiko kuijua.

Huenda ikawa watu wanajadili maswala ibuka kama vile ufisadi, kuavya mimba, matumizi ya dawa za kulevya, ukimwi, uzuiaji wa kizazi na kadhalika... labda huyaungi mkono maoni ya watu wengine kwa sababu ya imani na maadili yako. Hata hivyo, hutaki kusimama ukatoa msimamo wako mbele za watu ingawa dhamiri yako imekwazika. Baadaye utasikika ukiwalaumu watu wengine ilhali ulikataa kusimama na kutetea msimamo wako.

Wengi wetu hujichukua kuwa watu muhimu sana. Wanaona kuwa sherehe au mkutano wowote hauwezi kufaulu ikiwa wao hawako. Wanapokuwa kwenye hiyo mikutano wao hutaka watambuliwe. Hupenda majina yao yatajwe. Haya huwaridhisha , lakini swali ni je, kuwepo kwao ni muhimu kiasi hicho? Kumbuka kwamba mkutano ungeendelea vizuri bila kuwepo kwao. Kwa hivyo, tusiwe watu wa kutaka kutambuliwa kila tunapoenda mahali. Pia, tusilalamike ikiwa hatukuhusishwa katika jambo fulani.

Unaposhuhudia jambo fulani, kama wizi au ajali, usiwe na woga wa kutoa usaidizi kwa kutoa ushuhuda. Wengine hata huogopa kutoa usaidizi huo, hata kwa manusura wa ajali za barabarani, eti kwa sababu wanahofia kuitwa mahakamani kutoa ushuhuda. Kuna shida gani kuenda kusema yale uliyoyashuhudia bila kuongeza au kutoa chochote?

MASWALI

a) Bila kupoteza maana, fupisha aya ya kwanza hadi ya nne.(maneno 60) **(alama 7)**

Nakala chafu:

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Nakala safi:

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b) Fupisha aya nne za mwisho. (maneno 50) **(alama 8)**

Nakala chafu.

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Nakala Safi.

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MATUMIZI YA LUGHA (Alama 40)

a. Taja tofauti iliyopo kati ya sauti /f/ na /v/ **(alama 1)**

……

……

b. Andika sentensi ifuatayo ukitumia kinyume cha neno lililoandikwa kwa herufi ya mlazo:**(ala 1)**

Binadamu hawezi *kumuumba* mwenzake.

……

……

c. Andika sentensi ifuatayo upya ukizingatia kisawe cha neno lililopigwa mstari: **(alama 1)**

Mtoto mwenye <u>hamaki</u> hawezi kuelewa maagizo.

……

……

d. Andika kwa usemi halisi: **(alama 3)**

Yule mshukiwa aliyekamatwa na polisi alisema kuwa papo hapo ndipo alipoficha ule mkufu.

……

……

……

e. Tunga sentensi inayoshirikisha nomino uliyopewa pamoja na vipashio vifuatavyo vya sarufi: kivumishi kisisitizi, kitenzi kishirikishi, kitenzi, na kielezi cha waka**ti.** **(alama2)**

Pinde**……**

……

f. Sahihisha sentensi zifuatazo :

(i)Ndegwa alipeana kalamu yake kwa mwanafunzi. **(alama 1)**

……

……

(ii)Siku hizi mahitaji imezidi na pesa haitoshi. **(alama 1)**

……

……

g. Tunga sentensi mbili kubainisha maana mbili tofauti za neno: **rudi.** **(alama 2)**

(i) **……**

(ii) ……

h. Akifisha: **(alama 2)**

Mtume asimame nusura aingie kwenye shimo la taka

……

i. Unda nomino kutokana na kivumishi:**refu** **(alama 1)**

……

……

j. Onyesha chagizo katika sentensi ifuatayo: **(alama 1)**

Watu wanne walipeperushwa juu kwa juu na upepo mkali.

……

……

k. Tunga sentensi ukitumia**: isije ikawa** **(alama 2)**

……

……

……

l. Andika upya sentensi ifuatayo ukitumia virejeshi vya tamati: **(alama 2)**

Mwanafunzi anayefanikiwa maishani ni yule anayesoma kwa bidii na pia anayewatii wazazi wake.

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m. Ainisha viambishi awali na tamati katika sentensi: **Anikumbukaye** **(alama 2)**

……

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n. Kanusha kwa udogo: Mwizi aliiba kikapu na ng'ombe. **(alama 2)**

……

……

o. Andika umoja wa sentensi: **(alama 1)**

Kwato za wanyama hutufaidi.

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……_

p. Andika kwa wingi **:** **(alama 4)**

Wimbi hilo la maji lilimhofisha mvuvi akashindwa kutupa wavu wake majini.

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q. Andika katika hali ya kutendewa: **(alama 2)**

Kuku hawa wamemsumbua Sabina kwa muda mrefu.

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r. Tumia sentensi moja moja kubainisha tofauti kati ya sentensi **sahili** na sentensi **ambatano**

(alama 2)

……

……

……

s. Changanua sentensi ifuatayo kwa njia ya mistari au mishale:

Mwanasiasa aliyewapuuza wanaeneo bunge lake amekomelewa. **(alama 4)**

……

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……

t. Andika katika usemi wa taarifa. **(Alama 2)**

"Karibu Bakari, tafadhali kaa", Maimuna alisema. "Asante, je, habari za nyumbani?" Bakari aliuliza.

……

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……

u. Taja aina ya yambwa iliyopigiwa mstari katika sentensi uliyopewa: **(alama 1)**

Mpishi amempikia <u>mgeni</u> wali vizuri.

……

……

<u>ISIMU JAMII (Alama 10)</u>

(a) Taja nadharia zozote mbili zinazohusiana na chimbuko la lugha ya Kiswahili. **(alama 2)**

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……

(b) Kwa kutolea mifano, eleza sifa zozote nne za kimsingi za sajili inayoweza kutumika darasani.

(alama 8)

……

……

……

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

KISWAHILI

PAPER 3

TIME: 2½ HOURS

NAME……. ADM NO; ……

CLASS…… DATE……

MAAGIZO: *Jibu maswali yote katika karatasi hii*

SEHEMU YA A: TAMTHILIA YA BEMBEA YA MAISHA

1. ***"Mgaala muuwe na haki umpe"***

a) Eleza muktadha wa dondoo **(alama4)**

b) Tambua kipengele cha kimtindo katika dondoo hili **(alamal)**

c) Eleza umuhimu wa mbinu ya kimtindo uliyotaja **(alama2)**

d) Dhibitisha ukweli wa msemaji kwa mujibu wa dondoo hili **(alama3)**

e) Onyesha namna mbinu hiyo ya kimtindo ilivyotumika katika tamthilia ya Bembea ya Maisha **(alama10)**

2. Eleza umuhimu wa wahusika wafuatao katika kujenga tamthia ya **Bembea ya Maisha** **(alama20)**

a) Yona

b) Dina

SEHEMU YA B: FASIHI SIMULIZI.

3. a) Eleza umuhimu wa nyimbo katika usimulizi wa hadithi. (al.4)

b) i)Eleza maana ya misimu. (al.2)

ii) Taja mifano yoyote miwili ya misimu. (al.2)

c) Taja sifa tatu za vitanza ndimi. (al.3)

d) Taja sifa tatu za vitendawili. (al.3)

e) Fafanua umuhimu wa vitendawili. (al.6)

4. SEHEMU YA C: USHAIRI.

Akosaye shukurani, zako juhudi hajali,
Hata mfanyie nini, haoni huyo hajali,
Hata mpe milioni, matusi ndio stahili,
Aona huna akili, ni yeye ndiye mshindi.

Patia kila la shani, bure unajisumbua,
Takuona kama nyani, tena atakunyambua,
Akuona punguani, chochote hutaambua,
Usingoje shukurani, tenda wema wende zako.

Utafute kwa juhudi, bila kukata tamaa,
Mpe apate faidi, wala asipate njaa,
Hatachoka kukaidi, atakuletea baa,
Na mawazo yakujaa, maishayo hafikiri.

Mpe vyote vya haluwa,wenzako wamtamani,
Hatakupa ya muruwa, juhudi haioni,
Ataka kuzidishiwa, asubuhi na jioni,
Ufanyacho hathamini, aongeze ya karaha.

Si ndugu wala si mwana, si rafiki si jirani,
Shukrani kiwa hana, jua uko hatarini,
Hadharani tatukana, aulize ndiwe nani,
Ambe kama hajaona, kinyangarika kamawe.
Hebu yeye msaili, amepata toa nini?
Haweziye kukubali, kukupa hata thamani,
Ni bure wake ukali, akutia mashakani,
Yake wala hayaoni, mwovu hana shukurani.

Mfadhili watengaje, jana alikuopoa,
Mwaema wambwekeaje, mabaya wayachokoa,
Mzazi wadharauje, mbali alishakutoa,
Sasa jaribu kupoa, ujifunze shukurani.

Maswali

1. Lipe shairi hili anwani mwafaka**.** **(al.1)**
2. Hili ni shairi la aina gani? Thibitisha**.** **(al.2)**
3. Eleza dhamira ya mshairi katika shairi hili**.** **(al. 2)**
4. Bainisha mifano mitatu ya uhuru wa mshairi katika shairi hili. **(al.6)**
5. Andika ubeti wan ne kwa lugha nathari**.** **(al. 4)**
6. Taja na utolee mfano tamathali zozote mbili za usemi katika shairi. **(al.4)**
7. Eleza maana ya neno hili kama lilivyotumika katika shairi hili. **(al1)**
Shani

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

PHYSICS

PAPER 1

TIME: 2 HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

INSTRUCTIONS TO CANDIDATES:-

- *Write your name, index number and class in the spaces provided above.*
- *This paper consists of two sections; A and B*
- *Answer all the questions in section A and B in the spaces provided*
- *All working must be clearly shown.*
- *Mathematical tables and electronic calculators may be used*
- *Candidates should answer the questions in English.*
- *Take g=10N/kg*

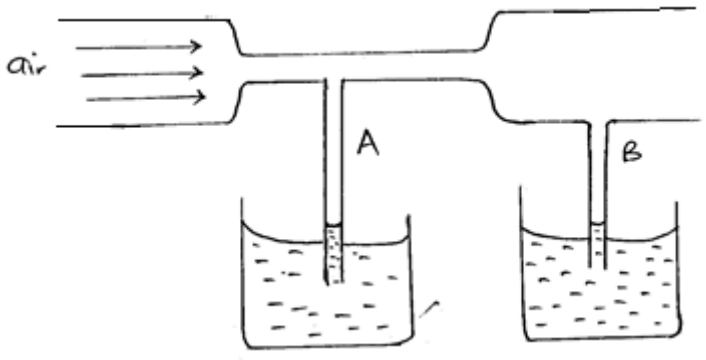
For Examiner's Use Only:

Section	Question	Maximum Score	Candidate's Score
A	1 – 13	25	
	14	11	
	15	9	
B	16	11	
	17	11	
	18	13	
Total Score		80	

SECTION A: 25mks (Answer all the questions)

1. State one assumption made when determining the size of a molecule in an oil drop experiment **(1 Mark)**

2. Air is blown into the horizontal tube as shown below.

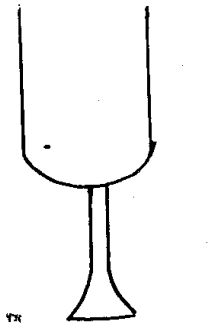


(a) Indicate the levels of water in tubes A and B when air passes through the horizontal tube at a high velocity. **(1 Mark)**

(b) Explain your observation in (a) above **(1 Mark)**

3. Sketch a velocity – time graph of a body moving with uniform velocity. **(1 Mark)**

4. The figure below shows an empty wine glass.

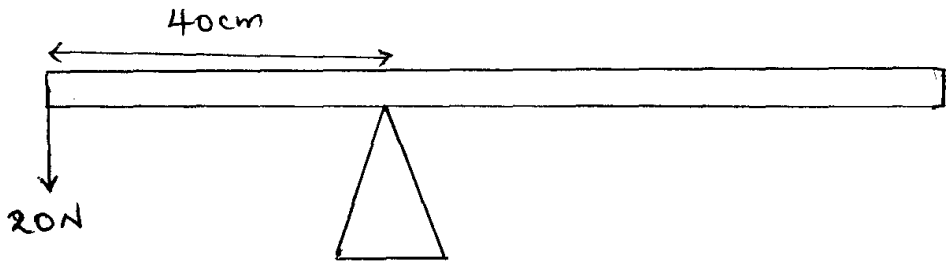


a. How is its stability affected when filled with wine? **(1 Mark)**

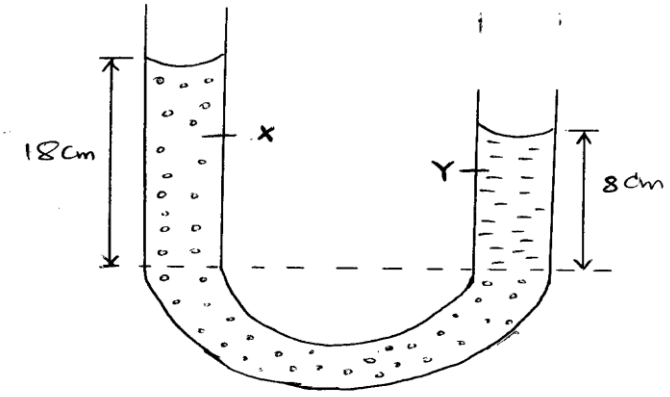
b. Explain the observation in (a) above **(1 Mark)**

