KCSE 2023 JOINT PREDICTION

ALL SUBJECTS

SERIES 1

Annual Joint Prediction exam for Select National Schools in Kenya for KCSE Candidates in preparation for Final KCSE 2023 Examination.

SUBJECTS PREDICTED;

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

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CONFIDENTIAL

For Marking Schemes

Mr Isaboke 0746 222 000 / 0742 999 000

ALL THE BEST IN KCSE!

KCSE 2023 JOINT PREDICTION

SERIES 1

BIOLOGY

231/1

PAPER 1 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

b) *Sign in the spaces provided above.*

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

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

FOR EXAMINERS USE ONLY

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

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

1. One of the function of the nucleus is storage of hereditary material also known as gene.

(a) What is a gene**.** **(1mks)**

……

……

(b) State the three functions of DNA. **(3mks)**

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2. State any **two** species of schistosoma that transmit bilharzia. **(2mks)**

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3. a) State three importance of photosynthesis in nature. **(3mks)**

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b) How does nutrition differ in plants and animals? **(1mk)**

……

……

4. (a) Identify the organelle shown below **(1mk)**



……

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b. How is the organelle you have identified in **(a)** above suited to its function? **(2mks)**

……

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……

5. During a practical class, form four students estimated the field of view to be 3.5mm. Using the low power objective, they observed spirogyra cells across the same field of view and counted 8cells. Calculate the size of each cell and give your answer in micrometer**.** **(3mks)**

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6. a) Explain what happens when a wilting plant is watered. **(2 marks)**

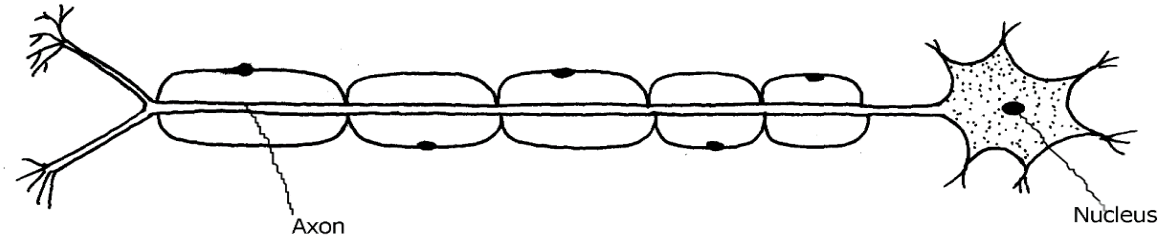
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7. The diagram below represents a type of neurone.



(a) (i) identify the neuron above. **(1 mark)**

……

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

……

……

(b) With an arrow, indicate on the diagram the direction of an impulse transmission through the neuron. **(1 mark)**

(c) Name the chemical substance that brings about transmission of impulse across a synapse **(1mark)**

……

8. The diagram below represents a mammalian jaw



(a) State the mode of feeding for the mammal**.** **(1 mark)**

……

(b) Describe three adaptations for this mammal from jaw to its mode of feeding. **(3 marks)**

……

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(c) Where are the following structures found along the mammalian digestive tract? (**2 marks)**

(i) Pyloric sphincter

……

(ii) Crypt of Lieberkuhn

……

9. Explain how crops grown along roads can be a source of lead poisoning to human beings.**(2 mks**

……

……

……

10. a) State the characteristics that can separate the following organisms into respective classes; millipedes, tsetsefly and spider. **(3marks)**

……

……

……

b) State the kingdom whose members have a cell wall made up of mullein**.** **(1 mark)**

……

11. The diagrams below show organs obtained from members of Angiospermatophyta

A **B**



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To which classes do the plants from which the organs were obtained belong? **(2marks)**

A ……..

B ……

a) Small insect-eating birds are feeding on the caterpillars and caterpilars are eating the leaves of a tree. A pair of sparrow hawks is hunting for small birds to feed their young.

(i) Represent the information on a food chain. **(1 mark)**

……

(ii) Draw a pyramid of numbers of the above chain. Give the organisms at each trophic level. **(2 marks)**

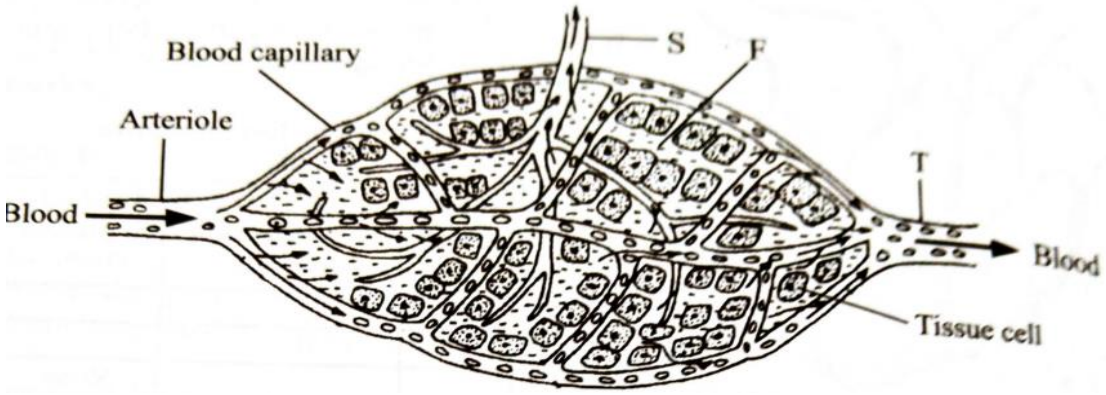
12. Give two ways by which prey are adapted to escaping predators **(2marks)**

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……

……

13. The diagram below shows the site where exchange of substances takes place in the mammalian circulation.



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a) Name the vessel labelled **T** **[1mark]**

……

b) Name the fluid labelled **F** and state its importance **[2marks]**

……

c) Explain the mechanism of formation of the liquid named in (b) above **[3marks]**

……

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……

14. Briefly give clear explanations to the statements below**.** **[2 marks]**

a) In mammals haemoglobin is confined to erythrocytes. Give one advantages of this

……

……

b) People living in high altitude areas have a higher erythrocyte count and more haemoglobin than people living in low altitudes. Suggest a reason for this adaptations

……

……

15. Color blindness is a sex-linked trait controlled by a recessive gene b if a mother is carrier and father is normal what is the chance that their son will be colour blind? Show your working. **(4mks)**

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16. a) State the role of a generative cell during fertilization in flowering plants**.** **(2mks)**

……

……

……

b). State two differences between prophase and prophase I. **(2mks)**

……

……

……

17. Using the named parts of a flower in the table below. State the differences between insect pollinated flower and wind pollinated flower. **(3marks)**

Part	Insect pollinated	Wind pollinated
Pollen grain		
Stigma		
Anthers		

18. (a) Name the part of the eye in which the light sensitive cells are located**.** **(1mark)**

……

(b) List the **two** types of sensory cells found in the part named in (a) **above** **(2 marks)**

……

……

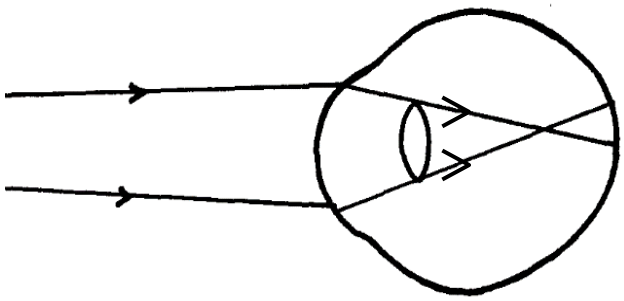
19. State the function of conjunctiva**.** **(1 mark)**

……

……

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20. The diagram below shows the position of an image formed in a defective eye:-



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

……

(**b)** How can the defect be corrected. **(1 mark)**

……

……

21. Name the disorder characterized by the following**.** **(2marks)**

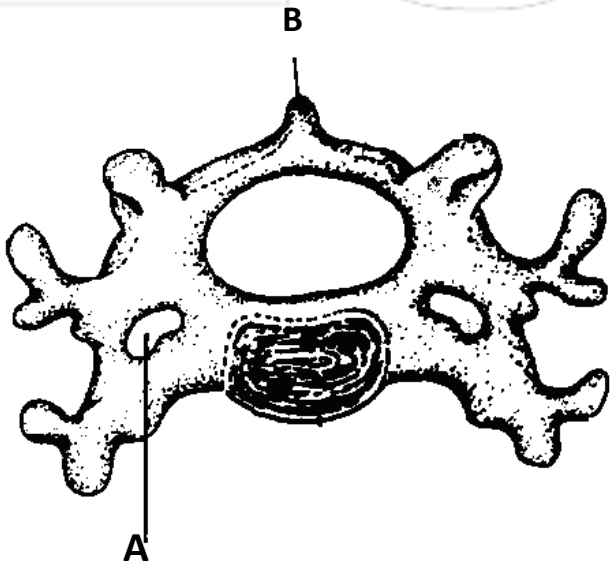
(a) Having extra somatic chromosome

……

(b) Missing one of the sex chromosome

……

22. Study the figure below then answer questions that follow.



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(a) Identify the bone on the diagram above. **(1mk)**

……

(b) Name the part labelled **A** and **B.** **(2mks)**

A ……

B …….. ……..

23. Name the type of joints found in the following regions. **(2 marks)**

(a) The anterior end of atlas.

……

(b) The articulation of glenoid cavity and head of humerus bone.

……

24. A boy who is learning how to swim in sea water accidentally drinks a lot of sea water. Explain the effect this will have on his kidneys**.** **(3mks)**

……

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……

25. (a)Name the fluid that is produced by sebaceous glands. **(1mk)**

……

(b) State **two** functions of sweat on the human body. **(2mks)**

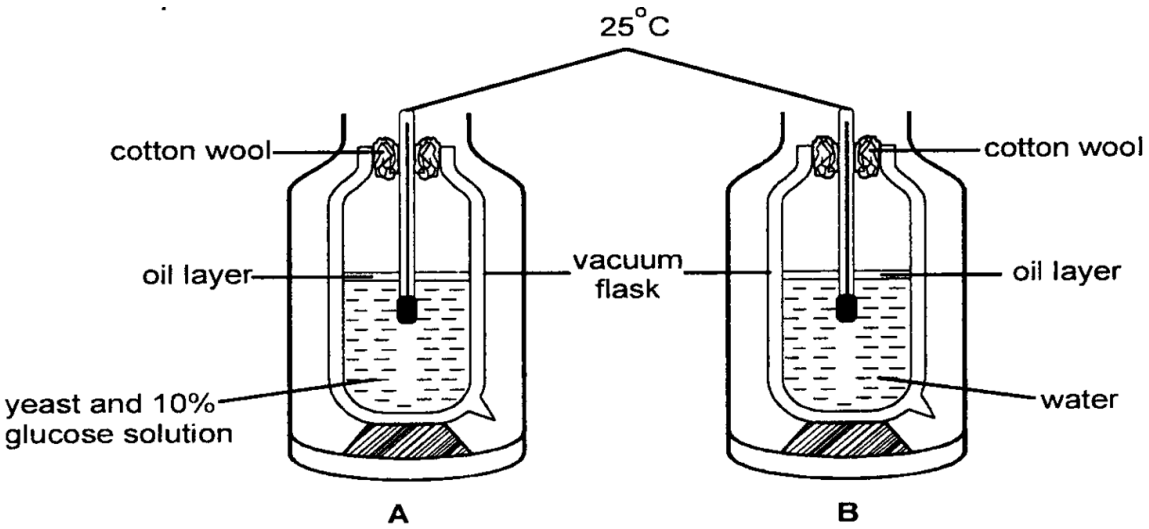
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26. Two flasks were set up as shown below.



a) What is the aim of the investigation? **(1mark)**

……

b) Explain why the vacuum flasks were used instead of conical flasks. **(1mark)**

……

……

c) What is expected of the thermometer reading after 2 hours in A? **(2marks)**

……

……

……

27. Explain what happens when there is oxygen debt in human **muscles** **(3mks)**

……

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KCSE 2023 JOINT PREDICTION

SERIES 1

BIOLOGY

231/2

PAPER 2 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

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

3) *In section B answer question 6 Compulsory and Either Question 7 or 8*

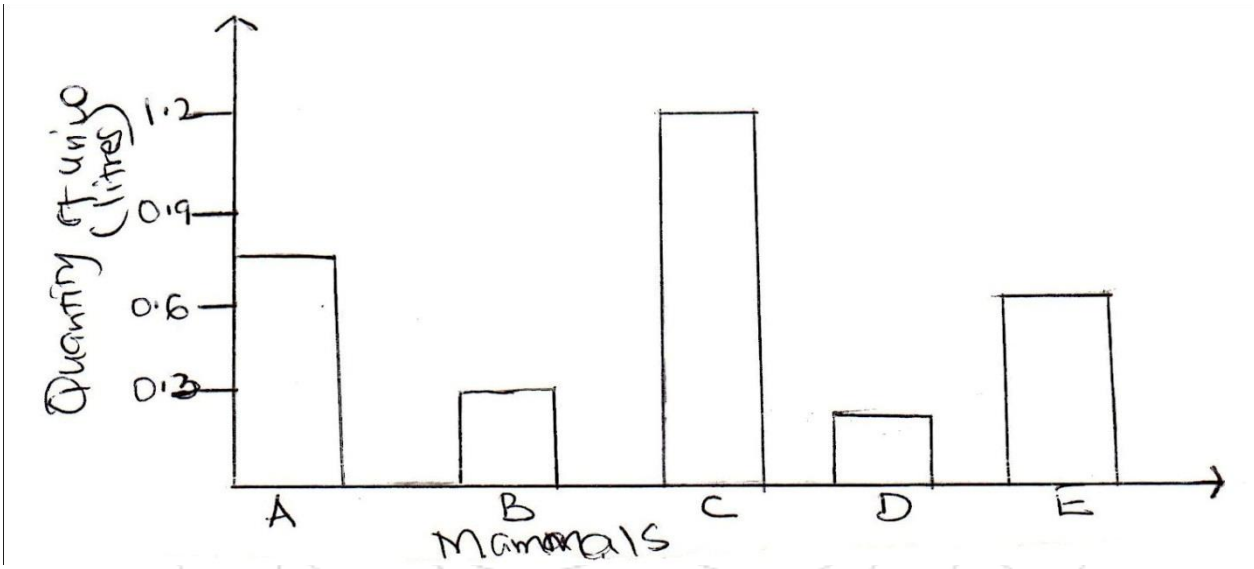
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Questions	Questions	Maximum Score	Candidate Score
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
TOTAL		**80**	

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SECTION A

1. The quantity of urine passed per day was established in five mammals A, B, C, D, and E of the same species in the natural habitats. The results are ash shown in the following diagram;



(a) Which of the above mammals is likely to be excreting urine very high in ammonia? Explain **(2mks)**

……

……

(b) Which of the five mammals was likely to be living in a desert? Explain **(2mks)**

……

……

……

(c) State two structural differences expected in the nephron of mammals A and **D.** **(2mks)**

……

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(**d)** Name two physiological mechanisms used in mammal D to regulate its salt and water balance in the body. **(2mks)**

……

……

2. (a) State the function of the following parts of mammalian ear;

i) Tympanic membrane **(1mk)**

……

……

ii) Pinna **(1mk)**

……

……

iii) Ear ossicles **(1mk)**

……

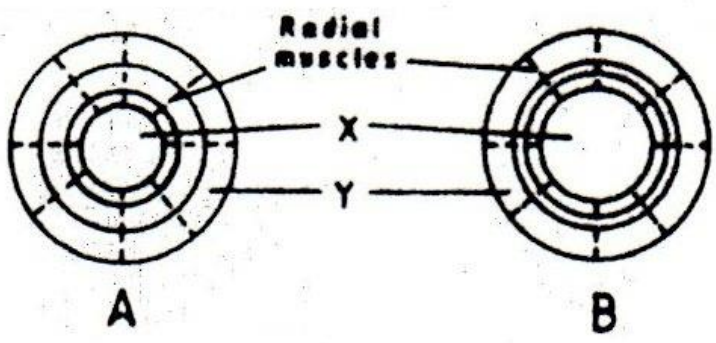
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(b) Give **two** defects of mammalian eye **(2mks)**

……

……

(c) The diagram below show how the iris and pupil of a human eye appear under different Condition



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i) Name the structures labeled X and Y **(2mks)**

X.....

Y.....

ii) State the condition that lead to the change in appearance shown in the diagram labeled B

.....

3. A biologists carried out a study to investigate the growth of a certain species of herbivorous fish and the factors influencing plant and animal life in four lakes A,B,C and D. The lakes were located in the same geographical area.

Two of the lakes A and B were found to contain hard water due to the presence of high content of calcium salts. The mean body length of 2 year old fish, amount of plant use and invertebrates biomass in each lake were determined. The data was shown in the table below;

Lakes	**Means of fish body length (m)**	**Type of water**	**Amount of plant life**	**Invertebrate biomass g/cm3**			
				insects	**snails**	**crabs**	**worms**
A	31.2	Hard	1050	11	300	10	180
B	38.6	Hard	950	72	100	9	90
C	18.4	Soft	1.2	79	0	2	20
D	16.3	soft	0.5	99	0	1	10

(a) Describe the procedure that may have been used to determine the mean body length of the fish. **(4mks)**

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(b) What are the likely reasons for the difference in mean body length of the fish living in lakes A and D **(2mks)**

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(c) Explain why primary producers have a higher biomass than primary consumers. **(2mks)**

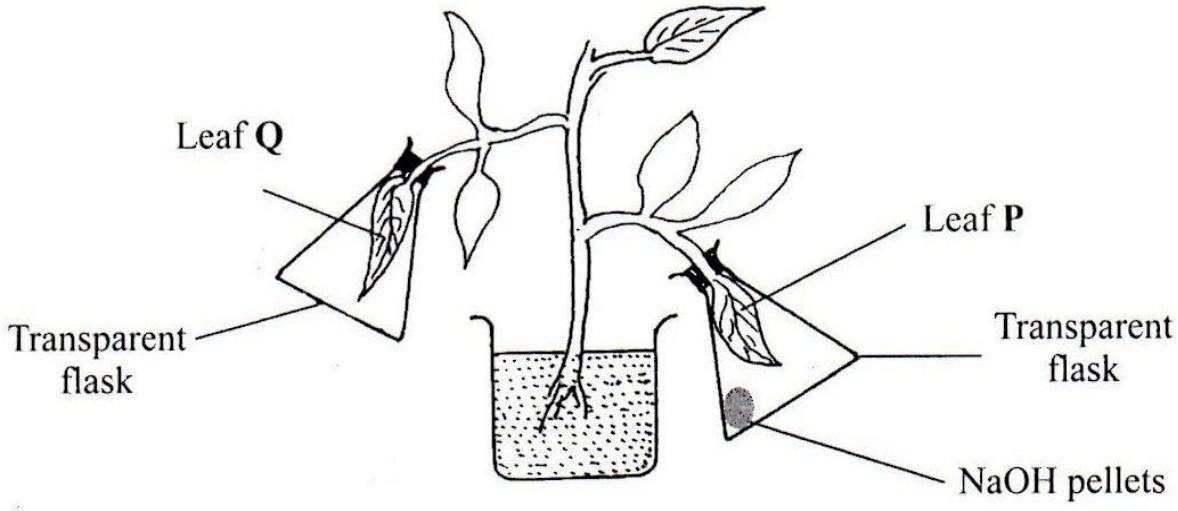
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4. In an experiment to investigate a factor affecting photosynthesis a potted plant which had been kept in the dark overnight was treated as shown in the diagram below and exposed to light.



(a) Why was the potted plant kept in the dark overnight? **(1mk)**

……

……

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(b) Which factor was being investigated in the experiment? **(1mk)**

……

……

(c) (i) Which test did the students perform to confirm photosynthesis in the leaves labeled ***P and Q***

……

(ii) State the results obtained in the leaves labeled **P and Q.**

P **(1mk)**

……

……

Q **(1mk)**

……

……

(iii) Explain the results obtained in the leaves labelled P and Q

P **(1mk)**

……

……

Q **(1mk)**

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……

(iv) What was the purpose of the leaf Q in the experiment? **(1mk)**

……

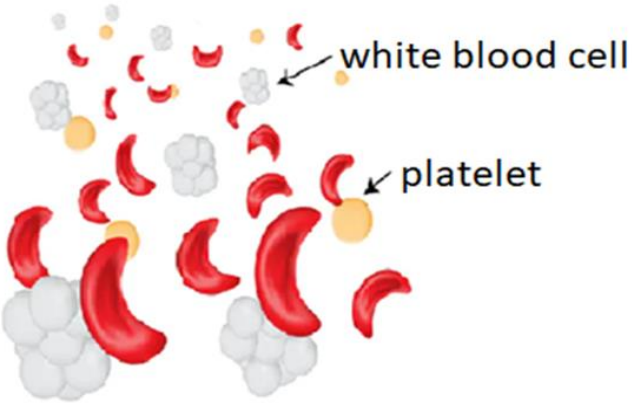
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5. The diagram below shows samples of blood obtained from two different persons A and B



PERSON A



PERSON B

(a) What genetic disorder is person B suffering from? **(1mk)**

……

(b) State one advantage and one disadvantage of the disorder exhibited in person **A.** **(2mks)**

……

……

(c) Work out the genotype and phenotypes of the resulting offspring of a marriage between person A and B. Show your working **(5mks)**

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SECTION B

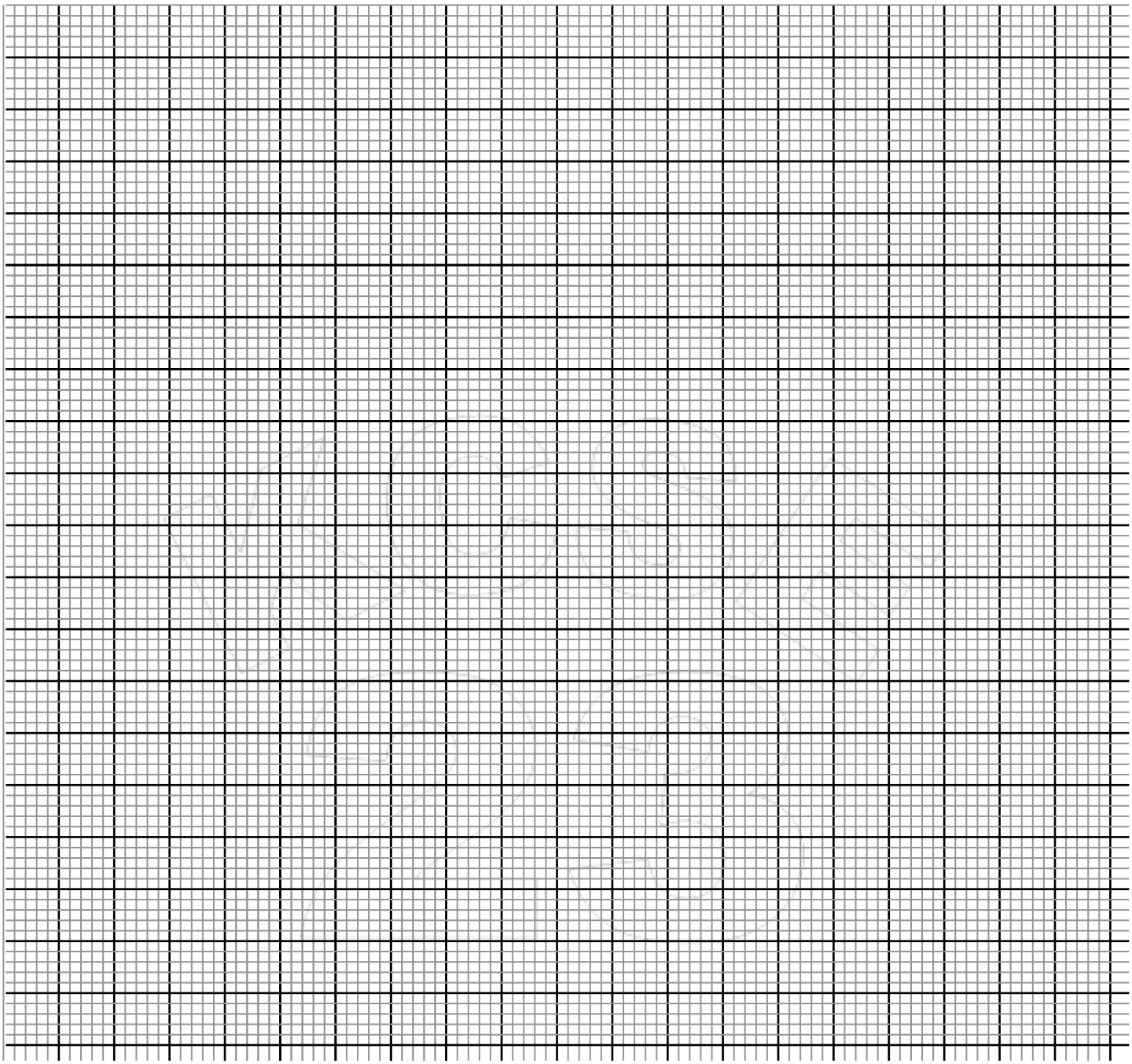
6. The data below represents levels of progesterone hormone produced in a female's body within a period of 34 days. Study the data and use it to answer the questions that follow

NB: The days were counted from the 1st day that menstruation was noticed.

Day	**Progesterone hormone concentration in arbitrary units**
1	6
2	5
3	3
4	2
5	1
6	1
8	1
10	2
12	4
14	7
16	8
20	9
22	10
24	10
26	10
28	10
30	11
32	11
34	11

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(a) Plot a graph of progesterone concentration against time using a suitable scale. **(6mks)**



(b) Account for the progesterone levels in the blood between

i) Day 1 - day 5 **(2mks)**

……

……

……

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ii) Day 14 – day 20 **(2mks)**

……

……

……

iii) Day 28 – day 35 **(2mks)**

……

……

……

(c) Name two structures that produce progesterone in females . **(3mks)**

……

……

(d) Suggest the process that usually takes place at day 14. **(1mk)**

……

(e) Suggest two other hormones that were in high concentration in the body of the female between day 10 – 15 . Give reasons for your answer. **(4mks)**

……

……

……

……

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

8. (a) Describe the process of carbohydrates digestion in human beings. **(12mks)**

(b) Describe the flow of energy from the sun through the different trophic levels in an Ecosystem **(8mks)**

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KCSE 2023 JOINT PREDICTION

SERIES 1

BIOLOGY

231/3

PAPER 3 (PRACTICAL)

TIME: 1¾ HOURS

SCHOOL…… SIGN……

Kenya Certificate of Secondary Education.

Confidential

The information contained in this **KCSE prediction paper** is to enable the head of the school and the teacher in charge of **Biology** to make adequate preparations for the **231/3 Biology** Practical examination.

NOTE: The teacher in **charge of Biology** should **NOT** perform any of the experiments in the same room as the candidates or give any other information related to the experiments to the candidates.

No one else should have access to this information either directly or indirectly.

INSTRUCTIONS

Each Candidate will Require the following:-

a) *A tablet labelled K-Vitamin C tablet*

b) *Pestle and mortar*

c) *2cm^3 Copper sulphate solution*

d) *2cm^{3}Sodium hydroxide solution*

e) *2cm^3 DCPIP solution*

f) *3 test tubes*

g) *3 droppers*

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KCSE 2023 JOINT PREDICTION

SERIES 1

BIOLOGY

231/3

PAPER 3 (PRACTICAL)

TIME: 1¾ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

a) *Write your name, admission number, date, and signature and school name in the spaces provided.*

b) *Answer **ALL** the questions in the spaces provided in the question paper*

c) *You are NOT allowed to start working with the apparatus for the first 15 minutes of the **1¾ hours** allowed for this paper. This time is to enable you to read the question paper and make sure you have all the chemicals and apparatus that you may need.*

d) *Additional pages must **not** be inserted*

FOR EXAMINERS USE ONLY

SECTION	QUESTION	CANDIDATES SCORE
	1	
	2	
	3	
TOTAL SCORE		

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1. You are provided with the following materials;

A tablet labelled K

Pestle and mortar

2cm^3 Copper sulphate solution

2cm^{3}Sodium hydroxide solution

2cm^3 DCPIP solution

3 test tubes

3 droppers

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

Substance	Food substance being tested	Procedure	Observations	Conclusion
K				
K				

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

……

……

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

……

……

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……

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





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

S	T

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



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

……

……

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

……

……

……

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



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

……

……

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

……

……

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

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

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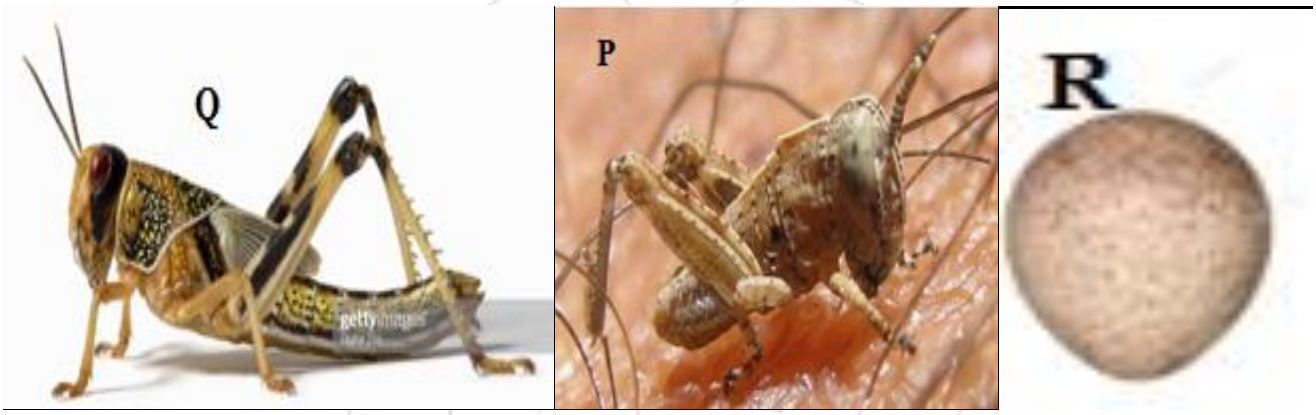
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……

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



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

P ……

Q ……

R ……

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

Q	P

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

(4mks)

Hormone	Role

(c) 'Hundreds of millions of locusts have swept over several counties in Kenya, devouring tens of thousands of hectares of crops. This massive destruction has threatened food security in Kenya…..' this is an extract from one of the local dailies dated 2nd February, 2020.







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

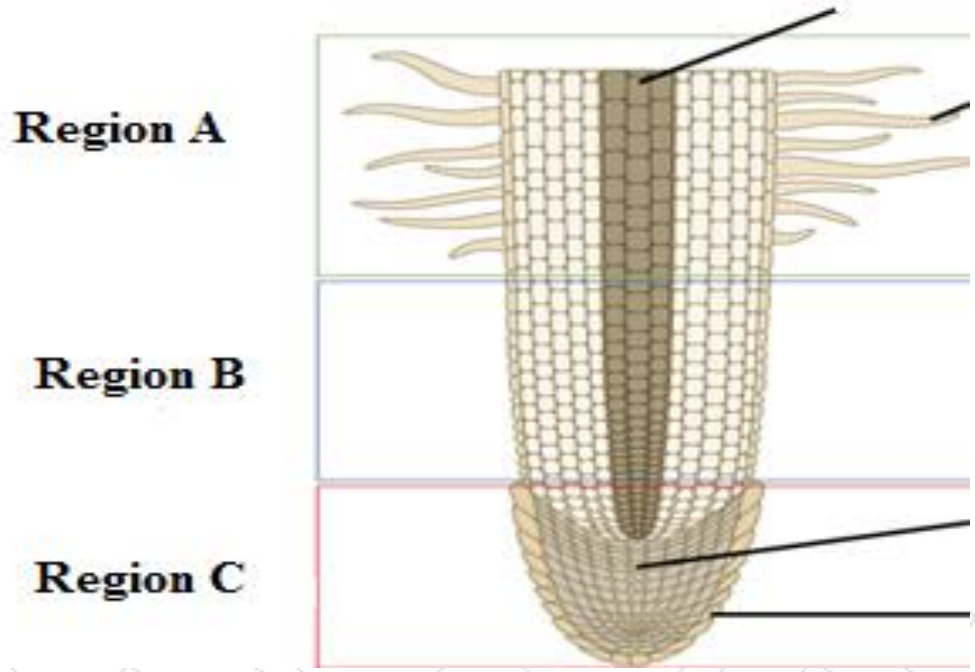
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(d) The photograph below shows a longitudinal section through a root



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

A ……

B ……..

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

……

……

……

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KCSE 2023 JOINT PREDICTION

SERIES 1

CHEMISTRY

233/1

PAPER 1 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

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

c) *Answer **ALL** the questions in the spaces provided below each question.*

d) *Mathematical tables and silent electronic calculators may be used.*

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

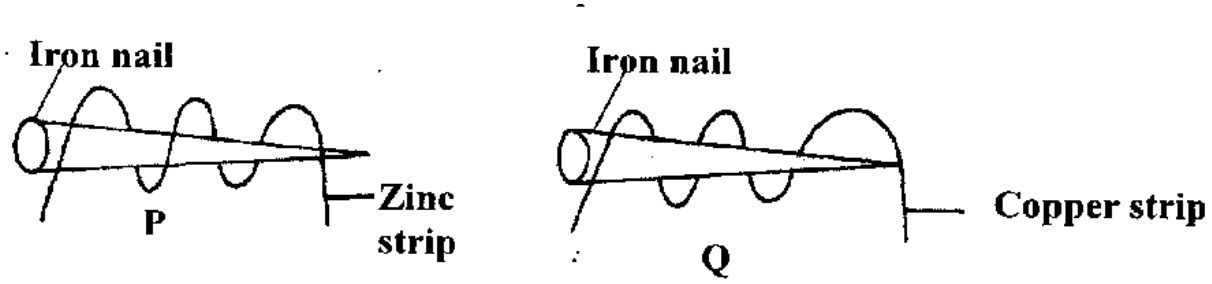
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Questions	Max. Score	Candidate's Score
1 – 27	80	

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

1. Use the diagram below to answer the questions that follow.



a) In which set – up will the iron nail rust? Explain **(2 marks)**

……

……

……

b) State **one** advantage of rusting **(1 mark)**

……

2. During distillation in a laboratory the distillate can be collected either by a beaker or a conical flask.

(a) Define the term distillate. **(1 mrk)**

……

……

(b) Explain why a conical flask is the most preferred apparatus for the collection of the distillate. **(1 mark)**

……

……

(c) Draw the diagram of a graduated conical flask. **(1 mark)**

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3. Describe how you would test for pH value of plant extract **(3 marks)**

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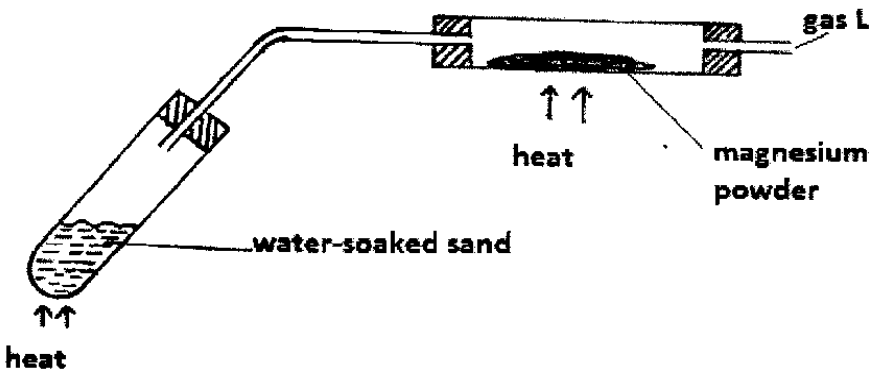
4. During investigation to identify illegal steroids used by three athletes. Urine samples were obtained and labeled as **A**, **B** and **C**. Illegal steroid was labeled as **X**, each urine sample had 2 components each and urine **A** and **C** contain the illegal steroid.

a) Give the name of process used to identify illegal steroids in athletes**.** **(1 mark)**

……

b) Draw a chromatogram, showing the information given above **(2 marks)**

5. The following set up was used to react steam with Magnesium Powder.



a) Explain why the water-soaked sand was heated before heating the iron powder**.** **(1 mark)**

……

……

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b) Write an equation for the reaction that took place between steam and magnesium powder.**(1 mk)**

……

c) State how gas **L** would be collected without using water. **(1 mark)**

……

……

6.(a) Using dots(•) and crosses(**x**) ,show bonding in Hydroxonium ion, (H_3O^+) (H =1.0,O = 16.0)

(1mark)

(b) The chloride of Aluminum was added to water and stirred. State and explain the observation made when two drops of methyl orange were added into the solution. **(2 marks)**

……

……

……

7. The data below gives the electronic configuration of some selected atoms and ions

Atom/ion	A^{2+}	B	C^{2-}	D^{2+}	E	F^-	G^+	H
Electronic configuration	2	2.4	2.8	2.8.8	2.8	2.8.8	0	2.8.2

(a) Select an atom that is a noble gas **(1 mark)**

……

(b) What is the atomic number of**:** **(1 mark)**

A……...

C……..

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(c) Select an element that belongs to group II and period 4 **(1 mark)**

……

……

8. Use the table below to answer the questions that follow:

Element	Atomic number
A	11
B	13
C	14
D	17
E	19

(a) Write an equation for the reaction between element **A** and water. **(1 mark)**

……

……

(b) Compare the atomic radii of elements **A** and **D**. Explain. **(2 marks)**

……

……

……

……

9. Starting with Copper metal describe how to prepare pure Copper (II) sulphate crystals. **(3 marks)**

……

……

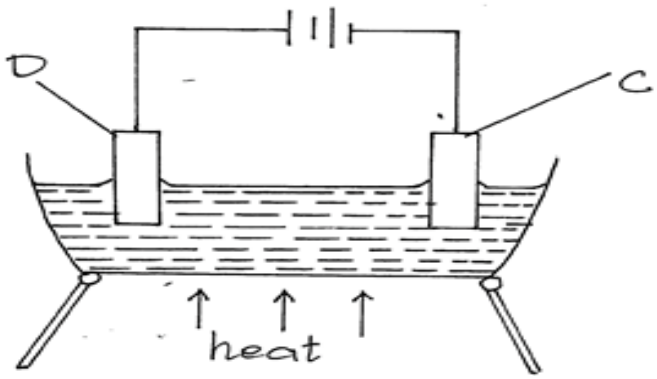
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10. The diagram below was used to electrolyze molten copper (II) chloride using graphite electrodes.



(a)Explain the role of heat on the above set up. **(1 mark)**

……

……

(b) Write an equation for the reaction taking place at electrode: **(2 marks)**

C……

D……..

11. A state of equilibrium between dichromate (VI) and Chromate ions is established as shown below.

$$Cr_2O_7^{2-}{}_{(aq)} + 2OH^-{}_{(aq)} \rightleftharpoons CrO_4^{2-}{}_{(aq)} + H_2O_{(l}$$

(Orange) (Yellow)

a) What is meant by a dynamic equilibrium? **(1 mark)**

……

……

b) State and explain observation made when a few pellets of Potassium hydroxide are added to the equilibrium mixture. **(2 marks)**

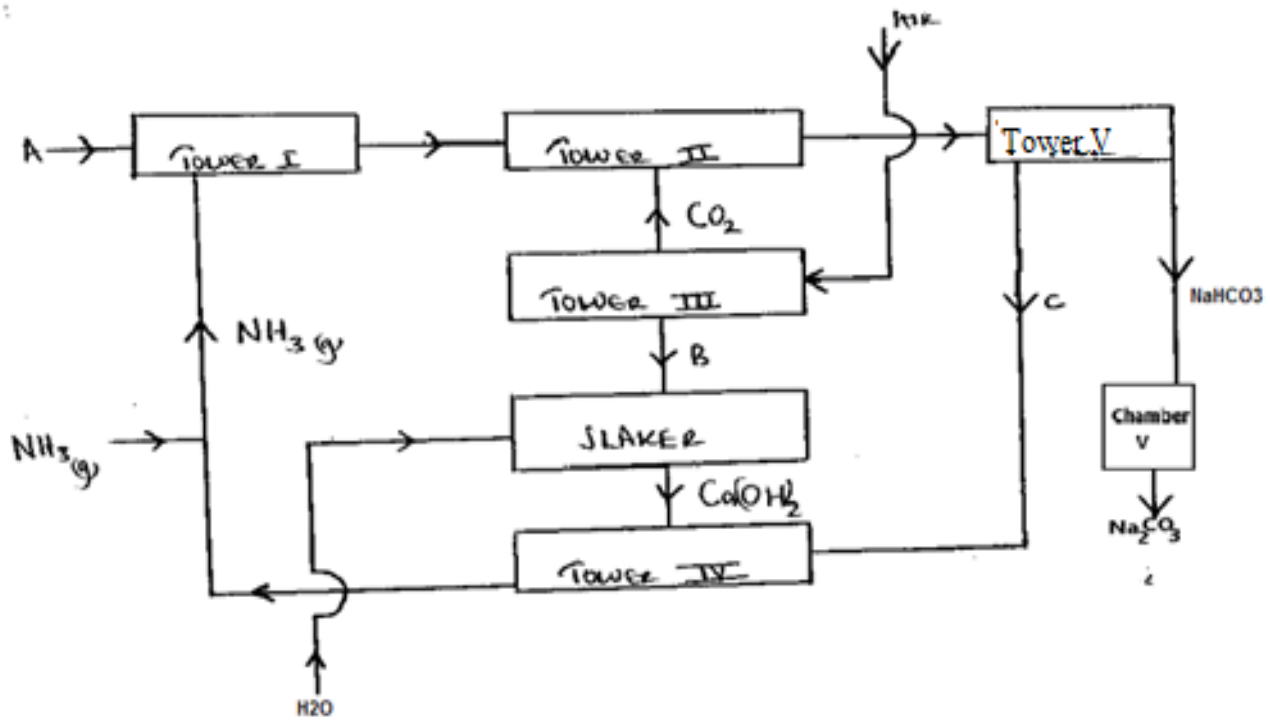
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12. The figure below shows some steps in the industrial preparation of sodium carbonate. Study it and answer the questions that follow.



(a)Identify substances labelled **B** and **C** **(1 mark)**

B……

C……

b) Name the method that is used to separate sodium hydrogen carbonate and ammonium chloride.

(1 mark)

……

……

(c) Name the most suitable substance used in Tower III to produce Carbon (IV) oxide. **(1 mark)**

……

……

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13.Calculate the relative formula mass of gas **A** given that the time taken for equal volumes of oxygen and gas **A** to diffuse through the same hole is 20 seconds and 24 seconds respectively (O=16.) **(2 marks)**

……

……

……

……

14. Propane gas was bubbled through bromine liquid in a boiling tube.

(a) State condition required for the reaction to occur. **(1 mark)**

……

(**b)**Name the type of the reaction above. **(1 mark)**

……

(c)State one observation made during the reaction. **(1 mark)**

……

15.Zinc metal and hydrochloric acid react according to the following equation.

$$Zn_{(s)} + 2HCl_{(aq)} \rightarrow ZnCl_{2(aq)} + H_{2(g)}$$

2.0g of zinc were reacted with 100 cm^3 of 0.2M Hydrochloric acid,

Determine the reagent that was in excess **(3 marks)**

……

……

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16.a) What is meant by the term allotropy**?** **(1 mark)**

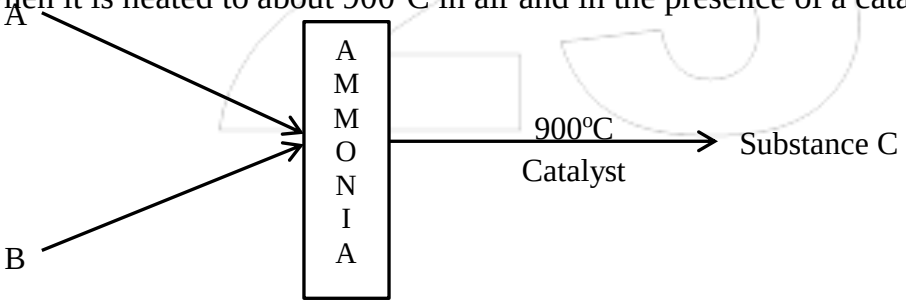
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b) Which type of Sulphur is formed under the following conditions?

	Conditions	Type of Sulphur
(i)	Mixing sodium thiosulphate with dilute hydrochloric acid	(½ mark)
(ii)	Saturating distilled with Hydrogen sulphide then exposed to air	(½ mark)
(iii)	Pouring boiling Sulphur into cold water	(½ mark)
(iv)	Below 96^0C	(½ mark)

17. The flow chart below shows the process that can be used to obtain substance C from ammonia gas when it is heated to about 900ºC in air and in the presence of a catalyst.



a) Ammonia is obtained on large scale by Haber process. Name the raw materials A and B.

(1 mark)

……

b) Name the substance C and the catalyst used. **(1 mark)**

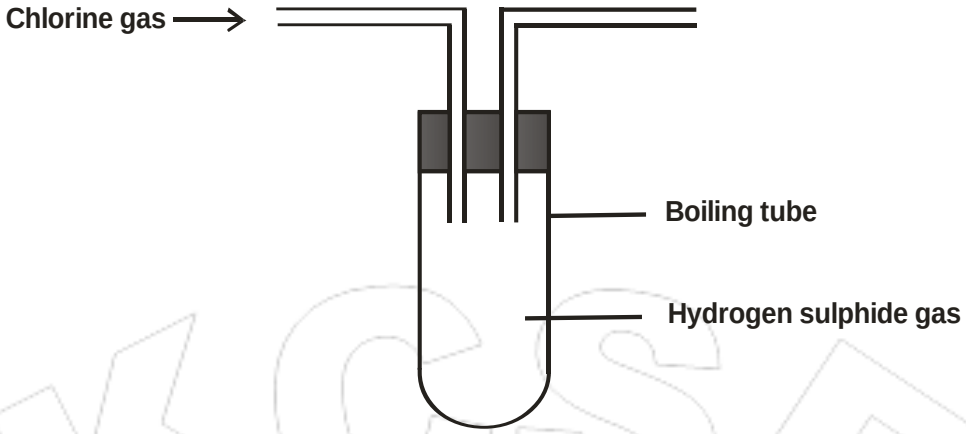
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c) Write an equation to show the product formed when C is cooled in the presence of air**. (1 mark)**

……

18. In an experiment, Chlorine gas was passed into moist hydrogen Sulphide gas as shown below



a) What observation was made in the boiling tube? **(1 mark)**

……

b) Write an equation for the reaction which took place. **(1 mark)**

……

c) What precaution should be taken in carrying out this experiment? Give a reason. **(1mark)**

……

19. In an experiment to investigate the enthalpy of displacement of copper(II) ions by Zinc,50cm^3 of copper(II) sulphate solution was placed in a plastic beaker. Excess zinc powder was then added into the beaker and allowed to react. After two minutes the highest change in temperature was noted to be 15 ^oC

(a) Calculate the amount of heat given out during the reaction (C =4.2kJ/Kg/Density of solution = 1g/cm^3**)** **(1 mark)**

……

……

……

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(b) Given that the molar heat of displacement of reaction is -63kJ/mol,calculate the concentration of copper(II)sulphate solution in moles/litre. **(2 marks)**

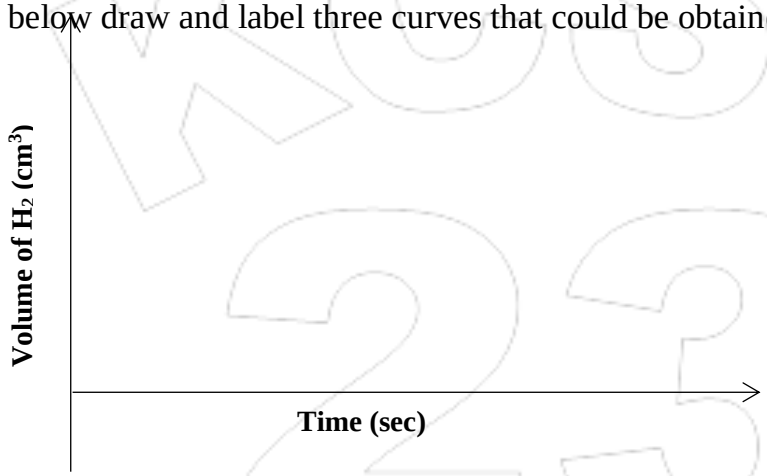
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20. The table below gives three experiments on the reaction of excess hydrochloric acid and 1.5g of zinc done under different conditions. In each the volume of gas was recorded at different time internals

Experiment	Form of Zinc	Hydrochloric acid solution
I	Powder	1.5M
II	Granules	1.0 M
III	Powder	1.0 M

On the axis below draw and label three curves that could be obtained from such results.**(3 marks)**



21. An experiment was carried out where hydrogen chloride gas was bubbled through methylbenzene and water in separate beakers. The resulting solutions were tested with blue litmus papers and sodium carbonate

(i) Write the observations made in the following table **(2 marks)**

Solution of hydrogen Chloride gas in:	Blue litmus paper	Sodium carbonate
Water		
Methylbenzene		

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(ii) Explain the observations in (i)above **(1 mark)**

……

……

22. An element **R** has a relative atomic mass of 88. When a current of 0.5 A were passed through the fused chloride for 32 minutes and 10 seconds, 0.44g were deposited at the cathode. Determine the charge on the ion of **R**. (1 Faraday= 96500 C) **(3 marks)**

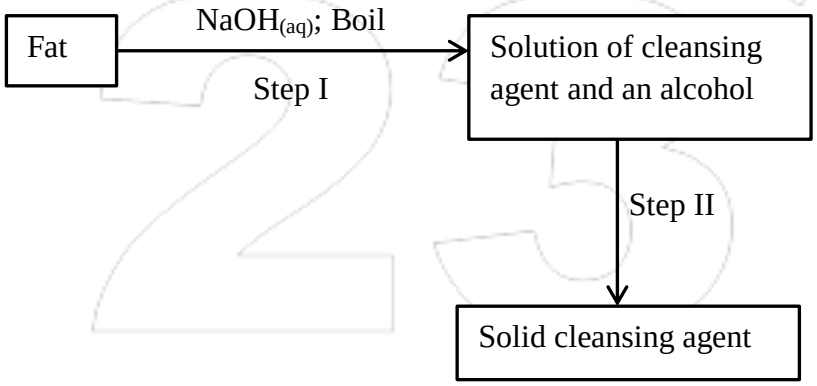
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23. The scheme below was used to prepare a cleansing agent. Study it and answer the questions that follow.



i) What name is given to the type of cleansing agent prepared by the method shown in the scheme? **(1 mark)**

……

ii) Name one chemical substance added in step II **(1 mark)**

……

iii) What is the purpose of adding the chemical substance named in (ii) above? **(1 mark)**

……

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24. In the extraction of zinc, the zinc ore is crushed to a powder, mixed with oil and water and air blown through the mixture.

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

……

b) Explain how this process works. **(1mark)**

……

……

c) Name the chief ore from which zinc is extracted. **(1 mark)**

……

25. Radioactive polonium (Po) mass number 212 and atomic number 84 was detected in a sample of water. The water had an activity of 1000 counts per second.

a). If the water is boiled explain whether the activity would be affected or not. **(1 mark)**

……

……

b). Given that polonium resulted from Bismuth (Bi) following emission of a beta (β) particle; write a nuclear equation for the decay. **(1 mark)**

……

……

c) State **one** medical application of radioactivity. **(1 mark)**

……

26. (a) State the Hess's Law **(1 mark)**

……

……

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(b) Calculate the molar enthalpy of formation of ethyne (C_2H_2) given the following. **(2 marks)**

$C_2H_2 + {}^5/_2O_{2(g)} \rightarrow 2CO_{2(g)} + H_2O_{(l)}$ $\Delta H = -1300kJ/mol$

$C_{(S)} + O_{2(g)} \rightarrow CO_{2(g)}$ $\Delta H = -394kJ/mol$

$H_{2(g)} + {}^1/_2O_{2(g)} \rightarrow H_2O_{(l)}$ $\Delta H = -286kJ/mol$

.....

.....

.....

.....

27 (a) Using the oxidation number, identify and explain oxidizing and reducing agent **(2 marks)**

$2\ H_2S_{(g)} + SO_{2(g)} \rightarrow 3S_{(s)} + 2H_2O_{(l)}$

.....

.....

.....

.....

(b) Atomic number of Sulphur is 16. Write the electron configuration of S in SO_3^{2-} **(1 mark)**

.....

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KCSE 2023 JOINT PREDICTION

SERIES 1

CHEMISTRY

233/2

PAPER 2 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

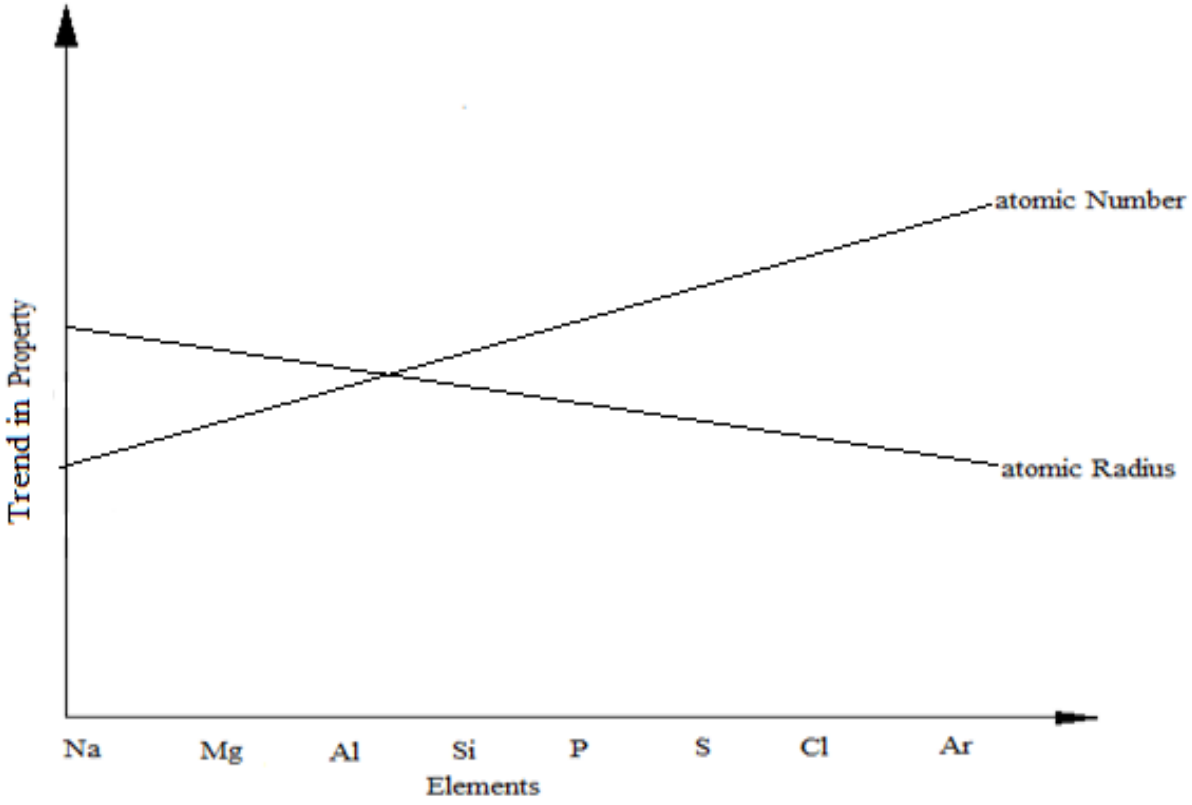
1. *Write your name, class and admission number in the spaces provided above.*
2. *Answer all the questions in the spaces provided in the questions paper.*
3. *Mathematical tables and silent electronic calculators may be used.*
4. *All working must be shown where necessary.*

For Examiners Use Only

Question	Maximum score	Candidates score
1	10	
2	11	
3	14	
4	10	
5	12	
6	11	
7	12	
TOTAL	80	

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1. The figure below represents trends of some properties of period three elements. Study it answer the questions that follow.



a). Explain the trends shown by the atomic numbers and the atomic radii

i). Atomic number **(1 mark)**

……

……

……

ii). Atomic radii **(2 marks)**

……

……

……

b). On the same axes, sketch the trend of reactivity across the period **(1mark)**

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c). Write down the electronic configuration of phosphorous and sulphur in the following compounds

i). H_3PO_4 (P=15) **(1 mark)**

……

……

ii). $Na_2S_2O_3$ (S=16) **(1 mark)**

……

……

d). i). One of the elements given in the figure above is stored under water.

Identify the element and give a reason as to why it is stored under water **(1 mark)**

……

……

ii). State **one** use of aluminium that can be associated with its malleability. **(1mark)**

……

……

e). Explain the observation that would be made if the chloride of Phosphorous is exposed to moist air. **(2 marks)**

……

……

……

2.a). Sulphur is extracted from sulphur beds below the earth's surface. Super-heated water is pumped down a pipe into the sulphur beds.

i. What is super-heated water and how is it obtained**?** **(2marks)**

……

……

……

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ii. Why does the water used here have to be **superheated**, and **not use boiling** water? **(1mark)**

……

……

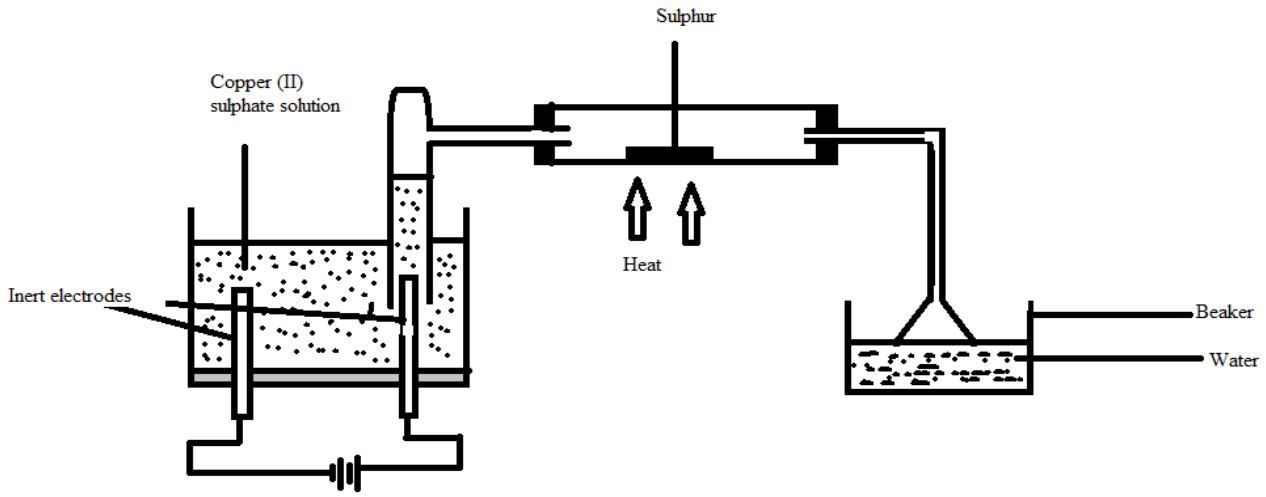
iii. When molten sulphur is pumped to the surface, it solidifies. Which allotrope of sulphur forms first**?** **(1mark)**

……

iv. Name the form of sulphur obtained when liquid sulphur is poured into a beaker of cold water **(1mark)**

……

b) The diagram below represents a set up that can be used for electrolysis of aqueous copper (II) sulphate. Use it to answer the questions that follow.



i. What do you understand by the term inert electrode? **(1mark)**

……

……

ii. What is the purpose of the filter funnel**?** **(1mark)**

……

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iii. Explain what happens to the pH of the:

I. Water in the beaker**.** **(1mark)**

……

……

II. Copper (II) sulphate **solution** **(1mark)**

……

……

iv. Write ionic equation for the:

I. Oxidation **reaction** **(1mark)**

……

……

II. Reduction reaction, in above set up. **(1mark)**

……

……

3. a).(i) Define the term 'molar enthalpy of formation of a compound; **(1mark)**

……

……

(ii) Calculate the molar enthalpy of formation of ethane using the following information:

(3marks)

$C_2H_{6(g)} + \frac{7}{2}O_{2(g)} \longrightarrow 2CO_{2(g)} + 3H_2O_{(l)}$, $\Delta H_f^{\Theta} = -1561$ kJ/mole

$C_{(s)} + O_{2(g)} \longrightarrow CO_{2(g)}$, $\Delta H_f^{\Theta} = -394$ kJ/mole

$H_{2(g)} + \frac{1}{2}O_{2(g)} \longrightarrow H_2O_{(l)}$, $\Delta H_f^{\Theta} = -286$ kJ/mole

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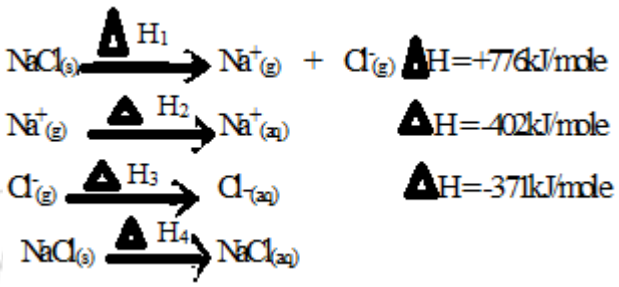
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b) Study the reactions below and answer the questions that follow:



I. State the name given to :

a) ΔH_1 **…….(1mark)**

b) ΔH_2 **……(1mark)**

II. Draw an energy cycle diagram illustrating the reactions above. **(2marks)**

III. Determine the value of H_4 **(2marks)**

……

……

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IV. Joy placed 100cm^3 of 0.1M $CuSO_{4(aq)}$ in a plastic beaker , covered it with some cotton wool and recorded its initial temperature. She then added excess zinc powder to the solution and stirred it using a stirrer. She noted down the following data:

Initial temperature 20.5^{o}C

Final temperature 30.0^{o}C

Density of solution 1.0g/cm^3

Specific heat capacity of water 4200J/kg/k

i. Apart from the temperature rise, state one other observation made while she was stirring. **(1mark)**

……

……

ii. Calculate the heat change for the reaction **above** **(1mark)**

……

……

……

……

iii. Determine the number of moles of ions of copper reacting **(1mark)**

……

……

……

……

iv. Hence, determine the molar enthalpy of the reaction**.** **(1mark)**

……

……

……

……

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4.a) An experiment was set up to investigate the effect of temperature on the rate of reaction between 1.0g calcium carbonate and excess hydrochloric acid. The temperature was varied from15^0C, 20^0C and 25^0C; and data obtained for the 3 sets of reagents.

i) Sketch a graph of volume of carbon (IV) oxide gas produced against time for each temperature on the axes below. Label each graph with corresponding temperature. Consider all gas volumes measured at same temperature and pressure. **(2 marks)**

KCSE 23

ii) Explain the shape of graphs you've drawn in (a) above. **(2marks)**

……

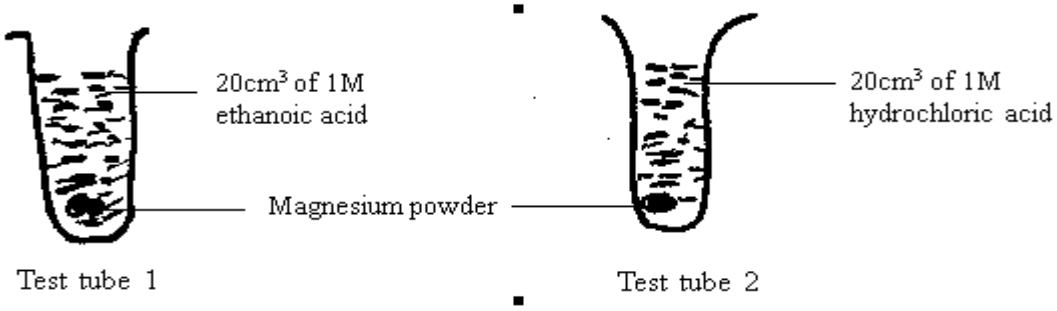
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b) **In** an experiment, equal amounts of magnesium powder were placed into test tube 1 and 2 as shown below.



i) Explain why the magnesium powder in test tube 2 gets used up faster than that in test tube 1.