5. State one factor that affects heat transfer in solids. **(1 Mark)**

6. The figure below shows a uniform bar of length 1 metre. Calculate the weight of the bar. **(3 Marks)**



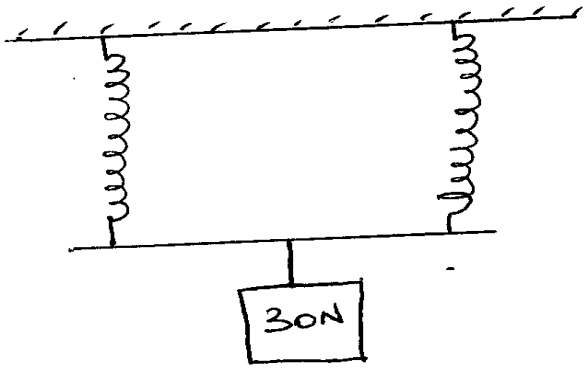
7. The figure below shows a u-tube containing the liquids X and Y. Given that the density of liquid X is 1.8g/cm^3, calculate the density of liquid Y in g/cm^3. **(3 Marks)**



8. Name one factor that affects surface tension. **(1 Mark)**

9. When a liquid is heated in a glass flask, its level first falls and then starts rising. Explain this observation. **(2 Marks)**

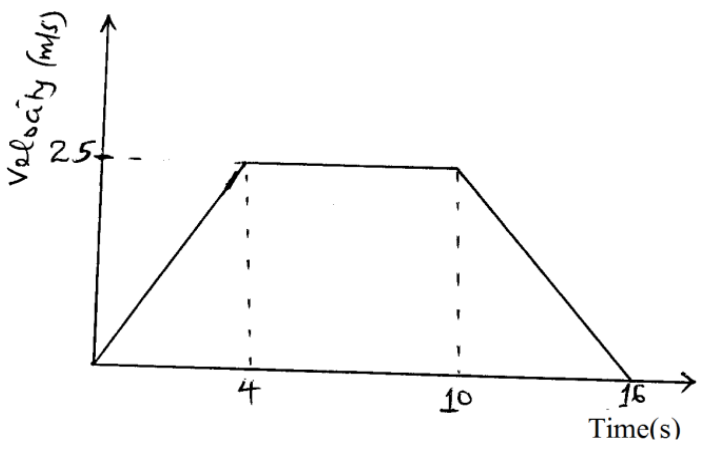
10. The figure below shows two identical springs with negligible weight. The extension produced on the system is 10cm.



Determine the spring constant of each spring. **(3 Marks)**

11. A body A of mass 2kg moving with a velocity of 5m/s collides with a body B of mass 30kg travelling at 2m/s in the opposite direction. If the collision is perfectly inelastic, find their common velocity after collision. **(3 Marks)**

12. The figure below shows a velocity time graph for a trolley



From the graph, calculate the distance covered by the trolley in the first 10 **seconds** **(2 Marks)**

13. State the reason why gases are easier to compress than solids. **(1 Mark)**

SECTION B: 55mks

14. a. State the Hooke's law **(1 Mark)**

b. The table below shows the extension produced in a spring by various forces.

Extension (cm)	0	0.3	0.7	1.10	1.5	1.9
Force (N)	0	1.0	1.9	3.0	4.1	5.0

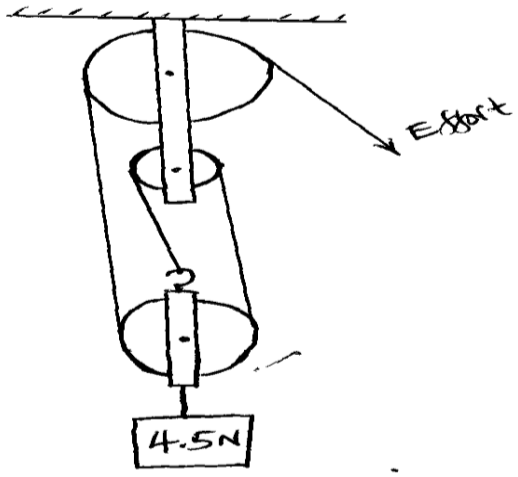
i. Plot a graph of force against extension. **(5 Marks)**

Graph paper attached behind

ii. From the graph, determine the spring constant. **(3 Marks)**

iii. What force would cause an extension of 1.2cm on the spring? **(2 Marks)**

15. The figure below shows a block and tackle system



(a) State the velocity ratio of the system **(1 Mark)**

(b) Mark the direction of tension in the strings **(1 Mark)**

(c) If an effort of 2N is applied, calculate the mechanical advantage of the system. **(3 Marks)**

(d) Calculate the efficiency of the system. **(3 Marks)**

(e) State why the efficiency of the system is less than 100%. **(1 Mark)**

16. A body of mass 2kg is thrown vertically upwards with a velocity of 14m/s. Determine;

(a) The maximum height reached by the body **(3 Marks)**

(b) Its velocity after 0.5 seconds. **(3 Marks)**

(c) The time taken to reach maximum height. **(3 Marks)**

(d) Calculate the net force acting on the ball as it moves upwards if it experiences an air resistance of 8N. **(2 Marks)**

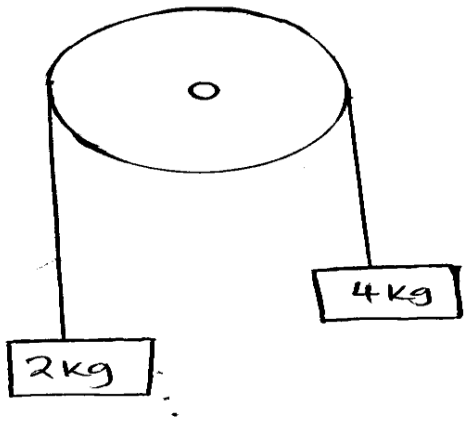
17. a. State the Newton's 2nd law of motion **(1 Mark)**

b. A lady of mass 90kg is standing on the floor of a lift. Determine the reading on the weighing machine when

i. Lift is at rest **(2 Marks)**

ii. Lift is moving upwards with an acceleration of $3m/s^2$ **(2 Marks)**

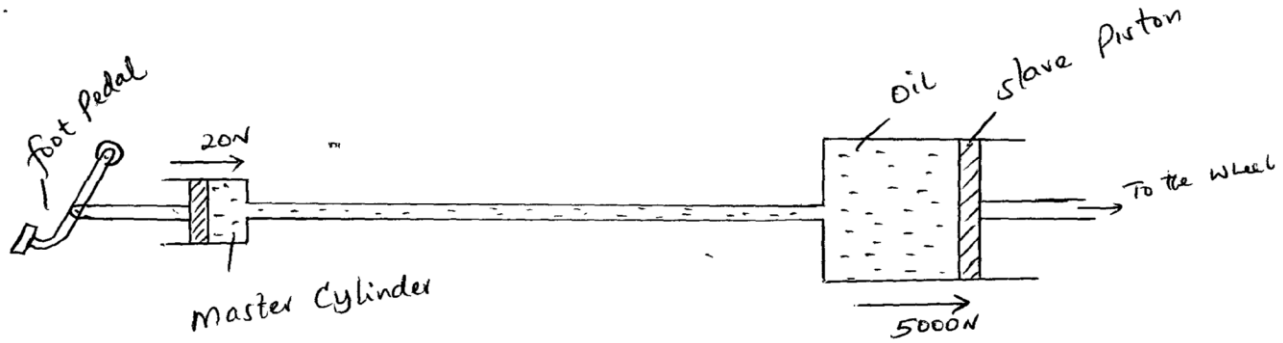
c. Two masses of 4kg and 2kg are connected by a light string passing over a frictionless pulley as shown below.



Calculate the acceleration of the masses when left to move freely. **(3 Marks)**

d. A block of mass 35kg is pushed along a horizontal surface whose frictional force is 20N. If the force moving the block is 100N, calculate the co-efficient of friction between the block and the surface. **(3 Marks)**

18. The figure below shows a hydraulic brake system.



A force of 20 N is applied on the foot pedal connected to a piston of area 0.05m^2. This causes a stopping force of 5000N on one wheel. Calculate.

a. Pressure in the master cylinder **(3 Marks)**

b. Area of the slave piston. **(3 Marks)**

c. Velocity ratio of the system. **(3 Marks)**

d. Give two reasons why oil is used in the hydraulic brake system. **(2 Marks)**

e. State two factors affecting pressure in liquids. **(2 Marks)**

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

PHYSICS

PAPER 2

TIME: 2 HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

SECTION A: (25 MARKS)

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

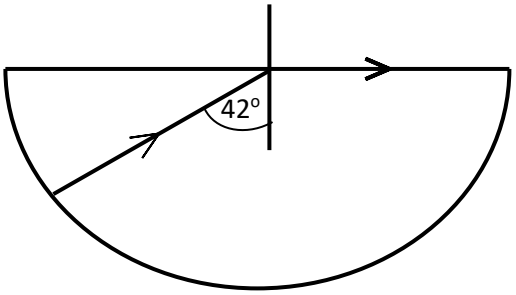
1. What property of light is suggested by the formation of shadows? **(1mark)**

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)**

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)**



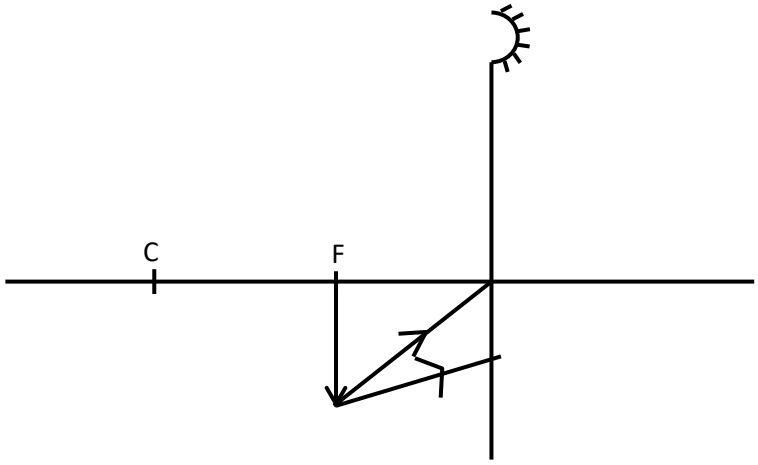
5. Explain why repulsion is the only sure test for polarity of a magnet. **(1mark)**

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

7. A lamp of height 6cm stands in front 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)**

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)**

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)**

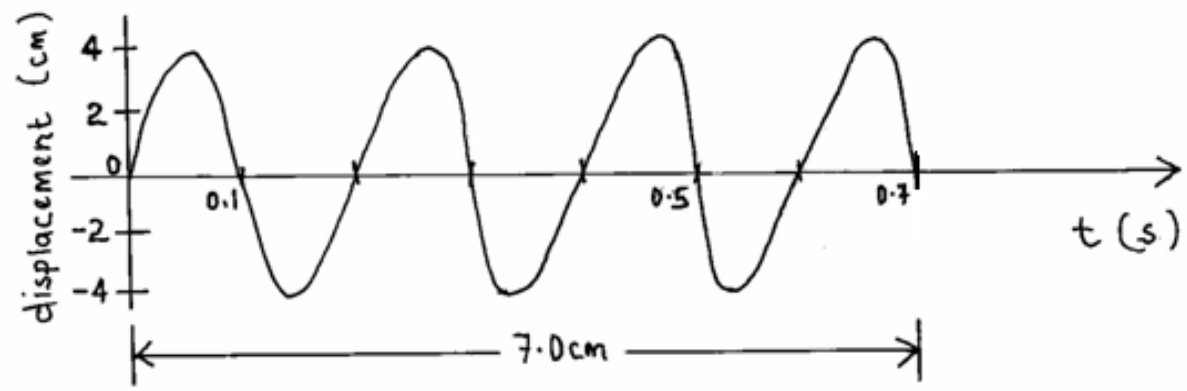
12. (i) Distinguish between transverse and longitudinal waves. **(1mark)**

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

SECTION B: (55 MARKS)

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

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. **(2mark)**

(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)**

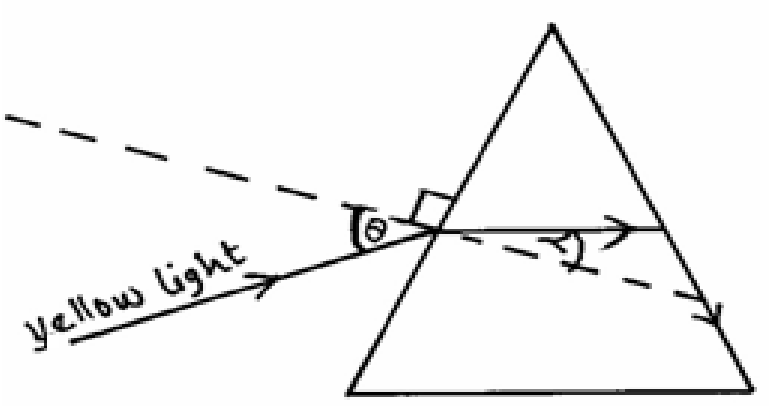
(b) (i) The echo sounder of a ship receives the reflected wave from a sea-bed after 0.2 seconds. What is the depth of the sea bed if the velocity of sound in water is 1450m/s. **(3marks)**

(ii) State **three** factors that affect the speed of sound in air. **(3marks)**

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)**

(b) 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.