(3 marks)

……

……

……

……

ii) Other than concentration, state one factor that affects the rate of a reaction. **(1 mark)**

……

c) Consider the equilibrium of the reaction below

$$A_{(g)} + B_{(g)} \rightleftharpoons D_{(I)} + E_{(g)}; \text{ DH = -ve.}$$

In which direction will the equilibrium position shift as a result of each of the following changes? Explain.

i) Raising the temperature **(1 mark)**

……

……

ii) Reducing the volume of the container. **(1mark)**

……

……

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5. (a) Work out the oxidation number of nitrogen in NO_3^- ? **(1 mark)**

(b) Study the standard electrode potentials below and answer the questions that follow. (The letters do not represent the actual symbols of the elements.

$$A^+_{(aq)} + e^- \longrightarrow A_{(s)} \qquad E^\vartheta = -2.92V$$

$$B^+_{(aq)} + e^- \longrightarrow B_{(s)} \qquad E^\vartheta = +0.52V$$

$$C^+_{(aq)} + e^- \longrightarrow \frac{1}{2}C_{2(g)} \qquad E^\vartheta = 0.00V$$

$$\frac{1}{2}D_{2(g)} + e^- \longrightarrow D^-_{(aq)} \qquad E^\vartheta = +1.36V$$

$$E^{2+}_{(aq)} + 2e^- \longrightarrow E_{(s)} \qquad E^\vartheta = -0.44V$$

(i) With reasons, identify the;

I Strongest reducing agent. **(1 mark)**

……

II the reference electrode. **(1 mark)**

……

(ii) Write the overall equation for the reaction that will be obtained when half cells of B and E are connected. **(1 mark)**

……

……

……

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(iv) Explain whether the reaction represented below can take place. **(2 marks)**

$$2A^{+}_{(aq)} + E_{(s)} \longrightarrow 2A_{(s)} + E^{2+}_{(aq)}$$

(v) Draw the cell diagram obtained when the half cells in (ii) are combined. **(2 marks)**

(c) In an experiment to electroplate a copper spoon with silver, a current of 0.5A was passed for 18 minutes.

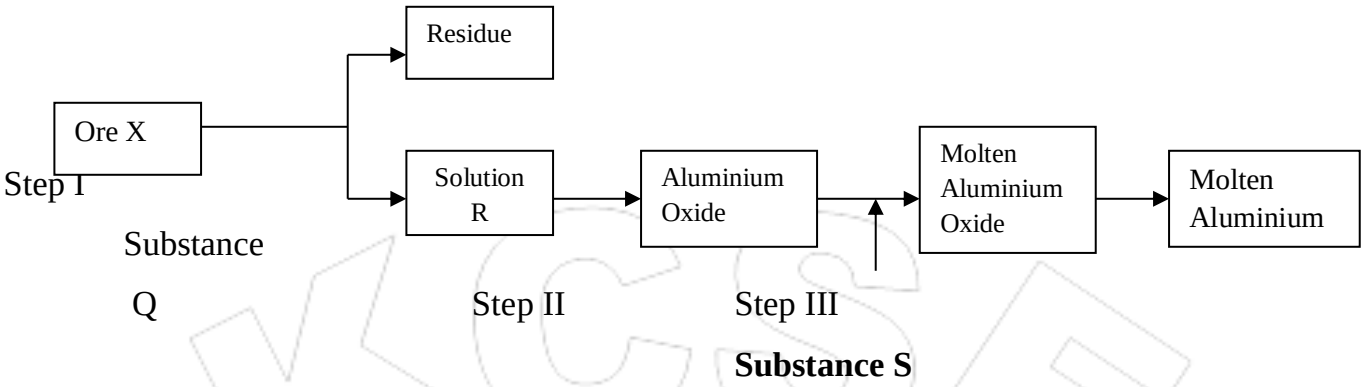
(i) Sketch a diagram to show how the experiment was carried out. **(2 marks)**

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(ii) Calculate the amount of silver deposited on the spoon.

(IF = 96500C, Ag = 108) **(2 marks)**

6. The process of extraction of Aluminium is summarized as below:



(a) (i) Write the formula of the main Ore X which is used in extraction of Aluminium. **(1 mark)**

(ii) Name:

(a) The main residue formed after filtration in step I. **(1 mark)**

……

(b) Substance Q. **(1 mark)**

……

(iii) How is the sodium Aluminate in Solution R separated from the impurity silicon (iv) oxide. **(2 marks)**

……

……

……

(iv) What is the purpose of addition of substance S in step III. Explain. **(2 marks)**

……

……

……

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(b) (i)Explain why the Anode in extraction of Aluminium is replaced periodically **(2 marks)**

……

……

……

(ii) Write an equation for the formation of Aluminium at the cathode. **(1 mark)**

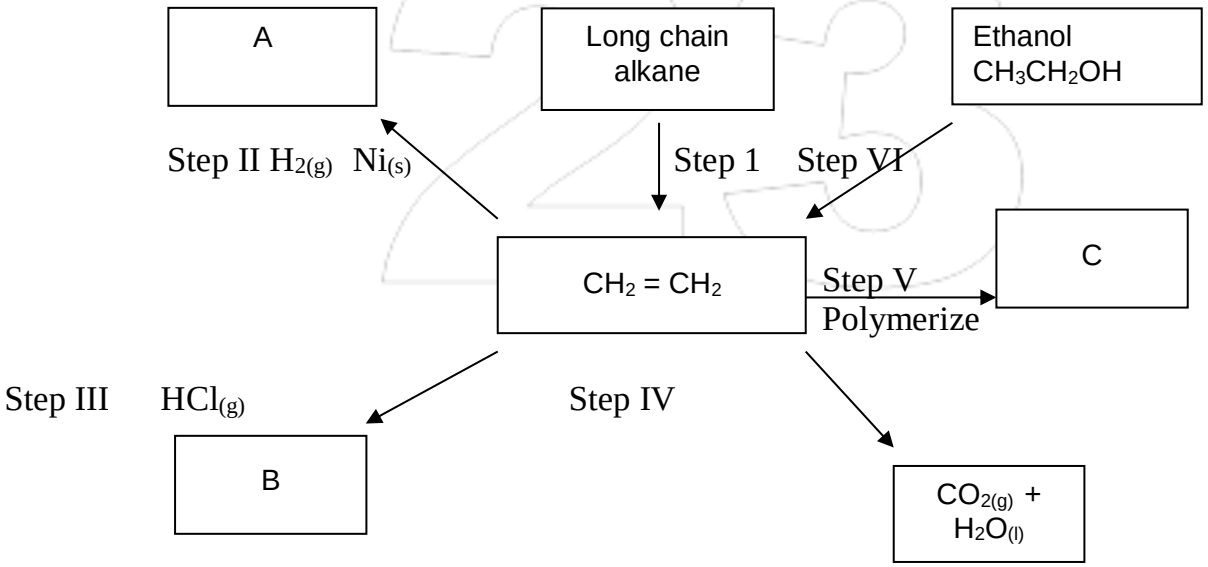
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(c) Explain why Duralum an alloy of Aluminium is used in construction of aircraft parts and car window frames. **(1 mark)**

……

……

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



(i) Name the process taking place in step (I). **(1mark)**

……

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(ii) Describe a chemical test that can be carried out to show the identity of organic compound A.

(2marks)

……

……

……

(iii) Give the name of the following: **(2marks)**

I. A:……

II. B:……

(iv) Give the structural formulae of substance C. **(1mark)**

……

(v) Name the type of reaction that occurs in:

I. Step IV **(2marks)**

……

II. Step VI:

……

(vi) Give the reagent and the condition necessary for step VI. **(2marks)**

Reagent:……

Condition:……

(b) Give the systematic names of the following compounds:

I. $CH_2CHCHCH_2CH_3$ **(1mark)**

……

II. CH C CH_3 **(1mark)**

……

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KCSE 2023 JOINT PREDICTION

SERIES 1

CHEMISTRY

233/3

PAPER 3 (PRACTICAL)

TIME: 2¼ HOURS

SCHOOL…… SIGN……

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(a) Each student should be supplied with the following

1. Burette
2. Pipette
3. Pipette filler
4. Filter funnel
5. White tile
6. Clamp and stand
7. **2** conical flask
8. **100 cm^3**glass Beaker (empty)
9. Stop watch
10. **100cm3** measuring cylinder
11. **10cm^3**measuring cylinder
12. **250 cm^3**volumetric flask
13. Metallic spatula
14. **6** clean test tubes
15. Test tube holder
16. **500ml** distilled water
17. White piece of paper or filter paper
18. **1** filter paper
19. **1** labelling paper
20. Phenolphthalein indicator

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21. About **90cm^3** solution **K**
22. About **100cm^3** solution **L**
23. About **70cm^3** solution **N**
24. About **90cm^3** solution **P**
25. About **0.5g$NaHCO_3$**
26. About **1.0g** solid **Q**
27. About **0.5g** solid **R**

(b) Each student should have access to the following solutions:

1. Mean of heating
2. 2M NaOH
3. 2M HNO_3
4. $Pb(NO_3)$
5. Acidified $KMNO_4$
6. Potassium iodide solution

NB: the above solutions should be supplied with a dropper each.

(c) <u>SOLUTIONS PREPARATION AND SOLID MEASUREMENTS</u>

1. SOLUTION **K** IS **1M H_2SO_4**
2. SOLUTION **L** IS **0.36 M NaOH** CONTAINING **14.4g** OF **NAOH** IN **1 LITRE** OF THE SOLUTION
3. SOLUTION N IS **2M HCl**
4. SOLUTION P IS **0.16 M $Na_2S_2O_3$**(***SODIUM THIOSULPHATE***)
5. SOLID Q IS A MIXTURE OF SODIUM SULPHITE(**Na_2SO_3**) AND LEAD (II) CARBONATE (**$PbCO_3$**) MIXED IN THE **RATIO 1:1 (*should be thoroughly mixed*)**
6. SOLID **R** IS MALEIC ACID

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KCSE 2023 JOINT PREDICTION

SERIES 1

CHEMISTRY

233/3

PAPER 3 (PRACTICAL)

TIME: 2¼ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO THE CANDIDATES:-

- ***Write your name and index number in the spaces provided***
- ***Sign*** *and write the* ***date*** *of examination in the spaces provided*
- ***Answer all the questions in the spaces provided.***
- *Mathematical tables and electronic calculators may be used.*
- *All working* ***MUST*** *be clearly shown where necessary.*
- *Use the first 15minutes of the 2 ¼ hours to ascertain you have all the chemicals and apparatus tha you may need.*

FOR EXAMINERS USE ONLY

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

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QUESTION 1

- You are provided with solution **K** and **L**
- **S**olution **K** is 1M H_2SO_4
- Solution **L** contains 8.7g of the hydroxide of metal **M** {with formulae MOH] in 600cm^3 of the solution
- You are required to carry out the experiment to determine;

i. Concentration of solution L

ii. R.A.M of metal **M**

Procedure

1. Measure 75cm3 of solution K and put into a clean 250cm3 volumetric flask and add distilled water up to the mark

-label this solution **W**

2. Fill a clean burette with solution W

3. Pipette 25cm3 of solution L into a clean conical flask and add 2 drops of phenolphthalein indicator

4. Titrate the solution **W** in the burette against solution **L** in the conical flask and record the results in the table below

5. Repeat {3} and {4} above as you fill the table below.

TABLE 1

	I	II	III
Final burette reading {cm^3}			
Initial burette reading {cm^3}			
Volume of solution W used {cm^3}			

[4mks]

{a} Calculate the;

{i} Average volume of solution W **used** **[1mk]**

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{ii}Concentration of solution W **[1mk]**

……

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{iii}Number of moles of solution W that reacted with each 25cm3 portion of solution **L {2mks]**

……

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……

{b}Calculate the;

{i} Number of moles of the metal hydroxide {MOH} in solution L that reacted with each portion of solution W **[2mks]**

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{ii}Concentration of solution L **[1mk]**

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{iii} Number of moles of the metal hydroxide [MOH]in 600cm3 of solution **L** **[2mks]**

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{iv} R.A.M of metal M **[0=16, H=1]** **[2mks]**

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QUESTION 2

You are provided with solution N and P

- Solution N is 2M HCl
- Solution P is 0.16M sodium thiosulphate
- You are required to carry out the experiment below to determine how concentration affects the rate of reaction between HCl and sodium thiosulphate solutions

PROCEDURE

1. Fill a clean burette with solution P.

Measure 25cm^3 of the solution P from the burette into a clean 100cm^3 glass beaker and place on a white piece of paper with a cross[x] marked on it

2. Add 10cm^3 of solution N into it and immediately start a stop watch and note the time taken for the cross beneath the mixture to become invisible

3. Clean the 100cm^3 beaker and measure into it 20cm^3 of solution P form the burette, and add 5cm^3 of distilled water into the solution solution

4. Repeat step [2] above and note the time taken for the cross to become invisible

5. Repeat the experiment using volumes indicated on the table below and as you record the results

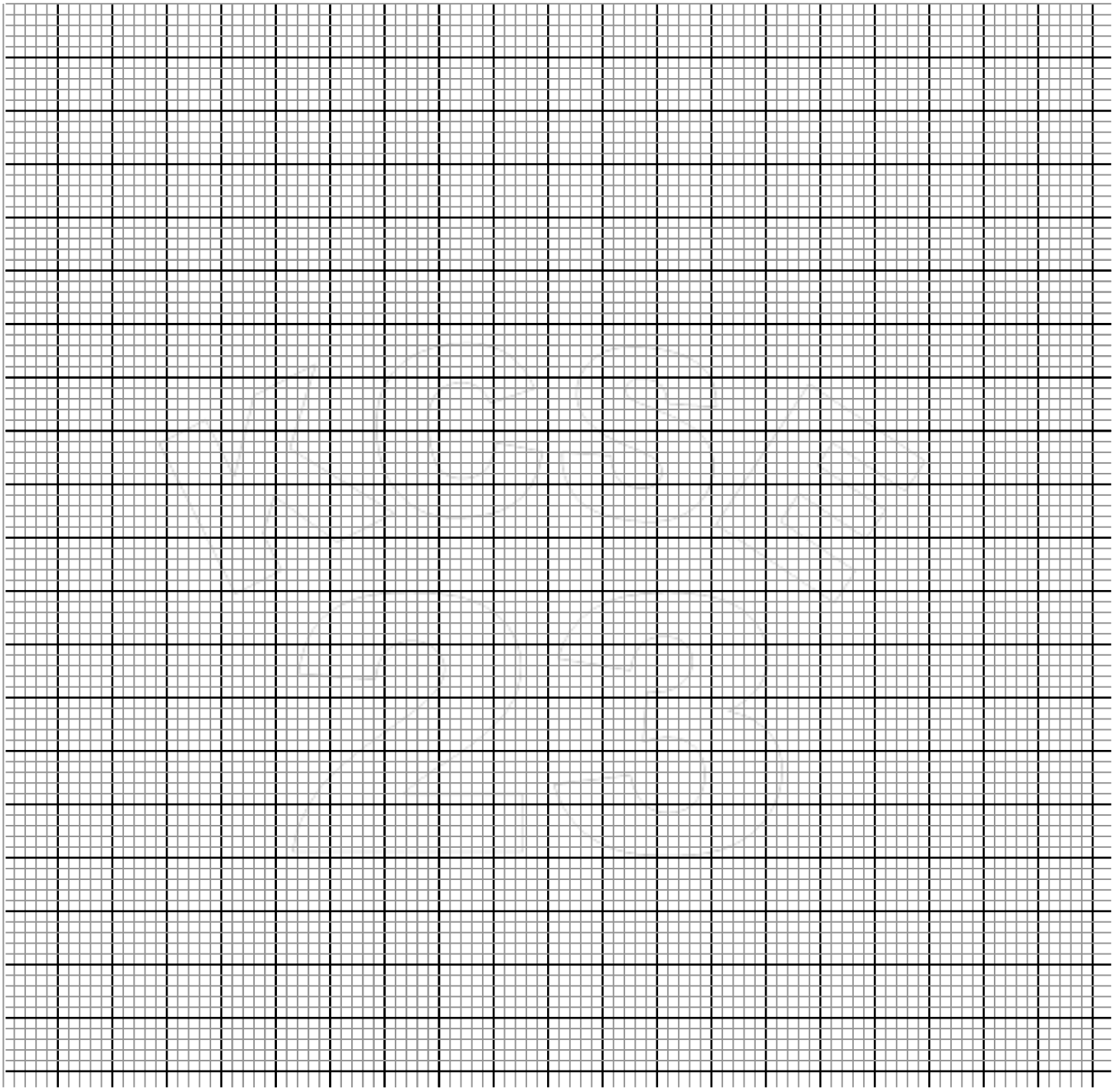
TABLE 2

Expt	1	2	3	4	5
Volume of solution p(cm^3)	25	20	15	10	5
Volume of water added to solution p{cm3}	0	5	10	15	20
Volume of solution N	10	10	10	10	10
Time taken for the cross to become invisible [in seconds]					
$\frac{1}{t}$ S^{-1}					

(4mks)

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[a] plot a graph of $\frac{1}{t}$ against volume of solution P on the grid provided **[3mk]**



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{b}From the graph

{i} Determine the time taken for the cross to become invisible when 12.5cm^3 of solution P is used

[2mks]

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{ii}Explain the effect of concentration on the rate of reaction between HCl and sodium thiosulphate **solution** **[2mks]**

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QUESTION 3

- You are provided with solids Q and R
- You are required to carry out the tests below as you record your observations and inferences

(i) SOLID Q

-Add about 5cm^3 of distilled water to solid Q, shake the mixture thoroughly for a while and then filter it

NOTE: Retain both the filtrate and the residue for the tests below

	TEST	OBSERVATIONS	INFERENCES
(a){i}	Divide the filtrate into 4 portion -To the first portion, add 4 drops of NaOH	$\left(\frac{1}{2}mark\right.$	$(1mark$

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{ii}	Scoop the 2nd portion on a metallic spatula and ignite on a non-luminous flame	$\left(\frac{1}{2}mark\right.$	$\left(\frac{1}{2}mark\right.$
{iii}	To the 3rd portion, add 2 drops of $Pb\{NO_3\}_{[aq]}$	$\left(\frac{1}{2}mark\right.$	$(1mark$
{iv}	To the 4th portion ,add acidified $KmnO_4$	$\left(\frac{1}{2}mark\right.$	$\left(\frac{1}{2}mark\right.$

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b{i}	Put the residue in a test tube and add about $2cm^3$ of HNO_3	$\left(\frac{1}{2}mark\right)$	$(1mark$
{ii}	To the mixture in b{i} above, add 2 drops of KI solution	$\left(\frac{1}{2}mark\right)$	$\left(\frac{1}{2}mark\right)$

{**ii}SOLID R**

	TEST	**OBSERVATIONS**	**INFERENCES**
(a)	Scoop a portion of solid R on a Metallic spatula and burn on a Non-luminous flame	$(1mark)$	$(1mark)$

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(b){i]	Put the remaining portion of solid R into a clean test tube and add about $3cm^3$of distilled water, shake and divide into 2 portions	$(1mark)$	$\left(\frac{1}{2}mark\right)$
{ii}	To the 1st portion, add 2 drops of acidified $KMnO_4$ and warm	$\left(\frac{1}{2}mark\right)$	$(1mark)$
{iii}	To the 2nd portion add $NaCO_3$	$\left(\frac{1}{2}mark\right)$	$(1mark)$

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KCSE 2023 JOINT PREDICTION

SERIES 1

PHYSICS

232/1

PAPER 1 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS

- *Write your name and admission number in the space provided*
- *Sign and write the date of the examination in the space provided above*
- *This paper consists of two sections A and B.*
- *Answer all the questions in the spaces provided.*
- *All workings must be clearly shown.*
- *Mathematical tables and silent electronic calculators may be used.*

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SECTION	QUESTION	TOTAL MARKS	CANDIDATE'S SCORE
A	1-13	25	
B	14	12	
	15	10	
	16	12	
	17	10	
	18	11	
	TOTAL	80	

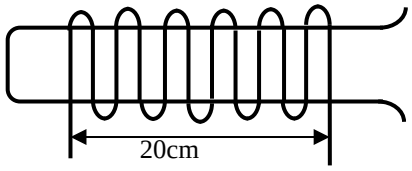
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SECTION A (25 MARKS)

Answer all the questions in this section **(Take g=10N/kg or 10m/s^2)**

1. The figure1 below shows a wire wound on a test tube. The windings just touch each other. If the total number of complete loops was found to be 15, and the distance covered by the windings on the test tube is 20cm; find the radius of the wire. **(2marks)**

Figure 1



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2. A paratrooper flexes his legs when he lands. Explain **(1mark)**

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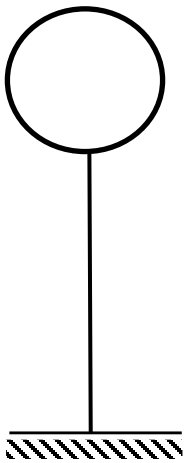
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3. A needle may float on clean water but sinks when a detergent is added. Explain. **(1 mark)**

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4. The mass of a fabric of a large balloon is 100kg. the balloon is filled with 200 m3 of helium and attached to a cable fixed to the ground as shown below.



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Given that the densities of air and helium are 1.3 kg/m^3 and 0.018kg/m^3 respectively, determine the tension in the string. **(3 marks)**

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5. Water flows in a pipe of diameter 7cm at a speed of 5m/s. The water then gets to the perforated end which has 20 holes of diameter 0.7cm each.Determine the speed of water jets. **(3 marks)**

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6. For an enclosed system with a liquid, a force is applied at one point.

a) Briefly explain how force is transmitted to other parts of the system. **(2 marks)**

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b) State one application of such a system. **(1 marks)**

……

7. A 150g mass tied on a string is whirled in a vertical circle of radius 30cm with a uniform speed. At the lowest position the tension in the string is 9.5N.Calculate the velocity of the mass.

(3 marks)

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8. A spring of elastic constant K has its length increased from 4.00m when unloaded to 4.25m when loaded with a 75N weight. Assuming that the elastic limit is not exceeded, determine the value of K. **(2 marks)**

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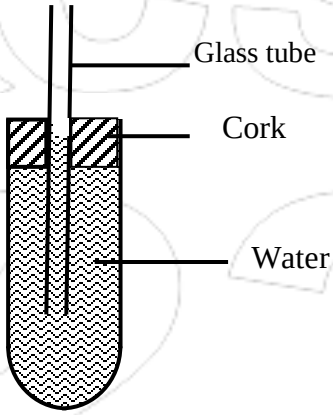
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9. The figure 2 below shows a glass tube fitted on to a boiling tube filled with water. State and explain what is observed when the boiling tube is heated. **(2marks)**

Figure 2



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10. A bus that carries goods in the roof carrier is less stable than one that carries goods in the boot. Explain why this is so. **(1 mark)**

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11. A rod consists of glass on one part and copper on the other. The rod is wrapped with a piece of paper and then a flame passed below it. It is observed that the paper on the side with glass is charred while that on the side of copper is not. Explain this observation. **(1 mark)**

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12. The figure 3 below shows a uniform 50cm rod. It is balanced horizontally by a load of 4N on one end. Calculate the weight of the rod. **(2marks)**

fig. 3



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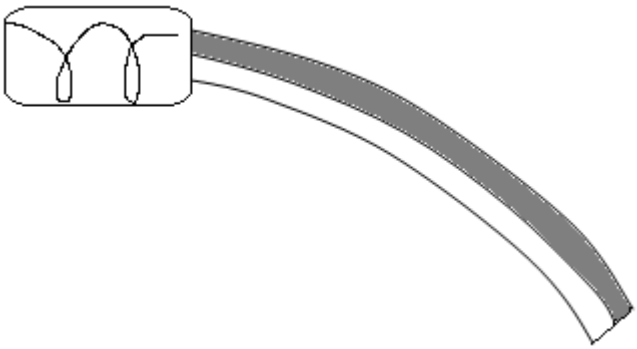
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13. The figure 4 below shows a bimetallic strip cooled below room temperature. Sketch on the side the bimetallic strip at room temperature. **(1Mark)**

Figure 4.



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SECTION B (55 Marks)

Answer all questions in this section in the spaces provided.

14. a) Define "absolute zero temperature" for an ideal gas **(1 Mark)**

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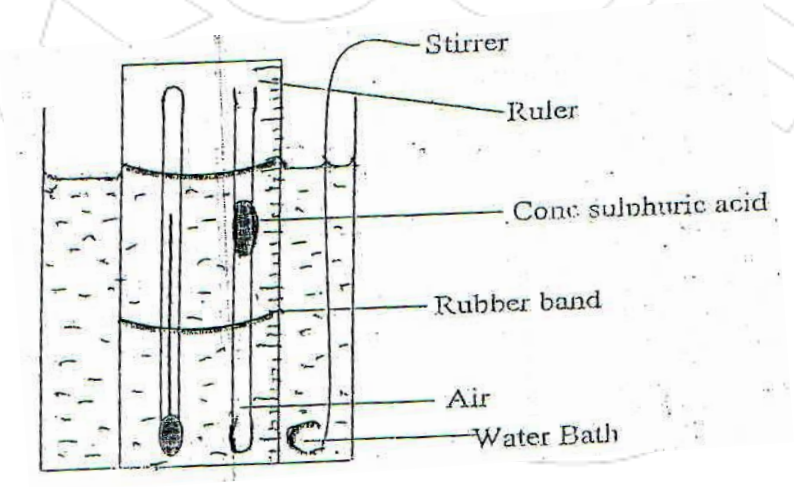
b) Using kinetic theory, explain Boyle's law for an ideal gas. **(2Marks)**

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c) The diagram shows an experiment to investigate the relationship between volume and temperature of a fixed mass of gas at constant pressure.



i) Explain the function of;

(I) Concentrated sulphuric acid **(1 Mark)**

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(II) Stirrer **(1 Mark)**

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ii). Explain how the set up above can be used to verify Charles law for an ideal gas **(3Marks)**

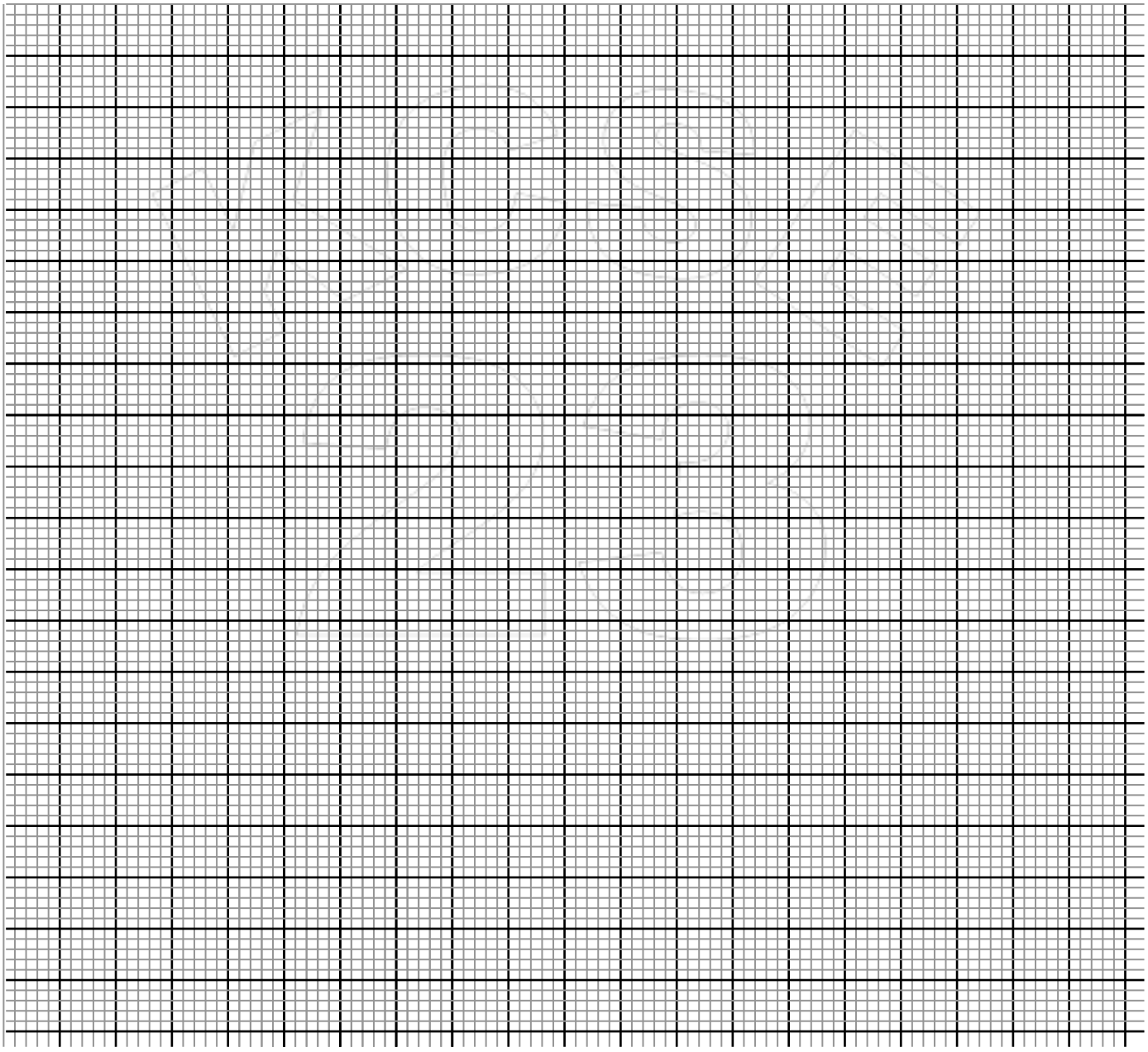
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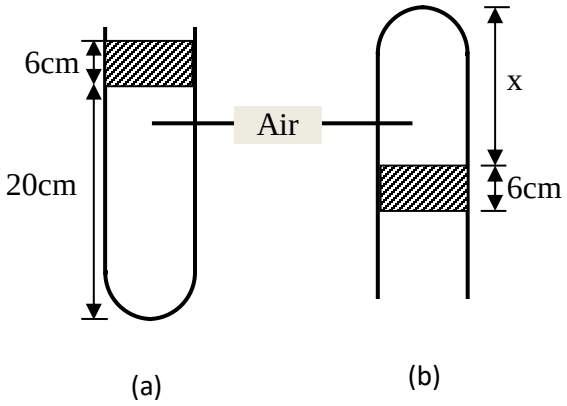
iii. On the grid below sketch a graph of volume (cm^3) against temperature (^0c). Mark with letterT the absolute zero temperature. **(2 Marks)**



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(d)A column of air 20cm long is trapped by mercury thread 6cm long as shown in figure 7 (a) below.

Fig 7



If the tubeis now inverted,determine column X in figure b).Take atmospheric pressure as 76cm of mercury. **(2Marks)**

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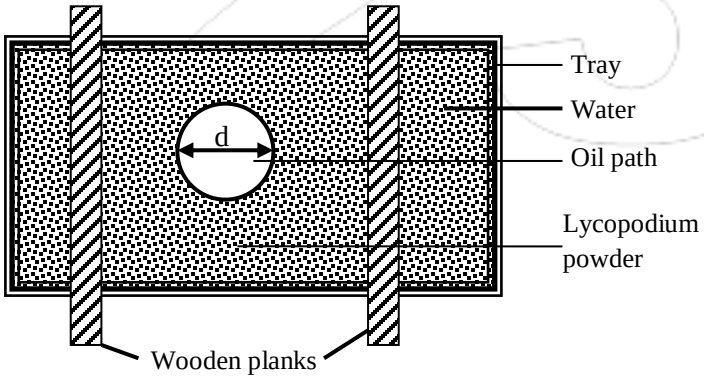
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15. The figure 8 below shows an experimental set up for estimating the diameter of an oil molecule.

Figure 8



i) Describe how the oil patch is formed **(2Marks)**

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ii) i)In this experiment the diameter 'd' of the oil patch was measured to be 21cm for an oil drop of radius 0.28mm. Determine the diameter of the oil molecule. **(3Marks)**

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ii)State any two assumptions made in calculating the diameter of the oil molecule. **(2Marks)**

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iii) What is the role of the lycopodium powder in this experiment? **(1Mark)**

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iv) Describe one method of determining the diameter of an oil drop. **(2Marks)**

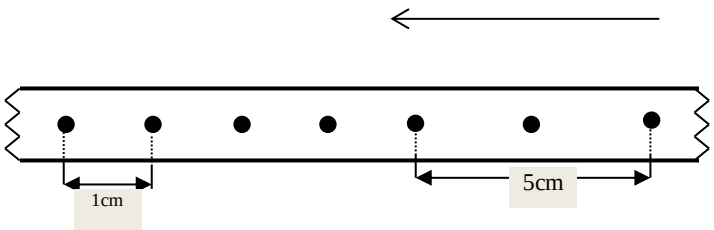
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16. The figure 9 below shows the pattern formed on a tape in an experiment to determine the acceleration of a trolley.The frequency of the ticker tape used was 50Hz

Figure 9



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Calculate

i) The initial velocity of the trolley **(2Marks)**

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……

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ii) The final velocity of the trolley **(2Marks)**

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iii) The acceleration of the trolley **(2Marks)**

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b) A gun is fired vertically upwards from the top of an open truck moving horizontally at a uniform velocity of 50m/s. The bullet attains a maximum height of 45m.Calculate;

1) The time taken by the bullet to reach the maximum height **(3Marks)**

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2) The distance covered by the truck just before the bullet reaches the level from which it was fired.

(3Marks)

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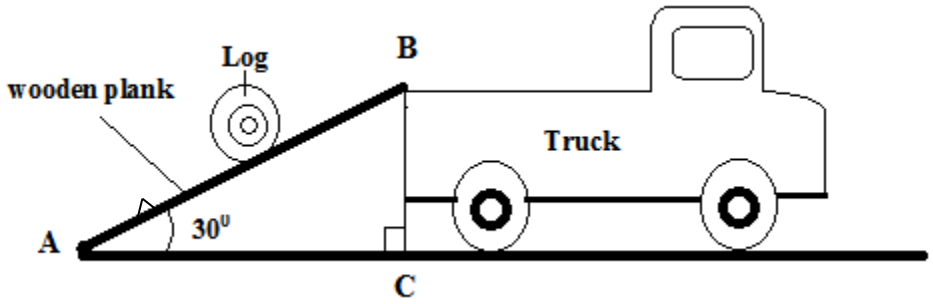
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17. A man used a wooden plank to lift a wooden log from the ground to a stationary truck as shown in the figure. The wooden plank is inclined at an angle of 30^0 to the ground.

Figure 10



i) Show that the velocity ratio of the system is given as V.R=$\frac{1}{Sin\ 30^0}$ **(3Marks)**

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ii) Given that the system is 65% efficient, determine the Mechanical Advantage. **(3 marks)**

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iii) Explain why the efficiency of this system cannot be 100%. **(1Mark)**

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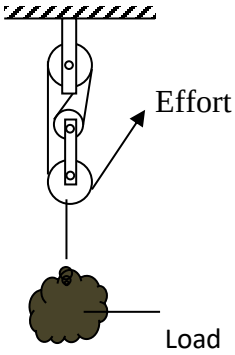
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b) The figure 11 shows a pulley system.

Figure 11



i) State the velocity ratio of the machine. **(1Mark)**

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ii) Explain what happens to the Mechanical Advantage of the machine as the load is increased gradually. **(1Mark)**

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c) Water drops from a waterfall to the bottom. The temperature of the water is found to be higher at the bottom than at the top.State the energy transformations. **(1Mark)**

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18. a) Define "specific heat capacity" of a substance **(1Mark)**

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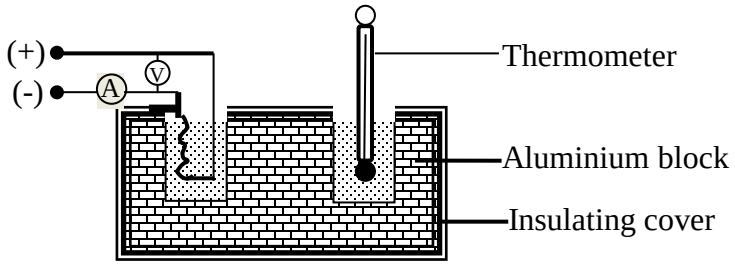
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b) In an experiment an aluminium block of mass 2kg was heated using an immersion heater as shown in figure 12 below

Figure 12



The temperature of the block was recorded every minute for exactly five minutes and then the heater was switched off. A graph of temperature in ^{0}c against time in minutes for the experiment is shown below.

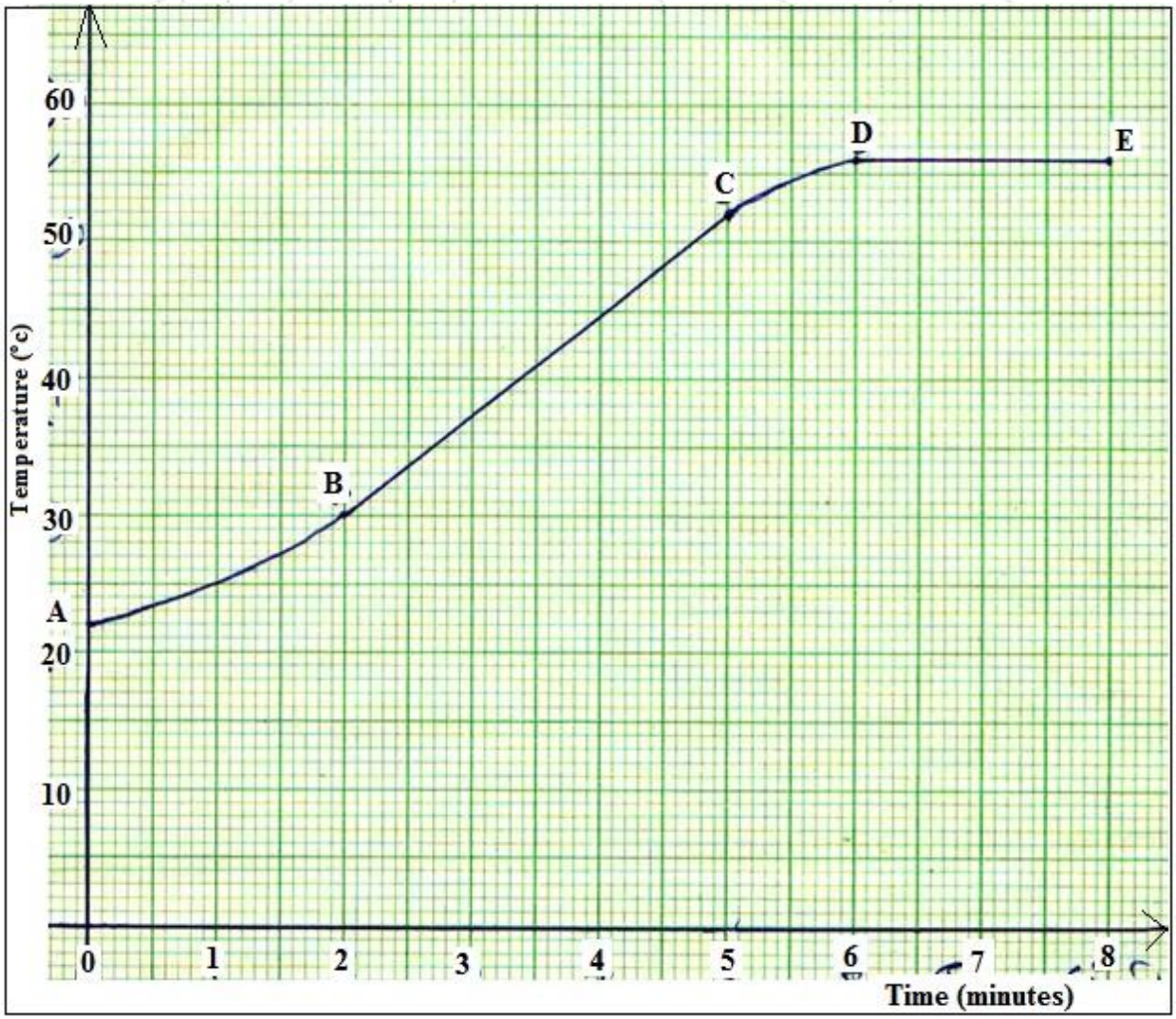


Figure 13

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Study the graph above and answer the questions that follow.

Suggest why;

i) The reading in the thermometer rose relatively slowly between point A and B. **(1Mark)**

……

……

ii) The temperature continued to rise after the heater was switched off **(1Mark)**

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iii) Use the straight portion of the graph (Bto C)to calculate the specific heat capacity of the aluminium given that the voltmeter read 22.00V and ammeter 10A throughout the course of the experiment. **(3Marks)**

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4) Explain the two reasons why the value calculated in b) iii) will not be accurate. **(2Marks)**

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5) A temperature scale X has an ice point of 40^0 and a steam point of 240^0 .What is the temperature in X^0 when the Celsius temperature is 50^0C. **(3Marks)**

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KCSE 2023 JOINT PREDICTION

SERIES 1

PHYSICS

232/2

PAPER 2 (THEORY)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

Instructions

a) *Write your name, index number and name of your school in the spaces provided above.*

b) *This paper consists of two sections, section I and II. Answer all the questions in both sections.*

c) *Mathematical tables and silent non – programmable calculators may be used.*

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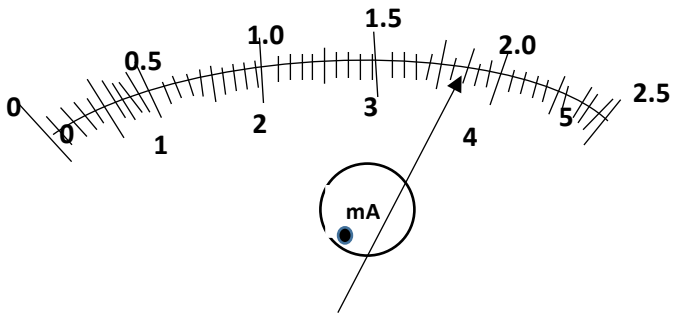
section	Question	Maximum score	Candidate's score
I	1 – 11	25	
II	12	11	
	13	11	
	14	11	
	15	12	
	16	10	
Total		80	

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Section I (25 marks)

Answer all the questions in this section

3) What is the reading shown by the pointer in the figure below, if the full scale range is;



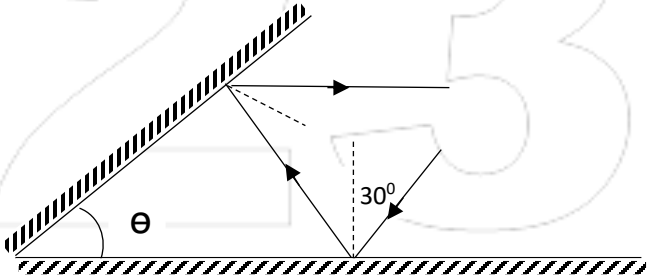
a. 0 - 2.5 **(1 mark)**

……

b. 0 – 5 **(1 mark)**

……

4) The following diagram shows two mirrors inclined at an angle θ to each other. A ray of light is incident on one of the mirrors and finally reflected from the second mirror parallel to the first mirror find the angle between the mirrors. **(2 marks)**



5) It is not possible to charge an electroscope by contact method using a metal rod. Explain

(2 marks)

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6) A car battery is rated 40 Ah and it is expected to supply a constant current for 120 minutes.

a. What is the strength of the current delivered? **(2 marks)**

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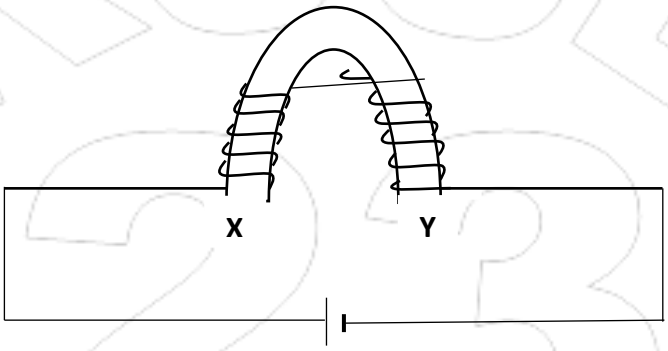
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b. Explain why eight dry cells in series cannot be used to start a car engine even though they have the same e.m.f. **(1 mark)**

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7) A coil of insulated wire is wound around a u – shaped soft iron core X Y and connected to a battery as shown below.

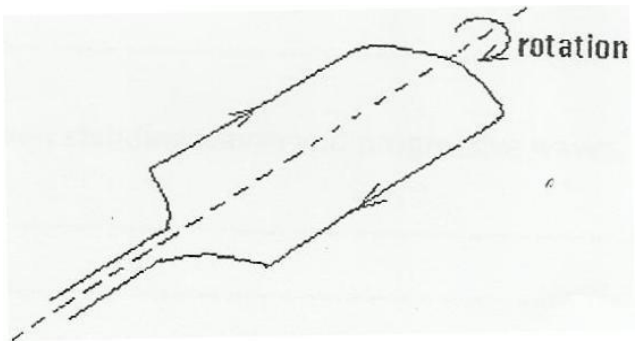


State the polarities of the ends X and Y**.** **(2 marks)**

X ……

Y……

8) The figure below shows a coil carrying a current flowing in the direction shown in a magnetic field.



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On the same diagram draw the magnetic field lines across the coil. **(1 mark)**

9) An object of height 5 cm is placed 25 cm from a convex mirror of focal length 15 cm. determine the image distance and hence state the nature of the image formed**.** **(3 marks)**

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10) Loudspeaker placed between two wall A and B is sending out constant wave pulses. Determine how far the loudspeaker is from wall B if it is 100m from wall A, and the time between the two echoes received is o.2 seconds (speed of sound is 340m/s) **(3 marks)**

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11) The following table shows part of the electromagnetic wave spectrum.

Ultraviolet rays	
Microwaves	
X-rays	
Visible light	

d) On the right column of the table, arrange the waves in the order of decreasing energy. **(1 marks)**

e) Give an application of each of the following electromagnetic waves. **(2 marks)**

i. Ultraviolet rays:

……

……

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ii. Microwaves:

……

……

12) A 4Ω resistor is connected in series to a battery of e.m.f 6V and negligible internal resistance. Determine the power dissipated by the resistor. **(2 marks)**

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13) State any two laboratory safety rules that deal with electrical safety in the lab. **(2 marks)**

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Section II (55 marks)

Answer all the questions in this section.

14) a) Define term focal length as used in thin **lenses** **(1 mark)**

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6) Give the functions of the following parts of a lens camera. **(3 marks)**

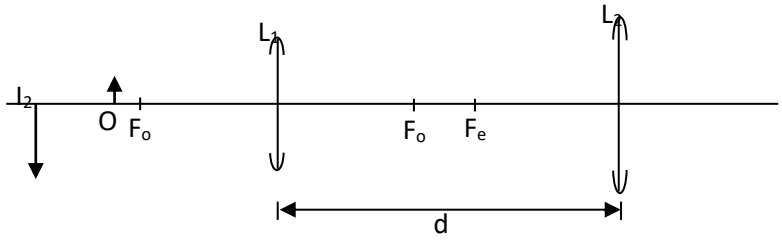
i. Shutter: ……...

ii. Film: ……

iii. Diaphragm: ……

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7) A compound microscope with objective lens L_1 of focal length 0.8cm and an eyepiece lens L_2 of focal length 2.5cm is shown in figure below. An object O is placed in front of the objective lens at a distance u_1 of 1.2cm. The system forms a final image I_2 at a distance of 10cm from L_2. Determine the distance of separation of lenses L_1 and L_2. **(4 marks)**



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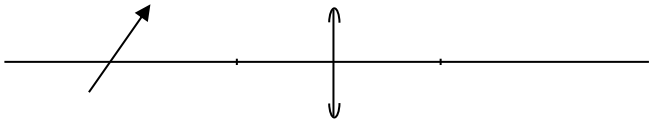
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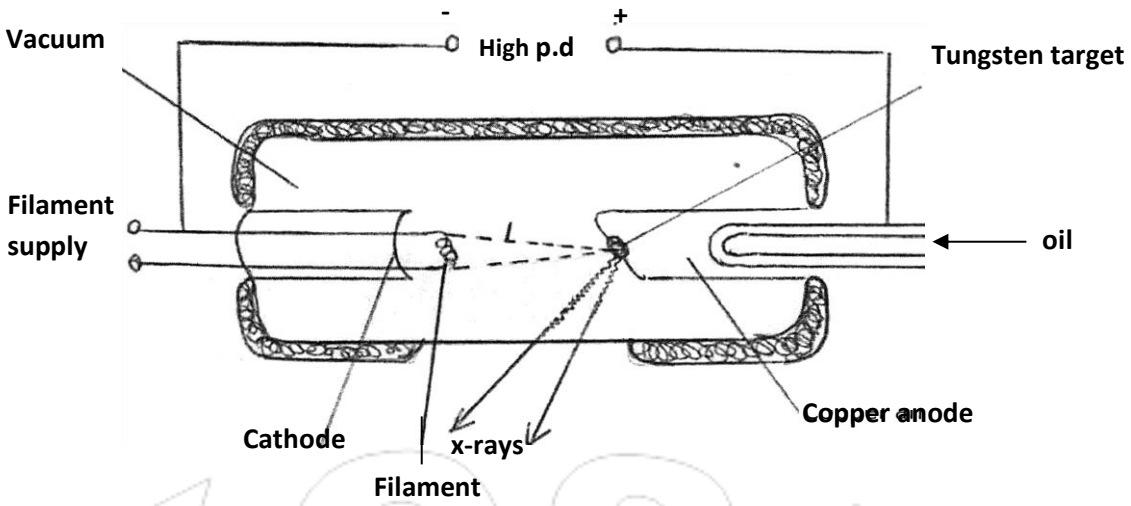
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8) The figure below (figure 9) shows an object placed in front of a convex lens. Complete the ray diagram to show the position of the image. **(3 marks)**



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15) The figure below shows the features of an X-ray tube



a. (i) What is the purpose of the oil going in and out of the anode **(1mk)**

……

……

(ii) State the property of tungsten that makes it suitable as a target **(1mk)**

……

(b)An X-ray tube operates with a potential difference of 100kv and filament current is 20mA.

Calculate;

d) The power transferred to the target of X-ray tube **(2mks)**

……

……

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……

e) The number of electrons hitting the target per second **(2mks)**

……

……

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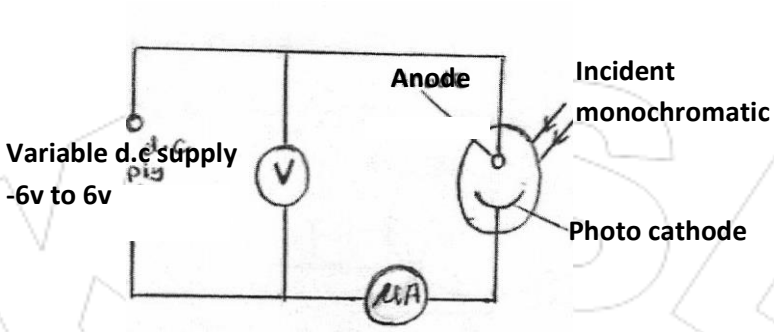
f) The maximum kinetic energy of emitted electrons (*Take charge of an electron=1.6x10^{-19}C, mass of an electron =9.1x10^{-31}kg*) **(2mks)**

……

……

……

(c) The diagram shows monochromatic radiation falling on a photocell connected to a circuit



The incident radiation has a wavelength of 2.15x10^{-7}m. The metal surface of the photocell has a work function of 2.26 eV.

i. Calculate the energy in eV of a photon of the incident radiation *(Take c=3.0x10^{8}m/s, h=6.63x10^{-34}Js and e=1.6x10^{-19}C)* **(3mks)**

……

……

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ii. What is the maximum kinetic energy of the emitted **electrons** **(2mks)**

……

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iii. Write down the value of the stopping potential **(1mk)**

……

……

16)a) State Snell's law **(1 mark)**

……

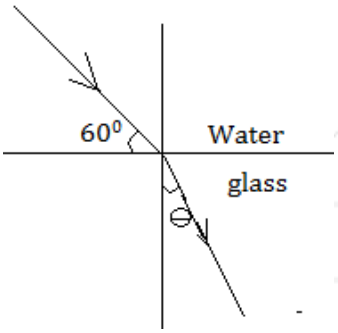
……

b) A student prepares to swim to the bottom of a pool to pick a coin on the bed. It is only while under the water that she realizes the presence of a sharp object beside the coin that she had not seen. Explain a possible reason why it was not visible in clear swimming pool water**. (1 mark)**

……

……

c) The figure below shows a ray of light travelling



i. Calculate the refractive index of water with respect to glass given the refractive index of glass and water are $^{3}/_{2}$ and $^{4}/_{3}$ respectively. **(2 marks)**

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ii. Calculate the angle Θ **(2 marks)**

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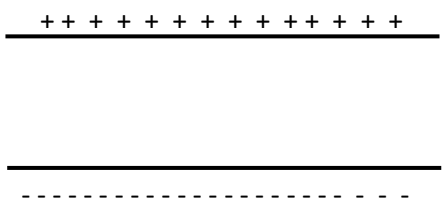
d) Using a well-labeled diagram, describe how optic fibers are used for communication. (**3 marks)**

17)a) Define the term capacitance**.** **(1 mark)**

……

……

b) The figure below shows two charged plates close to each other



i. Complete the diagram to show the electric field patterns between the plates **(1 mark)**

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ii) Without changing the area of overlap, suggest any two ways of increasing the capacitance of a parallel plate capacitor. **(2 marks)**

……

……

……

c) You have been provided with **THREE** identical capacitors each of capacitance 12 μF. State and show how you would combine them to get the following effective capacitance

i. 36μF **(2marks)**

……

……

……

……

ii. 4μF **(2marks)**

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iii. 8μF **(2marks)**

……

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……

18) (a) (i) The following nuclear reaction is part of a radioactive series

$$^{210}_{82}A \xrightarrow{\beta} {}^{210}_{x}B \xrightarrow{r} {}^{210}_{84}C \xrightarrow{s} {}^{206}_{y}D$$

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I. Name the radiation represented by **r** and **s** **(1mk)**

r ……

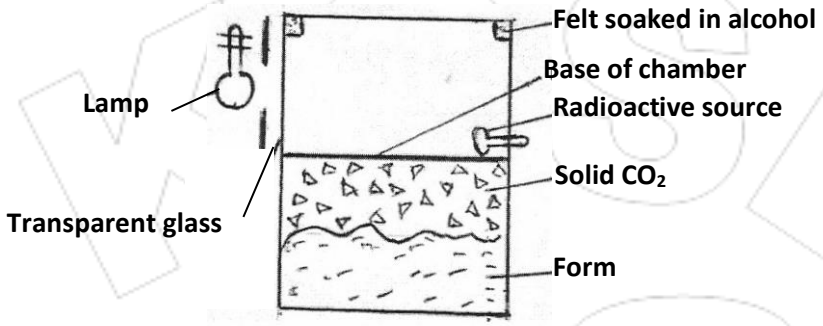
s ……..

II. Determine the number represented by **x** and **y** **(1mk)**

x ……

y …….