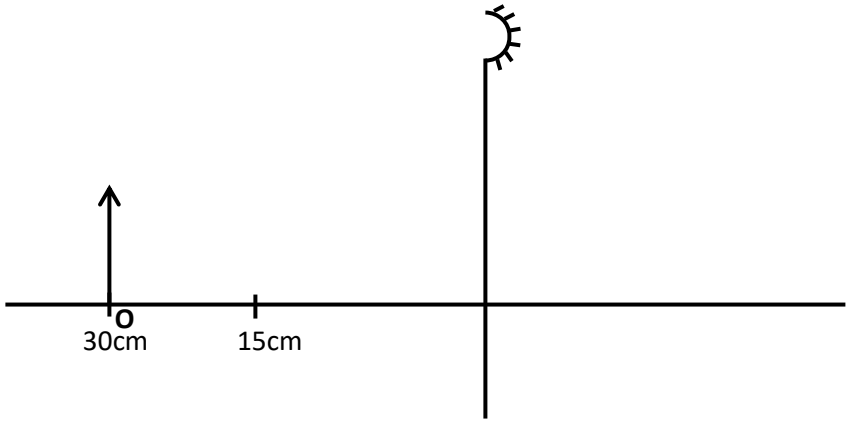
(i) Determine the refractive index of the prism material for the light (speed of light in vacuum, c = 3.0×10^8m/s. **(3marks)**

(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.

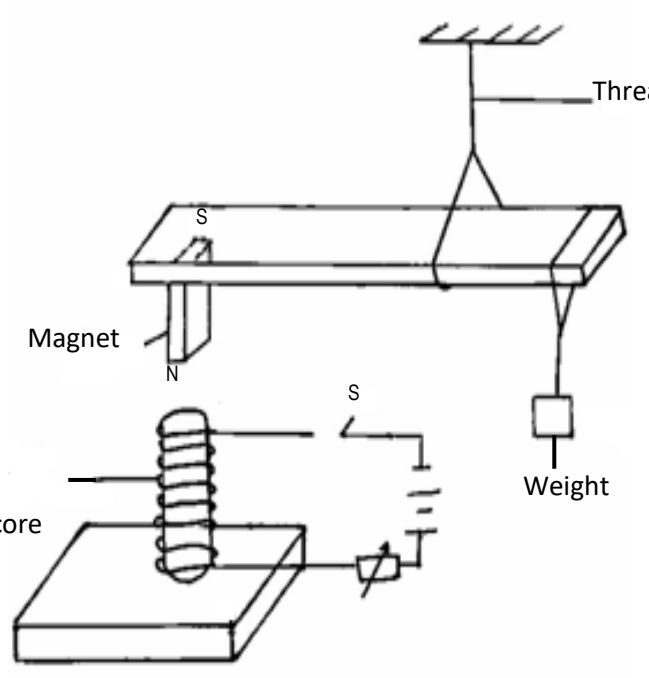


Draw on the figure a ray diagram to locate the image formed. **(3marks)**

(c) State why parabolic reflection is used in car headlights. **2mks**

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? **(2mark)**

(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.

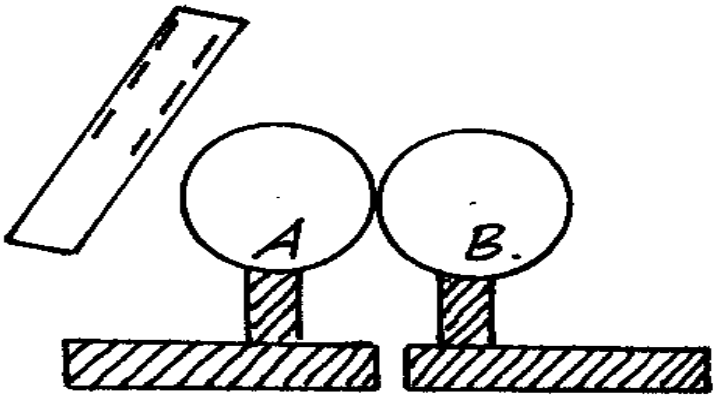


On the same figure.

(i) Sketch the magnetic field pattern. **(2mark)**

(ii) Indicate the force F due to the current on each conductor. (**2mark)**

18. Two identical spheres A and B each standing on an insulating base are in contact. A negatively charged rod is brought near sphere A as shown in figure below



In what way will A differ from B if separated while the rod is near? Explain. **(2mks)**

19. The figure 2 below shows two identical electroscopes. The one on the right is charged but the one on the left is not.

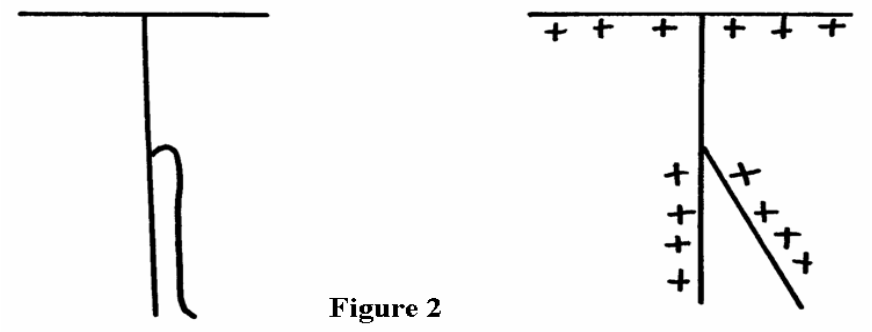


Figure 2

Show the charge distribution after the caps of the two electroscopes are connected by a thin conducting wire **(2mk)**

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

PHYSICS

PAPER 3

CONFIDENTIAL

The teacher is required to provide each student with the following;

- *concave mirror of focal length 10 ± 1 cm*
- *lens holder*
- *screen*
- *candle*
- *A pendulum bob*
- *A cotton thread about1m long*
- *A retort stand and clamp*
- *A metre rule*
- *A stopwatch*
- *Two pieces of wood*
- *Vernier calipers(to be shared)*

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

PHYSICS

PAPER 3

TIME: 2½ HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

SIGN…… DATE;……

INSTRUCTIONS TO CANDIDATES

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

b) *Answer all questions on the question paper*

c) *You are supposed to spend the first 15 minutes allowed for this paper reading the whole paper carefully before commencing your work and confirming your apparatus.*

d) *Marks are given for a clear record of the observations actually made, (or their suitability and accuracy and or the use made of them)*

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

f) *Mathematical tables or electrical calculators may be used*

g) *Candidates should answer all the questions in English*

FOR EXAMINER USE ONLY.

Question	Maximum	Candidates score
1	20	
2	20	
Total	40	

QUESTION 1

You are provided with following apparatus

- A pendulum bob
- A cotton thread about1m long
- A retort stand and clamp
- A metre rule
- A stopwatch
- Two pieces of wood
- Vernier calipers(to be shared)

Proceed as follows

a) Using the vernier calipers measure the diameter of the pendulum bob. **(1mk)**

……cm

b) Clamp the pendulum as shown starting with L=80cm

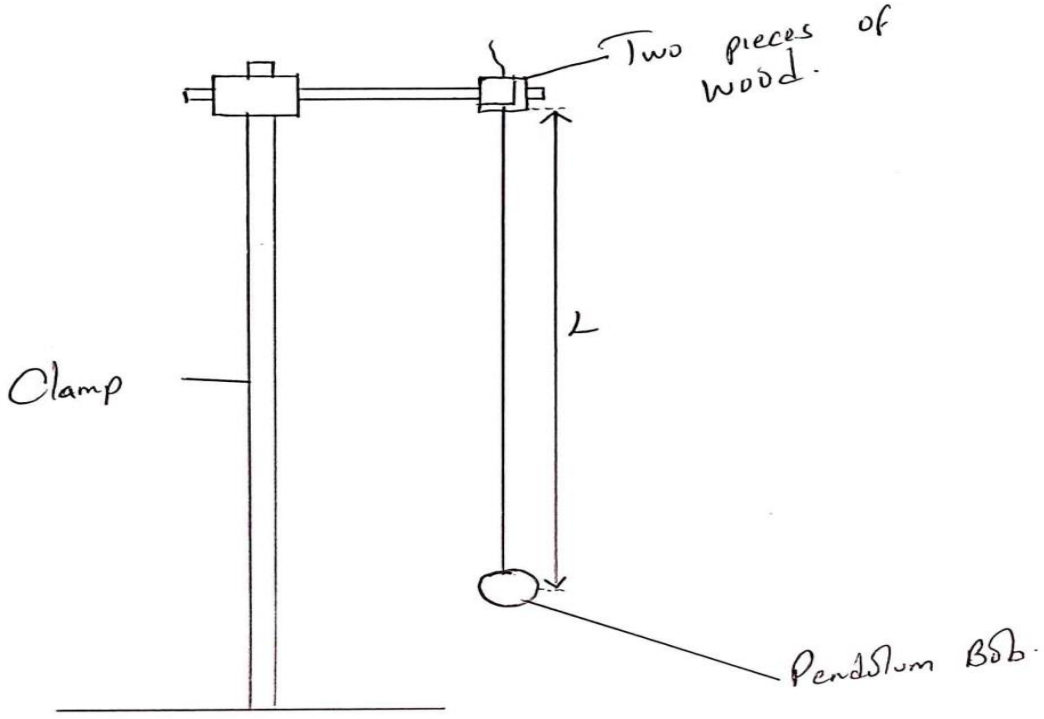


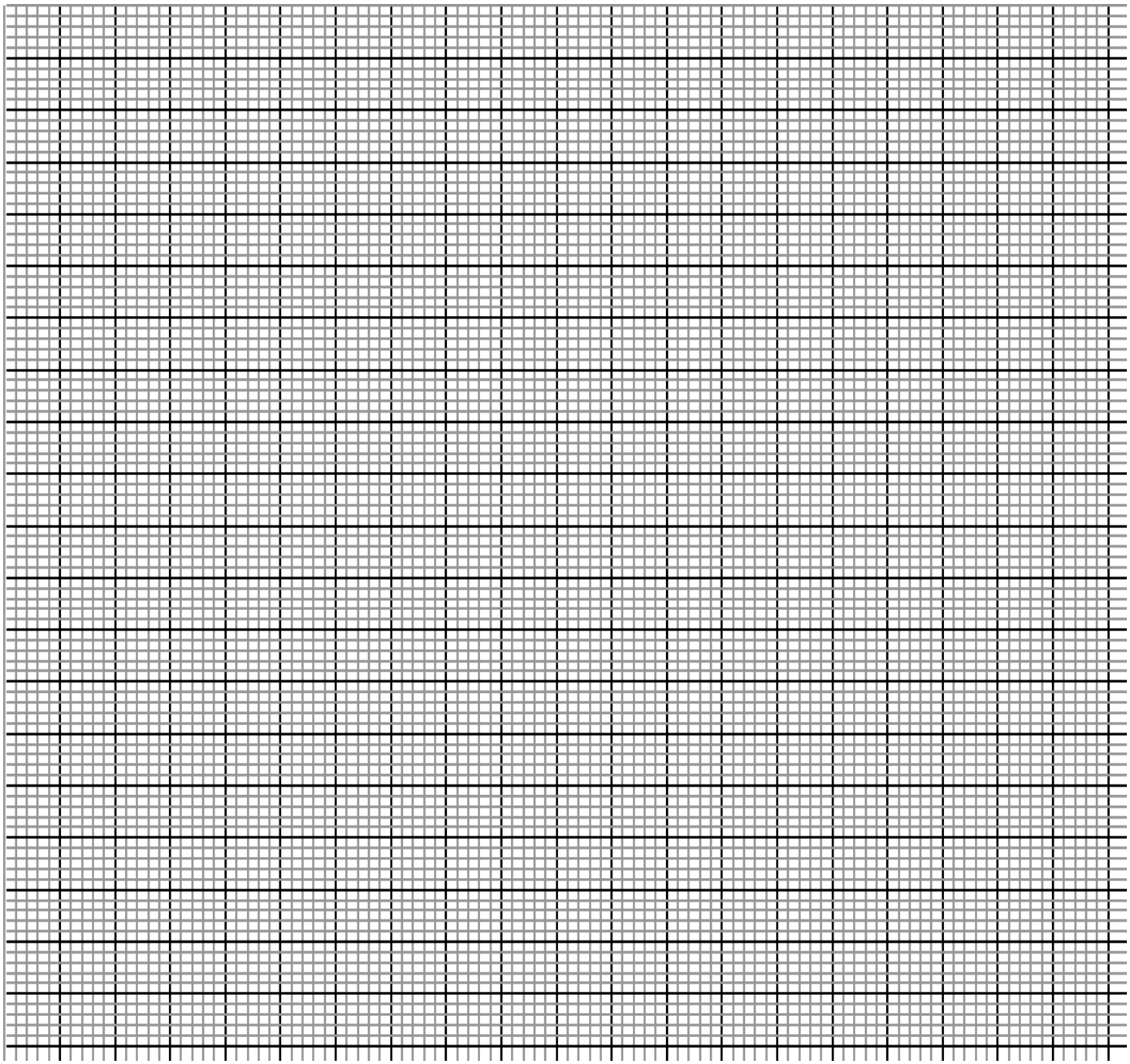
Figure 1

c) Give the bob a small displacement and record the time t for 20 complete oscillations. Record also periodic time T for one complete oscillation.

d) Repeat the procedure above for values of L as shown in the table. Record and complete the table**.(8marks)**

Length L (cm)	**L (m)**	**Time for 20 oscillations**	**Period T**	**(T^2) (s^2)**
80				
70				
60				
50				
40				
30				
20				

e) Plot the graph of T^2 **against L(m)(5marks)**



f) Determine the slope of the **graph** **(3marks)**

g) The equation for the graph is given by $T^2 = \frac{4\pi^2 L}{g}$ where g is a constant. From the graph find the value **of g.** **(2marks)**

h) What is the significance of g**.** **(1mark)**

QUESTION 2

APPARATUS

- concave mirror
- lens holder
- screen
- candle

Proceed as follows;

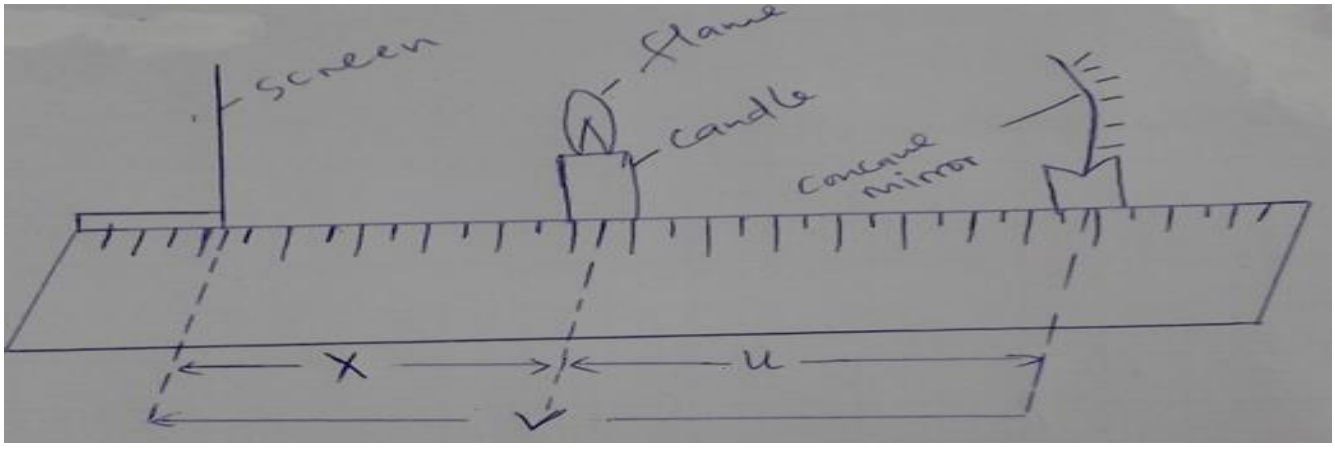


Figure 2

Procedure

I. Set the apparatus as shown in figure 2

II. Place the candle at a distance **x=5.0 cm** from the screen

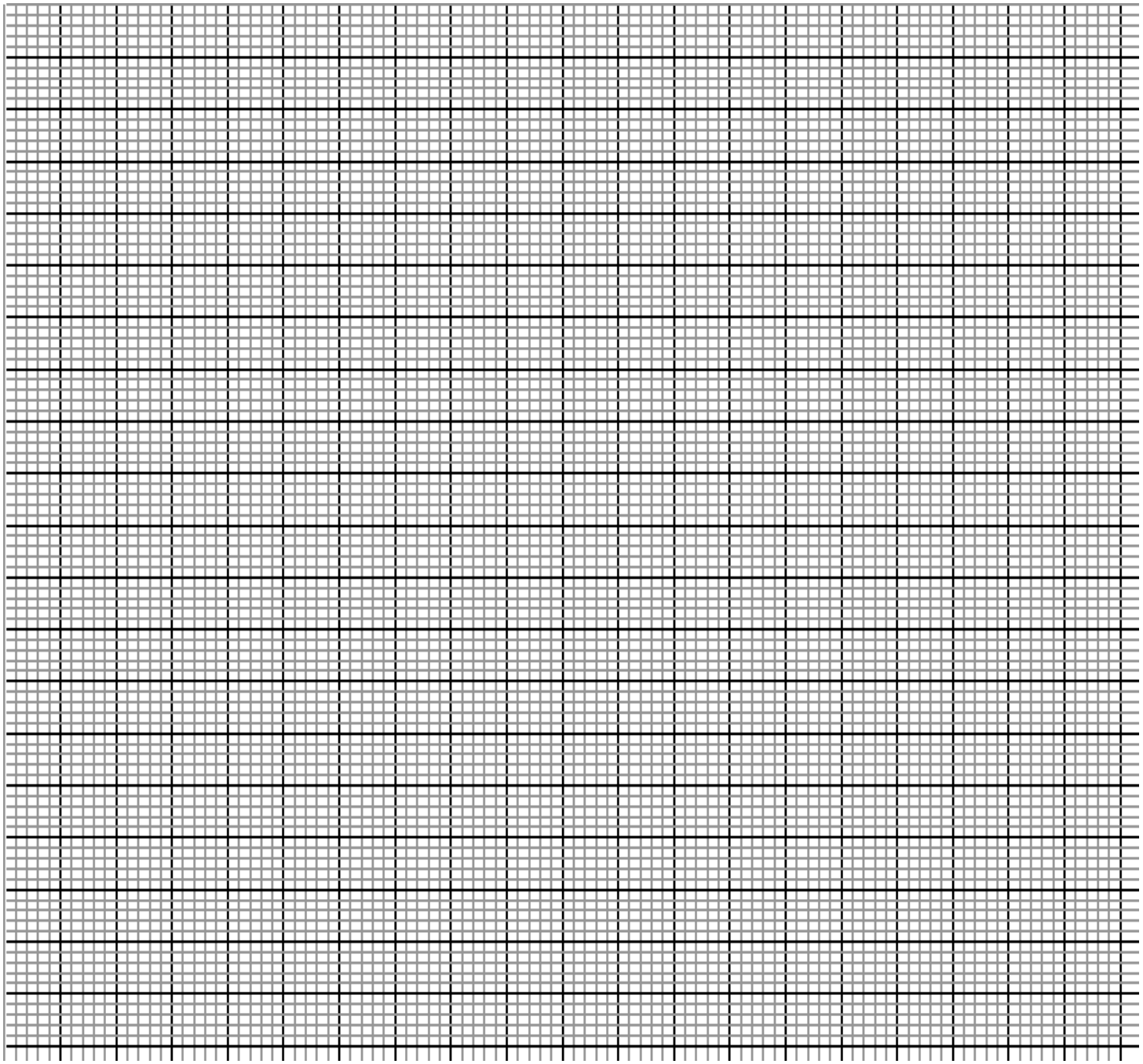
III. Move the mirror to and fro to focus a clear; sharp image of the candle on the screen

IV. Measure and record the distance u between the mirror and the candle and the distance v between the screen and the mirror.

V.Repeat the experiment for other values of x and complete the table **below** **(8MKS)**

x (cm)	**5.0**	**10.0**	**15.0**	**20.0**	**25.0**	**30.0**
u (cm)						
v (cm)						
(u + v) (cm)						
uv (cm)						

Vi) Draw a graph of **(u + v)** cm against **u v** (cm**)** **(5MKS)**



Vii) Determine the slope **S** of the **graph** **3mks**

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viii) Using the value of **S** obtained above in (viii); determine the value of **f,** the focal length of the mirror**,** **2mks**

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Given that $\mathbf{R = 4f/s^2}$ **2mks**

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FORM 3 TERM 2 OPENER EXAMS

SERIES 1

BUSINESS STUDIES

PAPER 1

TIME: 2 HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

INSTRUCTIONS TO CANDIDATES

- *Write your name admission number and class in the spaces provided.*
- *Answer all questions in the spaces provided.*

1. State **four** reasons why land is considered a prime factor of production. **(4mrks)**

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2. Outline **four** measures being used by the government to control high rate of unemployment in Kenya. **(4mrks)**

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3. Highlight **four** reasons why the owner of a small business enterprise would prefer to a advertise his goods using **posters** **(4mrks)**

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4. State **four** challenges that a business with no plan will encounter in its operations. **(4mrks)**

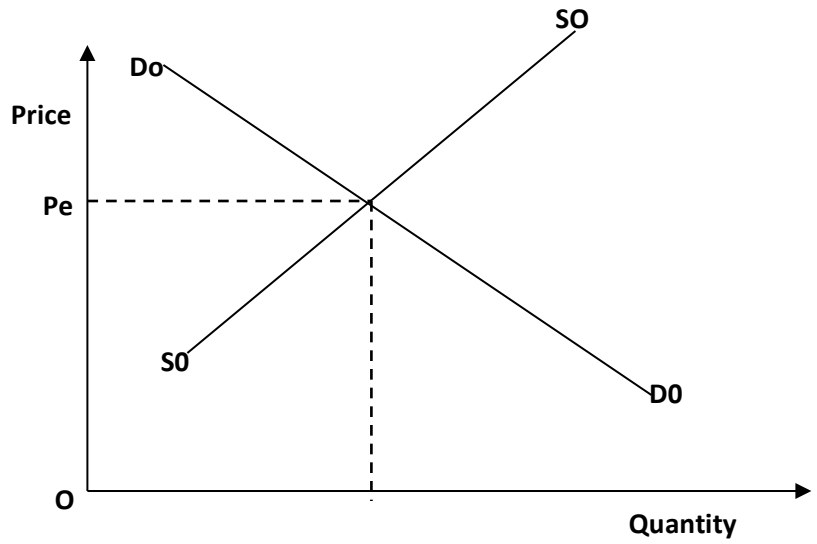
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5. The diagram shows equilibrium price and quantity



Draw a new demand curve on the diagram above showing a decrease in demand and the Effect on **(4mks)**

(i)Equilibrium price

(ii) Equilibrium quantity

(iii) Equilibrium point

6. Mention **four** roles played by intermediaries in the chain of distribution **(4mks)**

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7. Give **four** factors that may determine the amount of premium payable in life assurance **(4mks)**

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8. Outline **four** features of oligopoly **(4mks)**

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9. Mention **four** pre requisites of transport **(4mks)**

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10. State **four** principles that govern the operation of cooperative societies in Kenya**. (4 marks)**

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11. Outline **four** criteria used in determining the size of the firm. **(4 mks**

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

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

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14. Outline four roles played by the stock exchange market as a market for securities**.** **(4 mk)**

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15. Give **four** malpractices against which consumers may need protection**.** **(4 marks)**

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16. Outline **four** circumstances under which gaps in the market may be identified**. (4 marks)**

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17. State **three** injections into the circular flow of income. **(3 marks)**

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18. Outline **four** reasons why a cheque may be dishonored . **(4 marks)**

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19. Highlight **four** measures which a firm may take to improve its human resource productivity.

(4 mark)

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20. Outline **four** circumstances under which verbal communication may be used. **(4marks)**

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21. State **four** essentials for a warehouse. **(4 marks)**

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22. State **four** types of internal economies of scale to a firm. **(4 marks)**

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23. Highlight four reasons for making choices between competing wants. **(4mks)**

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24. State four advantages of using credit cards as a means of payment. **{4 marks}**

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25. Indicate in the table below the office machine used to perform the following **functions. (5 marks)**

	Function	**Machine**
a.	Folding documents, placing them in envelopes and sealing the envelopes.	
b.	Making short hand dictations and recording information on tapes.	
c.	Posting information to ledgers and preparation of pay rolls.	
d.	For trimming documents into required shapes and sizes.	
e.	Used to destroy unwanted papers	

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

BUSINESS STUDIES

PAPER 2

TIME: 2½ HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

INSTRUCTIONS: ***Answer any five questions***

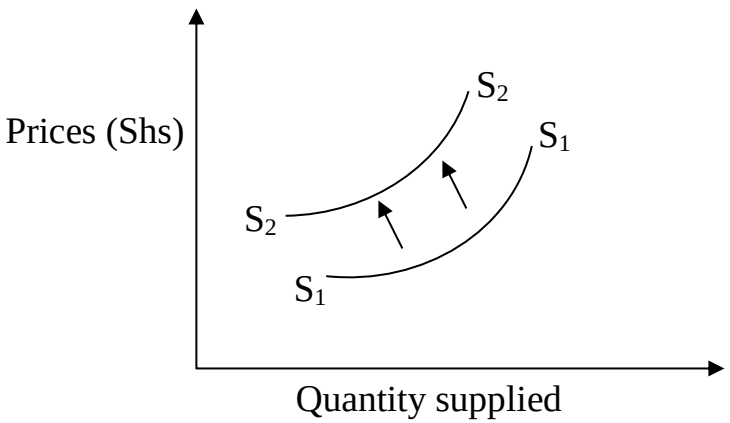
1. (a) Explain **FIVE** types of unemployment **(10 mks)**

(b)Describe **FIVE** channels of distribution that may be followed by imported manufactured goods **(10 mks)**

2. a) Explain **five** ways in which the government may encourage delocalization of firms. **(10 marks)**

b) In the recent past, many small businesses in Kenya have expanded and grown into large enterprises. Explain **five** causes of business success in Kenya. **(10 marks)**

3. a) The diagram below shows a shift of the supply curve of a commodity from S_1S_1 to S_2S_2. Explain **five** factors that would have caused the shift. **(10 marks)**



b) Ramji operates a large hardware business in a town in Kenya. Apart from motor vehicle insurance policies, highlight giving reasons, **five** insurance policies that may be beneficial for this business. **(10 marks)**

4. (a) Explain **<u>five</u>** limitations of using posters as a medium of product promotion **(10mks)**

(b) Explain **<u>five</u>** circumstances under which a partnership could be dissolved **(10mks)**

5. a) Outline **five** differences between land and labour as a factor of production. **(10 marks)**

b) Outline **five** uses of National income statistics to a country. **(10 marks)**

6. (a) Explain **five** factors that a business may consider when choosing an office layout.**(10 marks)**

(b) Explain five effects of a declining populating to an economy. **(10 mks)**

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

AGRICULTURE

PAPER 1

TIME: 2 HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

SECTION A: (30 MARKS)

Answer ALL questions in this section in the spaces provided.