(ii) The figure below shows the features of diffusion cloud chamber used for detecting radiations from radioactive sources



i) State the property of alcohol that makes it suitable for use in the chamber **(1mk)**

……

ii) What is the purpose of the solid CO_2? **(1mk)**

……

iii) Explain how the radiation from the radioactive source is detected in the chamber. **(2mks)**

……

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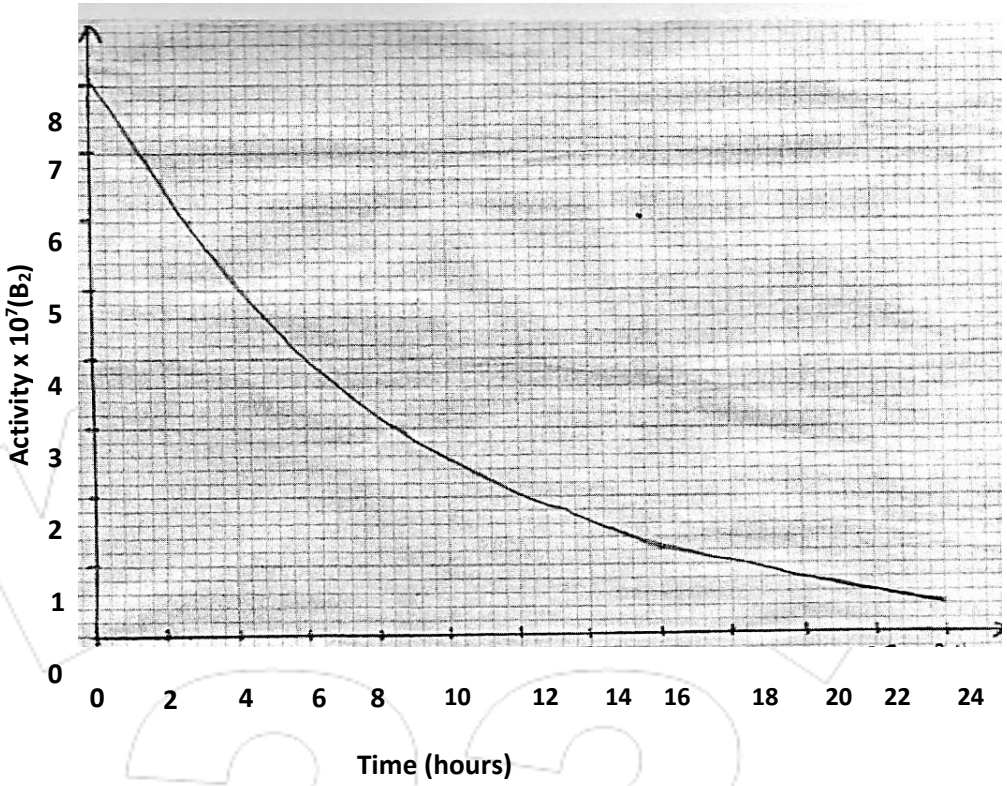
IV. State one advantage of the cold chamber over a charged gold leaf electroscope when used as detectors of radiation **(1mk)**

……

……

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(b) The graph below shows how the activity of a sample of the radioisotope technetium which is used extensively in medicine, varies with time



I. Use the graph to determine the half-life. T ½ of technetium **(1mk)**

II. Hence calculate the decay constant for technetium given that $T_{1/2} = \frac{0.6931}{\lambda}$ where λ is the decay constant. **(1mk)**

III. Determine the number of technetium atoms remaining in the sample after 24 hours **(1mk)**

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KCSE 2023 JOINT PREDICTION

SERIES 1

PHYSICS

232/3

PAPER 3 (PRACTICAL)

TIME: 2½ HOURS

CONFIDENTIAL INSTRUCTIONS TO SCHOOLS

Question 1

Each candidate is required to have:

a) A metre rule
b) Two stands
c) A pendulum bob
d) Some plasticine
e) Stop watch
f) Protractor
g) Two pieces of strings (long~1m and short ~20cm one)

Question 2

Each candidate is required to have:

a) A glass block (10 cm x 6 cm)
b) A Plane mirror (7cm x 6 cm)
c) 4 optical pins
d) A soft board
e) Cellotape (about 15 cm long)
f) 2 white – plain sheets of paper
g) a ruler or half – metre rule
h) A protractor
i) 4 office pins
iv) a nichrome wire, 1m long mounted on mm scale and labeled AB
at the ends (SWG 28)
a. A dry cell
b. 1 ammeter (0 – 1A)
c. A switch
d. A bulb
e. A voltmeter (0-5v or 0 – 3v)
f. A one cell holder
g. At least 6 connecting wires, one with a jockey

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KCSE 2023 JOINT PREDICTION

SERIES 1

PHYSICS

232/3

PAPER 3 (PRACTICAL)

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

i) *Write your name and Admission number in the spaces provided above.*
ii) *Answer **ALL** the questions in the spaces provided in the question paper.*
iii) *You are supposed to spend the first 15 minutes of the 2 ½ hours allowed for this paper reading the whole paper carefully before commencing your work.*
iv) *Marks are given for a clear record of the observations actually made, for their suitability and accuracy and the use made of them.*
v) *Candidates are advised to record their observations as soon as they are made.*
vi) *Mathematical table and electronic calculators **may be** used.*

FOR EXAMINER'S USE ONLY

QUESTION	SCORE
1	
2	
Total	

1) **Y**ou are provided with the following apparatus

- A metre rule
- Two stands
- A pendulum bob
- Some plasticine
- Stop watch
- Protractor
- Two pieces of strings (long and short one)

Proceed as follows:

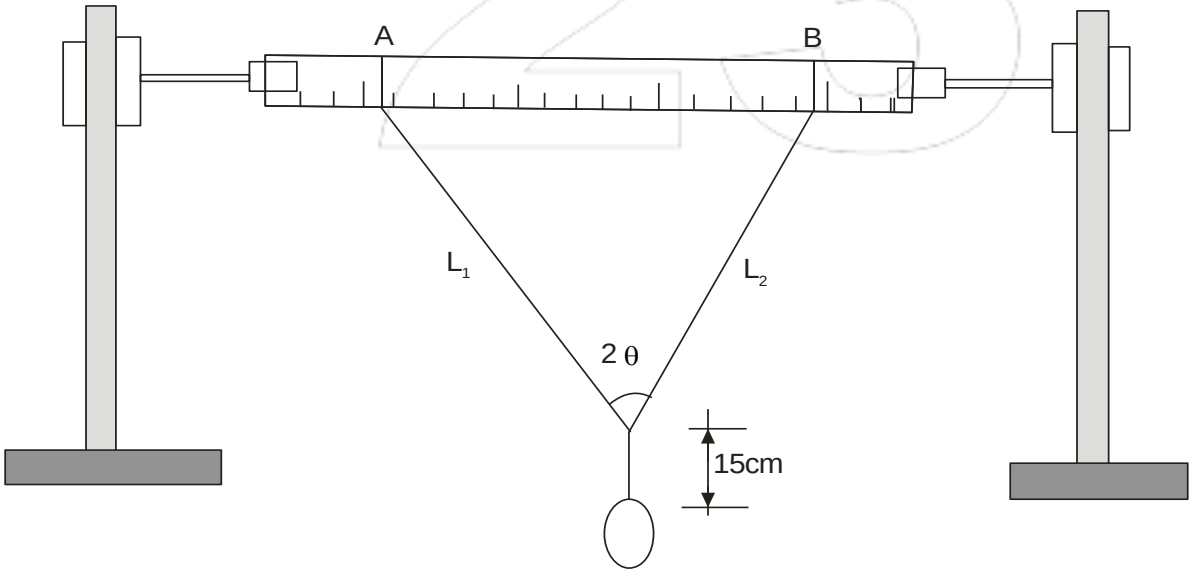
i) Attach one end of the length of string to the metre rule at 10cm mark. Mark by use of a sliding loop of string round the meter rule.

ii) Fix the string at this point with the small bob of plasticine.

iii) Tie the string in a second loop at 90cm mark so that the string is stretched taught between the two marks.

iv) Fix this loop with a small plasticine. Attach the pendulum bob to the centre of the string so that the centre of gravity is 15cm below the point of suspension.

v) If the attachments of the pendulum bob to the pieces does not produce a V-shape squeeze the string at the knot between the thumb and the fore finger.



iv) Measure the angle 2θ

v) Pull the pendulum bob towards you through a small distance, release it; measure the time (t) of the motion by timing 10 oscillations.

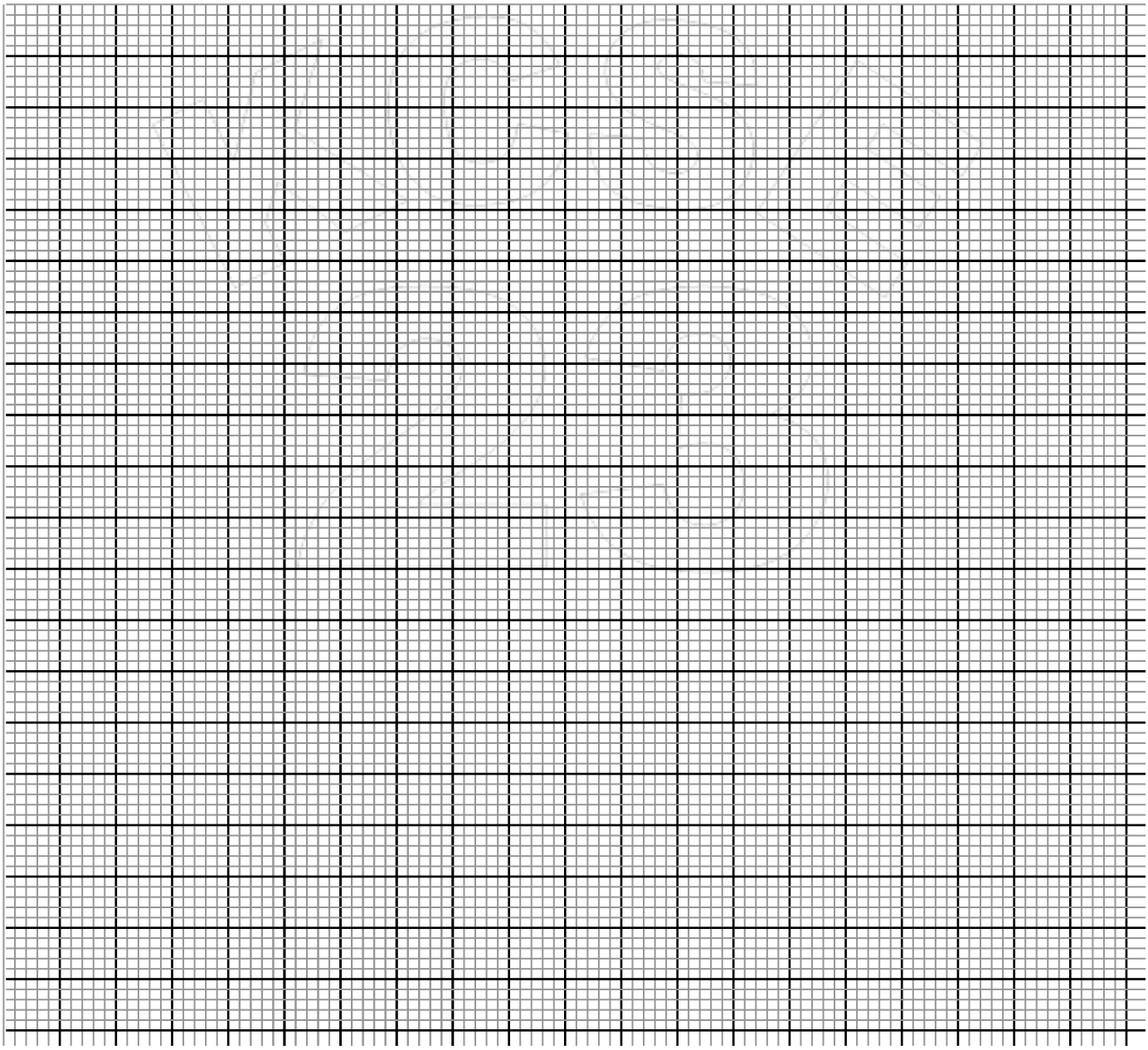
©2023 The Kenya National Examinations Council.

vi) Remove the plasticine at B and slide the loop towards A by 4cm and repeat (ii) above for other distances AB as shown in the table below.

RESULTS (9 marks)

Length from A to B(cm)	80	76	72	68	64	60
Time for 10 oscillations(s)						
Periodic time T(s)						
$T^2(s^2)$						
2θ						
θ						
$\cos\theta$						

f) Plot a graph of T^2 against Cos θ **(5 marks)**



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g) Find the slope S of the graph. **(3 marks)**

h) Given that $S = \frac{1.6\pi^2}{k}$, find k **(3 marks)**

2. PART A

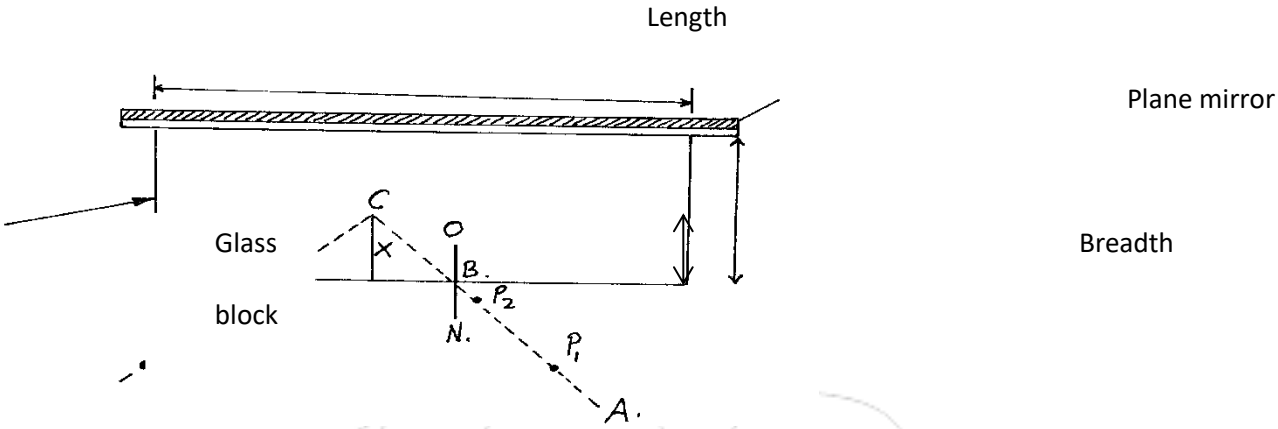
a) You are provided with the following apparatus

- a glass block
- a plane mirror
- 4 optical pins
- a soft board
- A cellotape (about 15cm long)
- 2 white – plain sheets of paper
- a ruler or half metre rule
- a protractor
- 4 office pins

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Proceed as follows:-

2. Using the cello tape provided fix the plane mirror to the glass block alongside as shown in the figure below. The reflecting surface to face the glass block.



3. With the use of the office pins, secure firmly a white plain paper on the board and place the block together with attached mirror.

4. Draw the outline of the glass block together with the mirror

5. Remove the block and the mirror and draw a normal at B somewhere a quarter- way the length of the outline you drew in (iii) above.

6. Draw four(4) different rays AB incident at B and extended to C. The incident rays should make angles 10°, 20°, 30°,and 40°.

7. Replace the glass block together with the attached mirror so as exactly fit the outline in(iii)

8. Place two object pins P_1 and P_2 along the 10° line. Locate the images of pinsP_1 and P_2 as they appear by non-parallax (the images of the pins appear to be in a straight line when viewed through the glass block).

Place pins P_3 and P_4 so that the images of pins P_1 and P_2 are not seen.

9. Remove the glass block together with the attached mirror from the outline and produce the lines joining P_1 to P_2 and P_3 to P_4 so that the they intersect at C. Measure and record the distance x in the table 2 below**.** **(4 marks)**

NB. It may be necessary for you to draw another outline so as to avoid congestion of (construction) lines.

Angle i °	10	20	30	40
Distance x(cm)				

Table 2

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10. Now measure the breadth b of the glass block.

b=_____ **(1mark)**

11. Calculate the average A_x of the values of x in table 3 above

A_x _____ **(1mark)**

12. Determine the refractive index of the glass block using the formula.

Refractive index n of glass $n = \frac{b}{A_x}$ **(2 marks)**

PART B

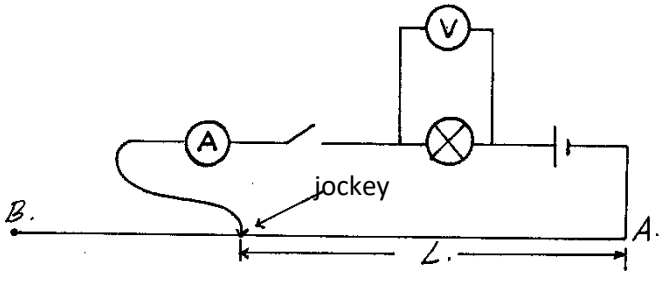
You are provided with the following

a. A nichrome wire 1m long mounted on a scale
b. A dry cell
c. 1 ammeter (0 – 1A)
d. A switch
e. A bulb
f. A voltmeter (0-5v or 0 – 3v)
g. A one cell holder
h. At least 6 connecting wires, one with a jockey

Proceed as follows

a) (i) Set up the circuit as shown in fig. 2

Fig 2



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iii) With the jockey / crocodile clip at B (L=100cm) note the voltmeter reading V and ammeter reading, I and record on the table III below.

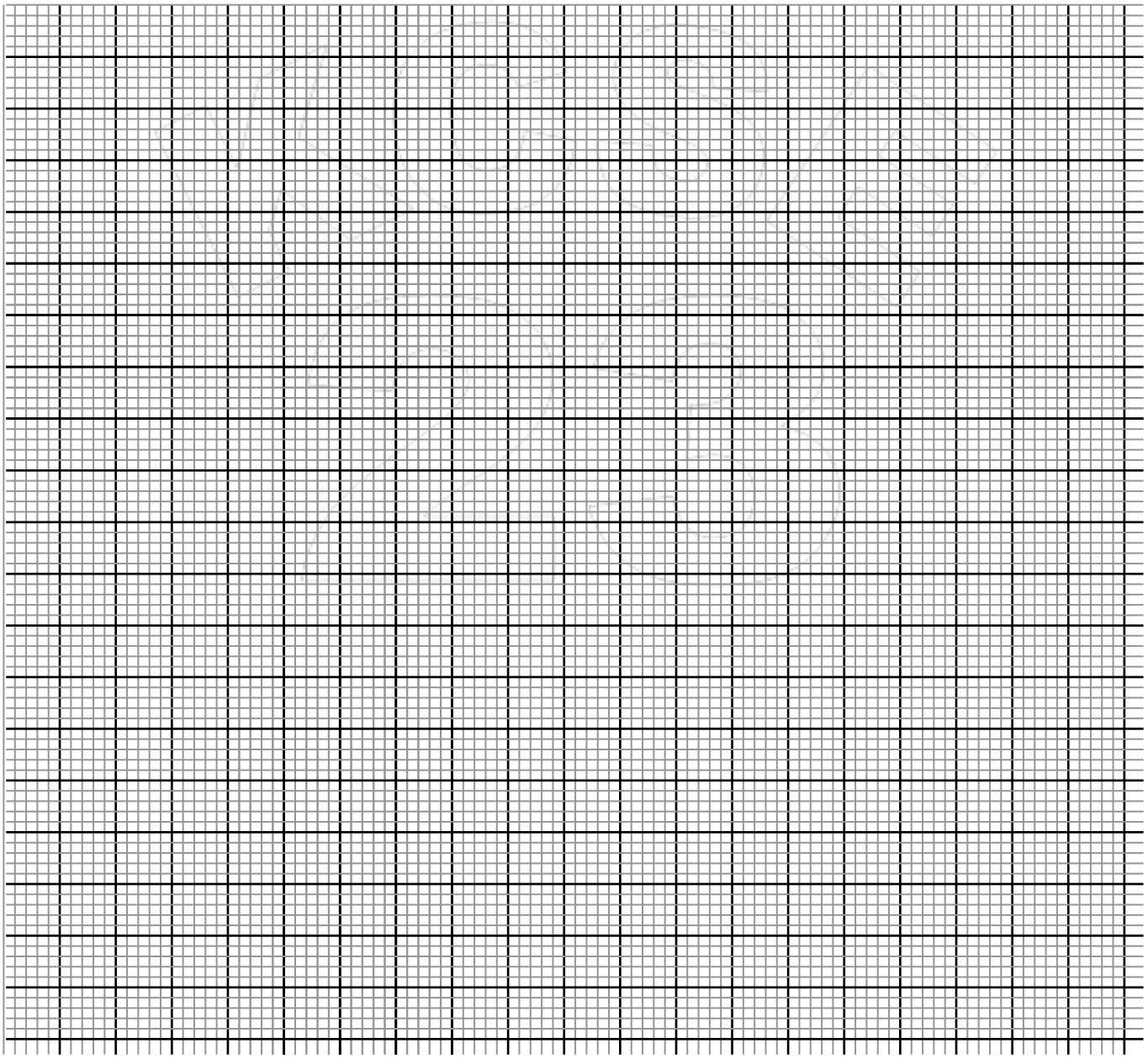
iv) Repeat the procedure in (ii) above for L=80cm, 60cm, 40cm, 20cm and 0cm and record.

5 marks

Table III

L(cm)	100	80	60	40	20	0
V(volts)						
I (A)						

iv) Plot the graph of V(y-axis) against I on the grid provided. **5marks**



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v) Calculate the slope of your graph when current is 0.15A. **2 marks**

KCSE 23

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KCSE 2023 JOINT PREDICTION

SERIES 1

AGRICULTURE

443/1

PAPER 1

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

Instructions

*This page consists of **three sections A, B** and **C.***

*Answer **ALL** the questions in **sections A** and **B** and **only two** questions from **section C.***

FOR EXAMINERS USE ONLY

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATE SCORE
A	1-9	30	
B	10-12	20	
C	13-15	40	

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SECTION A: 30 MARKS

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

1. Define the following terms. **(3 marks)**

a) Under sowing

……

……

b) Over sowing

……

……

c) Ammonification

……

……

2. State **four** factors which determine soil depth. **(2 marks)**

……

……

……

……

3. State **four** benefits of soil organisms in crop growth. **(2 marks)**

……

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4. a) Give **four** natural factors that would encourage the gully erosion on a farm**.** **(2 marks)**

……

……

……

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b) State four ways by which mulch control soil erosion. **(2 marks)**

……

……

……

……

c) List **four** materials used in the construction of gabions. **(2 marks)**

……

……

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……

5. a) State **four** factors that should be considered when selecting a forage crop species to be established in a given area. **(2 marks)**

……

……

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b) Define topping as used in forage crops. **(1 mark)**

……

……

6. State **four** ways of weed control in a field of tomatoes. **(2 marks)**

……

……

……

……

……

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7. State **four** factors that should be considered when collecting seeds for tree planting. **(2 marks)**

……

……

……

……

8. Name **two** types of labour used on a farm. **(2 marks)**

……

……

9. State four problems farmers face in a loan repayment. **(2 maks)**

……

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10. Outline **four** uses of gross margin to a farmer. **(2 marks)**

……

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11. Outline **four** reasons why a farmer should diversify his farm enterprises. **(2 marks)**

……

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……

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12. State **two** advantages of contract marketing. **(2 marks)**

……

……

SECTION B 20MARKS

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

13. The photographs below show two maize pests labeled **A** and **B**. Study them carefully and answer the questions that follow.



a) Name the pests. **(2 marks)**

A ……..

B ……

b) Define the term economic injury level. **(1 mark)**

……

……

c) Outline **three** factors to consider before deciding to use a chemical method of pest control.

(3 marks)

……

……

……

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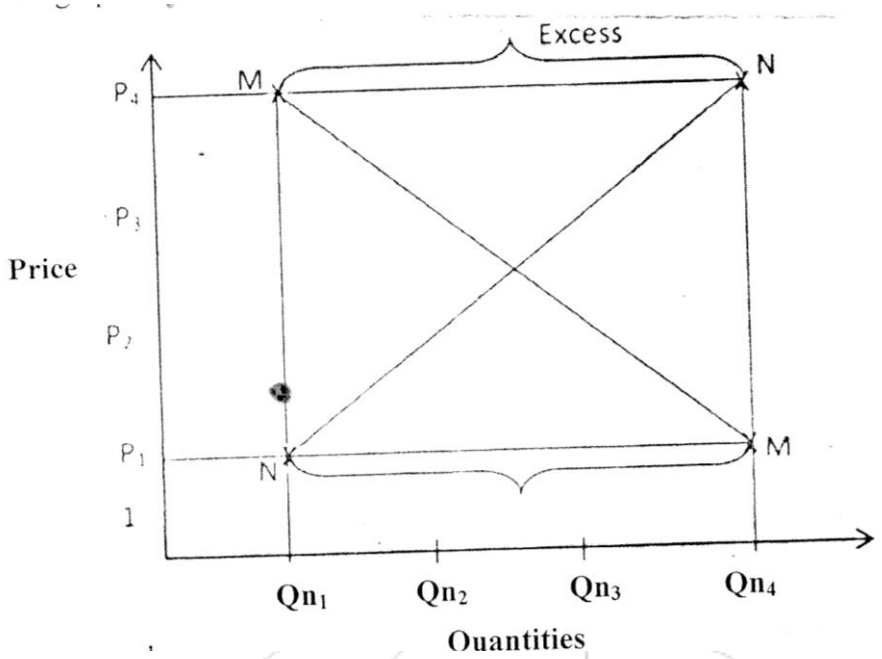
d) List **three** advantages of biological pest control. **(3 marks)**

……

……

……

14. **Below** is a graph showing the relationship between supply and demand in price determination.



a) Name the curves. **(2 marks)**

M ……..

N ……

b) What is the name given to the point where the two curves **M** and **N** intersect. **(1 mark)**

…….....

…….....

c) Give **two** reasons why there is excess supply above P4. **(2 marks)**

……

……

……

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d) Define the law of demand. **(1 mark)**

……

……

e) Given that at a price of ksh 100 per bag, 20 bags of maize are on demand but when the price changed to 80sh per bag 22 bags are demanded. Calculate electricity of demand. Show your working. **(3 marks)**

f) Give **two** types of production functions in agricultural economics. **(2 marks)**

……

……

SECTION C 40 MARKS

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

15. a) Describe the functions of agricultural marketing. **(10 marks)**

b) Explain the role of agricultural cooperatives in Kenya. **(10 marks)**

16. (a) Explain **ten** problems hindering agricultural development in Kenya. **(10 marks)**

b) Describe the process involved in water treatment using a chemical treatment system. **(10 marks)**

17. a) Describe ten harmful effects of weeds. **(10 marks)**

b) Outline ten advantages of zero grazing. (**10 marks)**

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KCSE 2023 JOINT PREDICTION

SERIES 1

AGRICULTURE

443/2

PAPER 2

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

1. *Write your name, Admission number and date in the spaces provided.*
2. *This paper consists of three sections; A, B and C.*
3. *Answer **All** questions in Section A and B in the spaces provided.*
4. *Answer any **two** questions in Section C in the spaces provided.*

For Examiners use only.

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1-17	30	
B	18-22	20	
C		20	
		20	
		20	
TOTAL		**90**	

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SECTION A

1. Name **four** dairy breeds of goats**.** **(2 mks)**

……

……

……

……

2. Outline **two** control measures of roundworm**.** **(1 mk)**

……

……

3. State **four** maintenance practice carried on a wheelbarrow**.** **(2 mks)**

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……

……

4. Give **three** ways of transmitting livestock diseases**.** **(1 ½ mks)**

……

……

……

5. State the appropriate use of each of the following farm tool.

i) Stock and die **(1 mk)**

……

……

ii) Oil **stone** **(1 mk)**

……

……

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6. Distinguish between zoonotic disease and a notifiable disease. **(2 mks)**

……

……

……

7. State **four** reasons for keeping livestock healthy**.** **(2 mks)**

……

……

……

……

8. a) What is the intermediate host for liverfluke**.** **(1 mk)**

……

……

b) What is the duration of oestrus cycle in a cow**.** **(1 mk)**

……

……

9. State **two** advantages of upgrading cattle**.** **(2 mks)**

……

……

10. Give the functions of the following parts of a reciprocating mower.

a) swath stick **(½ mk)**

……

b) Shoe **(½ mk)**

……

c) Cutter bar **(½ mk)**

……

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11. Give **two** functions of the albumen in an egg. **(2 mks)**

……

……

12. State **four** qualities of good wool. **(2 mks)**

……

……

……

……

13. Give **two** reasons why honey harvesting is discouraged at night**.** **(2 mks)**

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14. Which hormone stimulates milk let down? **(1 mk)**

……

……

15. Give **two** qualities of a creep feed. **(2 mks)**

……

……

16. State **two** reasons for seasoning timber before use in construction. **(2 mks)**

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17. Name the causal organisms of the following diseases.

a) Anthrax **(½ mk)**

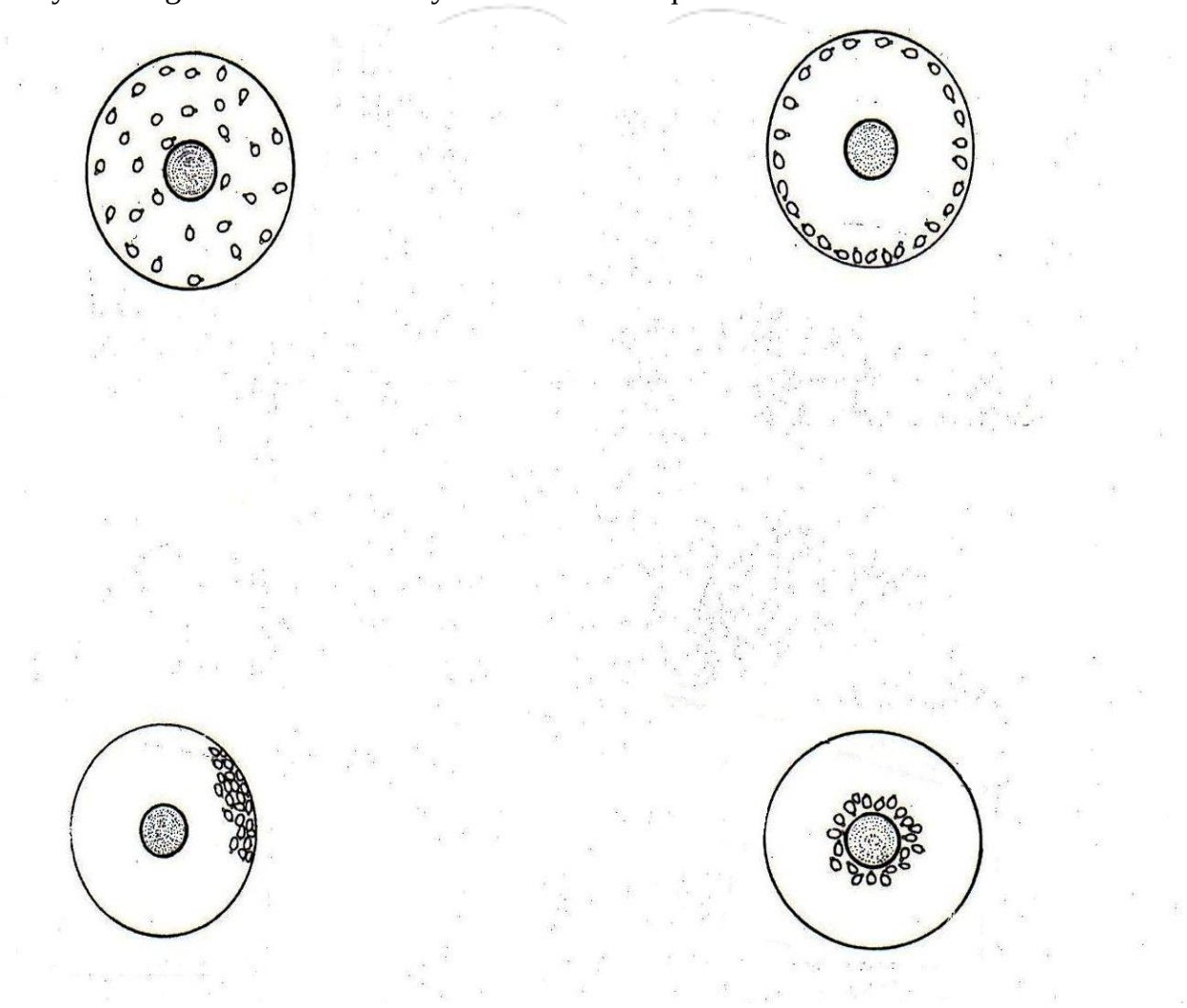
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b) Nagana **(½ mk)**

……

SECTION B

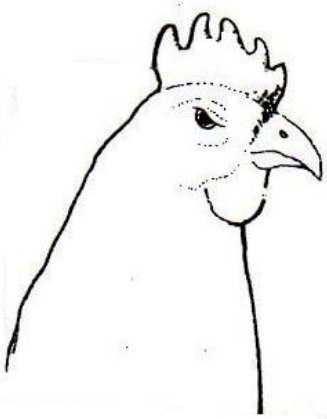
18. Study the diagram below carefully and answer the questions that follow.