1. Name two types of land tenure **systems.** **(1mk)**

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2. State four problems associated with land fragmentation in Kenya**.** **(2mks)**

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3. Give four advantages of individual owner operator tenure system as practiced in Kenya. (2mks)

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4. Give four methods of breaking seed dormancy. **(2mks)**

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5. State four disadvantages of organic mulch in crop production. **(2mks)**

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6. Give four practices carried out in a tree nursery. **(2mks)**

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7. State four reasons for staking tomatoes. **(2mks)**

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8. List four methods of treating water for use on the farm. **(2 mks)**

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9.Give two examples for each of the following categories of water pipes.

a) Metal pipes **(1mk)**

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b) Hose pipes **(1mk)**

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10. What is organic farming? **(1mk)**

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11. State four problems that may be brought about by hardpans in crop land. **(2mks)**

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12.State four information contained in a land title deed. **(2mks)**

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13. State four disadvantage of communal system of land **tenure** **(2mks)**

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14. State four factors that determine the depth of planting. **(2 mks)**

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15. List four aspects of **rain.** **(2mks)**

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16. State four human factors influencing agriculture. **(2mks)**

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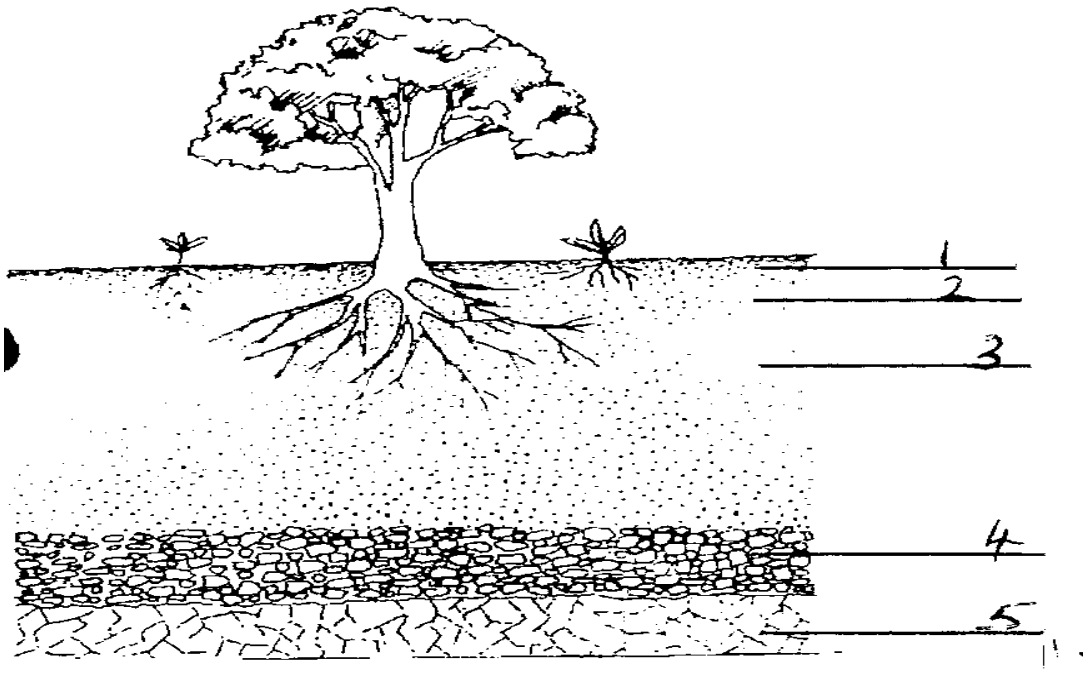
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SECTION B: (20 MARKS)

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

17. The diagram below illustrates a soil profile. Study it carefully and answer the questions that follow



a) Name the layers represented by numbers **2,3,4, and 5.** **(4mks)**

2……

3……..

4……..

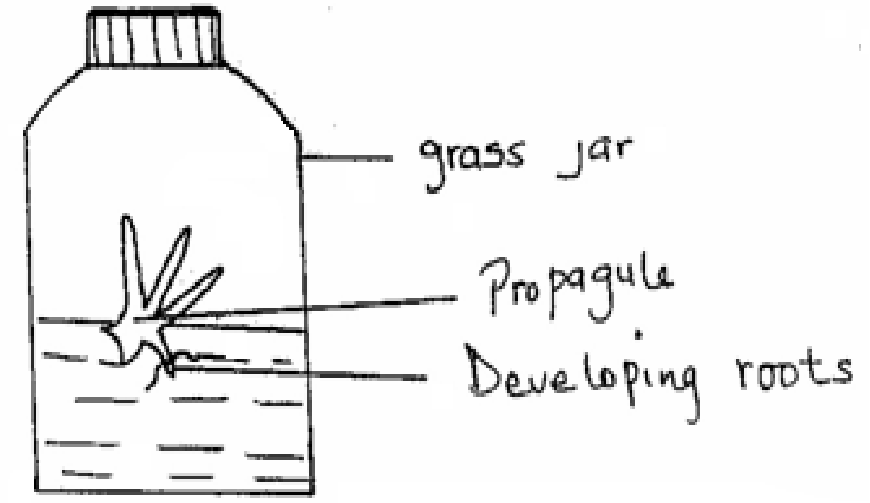
5……

c) State **two** characteristics of the layer**.** **(2mks)**

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18. The diagram **below** illustrates a method of crop propagation.



(a) Identify the method of propagation. **(1 mark)**

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(b) Name a common crop propagated through the method. **(1 mark)**

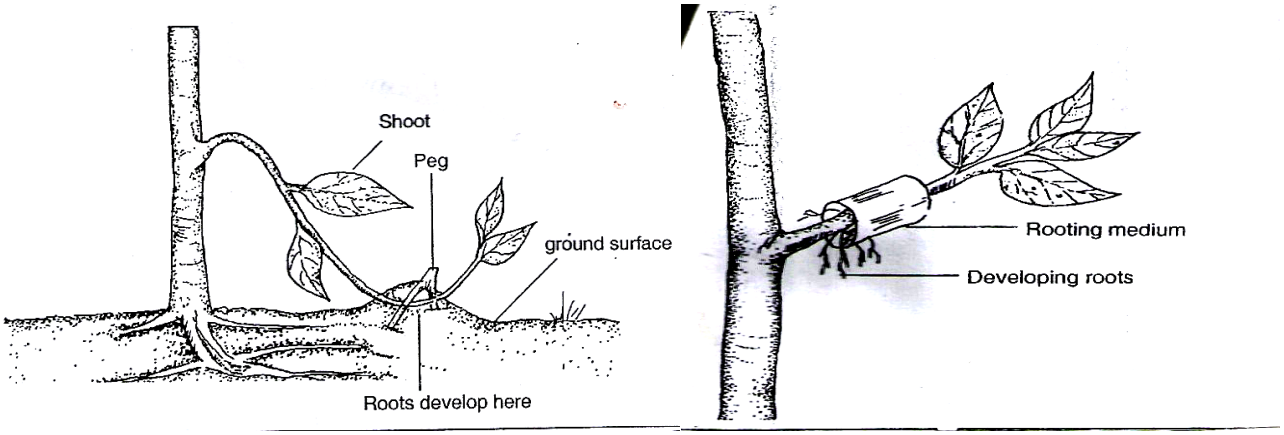
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(c) Name **two** advantages of this method. **(2 marks)**

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19.The diagrams below illustrate methods of crop propagation. Study them carefully and answer the questions that follow

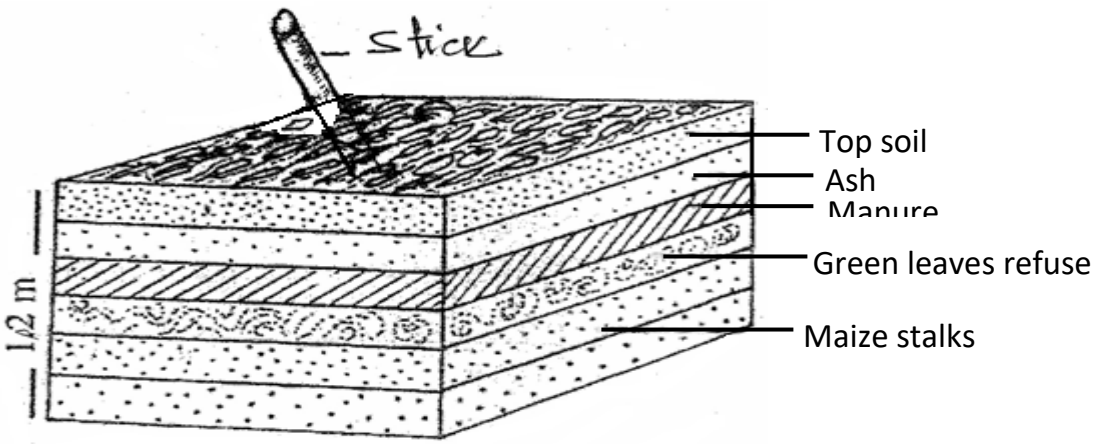


L **K**

(a) Name the types of layering shown above **(1 mark)**

b) State **one** method of budding **(1mks)**

20.The diagram below shows preparation of organic manure.



(a) Which type of organic manure is being prepared above? **(1 mark)**

(b) Give the importance of inclusion of the following layers. **(4 marks)**

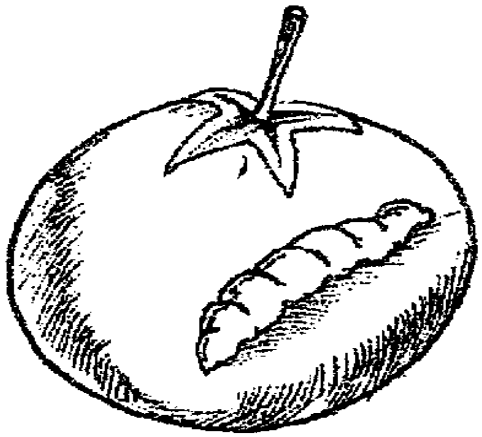
(i) Ash

(ii) Topsoil

(iii) Manure

(iv) Stick

21. The diagram below shows a pest and the damaged crop. Study it and answer the questions that follow.



(a) **Identify** the crop pest illustrated **above.*(1 mark)***

(b) What damage does the pest cause to the crop***?(1 mark)***

(c) State two ways of controlling the pest**.** ***(1mark)***

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SECTION C

Answer any two questions in this section in the spaces provided

22a) State and explain **five** ways through which soil loses its fertility. **(10 marks)**

b) Describe **five** characteristics of Nitrogenous fertilizers. **(5 marks)**

c) Outline **five** methods used in application of inorganic fertilizers. **(5 marks)**

23a) Outline the factors affecting rooting of cuttings. **(5 marks)**

b) State and explain human factors that influence Agricultural production**.** **(10 marks)**

c) Highlight the management practices carried out in a nursery. **(5 marks)**

24 .) Explain the factors considered in choosing seed rates **(8mks)**

b) Describe the production of cabbages under the following sub headings

i) Nursery establishment and management **(6 mks)**

ii) Transplanting **(6mks)**

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

AGRICULTURE

PAPER 2

TIME: 2 HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

SECTION A: (30 MARKS)

Answer ALL questions in this section in the spaces provided.

1. List **four** farm structures that would assist in control of livestock parasites. **(2mks)**

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2. State **three** desirable characteristics to be considered when a heifer for a milk production.(3mks)

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3. Distinguish between interbreeding and out crossing in livestock **production.** **(2mks)**

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4. a) Mention **four** reasons why bees **swarm.** **(2mks)**

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b) State **two** methods to stock bee hives. **(2mks)**

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5. State **four** reasons for castrating male c**attle.** **(2mks)**

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6. Give **two** reasons for steaming up in dairy cattle management**.** **(1mk)**

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7. Give **two** reasons why honey harvesting should be discouraged at night. **(1 mks)**

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……

8. a) Distinguish between inbreeding and line breeding. **(1mk)**

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……

……

b) State any **three** importance of cross breeding. **(1½mks)**

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9. State any **four** factors that may lower the quality of **honey.** **(2 marks)**

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10. State **four** reasons for maintaining wheelbarrow in the farm. **(2mks)**

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11. List **one** tool used in tightening barbed wire when constructing a fence. **(½mk)**

……

12. Name two types of be**es.** **(2mks)**

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13. State four factors determining the quality of **honey,** **(2mks)**

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14. Give two methods of **castration.** **(2mks)**

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15. State four signs of parturition in a **pig.** **(2mks)**

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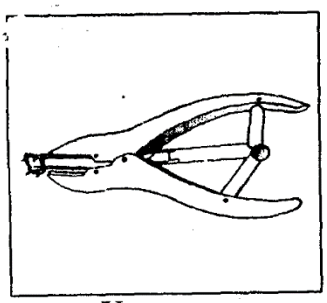
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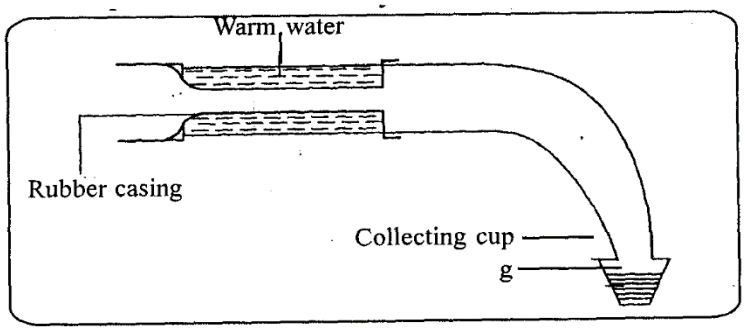
SECTION B: (20 MARKS)

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

16. Diagram X and Y illustrate livestock production. Study the illustration and answer the questions that follow.



X



Y

a). State **one** function of each tool .(2mks)