Indicate below each diagram the conditions in the brooder**.** **(4 mks)**

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19. Study the diagram below and answer the questions



i) Draw a line in the diagram indicating the correct position of debeaking the birds. (**1 mk)**

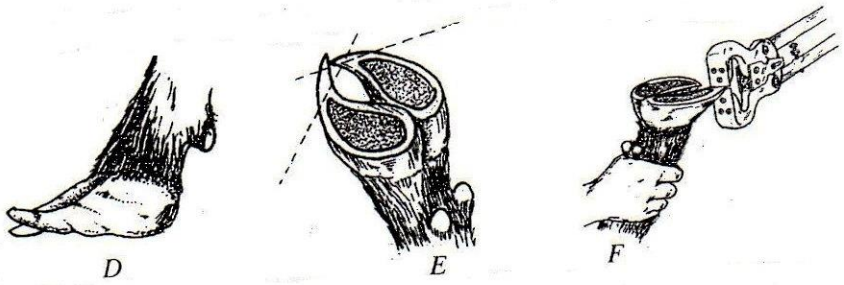
ii) Give the reasons for debeaking birds**.** **(2 mks)**

……

……

……

20. Below are illustrations of animal hooves and an activity being done?



a) What activity is going on in the diagram F**?** **(½ mk)**

……

……

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b) Which of the above hooves is likely to predispose foot rot infections**?** **(½ mk)**

……

……

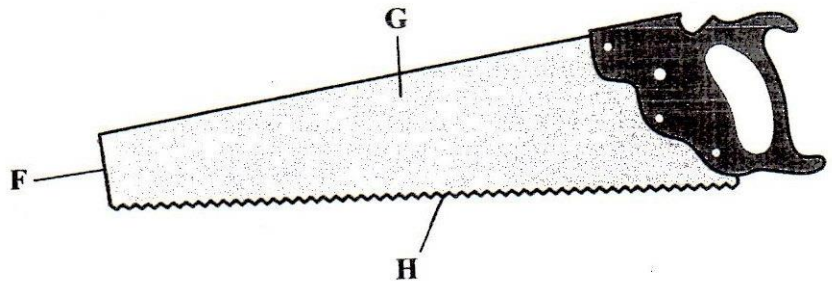
c) Other than protecting animals from foot rot, give two other reasons for carrying out the above activity. **(2 mks)**

……

……

……

21. The following is an illustration of a handsaw. Study it carefully and answer the questions that follow.



a) Name the parts labelled.

F - **(1 mk)**

……

G - **(1 mk)**

……..

b) Explain **three** maintenance practices that should be carried out on the part labelled H**. (3 mks)**

……

……

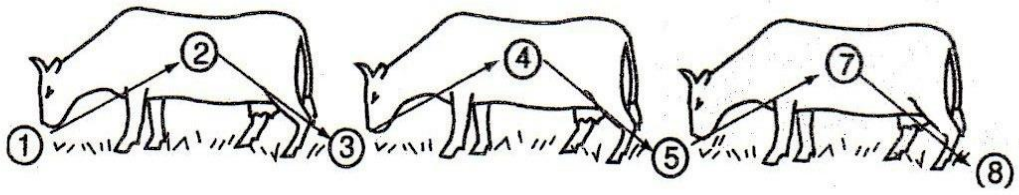
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22. The illustrations below represent the different stages of development of a three host tick. Study it carefully and then answer the questions that follow.



a) Briefly explain what is happening in the following stages. **(2 mks)**

1 –

……

4 –

……

5 –

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7 –

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b) Why could it be difficult to control the above tick using acaricides**?** **(1 mk)**

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c) Name the most common sites the tick can be found on the body of an animal. **(2 mks)**

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SECTION C

23. (a) Describe the control measures of cannibalism in layers**.** **(10 mks)**

(b) State **five** maintenance practices of a mould board plough. **(5 mks)**

(c) State the advantages of a four stroke engine. **(5 mks)**

24. (a) Describe **six** effects of parasite on livestock **(6 mks)**

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

(c) Discuss the management of layers in a deep litter system **(9 mks)**

25. (a) Explain the practices observed in clean milk production **(8 mks)**

(b) Explain the importance of fences in a farm **(12 mks)**

KCSE 23

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KCSE 2023 JOINT PREDICTION

SERIES 1

BUSINESS STUDIES

565/1

PAPER 1

TIME: 2 HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

(b) *This paper consist of 25 questions*

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

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

16	17	18	19	20	21	22	23	24	25

TOTAL

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

1) State four reasons why people satisfy basic wants before secondary wants. **(4 mks)**

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2) Write the type of accounts the following items fall under **(4 mks)**

	ITEM	TYPE OF ACCOUNT
a	Discount received	
b	buildings	
c	Creditor kemboi	
d	capital	

3) Highlight four assumptions of the circular flow of income in a two-sector economy **(4 mks)**

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4) Highlight four reasons why it is suitable to locate a bonded warehouse at a point of entry of a country. **(4 mks)**

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

	DESCRIPTION	TYPE OF UNEMPLOYMENT
a	People lose jobs and spend time looking for a new job	
b	Unemployment occurs repeatedly at similar times	
c	Affects certain occupations such as the construction industry	
d	Workers unwilling to accept the current wage rate	

6) State four reasons why a businessperson would prefer to use current account. **(4 mks)**

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7) Highlight four ways that can be used to correct unfavorable balance of payment. **(4 mks)**

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8) State four internal economies of scale. **(4 mks)**

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9) Indicate with a (+) for increase, (-) for decrease and a (0) for no change in totals of the balance sheet following the transactions below: **(4 mks)**

	TRANSACTION	EFFECT
a	A debtor paid by cash	
b	Paid creditors by cheque	
c	Bought goods on credit	
d	Withdrew cash from bank for office use	

10) A trader wants to import a car from Japan. List four possible channels of distribution he will use. **(4 mks)**

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11) Outline four benefits that accrue to business organizations that use the latest technology in record keeping. **(4 mks)**

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12) Highlight four ways in which a business idea can be implemented. **(4 mks)**

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13) Outline any four ways through which producers co-operatives help agricultural development in Kenya. **(4 mks)**

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14) Identify four types of small scale retail business without shops that wambui can run without a shop. **(4 mks)**

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15) Why would an exporter prefer to use container services as a method of transport?**(4 mks)**

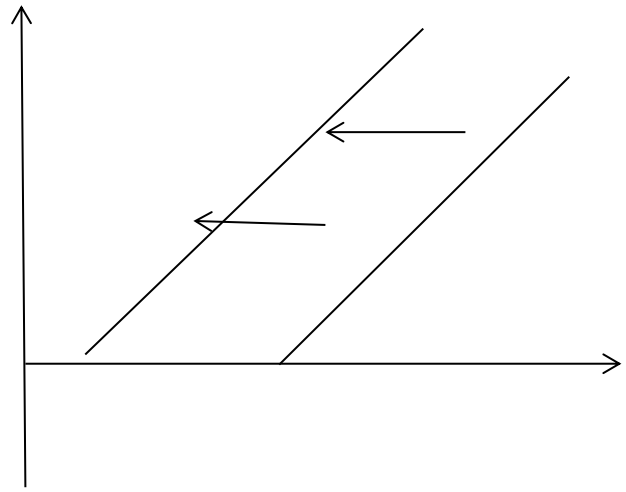
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16) The diagram shows a shift of a supply curve for a certain commodity. **(4 mks)**



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State four reasons why the supply curve could have shifted from S0 to S1

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17) Given the items of Njoroge Wholesalers on 1st July 2000 **(5 mks)**

Building	780,000
Net loss	43,000
Additional investment	8,400
Stock	45,000
Creditors	32,000
Debtors	29,000
Loan	240,000
Overdraft	60,000
Weighing machine	17,000
Cash	30,000

Prepare a balance sheet as at that date

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18) Highlight three features of cartels **(3 mks)**

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19) The following are some of the terms used in international trade. Write the following initials in full. **(4 mks)**

i) F.O.B

ii) C.I.F

iii) F.A.S

iv) F.O.R

20) The following information relates t to Maji Mazuri Traders as at 31. 12. 2010. **(4 mks)**

Fixed assets	400,000
Stock	120,000
Current liabilities	60,000
Net profit for the current year	100,000

Calculate:

a) Working capital **(2 mks)**

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b) Rate of return on capital employed **(2 mks)**

21) Outline four factors that may limit te development of a less-developed country. **(4 mks)**

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22) Highlight four factors that should be considered by a firm when deciding on the method to use for promoting its products. **(4 mks)**

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23) Identify four types of taxes based on structure of taxes. **(4 mks)**

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24) Highlight four problems associated with determining consumer price index in an economy.
(4 mks)

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25)A farmer's house valued at ksh. 1,200,000 was insured against fire for ksh. 900,000 under the 'average clause'. Fire occurred and damaged the house causing a loss of ksh. 500,000. Determine the value of compensation due to the farmer. **(4 mks)**

END

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KCSE 2023 JOINT PREDICTION

SERIES 1

BUSINESS STUDIES

565/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

For Examiner's Use Only

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

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*Answer any **five** questions*

Question one

a) Explain five means of payment that are provided by commercial banks. **(10 mks)**

b) Explain five reasons why small scale firms continue to exist in an economy dominated by large scale firms. **(10 mks)**

Question two

a) Describe the procedure used in making an insurance claim. **(10 mks)**

b) Explain five disadvantages that a country may experience from imposing trade restrictions on trading partners. **(10 mks)**

Question three

a) Discuss five factors to consider when choosing an office layout for a fir**m.** **(10 mks)**

b) Explain fve challenges experienced by a country when using expenditure approach to measure national income. **(10 mks)**

Question four

a) Differentiate between monopoly and monopolistic competition product markets.**(10 mks)**

b) Explain five ways through which consumers may protect themselves against exploitation by producers and business people. **(10 mks)**

Question five

a) Explain any five circumstances under which a firm may prefer written communication over oral communication. **(10 mks)**

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b) From the trial balance given below, prepare a trading, profit and loss account for the year ended 31st august 2021and a balance sheet as at that date. **(10 mks)**

Particulars	Dr	Cr
Purchases/sales	349,000	582,000
Debtors/Creditors	51,000	62,000
Motor vehicle	600,000	
Drawings	30,000	
Returns	22,000	19,000
Carriage in	10,000	
Equity loan		170,000
Furniture and fittings	45,000	
Discounts	25,000	36,000
Opening stock	40,000	
Carriage outwards	7,000	
Rent		24,000
Advertising	13,000	
Land and Buildings	500,000	
KPY Bank loan		210,000
Interest on loans	48,000	
Cash at bank	150,000	
Cash in hand	28,000	
capital		815,000
totals	**1,918,000**	**1,918,000**

Question six

i) Explain four ways through which the price of a commodity may be determined **(8 mks)**

ii) The following information was extracted from the e books of Mbaikipingo:

2018

Feb 1 credit purchases: kamendish 12,000. Mugendish 30,000 and Opiyosh 25,000

Feb 5 credit sales to Monica sh 20,000

Feb 7 returned goods to Kamendish 320

Feb 8 cash purchases paid for by chequesh 39,000

Analyze the above transactions in the relevant day books **(12 mks)**

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KCSE 2023 JOINT PREDICTION

SERIES 1

CHRISTIAN RELIGIOUS EDUCATION

313/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- *Write your name and admission number in the spaces provided above.*
- *This paper consists of six questions.*
- *Answer any **FIVE** questions in the answer sheet provided*
- *Each Question carries 20 marks*

FOR EXAMINERS USE ONLY

Questions No.	1	2	3	4	5	6	GRAND TOTAL
Marks							

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*Answer any **FIVE** questions*

1. a) Give six reasons how the learning of Christian Religious Education promotes equity. **(6mks)**

b) Describe the translation of the bible from its original language into local Kenya languages.**(7mk)**

c) Identify seven ways in which Christians can avoid sin. (**7mks)**

2. a) Describe the covenant ceremony between God and Abraham in genesis 15:1-9.**(7mks)**

b) Explain characteristics of a covenant demonstrated in the covenant between God and Abraham. **(8mks)**

c)What is the importance of the Decalogue to Christians Today. **(5mks)**

3. a) Outline seven duties of Samuel in Israel. **(7mks)**

b) Describe how prophet Elijah fought against corruption and injustice in Israel in 1st kings 21. **(7mks)**

c) Give six reasons why Christians should fight against the spread of devil worship in Kenya today. **(6mks)**

4. a) Identify six methods used by old testament prophets to pass on their messages.**(6mks?)**

b) Outline the teaching of prophet Amos on Israel election **(8mks)**

c) State six ways through which prophecy is practiced in the church today. **(6mks)**

5. a) State eight occasions when Nehemiah prayed. **(8mks)**

b) Outline the promises that the Israelites made when they renewed their covenant with God during the time of Nehemiah (Nehemiah:10 28-39) **(7mks)**

c) Give seven lessons learnt from Nehemiah's prayer life. **(5mks)**

6. a) Identify six elements of worship in traditional African society. **(6mks)**

b) Identify seven roles of the priest in the traditional African society. **(7mks)**

c) State seven changes that have taken place in traditional African medical practices today. **(7mks)**

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KCSE 2023 JOINT PREDICTION

SERIES 1

CHRISTIAN RELIGIOUS EDUCATION

313/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- *Write your name and admission number in the spaces provided above.*
- *This paper consists of six questions.*
- *Answer any **FIVE** questions in the answer sheet provided*
- *Each Question carries 20 marks*

FOR EXAMINERS USE ONLY

Questions No.	1	2	3	4	5	6	GRAND TOTAL
Marks							

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*Answer any **FIVE** questions*

1. a) Outline Jeremiah's prophecy concerning the messiah (Jeremiah 23:5-6) **(7mks)**

b) Describe the birth of John the Baptist. (Luke1: 57-80) **(8mks)**

c) State six attributes of Gods learned from the magnificat. **(5mks)**

2. a) Describe the call of the first disciples by Jesus (like 5:1-11) **(7mks)**

b) Give seven reasons why Jesus accepted to be baptized yet he wasn't a sinner. **(7mks)**

c) What lessons do Christians learn about Jesus from His temptations? **(6mks)**

3. a) With reference to the parable of the rich fool, state seven teaching by Jesus on materials possession. **(7mks)**

b) Describe the triumphant entry of Jesus into Jerusalem. (Luke 18:28-40) **(8mks)**

c) State five ways through which modern church leaders perform the duties of a disciple. **(5mks)**

4. a) Outline the teaching of Jesus on the role of the holy spirit. **(7mks)**

b) Explain the unity of believers in the analogy of the body of Christ. **(8mks)**

c) Give six ways in which churches discipline those who cause disunity in church today. **(5mks)**

5. a) Identify five sources of Christians ethics. **(5mks)**

b) Outline the changes that have taken place in marriage in traditional African society. **(7mks)**

c) How is the church preparing the youth for marriage today? **(8mks)**

6. a) State six ways in which a Christian can acquire wealth. **(6mks)**

b) State seven Christian teaching on wealth. **(7mks)**

c)Give seven reasons why Christians should not involve themselves in gambling. **(7mks)**

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KCSE 2023 JOINT PREDICTION

SERIES 1

HISTORY AND GOVERNMENT

311/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

b) *Answer all questions in section A, Three questions in section B, and Two questions in Section C.*

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

d) *Candidates should answer the questions in English.*

FOR EXAMINER'S USE ONLY

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

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SECTION A (25 MARKS)

*Answer **All** Questions from This Section*

1) Identify **one** disadvantage of using electronics as a source of information on History and Government. **(1mk)**

2) State **two** environmental factors that influenced the migration of the cushites into Kenya. **(2mks)**

3) Give the reason why the Luo are referred to as the River Lake Nilotes. **(1mk)**

4) Identify **two** conflict resolution methods used to settle disputes during the pre-colonial period. **(2mks)**

5) Mention **two** written sources of History on the Kenyan Coast. **(2mks)**

6) Mention any **two** Treaties that paved the way for the abolition of slave trade in Kenya. **(2mks)**

7) Give **one** reason why the government of Kenya may limit a person's freedom of speech. **1mk)**

8) Name the type of constitution used in Kenya. **(1mk)**

9) Give the main reason why a Referendum is held. **(1mk)**

10) Identify **two** pillars of the Nyayo Philosophy. **(2mks)**

11) State **two** political challenges faced in Kenya between 1978-1982. **(2mk**

12) Mention **one** political party that was formed after the Second Lancaster House Conference. **(1mk)**

13) Give **two** subordinate courts in Kenya. **(2mks)**

14) Mention **two** arms of the National police service. **(2mks)**

15) State **one** role played by the Ministry of Health to reduce the spread of HIV/AIDS in Kenya. **(1mk)**

16) Define the term '**Rule of Law'?** **(1mk)**

17) Name the officer who controls public finance in county National Governments**.** **(1mk)**

SECTION B (45 MARKS)

Answer three questions from this section

18)a) Identify **five** social features that are similar between the Bantu and the Nilotes. **(5mks)**

b) Discuss five impacts of the migration of the Borana into Kenya**.** **(10mks)**

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19)a) State **three** reasons why Africans were discouraged from growing cash crops upto 1939. **(3mks)**

b)Discuss **five** economic activities introduced by the colonial government during the colonial period. **(12mks)**

20)a) Identify **five** characteristics of early political organizations. **(5mks)**

b) Discuss **five** challenges faced by independent churches and schools in Kenya. **(10mks)**

21)a)Give **three** major reforms which resulted from the Lyttleton Constitution of 1954 in Kenya. **(3mks)**

b) Explain **six** ways through which Thomas Joseph Mboya contributed to the struggle for independence in Kenya. **(12mks)**

SECTION C: (30 MARKS)

Answer any two questions from this section.

22)a) Give **five** reasons for multi-party democracy in Kenya since 1991. **(5mks)**

b) Explain **five** challenges of multiparty democracy in Kenya. **(10mks)**

23)a) State **five** functions of the Cabinet in Kenya? **(5mks)**

b) Discuss **five** challenges facing the Kenya Defence Forces. **(10mks)**

24)a) Identify **three** factors considered while changing county boundaries in Kenya. **3mks)**

b) Explain six factors which undermines the provision of services by the county governments in Kenya. **(10mks)**

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KCSE 2023 JOINT PREDICTION

SERIES 1

HISTORY AND GOVERNMENT

311/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

b) *Answer all questions in section A, Three questions in section B, and Two questions in Section C.*

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

d) *Candidates should answer the questions in English.*

FOR EXAMINER'S USE ONLY

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

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SECTION A (25 MARKS)

*Answer **All** Questions from This Section*

1) Differentiate between pre-history and History. **(1mk)**

2) State any **two** uses of fire as a method of hunting in the Middle Stone age. **(2mks)**

3) Give **two** ways in which HIV/AIDS has contributed to food shortage in the Third World Countries. **(2mks)**

4) Mention **two** Arab families that administered the city states of the East Africa Coast. **(2mks)**

5) Identify the main challenge of sailing ships as a means of transport. **(1mk)**

6) Name **two** theories that explain the origin and spread of Agriculture in Africa. **(2mks)**

7) Give **two** examples of regional trade in Africa. **(2mks)**

8) Mention **one** early source of energy. **(1mks)**

9) Give **two** ways by which poor transport hinders industrialization in Third World countries. **(2mks)**

10) State **two** factors that led to the growth of Athens. **(2mks)**

11) Name the official who represented the judicial arm of the Buganda Kingdom. **(1mk)**

12) Identify **two** chartered companies that were used to administer European colonies in Africa. **(2mks)**

13) What was the main reason for the Maji Maji rebellion? **(1mk)**

14) Name **two** leaders who spearheaded the re-birth of the East African community. **2mks)**

15) Give **one** member of Triple Alliance. **(1mk)**

16) Name **one** founder member of the Non Aligned Movement. (NAM) **(1mk)**

17) Identify the executive organ of the East African Community (2001) **(1mk)**

SECTION B-(45 MARKS)

Answer any THREE questions from this section

18) a) Identify the first **five** stages of evolution of man. **(5mks)**

b) Describe **five** aspects of social organization of man during the middle stone age. **(10mks)**

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19)a) State **five** social effects of modern forms of transport. **(5mks)**

b) Explain **five** advantages of using the internet as a source of information on History and Government. **(10mks)**

20)a) State **five** factors that led to Nationalism in Mozambique**.** **(5mks)**

b) Discuss **five** results of the partition of Africa on Africans**.** **(10mks)**

21)a) Name **three** officials who assisted the Mwene Mutapa to run the kingdom. **(3mks)**

b) Explain **six** reasons for the Chimurenga War of (1896 – 1897) **12mks)**

SECTION C – (30 MARKS)

Answer any TWO questions from this section.

22)a) Outline **three** conditions given to Serbia by the Austrian government after the Sarajevo assassination. **(3mks)**

b) Discuss **five** political effects of the Second World War. **(12mks)**

23)a) Identify **five** economic challenges that have faced Tanzania since independence. **(5mks)**

b) Explain **five** factors that derailed the smooth running of the Pan African Movement. **(10mks)**

24)a) Identify any **five** powers of the President in India. **(5mks)**

b) Explain **five** checks and balances applied on the United States of America presidency. **(10mks)**

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KCSE 2023 JOINT PREDICTION

SERIES 1

GEOGRAPHY

312/1

PAPER 1

TIME: 2¾ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

1. *Write your name and Admission number in the spaces provided above.*
2. *This paper has **TWO** sections: A and B.*
3. *Answer **ALL** the questions in section A. In section B answer **QUESTION 6** and any other **TWO***
4. *ALL answers **MUST** be written in the Answer Booklet provided.*
5. *Do not remove any pages from this booklet.*

FOR OFFICIAL USE ONLY

SECTION A	6	7	8	9	10	TOTAL

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SECTION A (25 MARKS)

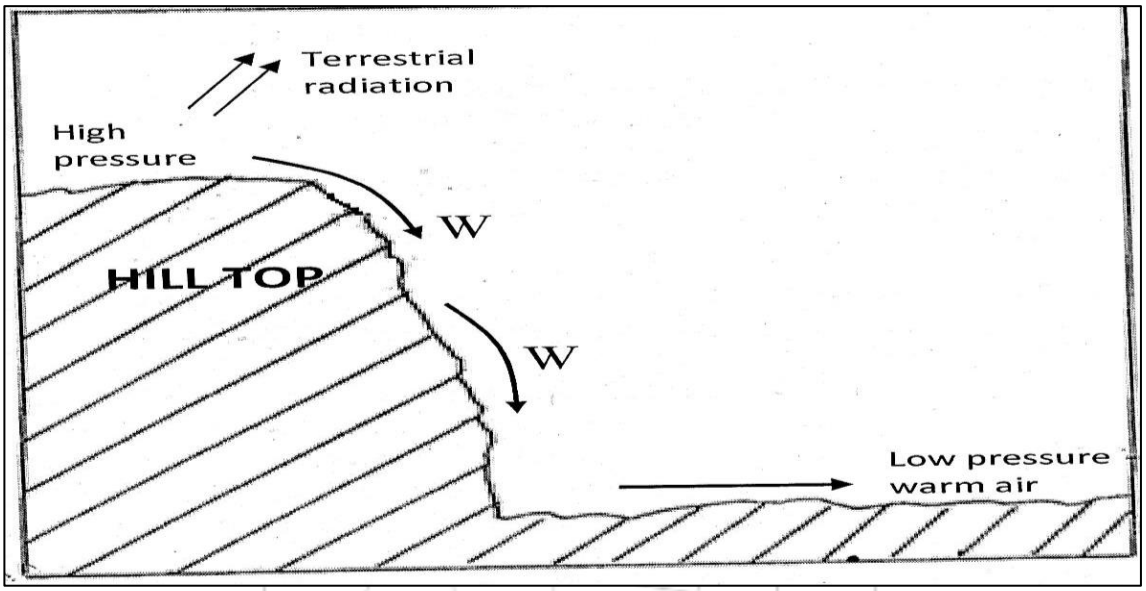
*Answer **all** the questions in this section.*

1. a) What is the relationship between Geography and medicine. **(2 marks)**

b) State **three** characteristics of Planet earth. **(3 marks)**

2. (a) What are harmattan winds. **(2marks)**

(b) The diagram **below** shows a type of wind



(I) Identify the type of wind marked **W** **(1 mark)**

(II) List two characteristics of the type of wind marked **W** **(2 marks)**

3. (a) What are limbs in a fold? **(2 marks)**

(b) List three theories put forward by scientists on the formation of Fold Mountains. **(3 marks)**

4. (a) Distinguish between a seismic focus and epicenter. **(2marks)**

(b) Identify three major earthquake belts of the world. **(3marks)**

5. (a) Name **two** warm ocean currents in Africa. **(2marks)**

(b) State **three** factors that influence ocean water temperature. **(3marks)**

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SECTION B (75 MARKS)

Answer question 6 and any other two questions from this section

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

a) i) Give the ***four*** figure grid reference of Obwolo school. **(1mk)**

ii) What is the approximate height of point 000960? **(1mk)**

iii) Name ***two*** physical features found at grid square 0384. **(2mks)**

iv) Name ***two*** types of natural vegetation in the area covered by the **map** **(2mks**

b) Calculate the area of the Kisumu municipality. Give your answer in square kilometers (km^2) **(2mks)**

c**) Measure** the length of the all-weather road(bound surface) from the junction at grid reference 974911 to the edge of the map, grid reference 950968 **(2mks)**

d) Citing evidence, give three social functions of Kisumu town. **(6mks)**

e) i) Using a scale of 1cm to represent 200 metres, draw a cross-section from grid reference 970980 to 030989. **(4mks)**

ii) On it mark and name the following

- Steep slope **(1mk)**
- Motor able road **(1mk)**
- Nyangori river **(1mk)**

iii) Calculate the vertical exaggeration. **(2mks)**

6. a. (i) Name three forces responsible for the shape of the earth **(3 marks)**

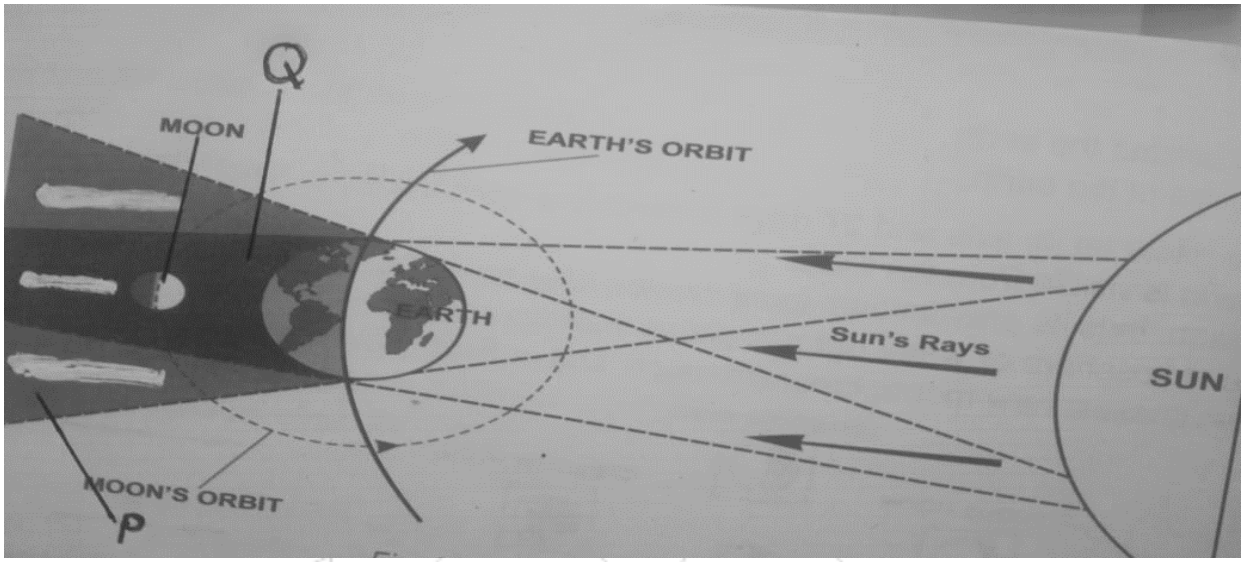
(ii) Give four proofs that the earth is spherical in shape **(4 marks)**

b. (i) What is international dateline **(2 marks)**

(ii) What is the longitude whose local time is 5:00 p.m. when the local time at Longitude 0° is 8:00p.m? **(2 marks)**

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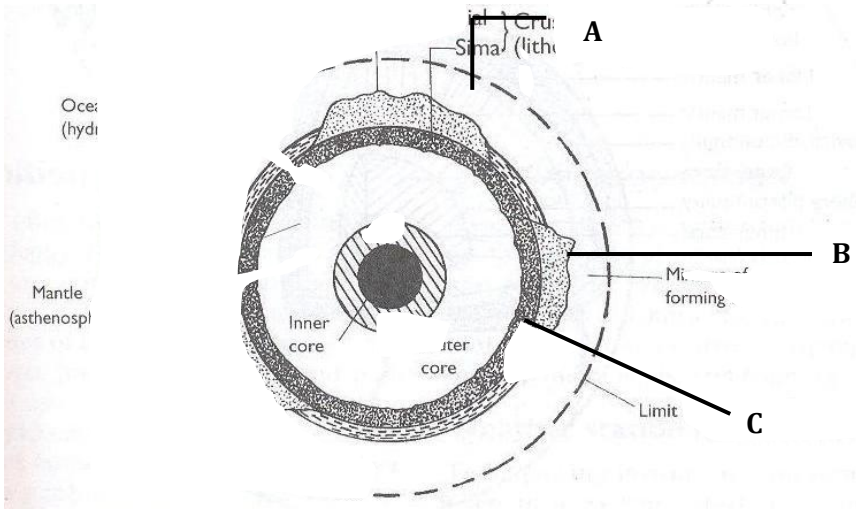
c. Use the diagram below to answer the questions that follow.



i) What type of eclipse is represented by the diagram how does it occur? **(3 mark)**

ii) Name the features marked P and Q **(2 marks)**

d. The diagram below represents the structure of the earth. Use it to answer the questions that follow.



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

(ii) Give four characteristics of the layer marked B **(4 marks)**

(ii) Name any ***two*** constituents of the atmosphere. **(2 marks)**

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7. a. (i) What is a climax vegetation? **(2 mark)**

(ii) State **four** characteristics of the mediterenean type of vegetation **(4 marks)**

b. Explain **three** factors which influence the distribution of vegetation in Kenya **(6 marks)**

c. Give Reasons why Tundra region has scanty vegetation. **(3 marks)**

(c) Write the names of the grasslands found in the following areas **(3 marks)**

(i) East Africa

(ii) Canada

(iii) Argentina

(d) You are required to carry out a field study of the vegetation within the local environment:

(i) Apart from identifying the different types of plants, state **three** other activities you will carry out during the field study. **(3 marks)**

(ii) Give three reasons why it would be necessary to sample out part of the area covered by the vegetation for the study **(2 marks)**

(iii) List three methods they may have used to collect data **(2marks)**

9. (a) Distinguish between river regime and river discharge. **(2 marks)**

(b) (i) State ***three*** factors influencing river transport. **(3 marks)**

(ii) Explain ***three*** ways through which a river transports its load. **(6 marks)**

(c) With the aid of a well labelled diagram, describe how a river braid is formed. **(6 marks)**

(d) Students of Buruburu Girls High School carried out a field study on river rejuvenation on River Athi.