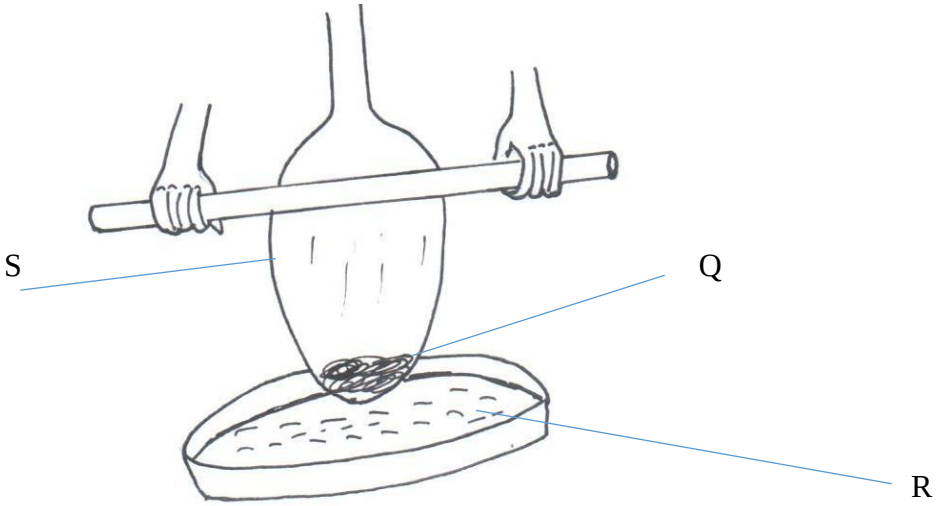
X

Y

b). What is the suitable name of the livestock production equipment **Y?** **(1 mk)**

c) State **one** advantage of using the substance g collected in Y above. **(1mk)**

17. Study the illustration of processing honey below and answer the question that follow.



a) Name the part labeled. **(2 marks)**

Q

R

(b) State the function of part labeled **S.** **(1 mark)**

(c) State **four** equipments used for harvesting **honey** **(4 marks)**

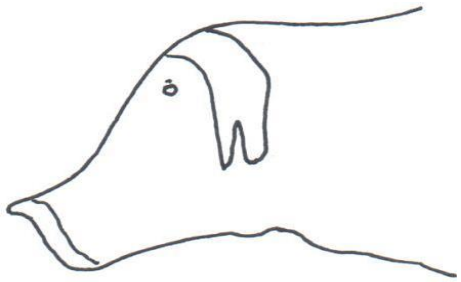
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18. The diagram below represents a method of livestock nurture management practice. Study it carefully and answer the questions beneath/below.



(a) Identify the management practice represented above**.** **(1 mark)**

(b) Name the farm tool used to carry out the management practice. (**1 mark)**

(c) State **one** major precautionary measure taken when carrying out the above management **practice.**

(1 mark)

(d) Name **four** livestock animals which the management practice is carried **out.** **(2 marks)**

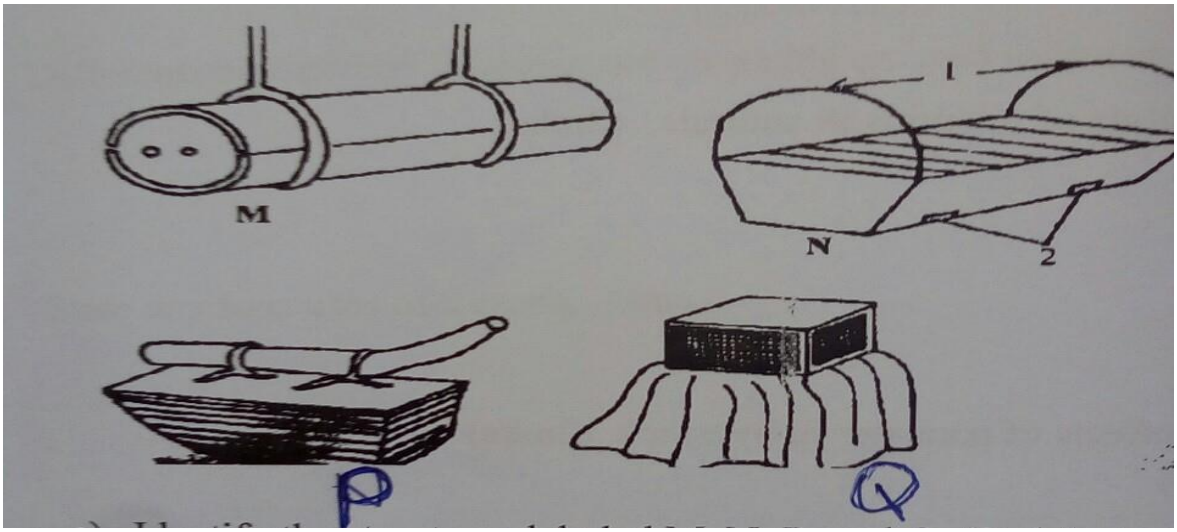
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19. The diagrams M, N, P, and Q show some structure used in apiculture.



a) Identify the structures labeled **M, N, P, and Q.** **(2mks)**

M –

N –

P –

Q –

b) State the uses **of P and Q.** **(2mks)**

P –

Q –

SECTION C

Answer any two questions in this section in the spaces provided

20(a) Outline **four** factors to consider when siting a **calf pen.** **(4 marks)**

(b) Name and describe the features of an ide**al calf pen.** **(6 marks)**

(c) What factors should a farmer consider when selecting materials for Constructing dairy cattle shed.

(10 marks)

21.a) Describe the reasons why bees may abscond from a **beehive.** **(10 marks)**

b) Describe the factors considered in siting farm structures on the farm**.** **(10 marks)**

22.a) Describe the factors to consider when selecting livestock for breeding**.** **(10 marks)**

b) Describe ten signs of ill health in livestock**.** **(10 marks)**

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

CHRISTIAN RELIGIOUS EDUCATION

PAPER 1

TIME: 2½ HOURS

NAME……. ADM NO; ……

CLASS…… DATE……

INSTRUCTIONS TO CANDIDATES

Answer Any Five Questions

FOR EXAMINERS USE ONLY

QUESTION	1	2	3	4	5	6	Candidates Total score
CANDIDATES SCORE							

QUESTIONS

1a) Describe the first Biblical creation **account (Genesis I)**

b) Mention SIC relationships between human beings and God in the second Biblical account of creation.

c) Give lessons to Christians from the fall of Adam into sin in Genesis 3 **(6 marks)**

2a) Outline SIX importance of the Abrahamic covenant **(6 marks)**

b) What were the physical effects of the Egyptians when Pharaoh refused to release the Israelites? **(7 marks)**

c) State lessons to Christians from the breaking of the Sinai covenant **(7 marks)**

3a) Identify FIVE problems encountered by the Israelites while settling in Canaan **(5 marks)**

b) Write down failures of King Saul **(7 marks)**

c) State activities that describe Elijah as the man of God **(8 marks)**

4a) Outline FIVE differences between the Old Testament Prophets and African Seers **(5 marks)**

b) Describe the vision of the Plumbline as revealed to prophet Amos during his call (Amos 7:7-9) **(8 marks)**

c) State lessons to Christians from Amos teaching on Israel Election **(7 marks)**

5a) Identify teaching of prophet Jeremiah on idolatry **(6 marks)**

b) Explain the significance of Jeremiah's symbolic act of buying linen waist cloth (Jeremiah 13) **(8 marks)**

c) Mention SIX sufferings of Prophet Jeremiah during his ministry **(8 marks)**

6a) What were the roles of Rainmakers in traditional African communities? **(7 marks)**

b) State occasions when services of the herbalists were required in African communities **(6 marks)**

c) Identify traditional African practices undermining the dignity of women **(7 marks)**

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

CHRISTIAN RELIGIOUS EDUCATION

PAPER 2

TIME: 2½ HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

INSTRUCTIONS TO CANDIDATES

Answer Any Five Questions

For Examiners Use Only

QUESTION	1	2	3	4	5	6	Total score
CANDIDATES SCORE							

QUESTIONS

1a) Describe the concept of the Messiah in the New Testament. **(7 marks)**

b) Outline activities that took place when Mary visited Elizabeth. **Lk 1:39-56** **(7 marks)**

c) Identify SIX ways in which Christian youths should show gratitude to God. **(6 marks)**

2a) Relate the story of the healing of a man with a withered hand **LK 6:6-11** **(8 marks)**

b) Explain the teachings of Jesus from the parable of the Sower. **(4 marks)**

c) Write down EIGHT ways in which churches are assisting the sick. **(8 marks)**

3a) Give reasons why Jesus was arrested **(6 marks)**

b) Describe an incident when Jesus was questioned about his authority during Jerusalem Ministry LK 20:18 **(6 marks)**

c) Outline the importance of Easter holidays to Christians. **(8 marks)**

4a) Mention St. Paul's teachings on how the gifts of the Holy Spirit should be used in the Church. **(8 marks)**

b) Explain the New Testament teachings on Christian unity **(6 marks)**

c) State SIX challenges that church ministers face today **(6 marks)**

5. (a) Describe the triumphant entry of Jesus into Jerusalem as in **Luke 19:28-40** **(8marks)**

(b) Outline seven teachings of Jesus on **prayer** **(7marks)**

(c) Why do some Christians find it difficult to pray? **(5marks)**

6. (a) Outline Jesus' teaching on the role of the Holy spirit **(7 marks)**

(b) Show how the Unity of Believers is illustrated in the image of the vine and the branches as recorded in John 15:1-10 **(8marks)**

(c) State five factors which threaten unity in the church today **(5 marks)**

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

MATHEMATICS

PAPER 1

TIME: 2½ HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

Instructions to candidates

1. *Write your **name, admission number** and **class** in the spaces provided above.*
2. *Sign and write the date of examination in the spaces provided above.*
3. *The paper contains two sections: **Section I** and **Section II**.*
4. *Answer **All** the questions in **section I** and **strictly any five** questions **from Section II.***
5. *All answers and working must be written on the question paper in the spaces provided below each question.*
6. *Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.*
7. *Marks may be given for correct working even if the answer is wrong.*
8. *Non-programmable silent electronic calculators and **KNEC** mathematical tables may be used, unless stated otherwise.*

For Examiner's use only.

Section I

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

Section II

17	18	19	20	21	22	23	24	**Total**

SECTION A (50 MARKS)

Answer all the questions in this section

1. Without using mathematical tables or calculator, evaluate. **3 mks**

$$\frac{\left(\sqrt[3]{13824}\ -4\right)}{3+4\ \div 2-5\times 7}$$

2. A watch which looses a half a minute every hour was set read the correct time at 0445hr on Monday. Determine in twelve hour system the time the watch will show on Friday at 1845hr the same week. **3mks**

3. Find the least whole number by which $2^5 \times 5^4 \times 7^3$ must be multiplied with to get a perfect cube. What is the cube root of the resulting number. **3mks**

4. A woman went on a journey by walking, bus and matatu. She went by bus $\frac{4}{5}$ of the distance , then by matatu for $\frac{2}{3}$ of the rest of the distance. The distance by bus was 55km more than the distance walked. Find the total distance. **3mks.**

5. Equity bank buys and sells foreign currencies as shown:

Currency	Buying (ksh)	Selling (ksh)
1 US Dollar	77.43	78.10
1 S.A Rand	9.03	9.51

A tourist arrived in Kenya with 5 600 US Dollars and changed the whole amount to Kenya shillings. While in Kenya he spent Sh. 201 376 and changed the balance to S.A Rand before leaving to South Africa. Calculate in SA Rand he received. **3 mks**

6. The size of an interior angle of regular polygon is $3x^o$. While its exterior angle is $(x - 20)^o$. Find the number of sides of the polygon. **3mks**

7. Use reciprocal, cosine and square tables only to evaluate to 4.s.f the expression.

$\frac{1}{15.79} - (cos\ cos\ 73.61)^2$ **4mks**

8. Given that $(x + 20^o) = cos\ cos\ (2x + 25)$ find the value of x and hence find the value of $tan\ tan\ x$. **3mks**

9. A rectangular room is 4m longer than it is wide. If its area is 12 m^2 ,find its dimensions. **3mks.**

10. The masses of two similar building blocks are 2.7 kg and 800grams respectively. Find the surface area of the larger block if the surface area of the smaller block is 120 cm^2. **3 mks**

11. By completing the square solve the following quadratic equation **4mks**

$$x^2 + 8x + 9 = 0$$

12. Without using a calculator , evaluate: $\frac{\frac{3}{4} + 1\frac{2}{7} \div \frac{3}{7} \, of \, 2\frac{1}{3}}{\frac{2}{3}\,(1\frac{2}{7} - \frac{3}{8})}$ **3 mks**

13. Simplify the expression: $\frac{9t^2 - 25a^2}{6t^2 + 19at + 15a^2}$ **3mks.**

14. A business bought 300 kg of tomatoes at Ksh. 30 per kg. He lost 20% due to waste. If he has to make a profit 20%, at how much per kilogram should he sell the tomatoes. **3mks.**

15. Find the equation of the line through the point (2,3) and parallel to the line x – 8y -2=0. Leave the equation in the form y = mx + c. **3 mks**

16. A rectangular field measures 308m by 228m. Fence posts are placed along its sides at equal distance apart. If the posts are as far as possible, what is the distance between them. **3mks**

SECTION II (50MKS)

Answer only *five* questions in this section in the spaces provided.

17. Three points P, Q and R are on a level ground. Q is 240 m from P on a bearing of 230°, R is 120m to the East of P.

(a) Using a scale of 1cm to represent 40m, draw a diagram to show the positions of P, Q and R in the space provided below. **4mks**

(b) Determine:

i. The distance of R from Q. **1mk**

ii. The bearing of R from Q.

(c) A vertical post stands at P and another one at Q. A bird takes 18 seconds to fly directly from the top of the post at Q to the top of the post at P. Given that the angle of depression of the top of the post at P from the top of the post at Q is 9°, calculate.

i. The distance to the nearest metre the bird covers. **2mks**

ii. The speed of the bird in Km/h. **2mks**

18. A and B are two towns. Tom left town A at 8:00 am travelling towards town B at an average speed of 90km/h. At 8:21 am on the same day, John left town A for town B travelling along the same road at an average speed of 97km/h. Determine;

(a) The time John caught up with Tom. **5mks**

(b) The distance from town A to the point where John overtook Tom. **2mks**

(c) On the same day, Paul left town B for A at 8:40am travelling at an average speed of 80km/h. He met Tom after 2hours 30 minutes. Determine the distance between A and B. **3 mks**

19. A surveyor recorded the following information in his field book after taking measurement in metres of a plot.

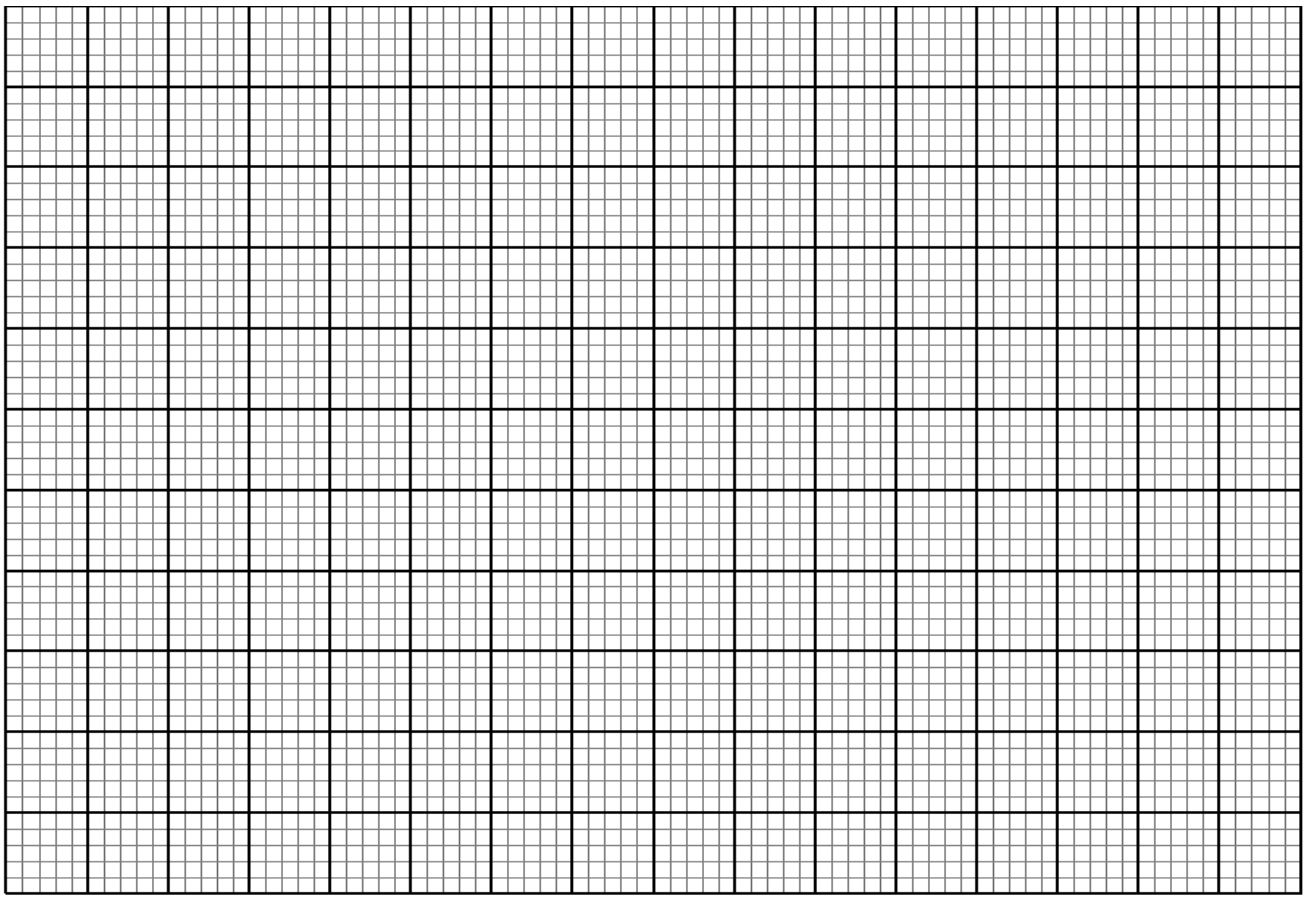
	To E	
	1000	
	880	320 to D
720 to F	640	
	480	600 to C
240 to G	400	
	200	400 to B
	From A	

(a) Sketch the layout of the plot. **4mks.**

(b) Calculate the area of the plot in hectares. **6mks**

20. Complete the table for the function $y = 1 – 2x - 3x^2$ in the range $-3 \leq x \leq 3$ **(2mks)**

X	-3	-2	-1	0	1	2	3
$-3x^2$	-27		-3	0		-12	
-2x		4		0			-6
1	1	1	1	1	1	1	1
Y	-20			1		-15	



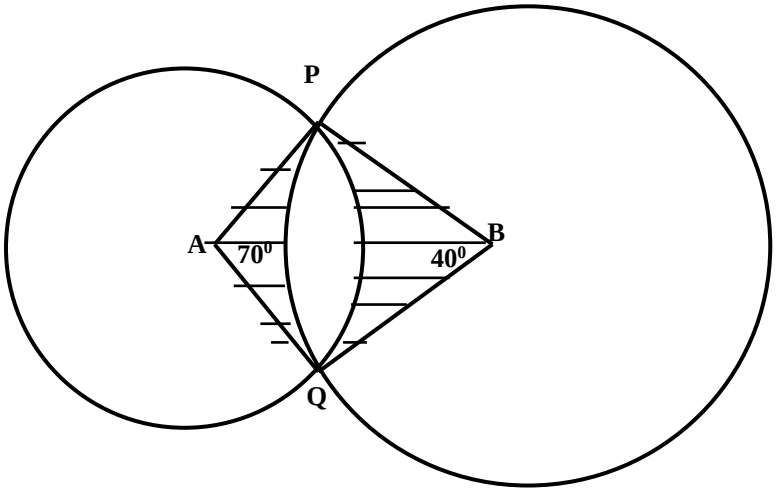
b) Using the table above and the graph paper provided, draw the graph of
$y = 1 – 2x –3x^2$ **(4mks)**

c) Use the graph in (b) above to solve

i) $1 – 2x – 3x^2 = 0$ **(2mks)**

ii) $2 – 5x – 3x^2 = 0$ **(2mks)**

21. The diagram below shows two circles, centre A and B which intersect at points P and Q. Angle PAQ = 70^0, angle PBQ = 40^0 and PA = AQ = 8cm.



Calculate

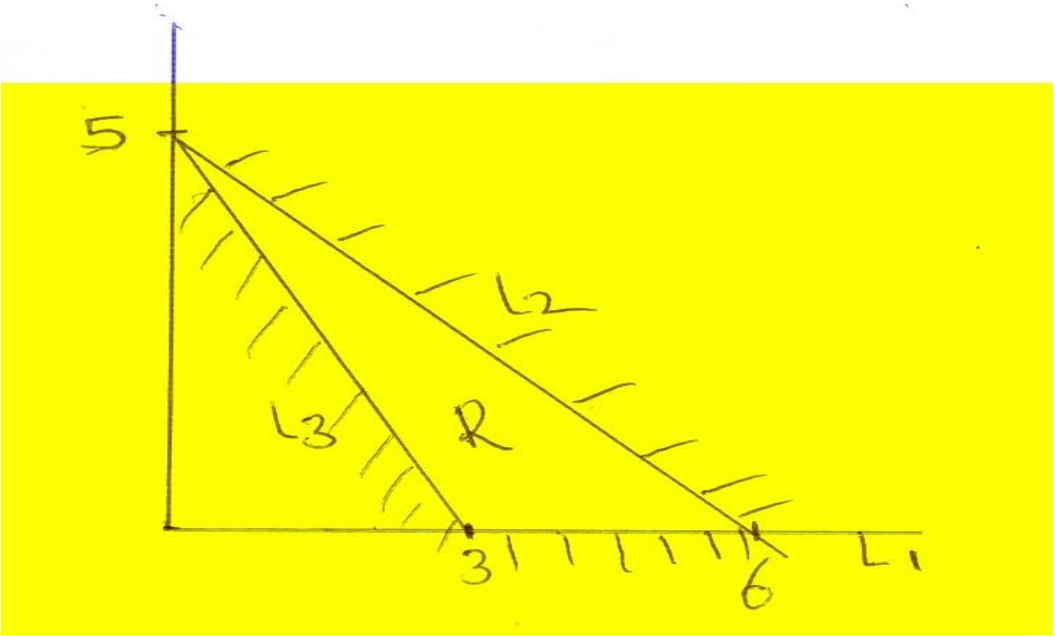
(a) PQ to correct to 2 decimal places **2 Mks**

(b) PB to correct to 2 decimal places **2 Mks**

(c) Area of the minor segment of the circle whose centre is A **2 Mks**

(d) Area of shaded region **4 Mks**

22. The region marked R below is enclosed by three inequalities as shown.



a) Determine the area of region R **(2mks)**

(b) determine the inequalities that enclose the region

(i) L_1 **(2mks)**

(ii) L_2 **(3mks)**

(iii) L_3 **(3mks)**

23. Three business partners, Bela ,Joan and Trinity contributed Kshs 112,000, Ksh,128,000 and ksh,210,000 respectively to start a business. They agreed to share their profit as follows:

30% to be shared equally

30% to be shared in the ratio of their contributions

40% to be retained for running the business.

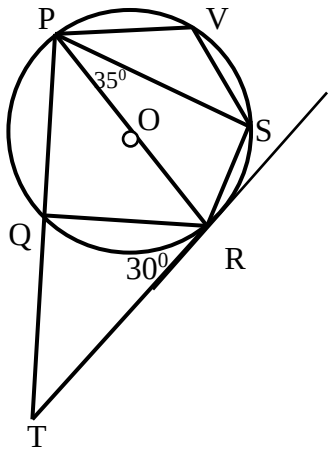
If at the end of the year, the business realized a profit of ksh 1.35 Million. Calculate:

a) The amount of money retained for the running of the business at the end of the year. **(1mk)**

b) The difference between the amounts received by Trinity and **Bela** **(6mks)**

c) Express Joan's share as a percentage of the total amount of money shared between the three partners**.** **(3mks)**

24. In the figure below POR is a diameter. PQT is a straight line, and $\angle QRT = 30^0$ and $RPS = \angle 35^0$. O is the centre of the circle.



Calculate

(a) Angle PRQ **(2 Marks)**

(b) Angle RPQ **(2 Marks)**

(c) Acute angle SOR **(2 Marks)**

(d) Angle RTQ **(2 Marks)**

(e) Angle PVS **(2 Marks)**

FORM 3 TERM 2 OPENER EXAMS

SERIES 1

MATHEMATICS

PAPER 2

TIME: 2½ HOURS

NAME…… ADM NO; ……

CLASS…… DATE……

INSTRUCTIONS TO CANDIDATES

a) Write your name and admission number in the spaces provided.
b) This paper consists of TWO sections. Section 1 and section 11.
c) Answer all the questions in section 1 and only five from section 11.
d) Show all the steps in your calculations, giving your answers at each stage in the spaces provided below each question.
e) Marks may be given for correct working even if the answer is wrong.
f) Non-programmable silent electronic calculators and mathematical tables may be used.

For examiners use only

Section 1

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

Section II

17	18	19	20	21	22	23	24	total	Grand total	

SECTION I

Answer all the questions in this section.

1. Use logarithms to evaluate

$$\frac{1.46\ x\ 183}{0.97\ x\ 0.041}$$ **(3mks)**

2. Find the integral values of x which satisfy the inequalities. **(3mks)**

$2(2-x) < 4x - 9 \leq x + 11$

3. Make v the subject of the formula

$4N = \frac{M}{p+\frac{1}{V}} + \mathbf{N}$ **(3mks)**

4. Solve the equation

$9^{x+3} = 243$ **(2mks)**

5. Mutua bought 8 pairs of trousers and six shirts at Sh. 4140. Had he bought twice as many shirts and half as many trousers, he would have saved Sh. 180. Find the cost of each item. **(3 marks)**

6. Determine the equation of the perpendicular bisector of a line joining the points P(-2,-4) and Q(4,8) **(3mks)**

7. The volume of a cube is $9.261cm^3$. Find

a) the length of the cube **(1mk)**

b) the perimeter of one of it's **faces** **(1mrk**

c) the total surface area of the **cube** **(2mks)**

8. Simplify leaving your answer in surd form.

$\frac{1+3\sqrt{2}}{1-\sqrt{3}}$ **(3mks)**

9. A play station can be purchased on cash at sh 30,000. It can also be purchased on hire purchase terms at a deposit of sh 10,000 followed by twelve equal monthly installments of sh. 3200 per month. Determine the percentage rate of interest per month. **(3mks)**

10. The floor dimensions of a rectangular tank were measured as 3.4cm by 2.7m. calculate the percentage error in calculating the area of the floor of the tank. **(3mks)**

11. The mean mass of 18 form 4 boys is 64 kg. When their class teacher is added the mean becomes 65 kgs. What is the mass of the class teacher in kilograms. **(3mks)**

12. The sum of four consecutive odd numbers is 88. Find the numbers. **(3mks)**

13. Solve the equation

$4\cos(2x - 60) = 2$ for the range $0^0 \leq x \leq 300^o$ **(3mks)**

14. Given that log y = 3.143 and log x = 2.425,evaluate

$4 \log y^3 - 3 \log \sqrt[3]{x}$ **(3mks)**

15. Given OP=(4 5), OQ =(3 8), and OR =(7 − 4)

a) Express in column form p – 2q – 3r **(1mk)**

b) Express PQ and QR as column vectors, hence write QR in terms of PQ. **(2mks)**