(i) State ***three*** causes of river rejuvenation they found out. **(3 marks)**

(ii) Name ***any three*** types of meanders they are likely to have identified**.** **(3 marks)**

(iii) Identify ***two*** problems they may have encountered during the field study. **(2 marks)**

10. (a) (i) What is soil? **(2 marks)**

(ii) Identify ***two*** components of soils. **(2 marks)**

(iii) Differentiate between soil structure and soil texture. **(2 marks)**

(iv) Name ***two*** types of soil according to soil texture. **(2 marks)**

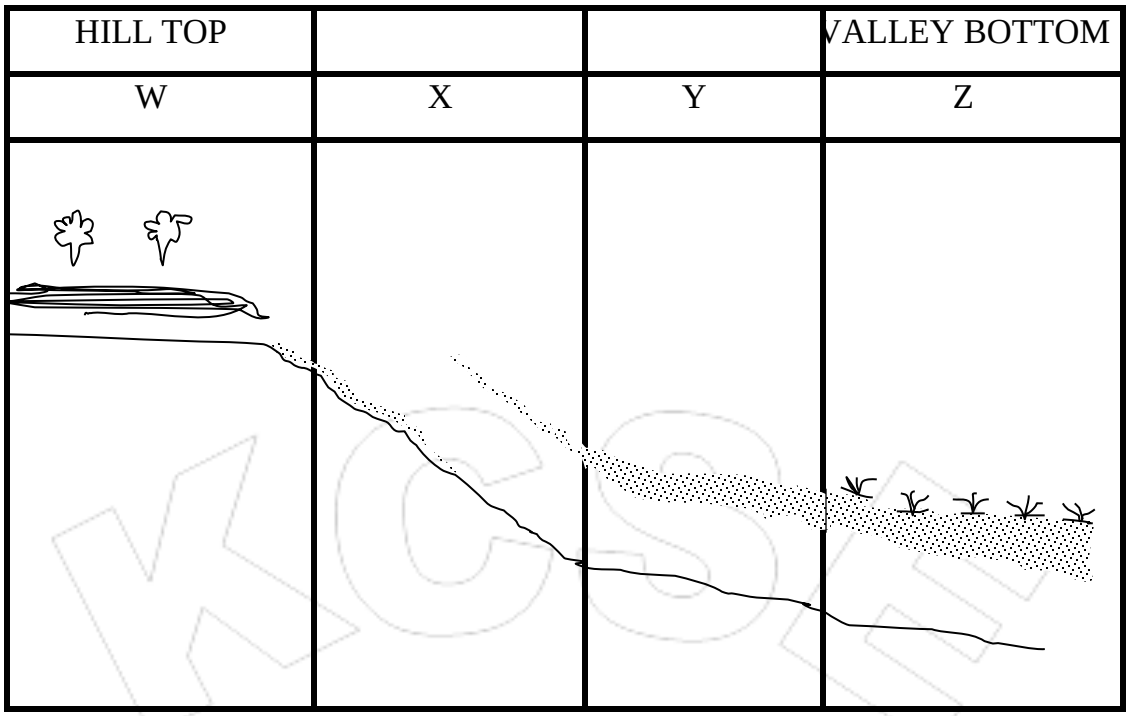
(b) Explain how the following factors influence the formation of soil.

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(i) Climate **(2 marks)**

(ii) Topography (2 marks)

(c) The diagram below shows a soil catena.



(i) Name the type of soils found in position **W** and **Z**. **(2 marks)**

(ii) State ***two*** characteristics of soils found in section marked **W** and **Z.** **(4 marks)**

(d) Explain ***two*** causes of chemical soil degeneration. **(4 marks)**

(e) State ***three*** measures of conserving soils. **(3 marks)**

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KCSE 2023 JOINT PREDICTION

SERIES 1

GEOGRAPHY

312/2

PAPER 2

TIME: 2¾ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

(a) *Write your name, admission number and class in the spaces provided above.*
(b) *This paper has two sections **A** and B*
(c) *Answer **all** the questions in **SECTION A**.*
(d) *Answer **question 6** and any other two questions from **SECTION B.***
(e) *All answers must be written in English.*

For Examiner's Use Only

Questions	Candidate's Score	Maximum Score
1 -5		25
6		25
		25
		25
Total Score		100

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SECTION A

Answer All the questions in this section

1 a) What is human geography**?** **(2 marks)**

b) State three ways in which the study of Geography contributes to National development. **(3 marks)**

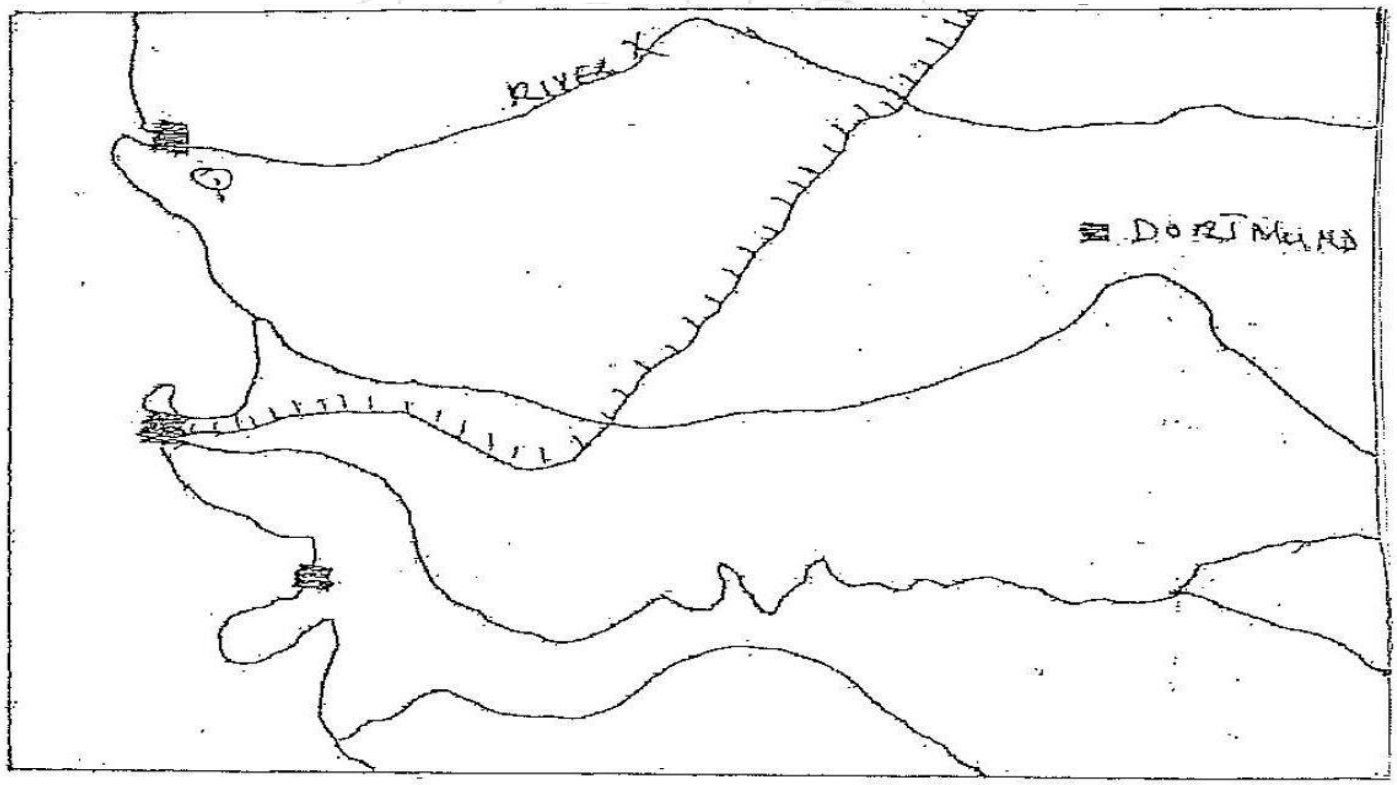
2. a) Apart from coniferous forest, name two other types of natural forests**.** **(2 mks)**

b) State three characteristics of coniferous which favour their exploitation**.** **(3 mks)**

3. a) Give the characteristics of plantation agriculture in Keny**a.** **(3 marks)**

b) State 2 problems facing coffee farming in Kenya. **(2 marks)**

4 a) Study the map of the Ruhr Industrial region and use it to answer the question below



(i) Name

(ii) The town marked **Q** **(1 mark)**

(iii) The River marked **X** **(1 mark)**

b) Apart from the iron and steel, list 3 other industries in the region**.** **(3 marks)**

5. a) State three causes of urban rural **migration** **(3 marks)**

b) Give two reasons for rapid population **growth.** **(2 marks)**

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SECTION B (75 MARKS)

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

6. The table below shows the number of tourists who visited Kenya between 1996 -1999. Use it to answer the questions that follow.

Origin/Year	1996	1997	1998	1999
Britain	100,000	80,000	60,000	40,000
N. America	80,000	50,000	45,000	45,000
Germany	70,000	40,000	35,000	30,000
S.E Asia	40,000	30,000	25,000	25,000

(a) Using a scale 1 cm to represent 20,000 people, draw a compound bar graph to present this data. **(6 marks)**

(b) State possible reasons for the decline in the number of tourists since **1997** **(4 marks)**

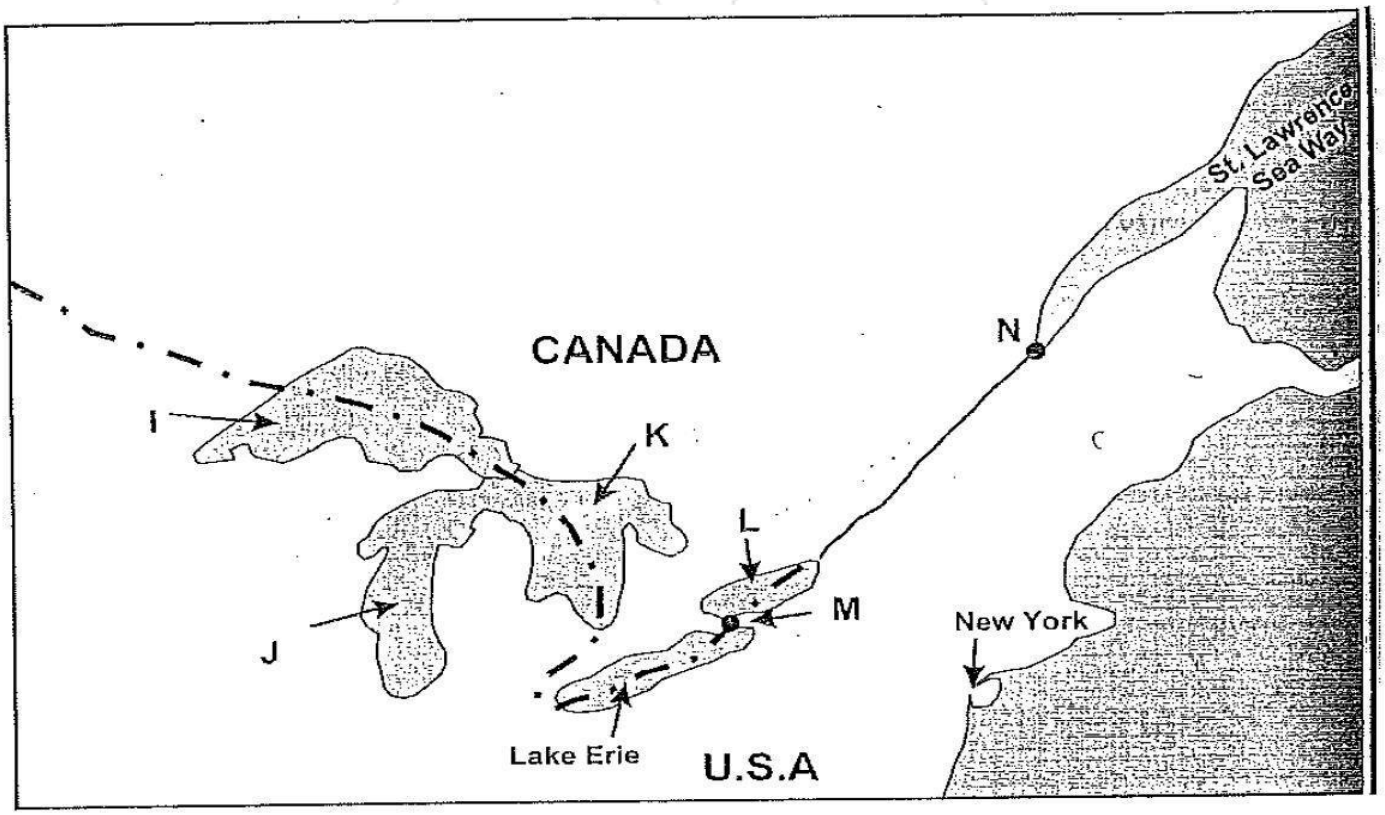
(c) (i) What is eco-**tourism** **(2 marks)**

(ii) State two objectives of eco-tourism**.** **(2 marks)**

(d) Explain three factors that hinder development of domestic tourism in Kenya**.** **(6 marks)**

(e) Identify five steps taken by the Kenya government to promote tourism in the country**. (5 mks)**

7. Study the sketch map of the great lakes of St. Lawrence



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Name

c) The port marked **N. (1 mk)**

d) The waterfall marked **M (1 mk)**

e) The lakes marked **I, J, K, L (4 mks)**

Explain five ways in which the great lakes of St. Lawrence sea way has contributed to the economy of Canada and USA**. (10 mks)**

i) State three recent developments that have taken place in Kenya to improve communication of information. **(3 mks)**

ii) Explain three problems facing telephone as a means of communication in Kenya**. (6 mks)**

8. (a) (i) What is Environmental Hazards. **(2 marks)**

(ii) Identify three environmental hazards caused by human activities**. (3 marks)**

(b) (i) State three cause of floods**. (3 marks)**

(ii) Explain four ways of combating floods in Kenya**. (8 marks)**

(c) Students from your school carried out a field study on a flood prone area in your country.

(i) State four reasons why the working schedule is very important in their study**. (4 marks)**

(ii) List two methods of data collection they are likely to use. **(3 marks)**

(iii) Name two areas in Kenya prone to flooding. **(2 mks)**

(9)a) (i) Apart from nuclear energy name three other non-renewable sources of energy. **(3 marks)**

(ii) State three factors that hinder development of nuclear energy in many countries.(**3 mrks)**

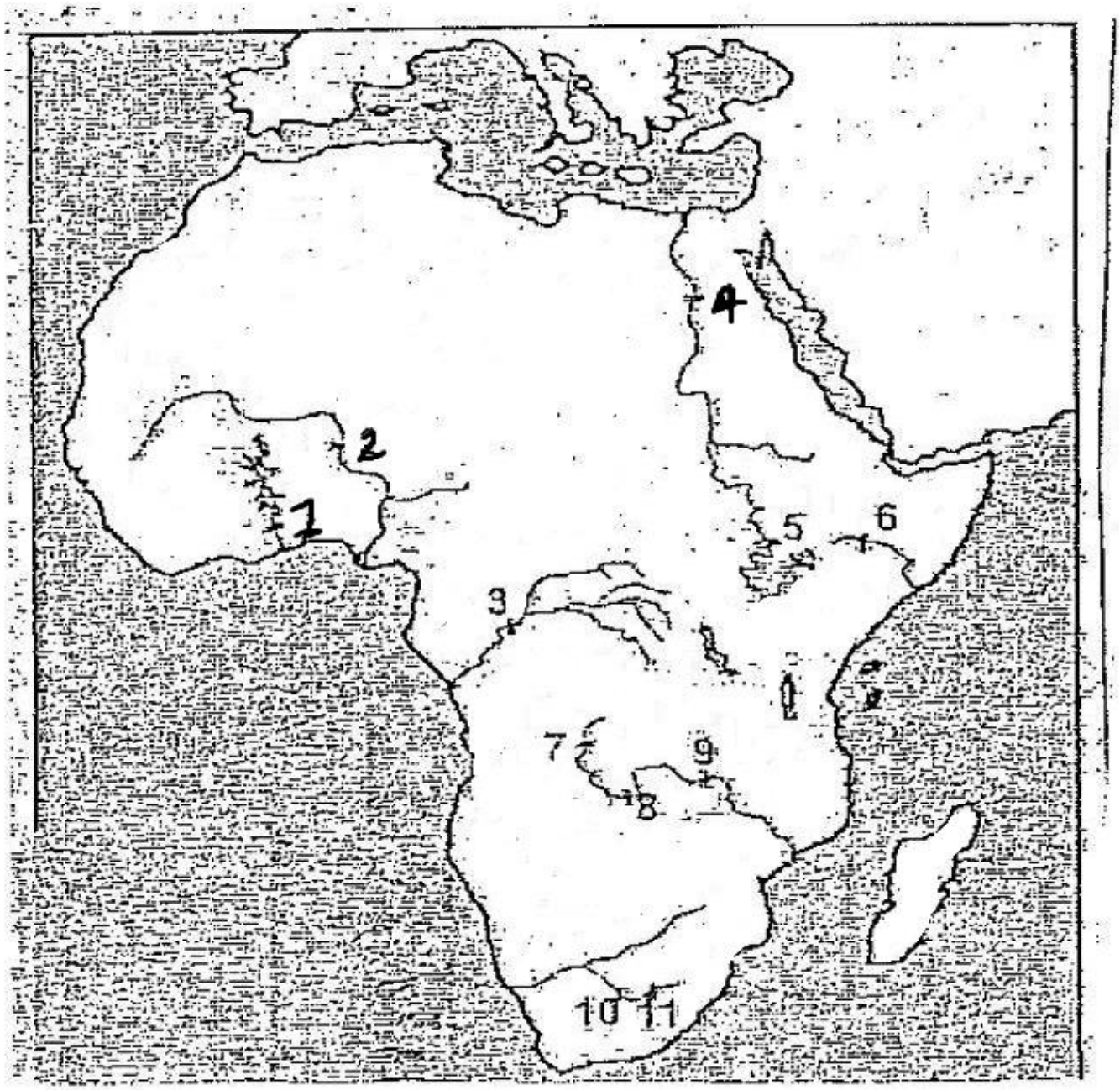
(b) (i) Explain the three effects of overdependence of petroleum on the economy of oil importing countries. **(6 marks)**

(ii) State 3 methods that Kenya can use to conserve her energy**. (3 marks)**

(c) Give reasons why Kenya has not been fully able to fully exploit her geothermal potential. **(4 marks)**

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(d) Use the map of Africa to answer the questions that follow



i) Name the H.E.P projects that are marked 1,2,5,**6.** **(4 mks)**

ii) Give two reasons why Africa has a high potential of **H.E.P** **(2 mks)**

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10. (a) i) Name four forms of which minerals **occur.** **(4 mks)**

ii) State four factors that are necessary for the occurrence of minerals. **(4 mks)**

b) State three ways in which open cast mining affect the environment**.** **(3 mks)**

c) Explain four ways in which mining contribute to the economy of Kenya. **(8 mks)**

d) Form 4 Geography students carried out field study on mineral found in the Rift Valley

i) State three objectives of their study. **(3 mks)**

ii) List down three problems they are likely to come across**.** **(3 mks)**

KCSE 23

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KCSE 2023 JOINT PREDICTION

SERIES 1

ENGLISH

101/1

PAPER 1 (Functional Skills)

TIME: 2 HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

Instructions

1. *Write your **name** and **index number** in the spaces provided above.*
2. *Sign and write the date of the examination in the spaces provided above.*
3. *Answer **all** the questions in this paper.*
4. *All your answers must be written in the spaces provided in the question paper.*
5. *Candidates should answer the questions in English.*

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Question	Maximum Score	Candidate's Score
c) Functional skills	20	
d) Cloze test	10	
e) Oral skills	30	
TOTAL	60	

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1. FUNCTIONAL WRITING (20 marks)

You passed very well in your KCSE. Your former school is holding a prize-giving ceremony. You have been invited through a letter as one of those receiving the awards. However, you have lost a neighbour and he will be laid to rest on the same day and so you will not attend the prize giving ceremony.

a) Reply to the letter declining the invitation. **(12 marks)**

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KCSE 2023

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b) Write a condolence note to your neighbour's parents. **(8 marks)**

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2. CLOZE TEST(10 marks)

Read the passage and fill the blanks with an appropriate word

Olive oil is good for the bones, a two-year (1)..... has found. People who consume olive oil have higher amounts of osteocalcin, a special (2)…….....that is found in bones which helps keep(3).....strong. They also found that osteocalcin lowers the risk of osteoporosis a (4)……..in which bones lose density and become fragile and more likely to fracture.

In addition, osteocalcin was found to (5)…….....in metabolic regulation. These findings help explain (6)…….....people from the Mediterranean area of Europe are the least (7)…….to developing osteoporosis. These people consume a lot of olives and olive oil, along with (8)……....and vegetables.

Other (9).....of olive oils include reduced stroke and breast (10).....risk and liver protection.

3. ORAL SKILLS(30 marks)

Read the following oral poem and answer questions that follow (8 marks)

One hand cannot manage work
A threshing stick cannot thresh millet with one hand
Some hands breed hatred at the eating time
Nobody hates being assisted

Let millet be threshed
Let it be threshed, let it be threshed
Cut a threshing stick for me
A lazy wife
Is taken back to her parents
When the rain fails
It blames the wind
And a lazy woman
Blames the threshing stick

Cut a threshing stick for me ii
My co-wife cut me a threshing stick

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You woman, owner of this occasion
Remember that work is the stomach
Take care not to starve us
The threshing sticks are sounding
Let the millet leave the threshing ground
(Adapted from Oral Literature of the Embu and Mbeere by Ciarunji Chesaina)

QUESTIONS

a) Identify and illustrate two mnemonic effects (sound devices) in the poem. **(2 marks)**

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b) You have been asked to perform the above poem. Explain how you will prepare for it. **(2marks)**

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c) What non-verbal aspects would you use in the performance of the poem and where? **(2 marks)**

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d) While performing the above poem you notice that members of the audience are murmuring what could the problem be? **(2 marks)**

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f) Provide another word that is identical in pronunciation with underlined words in the sentence below. **(4 marks)**

The **maid** offered the **guest** some juice squeezed from a **berry** from the **farm**.

- …….
- …….
- ……
- ……

g) Identify the silent letter in the following words **(4 marks)**

a) Debut ……..

b) Patois ……

c) Lesson ……

d) Heaven ……

h) You attend a prize-giving ceremony in your school. When the chief guest is speaking. You notice that he is sweating profusely, he is inaudible, and he stammers a lot and avoids eye contact with his audience. What could be the cause of such behaviour**?** **(4 marks)**

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i) The underlined indicates the stressed word in the sentence below. Briefly explain what each sentence means. **(3 marks)**

i) Tom visited Mary yesterday

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ii) Tom visited Mary yesterday

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iii) Tom visited Mary yesterday

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j) *Read the following conversation and answer the questions that follow.* **(7 marks)**

Becky: (Shouting) What does she have to do to be punished - commit murder?
Vera: Go easy on her.
Becky: (Irritably) But you know he does anything she asks him to do. It is not fair.
Vera: Grow up! ...
Becky: (Screaming) You hate me! You never liked me! You only came to my school to spy on me because you are jealous of me you ugly witch, you pretender.
Vera: (Tears welling) I sacrificed my golden chance to be with you stupid girl and you return it with nothing but insults!

i) Highlight Becky's shortcomings in her conversation to Vera. **(4 marks)**

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(ii) What good conversational skills should they have employed to enhance communication?**(4 mks)**

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KCSE 2023 JOINT PREDICTION

SERIES 1

ENGLISH

101/2

PAPER 2

Comprehension, Literary Appreciation and Grammar

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

a) *Write your name, class, admission number and school in the spaces provided*

b) *Answer **all** questions in this question paper.*

c) *Candidates MUST answer all the questions in English.*

FOR EXAMINER'S USE ONLY

Question	Maximum Score	Candidate's Score
1	20	
2	25	
3	20	
4	15	
Total Sore	**80**	

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1. COMPREHENSION

1. <u>Read the passage below and then answer the questions that follow.</u>

A lot of students think that learning is only in class. If students use two extra steps, most students will not forget what they learned in class. To achieve effective learning, students need to follow two extra steps in the three strategic learning processes.

The key to success is by following these three strategies. Review is essential to student success. Unless content is reviewed by students shortly after it is learned, it will soon be forgotten. To avoid forgetting what you learned, it is recommended to review daily.

It is also recommended to reduce large volumes of notes into point form and to paraphrase what you have learned. Other helpful tips include creating concept maps and diagrams; creating fact, concept or vocabulary cards and using visualization to better connect to what you learned. These are all important tools to helping students better understand and memorize lesson content.

The key to achieving academic success cannot be directly **correlated** to one specific area. Rather it requires students to be overall rounded in many different aspects. This includes attending class regularly to keep pace with the class. Falling behind in studies or homework can be **detrimental** to academic success and can induce stress onto students. Participating in class activities and discussions are also vital parts of learning and applying concepts learned. On the other hand, taking good, concise notes will always help in the long run when reviewing for tests and exams. To sum it all up, strategic learning is the password for many academic achievements. Being exposed to knowledge is the first step in the journey, the fact that young scholars can learn and be a part of history is a phenomenal step in furthering their search to success. Reviewing notes, in the way the young individual wishes, by him/herself, or with a good friend, this will help him/her to understand what has been learned in a way he/she understands. Lastly practice is a great way to memorise what has been learned, when practice achieves its full potential, the individual won't only be entitled for a good mark, but also a way to view, under and think of things. Those three attributes will help scholars become more successful, but it's important to one as it is to the other, and each and every person should find the learning strategies **effectual** for him/herself, and in extremely **exceptional** occasions even invent or innovate new strategies.

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Questions

(a) What does the writer faults in the students thinking according to the first paragraph**?(2 marks)**

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(b) Explain the **three** strategies that are key to success. **(6marks)**

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(c) Unless content is reviewed by students shortly after it is learned, it will soon be forgotten..

(1 mark)

Begin: if……

(d) The key to achieving academic success cannot be directly **correlated** to one specific area..

(1mark)

Add a question tag.

(e) Discuss the tone of the passage. **(3 marks)**

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(f) How, according to the passage, does practice help memorise what has been learned?(**3marks)**

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(g) Explain the meaning of the following words and phrases are used in the passage. (**4marks)**

Detrimental.....

Correlated.....

Effectual.....

Exceptional.....

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

***K*rogstad**: No matter about that.
Nora: What do you want of me?
Krogstad: An explanation of something.
Nora: Make haste them. What is it?
Krogstad: You know, I suppose, that I have got my dismissal.
Nora: I couldn't prevent it, Mr. Krogstad. I fought as hard as I could on your side, but it was no good.
Krogstad: Does your husband love you so little, then? He knows what I can expose you to, and yet ventures-
Nora: How can you suppose that he has any knowledge of the sort?
Krogstad: I didn't suppose so at all. It would not be the least like our dear Torvald
Helmer to show so much courage-
Nora: Mr. Krogstad, a little respect for my husband, please.
Krogstad: Certainly — all the respect he deserves, but since you have kept the matter so carefully to yourself. I make bold to suppose that you have a little clearer idea, than you had yesterday, of what it actually is that you have done?

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Nora: More than you could ever teach me.

Krogstad: Yes, such a bad lawyer as I am.

Nora: What is it you want of me?

Krogstad: only to see how you were, Mrs Helmer, 1 have been thinking about you all day long. A mere cashier, a quill driver, a man like me - even he has a little of what is called feeling, you know.

Nora: Show it, then; think of my little children.

Krogstad: Have you and your husband thought of mine? But never mind about that. I only wanted to tell you that you need not take this matter too seriously. In the first place there will be no accusation made on my part.

Nora: No, of course not; I was sure of that.

Krogstad: The whole thing can be arranged amicably; there is no reason why anyone should know anything about it. It will remain a secret between us three.

Nora: My husband must never get to know anything about it.

Krogstad: How will you be able to prevent it? Am I to understand that you can pay the balance that is owing?

Nora: No, not just at present.

Krogstad: Or perhaps that you have some expedient for raising the money soon?

Nora: No expedient that I mean to make use of.

Krogstad: Well, in any case, it would have been of no use to you. Now if you stood there with ever so much money in your hand, I would never part with your bond.

Questions

a) Place this excerpt in its immediate context. **(4marks)**

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b) What is Krogstad's attitude towards Helmer? Explain. **(3marks)**

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c) "You have some expedient for raising the money soon". Does Nora have an idea on how to raise the money? Explain **(4marks)**

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d) "Yes, such a bad lawyer as I am". What is the tone of this statement? **(2mks)**

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e) "Does your husband love you so little then?" How does Helmer's behavior later in the play bear out Krogstad' statement? **(4marks)**

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f) Describe Krogstad's character as revealed in this excerpt **(4marks)**

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g) Identify and explain the use of irony in this excerpt. **(2mks)**

h) A mere cashier, a quill driver a man like me even he has a little of what is called feelings you know. (Rewrite beginning: Even ……..) **(2 marks)**

3. ***Read the following narrative and answer the questions that follow.***

An Old Woman and her Deformed Son

There was an old woman whose children died in infancy and only a deformed boy survived to grow into adulthood. The boy was a hunchback.

Although the old woman loved this hunchback son of hers, she was secretly ashamed of his physical appearance. She was so ashamed that each day she was on the look – out for visitors who might come around just to make fun of him. To keep him away from the public eye, she used to confine him in a drum most of the time. So, right from his childhood the boy grew up in a drum. He was taken out only a few times during the day when the old woman was sure that there were likely to be no intruders around. When the boy attained circumcision age, he was duly circumcised. After circumcision he said to the old woman, "Mother, I now want a wife, can you please find me a girl to marry!" "Yes, my son", said the old woman. "I will try. I am indeed very pleased to learn that you are already thinking of a wife."

By and by, the old woman went to look for a suitable girl to marry her son. She approached a pretty girl and asked her whether she would be interested in marrying her son and the girl, promised to think about it. Without disclosing her son's physical defects to the girl, the old woman set about wooing her intensively. She brought all sorts of gifts to her mother, helped the girl to collect firewood and even helped her with the work in the shamba. Reluctantly the girl gave in and there upon requested the old woman to make the necessary arrangements so that she would meet the future husband. The old woman cunningly suggested that the girl should accompany her to her house where she would be able to meet the boy.