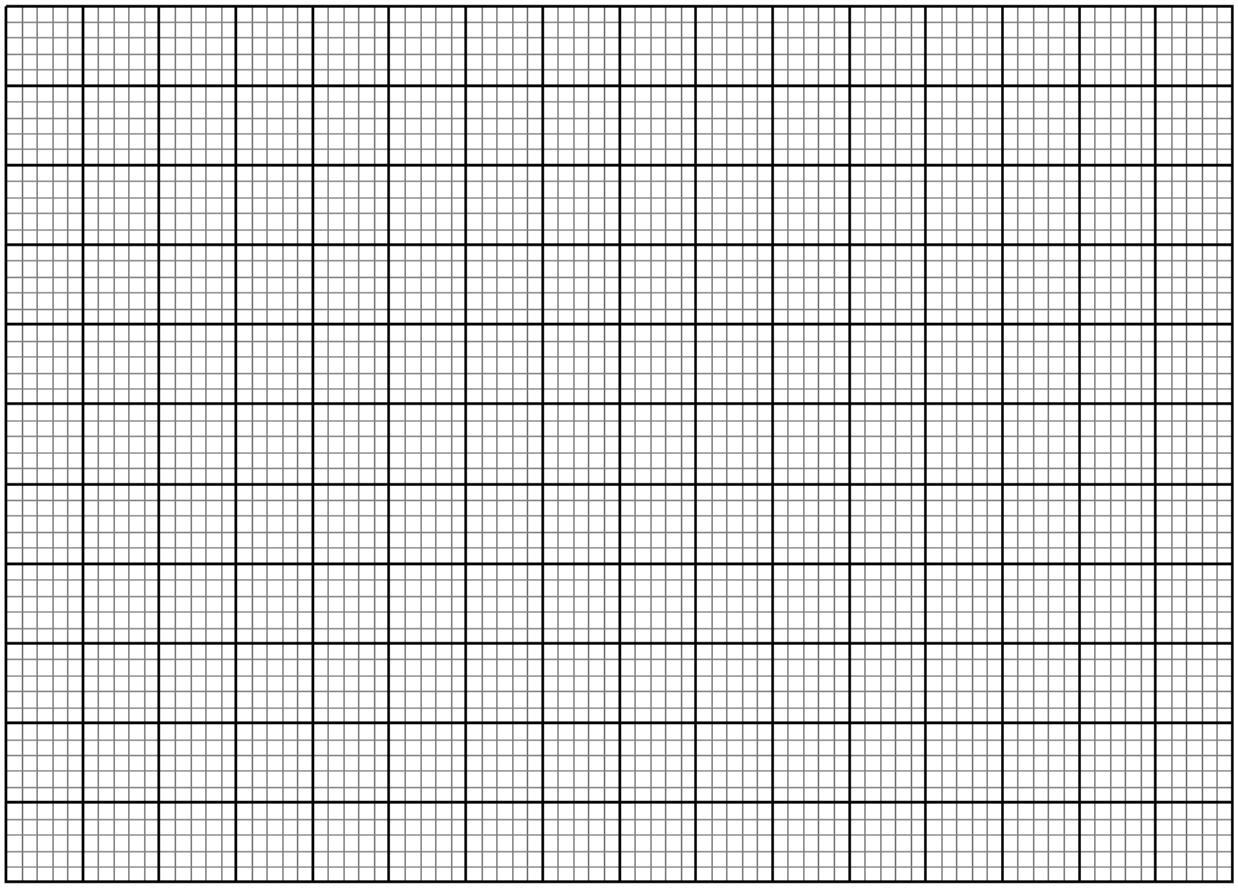
16. Triangle ABC is right angled at C. BC = 8cm and AC = 6cm. A perpendicular from C cuts AB at D. Find the length CD. **(4mks)**

SECTION II

Answer only 5 questions from this section.

17. Plot trapezium ABCD with vertices A(2,0), B(4,0),C(3,2) and D(2,2) **(1mk)**

a) Find the area of trapezium ABCD. **(1 mk)**



b) ABCD is reflected in the x – axis to give the image A^1 B^1 C^1 D^1. Plot the image and write down its co-ordinates. **(2mks)**

c) The image of $A^1B^IC^I$ D^I under a negative quarter turn about the origin is $A^{III}B^{III}C^{III}D^{III}$. Plot this image and write down its co-ordinates. **(2mks)**

d) Plot $A^{III}B^{III}C^{III}D^{III}$ the image of $A^{II}B^{II}C^{II}D^{II}$ under an enlargement scale factor -½ and centre (O,O) **(1mk)**

e) Describe fully a transformation that will map $A^{II}B^{II}C^{II}D^{II}$ onto ABCD. **(2mks)**

18. In triangle PQR, PQ=20m,QR=30m and angle PQR=70^{o}.

(a) Calculate

(i) the area of triangle PQR. **(2mks)**

(ii) the length PR **(2mks)**

(iii) the angle QPR **(2mks)**

(b) T is the top of a 10m pole standing vertically on point Q.

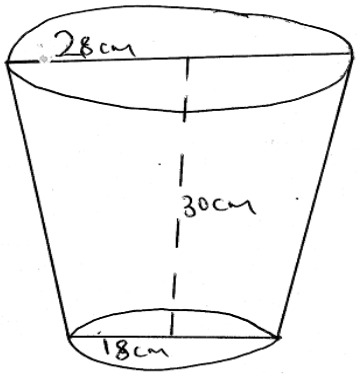
Find

(i) length TP **(1mk)**

(II) length TR **(1mk)**

(iii) area of triangle TPR **(1mk)**

19. A container in the shape of a frustrum of a cone has an internal base diameter of 18cm and internal top diameter of 28cm. the container is open at the top and has a depth of 30cm as shown below.



a) Calculate

(i) the slant height of the container **(3mks)**

(ii) the capacity of the container in litres **(3mks)**

b) The container is half-filled with water. Calculate the surface area of the container that is in contact with water. **(4mks)**

20. In triangle OAB, O(O,O) ,A(2,8) and B(10,2). C is the midpoint of OA and E is the midpoint of AB

a) Find

(i) the co-ordinates of C and E **(3mks)**

(ii) the magnitude of CE and OB **(3mks)**

b) Express the vector CE in terms of OB **(1mk)**

c) Given that OM=OE + 2CE, find

(i) the co-ordinates of M **(2mks)**

(ii) the co-ordinates of the image of M under a translation $(-8\ -2)$ **(1mk)**

21. A married man earns a basic salary of sh. 10800 per month and is housed by his employer for a nominal rent of sh. 500 per month. His taxable income is hence deemed to be 115% of his basic earning less the rent paid. He is entitled to a family relief of sh. 1160 per month and a life insurance relief at a rate of 10% of insurance premium of sh. 600 p.m.

a) calculate his taxable income in £p.a. **(1mk)**

b) calculate relief on his insurance in sh p.a **(1mk)**

c) Using the income tax table below

(i) calculate the gross amount of tax he pays in sh p.a **(4mks)**

Income in £ p.a	Rate in sh per £	
1- 2100	2	
2101 -4200	3	
4201- 6300	4	
6301- 8400	5	
Over 8400	6	

(ii)Calculate his net tax in sh. per **month** **(2mks)**

(d)Apart from tax,he is also deducted sh 280 for NHIF. Calculate his net earnings in sh per month. **(2mks)**

22. Marks scored by students in a class were recorded as shown below.

35	30	45	64	62	52	37	43	55	49
60	39	54	37	42	59	62	48	57	32
46	64	31	44	56	35	47	38	53	61
46	59	45	51	49	47	40	45	36	46

a) Complete the frequency table below with uniform classes as shown in the first class.

Marks	30-34						
No. of students	3						

b) determine the modal class. **(1mk)**

c) calculate

(i) the mean mark. **(4mks)**

(ii) the percentage of students who scored between 45 and 54 marks. **(2mks)**

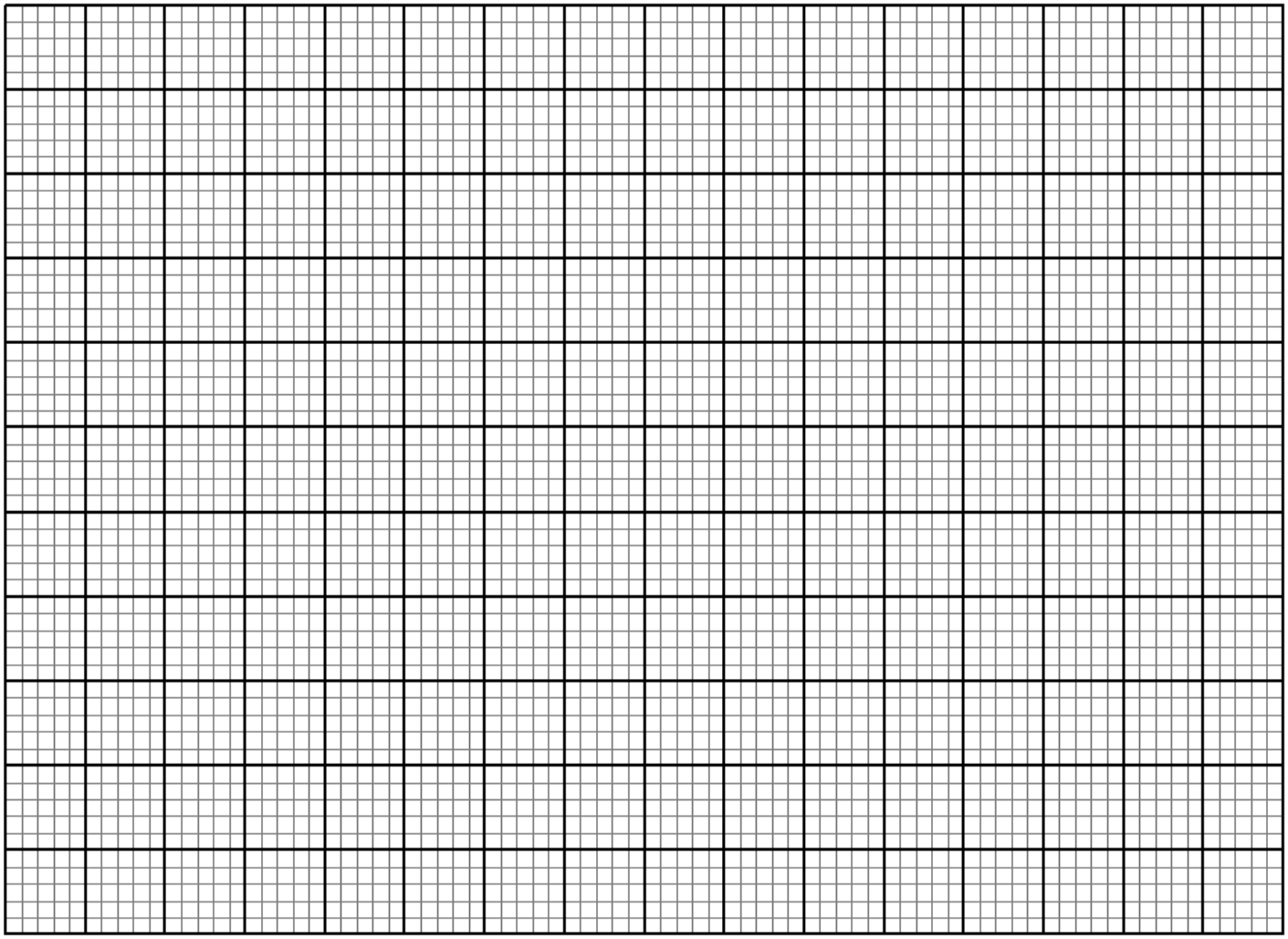
(III) The simplified fraction of students who passed the exam if the pass mark was 45**. (1mk)**

23. The effort E required to lift a load L is partly constant and partly varies as L. Use the table below for values of E and L to answer the questions that follow.

L	2	4	6	8	10	12
E	5.5	6	6.5	7	7.5	8

(a) Write an expression for E in terms of L. **(1mk)**

(b) Draw a graph of E against L **(3mks)**



c) From the graph,determine

(i) gradient of the graph **(2mks)**

(ii) the E-intercept of the graph. **(1mk)**

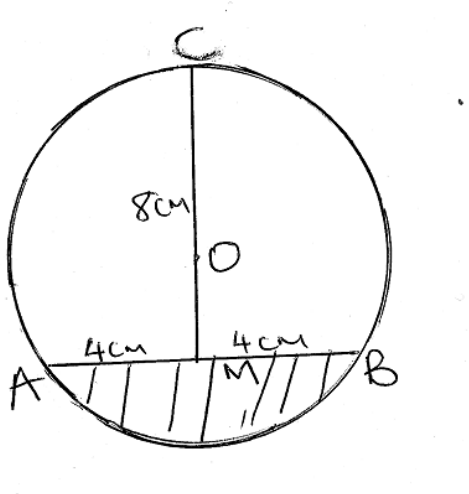
d) Write the equation connecting E and L. **(1mk)**

e) Find from the graph

(i) the effort when the load is 7. **(1mk)**

(ii) the load that can be lifted by an effort of 6,25. **(1mk)**

24. In the figure below, O is the centre of the circle. Chord AB of the circle is 8cm long. CM is perpendicular to AB and CM=AB.



Calculate

(a) the radius of the circle **(3mks)**

b) the obtuse angle AOB **(2mks)**

c) the shaded area **(3mks)**

d) the unshaded area **(2mks)**

THE END

For Marking Schemes, Contact Mr Isaboke

0746-222-000

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