The old woman lived a long way from the girl's village. On the day when the girl decided to visit her prospective bridegroom, she walked and walked until sunset. It was a very long journey indeed. When she eventually arrived, the old woman pretended that the young man was around and would appear shortly. The girl waited and waited but the boy did not appear at all. At bed time the girl was told that the boy was already in bed sleeping. She was shown a separate place to sleep, and thus no opportunity to either see or talk to the boy as would have been expected of people who

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were planning to live together. Very early in the morning the girl asked the old man, " Please, where is the boy you want me to marry?" and the woman replied, " My son woke up early in the morning and went to work in a different village yonder so that he can earn something for your bride price"

Although the girl was visibly disappointed, she tried to conceal her sentiments and appear to be at home with everything around the house. The old woman and the girl went to cultivate in a banana grove. While they were away the boy jumped out of the drum and busied himself about the house with the little chores singing:

Khanenuya munju, mwange, Khanenuye munju mwange
Mkhasi nakikhali misilu, maji kakuombelesay musecha kacha
Khuema, abele khuchuma nacha sina?
Menyile, mukhang'oma, kurumba kuli khumukongo

(Let me busy myself in my house. Aren't women foolish? Mother fooled her. "Your husband has gone to work." How could I have gone to work? I just live in my little drum because I have a hunchback.)

The girl heard the boy's singing but it was so faint that she would neither comprehend the meaning of the song nor even make out as to which direction the sound came from. However, out of curiosity she stopped from time to time and listened. This went on for several days until she started to guess the meaning of the words in the song. On getting the message home, she was quite disturbed. Her suspicion was strengthened by the fact that each morning they left for the shamba without sweeping or washing utensils but on their return they found everything tidy about the house. One day she deceived the old woman by telling her that she was going to attend to the call of nature while in fact her intention was to discover the house and stood listening keenly at the door. She got really upset with the boy's derogatory song. She pondered with herself, " So this is my husband to be? A hunch back confined to a drum? No wonder the old woman deceived me the way she did. What girl in proper senses could marry a man like that? Anyway what can I do now? I must put an end to this continued bluff….."

One morning she said to the old woman, "Mother, today will you go to look for firewood while I go to the plantation alone?" The old woman said, "Yes, my daughter, we can share work that way." She had grown so used to the cheerful and friendly manner of the girl, thinking that she would not mind staying on as her daughter – in law even after discovering that her son was deformed. Indeed she was already contemplating making the revelation to her.

And so each went her separate way. But as soon as the old woman vanished from sight the girl dashed back and stood at the door which had now become a familiar ground for spying on the hunchback. She listened briefly as the boy sang mischievously inside the house. Then she stole a quick glance peeping through a side hole.

To her amazement, she saw that he was a real hunchback! Quite oblivious, the boy went on sweeping the floor and singing. The girl felt that she could no longer stand it. She broke into the house suddenly with the intention of beating up the mischievous fellow. But before she could get hold of him he dodged nimbly and slipped back into the drum. Nonetheless, the girl fuming with anger

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picked up the drum and smashed it on the floor. A pool of blood started oozing from the broken drum. The poor hunchback was dead.

Considering it appropriate revenge on the old woman the girl felt no remorse for the action she had taken. She rolled over the cold body of the hunchback as a lump of anger swelled up in her throat. When the old woman returned home and found the mess she had done in the house she screamed at the top of her voice, " Ooh , oh…. Uuuuwee…. Uuuuweeeeeee!" But it was all in vain. The deformed boy whom she had been ashamed of showing to the public was dead and gone forever! Yes, instead of feeling relieved by the burden of shame she now felt great anguish for this loss. After killing the hunchback the girl also disappeared never to be seen again. The poor old woman remained there weeping and feeling quite forlorn.

Questions

(a) Place this narrative in its correct genre .. **(1mk)**

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(b) How is the old woman to blame for the tragedy that befell her? **(1mk)**

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(c) Identify **two** socio – economic activities in the community. Support your answer with the evidence from the story. **(4mks)**

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(d) What is the role of the song in the narrative? **(2mks)**

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(e) With illustrations, describe the character of: (4mks)

(i) The girl

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(ii) The old woman

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(f) Explain **two** features typical of oral narratives present in this story. **(4mks)**

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(g) Identify and illustrate any **two** moral lessons we learn from this **narrative** **(4mks)**

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5. GRAMMAR (15 MARKS)

1. Rewrite the following sentences according to the instruction s given after each without changing the meaning. **(4 marks)**

a.) He submitted his poem for publication after being encouraged by his friends. (Begin: Encouraged...)

b.) Mother asked Mutiso if he would make breakfast the following day. (Change to direct speech)

c.) But for the pilot's quick action, the plane would have crashed. (Begin: Had it ...)

d.) My brother and me have been taking violin lessons for two months. (Rewrite the sentence correctly.)

2. Fill in the blank spaces with the correct form of the word in bracket. (4 marks)

a.) He _____ visits his grandparents. (often)

b.) Our roads are being renovated to increase their _____ . (wide)

c.) The party rebels were _____ subjected to bombarding from the party leaders. (relent)

d.) Men are not expected to show signs of _____ . (coward)

3. In each of the following sentences, give an appropriate phrasal verb that means the same as the underlined word. **(3 marks)**

a.) The thief confessed after a thorough beating by the irate mob.

b.) The grandmother liked her grandchildren .

c.) The meeting was cancelled at the eleventh hour.

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4. Fill in the blank spaces with an appropriate preposition. (3 marks)

a.) The new student was so confused that he was lost _____ words.

b.) My father deals _____ second-hand clothes.

c.) John is very good _____ English.

5. Rewrite the following sentence correctly. (1 mark)

a.) I went for shopping yesterday.

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KCSE 2023 JOINT PREDICTION

SERIES 1

ENGLISH

101/3

PAPER 3

Essay Based On Literary Texts

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

Instructions to candidates

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

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

*(c) Answer **all** questions in this question paper.*

*(d) Answers to **three** questions **must** be written in the spaces provided in this booklet.*

For Examiner's Use Only

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

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1. IMAGINATIVE COMPOSITION

(a) Write a story ending with;

……. truth be told, we strongly believe that he was innocent. **(20mks)**

Or

(b) Write a story to illustrate the saying:

A fool and his money are soon parted

2. THE COMPULSORY SET TEST (20MKS) **(20mks)**

"People who do bad deeds to others never go unrepaid"

Show the validity of this statement with reference to Henry Ole Kulet's novel. Blossoms of the savannah"

3. THE OPTION SET – TEST **(20mks)**

Answer only one of the following questions

Either

(a) The short stories

Godwin Siundu, A Silent songs and other stories

People with admirable traits stand out. Basing your illustrations on **Vrenika Pather's *Ninema*,** write an essay to validate this assertion.

Or

(b) Drama

David Mulwa, inheritance

"Pretenders are worse than murderers." Write an easy to show the truthfulness of this statement basing your answer on the inheritance by David Mulwa.

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Or

(c) The novel

Kazuo Ishiguro, Artist of the Floating World

The author has been able to effectively employ irony to bring out the message of the text. Illustrate the effectiveness of this style in the text **An Artist of The floating world by <u>Kazuo Ishiguro</u>**

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KCSE 23

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KCSE 2023 JOINT PREDICTION

SERIES 1

KISWAHILI

102/1

KARATASI YA 1

MUDA: SAA 1¾

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Cheti cha Kuhitimu Kisomo cha Sekondari (KCSE)

MAAGIZO

*a) Andika insha **mbil**i. Insha ya kwanza ni ya **lazima.***
b) Kisha chagua insha nyingine moja kati ya hizo tatu zilizobakia.
*c) Kila insha isipungue maneno **400.***
*d) Kila insha ni alama **20.***
e) Kila insha lazima iandikwe kwa lugha ya Kiswahili.

KWA MATUMIZI YA MTAHINI PEKEE

Swali	Upeo	Alama
1	20	
	20	
Jumla	40	

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MASWALI

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

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

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

4. Tunga kisa kinachoanza kwa maneno haya:

Ilinichukua muda mrefu kusadiki niliyoyapata...

KCSE 23

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KCSE 2023 JOINT PREDICTION

SERIES 1

KISWAHILI

102/2

KARATASI YA 2

LUGHA

MUDA: SAA 2½

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

MAAGIZO

- *Andika **jina lako** na **namba yako** katika nafasi ulizoachiwa hapo juu.*
- *Weka **sahihi yako** na **tarehe** ya mtihani katika nafasi ulizoachiwa*
- *Jibu maswali yote.*
- *Majibu yaandikwe katika nafasi zilizoachwa wazi katika kijitabu hiki cha maswali.*

KWA MATUMIZI YA MTAHINI PEKEE.

SWALI	UPEO	ALAMA
1	15	
2	15	
3	40	
4	10	

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1. UFAHAMU: (ALAMA 15)

Soma kifungu kifuatacho kisha ujibu maswali:

Takwimu zilizothibitishwa zaonyesha kuwa kila sekunde nane mtu mmoja hufa duniani kutokana na utumiaji wa tumbako. Kwa siku basi, watu 10,800 hufa. Wengi wa wavuta sigara huanza katika umri kati ya miaka kumi na mitatu hadi kumi na tisa. Takwimu zaonyesha kuwa mtu akivuta sigara kwa zaidi ya miaka ishirini huupunguza umri wake kwa kati ya miaka 20 hadi 25 zaidi ya ambaye hajawahi kuvuta. Hii ni kwa kuwa tumbako ina zaidi ya kemikali 4,000 zinazodhuru afya.

Mojawapo ya madhara makuu zaidi yanayosababishwa na sigara ni saratani. Kunayo saratani ya ngozi – vidonda visivyopona huchubuka ngozini na baada ya muda hugeuka na kuwa kansa. Iri ya mapafu hutokea vifuko vya hewa vinapopasuka na hivyo kutatiza uvutaji wa oksijeni na utoaji wa kabondayoksaidi. Moshi pia husababisha madhara kwa njia ya kupitisha hewa, yaani umio, ambapo njia hii yaweza hata kuzibika hivyo kulazimu tundu kutobolewa kooni ili mgonjwa aweze kupumua. Kabla ya kufika kooni na mapafuni, moshi hupitia mdomoni. Saratani ya mdomo na ulimi basi hupatikana zaidi miongoni mwa wavuta sigara. Pia kidonda chochote, kwa mfano baada ya kung'olewa jino, huwa vigumu kupona kwa mvutaji sigara.

Kwa wanawake, kuna hatari ya kupatwa na iri ya fuko la uzazi. Madhara kwenye njia nzima ya uzazi huifanya iwe vigumu kwa wanawake wavuta sigara kuhimili. Ni rahisi pia kuzaa njiti. Mtoto wa mvutaji huzaliwa akiwa mwepesi zaidi ya kawaida. Hii husababishwa na kabonimonoksaidi kutoka kwa sigara inayomdhuru mtoto tumboni. Saratani hii husababisha hata kifo cha mtoto aliye tumboni. Wengine wazaliwapo huwa na hatari ya kupatwa na saratani zaidi ya waliozaliwa na akina mama wasiovuta sigara.

Aina zaidi za saratani zinazowakumba wavuta sigara ni kama vile saratani ya pua, ya tumbo, ya figo, ya kibofu cha mkojo, ya kongosho, ya njia ya kinyesi na hata saratani ya matiti inayowaathiri zaidi wanawake.

Shida za sigara sio saratani pekee; sigara husababisha shida za macho na masikio kwa kiasi kikubwa. Mboni ya jicho yaweza kufunikwa na utando, hali inayoweza kusababisha hata upofu. Macho yaweza kuwashwa na moshi mkali wa sigara au mishipa ya macho iathirike na kemikali zinazofika kwayo kupitia kwa mishipa mapafu yanapoathirika. Masikio nayo huathiriwa na uchafu wa tumbako unaoganda kwenye mishipa hadi sehemu za ndani za masikio. Damu hupunguza mwendo ufaao masikioni hivyo yanaugua. Moshi na kemikali za tumbako pia hujeruhi sehemu za ndani na athari hii yaweza kuenea hadi ubongoni na kusababisha utando unaofunika ubongo. Hali hizi zaweza kusababisha uziwi.

Mifupa na meno huathirika pia. Mifupa huwa myepesi, hukosa nguvu na kuwa rahisi kuvunjika. Mvuta sigara akivunjika mfupa huchukua muda wa asilimia themanini (80%) kupona zaidi ya mtu asiyevuta. Meno nayo hutatizika katika ukuaji wake kutokana na kugandwa na moshi wenye kemikali. Hali hii husababisha harufu mbaya, uchafu pamoja na kuoza kwa meno.

Ngozi ya mvuta sigara hukaushwa na kemikali kwa sahabu uwezo wake wa kujirekebisha na kujilainisha hupunguzwa pakubwa. Hali hii husababisha ukavu unaoonekana pamoja na

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makunyanzi yanayomfanya mvuta sigara aonekane mzee zaidi ya umri wake. Vidole navyo vilevile hugandwa na kutu ya sigara, nazo kucha na vidole hugeuka rangi vikawa vya manjano, hudhurungi au maji ya kunde. Vidole pia hukaushwa na moto na kemikali ya sigara. Nywele za mvuta sigara pia huathirika kwa kuwa kemikali huipunguza kinga ya mwili hivyo mizizi ya nywele kukosa nguvu. Nywele za mvuta sigara zaweza kung'oka mapema.

Sigara husababisha magonjwa ya moyo na vidonda vya tumbo. Kwa moyo, sigara husababisha shinikizo la damu na hatimaye mshtuko wa moyo waweza kutokea na kusababisha hata kifo. Kwa tumbo, sigara hupunguza uwezo wa kinga zake wa kuikinga dhidi ya asidi zinazosaga chakula. Pia hupunguza uwezo wa mwili wa kujikinga dhidi ya vidonda vya tumboni. Vidonda vya tumbo vya mvuta sigara huwa vigumu kupona na, ni rahisi kutokea tena baada ya kupona.

Kwa mwanamume, mpigo wa damu kwenye sehemu za uzazi huathiriwa. Hali hii ikizidi husababisha hata upungufu wa nguvu ya mbegu kwenye shahawa. Hata ugumba waweza kutokea. Pia watoto wa mwanamke mvuta sigara waweza kuzaliwa wakiwa na kasoro. Mimba zingine zilizotungwa na wanawake wavuta sigara pia hutunguka. Na si hayo tu; madhara ya sigara ni mengi zaidi.

Maswali

a) Yape makala haya kichwa. **(alama 2)**

……

……

……

b) Mbali na athari kwa uzazi kwa wanawake na wanaume na sura/umbo la binadamu, taja madhara mengine ya uvutaji sigara kwa binadamu. **(alama3)**

……

……

……

……

c) Kwa kurejelea kifungu onyesha kwamba sigara kwa wanawake hasa ni hatari mno. **(alama 4)**

……

……

……

……

……

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(d) Je, ni kweli kuwa vifo vingi hutokea kwa sababu ya uvutaji sigara? Toa sababu. **(alama 2)**

……

……

……

(e) Eleza namna ambavyo uvutaji sigara huathiri sura ya mhusika. **(alama 3)**

……

……

……

……

(f) Eleza maana ya msamiati ufuatao kama ulivyotumiwa kwenye taarifa. **(alama 1)**

Gandwa _____

2. **UFUPISHO:(ALAMA 15)**

Soma taarifa ifuatayo kisha ujibu maswali:

Biashara ya kimataifa ni muhimu sana katika ukuaji wa uchumi wa nchi yoyote ile. Nchi mbalimbali zimekuwa zikitegemeana kwa namna moja au nyingine. Kwa mfano, nchi ya Kenya imekuwa ikiuza maua na mboga katika nchi za ng'ambo na kupata fedha za kigeni ambazo hutumiwa humu nchini kuendeleza miradi mbalimbali ya maendeleo.

Biashara ya kimataifa huziwezesha nchi ambazo hazizalishi bidhaa na hata huduma mbalimbali kupata bidhaa hizo kutoka nchi nyingine zinazohusiana nayo katika biashara. Mathalan, Kenya ni nchi ambayo imekuwa ikitegemea kilimo lakini haijaendelea katika sekta ya viwanda. Kenya huagiza bidhaa kama vile vipuri vya magari na hata magari yenyewe kutoka nchi kama vile Japan. Nayo Kenya huuza mazao ya shambani kama vile pareto, chai na kahawa ng'ambo.

Kupitia kwa biashara ya kimataifa, nchi hupata masoko kwa bidhaa zake. Kwa vile biashara ya kimataifa huziwezesha nchi husika kuzalisha bidhaa mahususi ambazo hazitaigharimu nchi pesa nyingi kuzalisha, nchi hizo aghalabu huzalisha kiasi kikubwa cha bidhaa kuliko mahitaji yake ya nyumbani. Nchi basi hulazimika kutafuta masoko nje ya mipaka yake. Kwa njia hii uchumi wa nchi huendelea kuimarika.

Aidha, biashara ya kimataifa huwezesha nchi kupata huduma za kitaaluma ambazo hazipatikini katika nchi husika. Kuna nyanja za kiuchumi ambazo huhitaji wataalamu mahususi. Kwa mfano, katika sekta ya matibabu nchini humu tumepata kwamba kuna baadhi ya magonjwa ambayo

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yanahitaji matibabu maalumu. Wanaougua magonjwa haya huagiziwa madaktari kutoka ng'ambo au hata kupelekwa ng'ambo kwa uchunguzi na matibabu zaidi.

Biashara ya kimataifa hukuza ushirikiano wa kimataifa. Nyakati za majanga ya kimaumbile na hata mengine yanayosababishwa na kutowajibika kwa binadamu, nchi hupata usaidizi kutoka nchi za ng'ambo. Kwa mfano wakati wa mkasa wa bomu wa 1998, Kenya ilipata msaada wa kukabiliana na janga hili kutoka Israeli, Marekani na hata Ujerumani ambako baadhi ya waathiriwa wa mkasa huo walipelekwa kwa matibabu zaidi. Ushirikiano huu wa kimataifa huwezesha wananchi kutoka nchi fulani kwenda kusomea na hata kufanya kazi katika nchi nyingine. Katika miaka ya hivi karibuni Wakenya wengi wamekuwa wakienda kusomea vyuo vikuu vya ng'ambo. Wengine wamediriki kupata kazi katika mashirika ya kimataifa katika nchi mbalimbali kama vile Afrika Kusini, Rwanda, Msumbiji na kadhalika.

Biashara ya kimataifa husaidia kukuza ushindani kati ya nchi husika. Ushindani huu ni hakikisho la uzalishaji wa bidhaa za thamani bora. Kila nchi itafanya juu chini kuzalisha bidhaa ambazo zinaweza kukubalika katika soko la kimataifa. Pia wananchi wa nchi husika hupata aina tofauti za bidhaa badala ya kutegemea aina moja tu ya bidhaa zinazozalishwa nchini mwao.

Biashara ya kimataifa huleta ushirikiano wa kisiasa na uelewano zaidi kati ya madola mbalimbali. Mathalan muungano wa nchi za Afrika Mashariki – Kenya, Uganda na Tanzania, hauchangii tu kuleta manufaa ya kiuchumi bali huleta ushirikiano zaidi wa kisiasa.

Ingawa biashara ya kimataifa ina natija, biashara hii huandamana na hasara mbalimbali. Biashara hii imesababisha kuwapo kwa masoko huru ambayo yameleta ushindani mkubwa kwa wafanyibiashara wadogo wa humu nchini. Baadhi ya wafanyibiashara wamelazimika kufunga biashara zao baada ya kufilisika. Ushuru mkubwa unaotozwa baadhi ya bidhaa nchini huwafanya wananchi wengi kutofaidika kwa bidhaa na huduma kutoka nje. Aidha, kuna ucheleweshaji wa bidhaa zilizoagizwa. Bidhaa hizi mara nyingi huchukua muda kabla ya kutoka nchini, kwa hivyo wafanyibiashara wengi hulazimika kungojea kupata bidhaa hizi na kuwauzia wateja wao.

Vilevile, kutokana na biashara ya kimataifa, bidhaa duni huweza kupenyezwa katika mataifa yanayoendelea. Pia baadhi ya wafanyibiashara wa kimataifa huchukua fursa hii kulangua dawa mbalimbali za kulevya ambazo huwaathiri vijana wa nchi husika. Wengine huhusika katika vitendo vya kigaidi kama vile uchomaji wa majengo mbalimbali kwa bomu na mauaji ya ananchi wasio na hatia.

Ni kweli kuwa biashara ya kimataifa ina hasara zake. Hata hivyo mhimili mkubwa wa uchumi wa mataifa machanga.

(a) Kwa maneno yasiyozidi **themanini**, eleza umuhimu wa biashara ya kimataifa**.(alama 7)**

Matayarisho

……

……

……

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Nakala safi

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(b) Kwa maneno yasiyozidi **40**, eleza ujumbe wa aya tatu za mwisho. **(alama 6)**

Matayarisho

……

……

……

……

……

……

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Nakala safi

……

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……

……

……

3. MATUMIZI YA LUGHA

(a) Sahihisha sentensi: (alama 2)

(i) Mitume hiyo siyo ambayo tunaijua.

……

(ii) Wasikilizaji sasa wanaburudika na muziki kutoka idhaa la taifa hii.

……

(b) Ikanushe sentensi hii katika umoja. **(alama 2)**

Wasingecheza kiustadi wasingeshinda katika michezo ile.

……

(c) Tambulisha nyakati na hali katika sentensi: **(alama 2)**

(i) Wachezaji walikuwa wanafanya mazoezi.

……

……

(ii) Nkirote alipoingia alitukemea.

……

……

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(d) Eleza maana za sentensi. **(alama 2)**

(i) Kwa nini wasililie hapa?

……

……

(ii) Kwa nini wasilie hapa?

……

……

(e) Toa mifano miwili miwili ya sauti zinazotamkiwa katika : **(alama 2)**

(i) ufizi ……

(ii) meno ……

(f) Andika udogo na ukubwa wa neno ‘kidole’. **(alama 2)**

(i)……(ii)……

(g) Tunga sentensi mbili tofauti kubainisha matumizi ya KWA. **(alama 2)**

……

……

……

(h) Onyesha shamirisho kipozi na kitondo katika sentensi ifuatayo. **(alama 2)**

Msichana alimkaririra mgeni shairi.

……

……

……

(i) Tumia vitenzi hivi katika sentensi mojamoja katika jinsi ya kufanyiwa. **(alama 2)**

(i) nywa

……

(ii) pa

……

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(j) Kistari kifupi (-) aghalabu hutumika kuendeleza sauti hasa katika vihisishi. Onyesha matumizi mengine matatu ya alama hii akifishi. **(alama 3)**

……

……

……

……

……

(k) Tunga sentensi kubainisha tofauti kimaana kati ya vitawe: **(alama 2)**

(i)juha……

(ii)jua……

(l) Ziandike upya sentensi hizi kwa mujibu wa maagizo uliyopewa. **(alama 2)**

(i) Kiyondi aliukomelea mlango alipovisikia vishindo.

(Anza kwa :Mlango……..)

……

(ii) Mvua ilinyesha sana alasiri hiyo. Wachezaji walicheza mpira vizuri tu.

(Tumia 'japo')

……

(m) Tunga sentensi sahihi kubainisha matumizi ya KI kuonyesha: (alama 4)

(i) masharti

……

(ii) ngeli

…….

(iii) kufanyika vitenzi viwili au zaidi wakati mmoja

……

(iv)kielezi namna

……..

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(n)Tambua hali na matumizi ya kisarufi ya neno lililopigwa mstari katika sentensi: (alama 1)

Mtu mzee anapaswa kuheshimiwa

……

(o) Andika katika usemi halisi. (alama 2)

Mwalimu aliwaagiza wanafunzi warudi darasani, warejelee madaftari yao ya kumbukumbu na kuikosoa kazi hiyo.

……

……

(P) Andika katika umoja. **(alama 2)**

Tembe ambazo tulizimeza zilikuwa chungu.

……

(q) Eleza maana za semi au nahau: **(alama 2)**

(i) kwenda mbweu

……

……

(ii) shika sikio

……

……

(r) Changanua sentensi ifuatayo kwa kielelezo cha jedwali **(alama 4)**

Kiatu kilichonunuliwa juzi kimerejeshwa dukani.

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4. ISIMU - JAMII

(a) Eleza ukionyesha bayana tofauti baina ya lahaja na lafudhi. **(alama 4)**

……

……

……

……

……

……

(b) **Taja** sifa tatu tambulizi za lugha ya misimu **(alama 3)**

……

……

……

……

……

(c) Orodhesha sifa kuu za sajili ya siasa. **(alama 3)**

……

……

……

……

……

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KCSE 2023 JOINT PREDICTION

SERIES 1

KISWAHILI

102/3

KARATASI YA 3

MUDA: SAA 2½

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

MAAGIZO:

a) *Andika jina lako na nambari yako ya usajili katika nafasi ulizoachiwa hapo juu*
b) *Tia sahihi kisha uandike tarehe*
c) *Jibu maswali **manne** pekee*
d) *Swali la kwanza ni la lazima*
e) *Maswali hayo mengine **matatu** yachaguliwe kutoka sehemu nne zilizobaki yaani Tamthilia, Riwaya, Ushairi na Hadithi Fupi*
f) *Usijibu maswali **mawili** kutoka sehemu moja*
g) *Majibu yote **lazima** yaandikwe kwa lugha ya Kiswahili*

KWA MATUMIZI YA MTAHINI PEKEE

Swali	Upeo	Alama
1	20	
	20	
	20	
	20	
Jumla	**80**	

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SEHEMU A:

FASIHI SIMULIZI

LAZIMA

1. Soma utungo ufuatao kasha ujibu maswali

Mimi ni Olichilamgwara
Olichilamgwara mwana mbee wa Ojilong
Ojilong wa Marukatipe
Wazee waliposhindwa
Nilivuka misitu milima na mito
Ni mimi jabali
Kipande cha jifya la mama
Nilipokuwa nalisha mifugo
Nilisikia baragumu inalia
Baragumu ya wito
Mifugo wa mtemi wamechukuliwa
Nikachukua mkuki wangu
Wenye kigumba cha mti
Nikachukua upanga wangu
Wenye makali kama mmweso wa radi
Upanga uliopasua pembe za nyati kwa dhoruba moja
Ndipo nilipofyatuka kasi kama umeme
Kufumba kufumbua nikawakaribia nduli
Kusikia vishindi vyangu wakaanza kubabaika
Kuona kifua changu cha manyoya ya kanga wakatetemeka
Macho yangu makali kama kaa la moto yalipowatazama wakakimbia
Mkuki wangu ulipaa kama umeme
Wote wakalala
Mifugo wakanifuata…
Mko wapi vijana
Mmekuwa kama majivu baada ya moto kuzimika?

Maswali

a) Tambua kipera ulichokisoma na udhibitishe jibu lako **(al. 2)**
b) Tambua sifa za jamii zinazosawiriwa katika utungo huu **(al. 2)**
c) Kwa kutoa mifano bainisha vipengele vine vya kimtindo vilivyotumiwa na **nafsineni** **(al. 4)**
d) Fafanua sifa nne za kipera hiki **(al. 4)**
e) Eleza mambo manne ambayo mtendaji wa kipera hiki anaweza kufanya ili kufanikisha utendaji wake. **(al. 4)**
f) Fafanua mikakati ambayo jamii inaweza kutumia ili kuzuia tungo kama hizi **kufifia** **(al. 4)**

SEHEMU B:

TAMTHILIA: BEMBEA YA MAISHA, TIMOTHY AREGE

2. "Sima tayari. Ninaanda mchuzi….."

a) Weka dondoo hili katika muktadha wake **(al. 4)**

b) Onyesha umuhimu wa msemewa wa maneno haya **(al. 6)**

c) Tambua toni katika dondoo hili **(al. 2)**

d) Eleza changamoto zinazokumba ndoa za kisasa kwa kurejelea tamthilia nzima **(al. 8)**

3. "Masombo hufungwa kama walau mtu ametia kitu mdomoni. Pamoja na hali ngumu iliyopo, bado hatujafikia pa kukosa mlo wa kimsingi. Ndiyo hatumudu viliwa vya samli lakini hatuwezi kuishi kama kwamba tunazongwa na njaa. Tazama ulivyokonda unaelekea kushindana na ng'onda. Hii nafasi ya ng'onda unaitaka kwa nini?

a) Weka dondoo hili katika muktadha wake **(al. 4)**

b) Tambua mbinu mbili za kimtindo zilizomo kwenye dondoo **(al. 2)**

c) Bainisha sifa nne za msemewa **(al. 4)**

d) Jadili namna msemaji amechangia katika kuendeleza

i) Ploti **(al. 5)**

ii) Maudhui **(al. 5)**

SEHEMU C:

RIWAYA: Chozi la Heri la 4 au la 5

4. a) ….haya imekuandama tangu usiku ukimtongoza fulani, siku za kuchora ramani ya Afrika kwa vyanda vya miguu hadi sasa? Ama ni hizo mvi unaficha? Naskia ile mid-life crisis ikiwashika wazee ndiyo hivyo,

i) Weka dondoo hili kwenye muktadha wake **(al. 4)**

ii) Tambua mbinu zozote tatu za kimtindo kwenye dondoo hii **(al. 3)**

iii) Jadili udhaifu wa msemewa **(al. 4)**

b) Dhibitisha kauli kwamba 'Kweli jaza ya hisani ni madhila'
Kwa kurejelea wahusika tisa kwenye riwaya ya Chozi la Heri **(al. 9)**

RIWAYA: CHOZI LA HERI

5. "Nashangaa kinachompa kijana kama huyu, na wengine waliofariki jana, ambao wamesomea shahada za uzamili, kujihusisha na unywaji wa pombe haramu!

a) i) Eleza muktadha wa dondoo hili **(al. 4)**

ii) Fafanua umuhimu wa msemaji katika dondoo hili **(al. 4)**

iii) Kando na maudhui ya elimu eleza maudhui mengine mawili katika dondoo hili **(al. 2)**

b) Eleza jinsi mwandishi alivyofaulu kutumia mbinu zifuatazo katika kuijenga riwaya hii

i) Hadithi ndani ya hadithi **(al. 5)**

ii) Mbinu rejeshi (al. 5)

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SEHEMU D:USHAIRI

USHAIRI

Jibu swali la 6 ay la 7

6. Soma shairi lifuatalo kasha ujibu maswali

Said A. Mohamed: Mbele ya Safari

Ilipoanza safari, ilianza kwa dhiki
Tulishikana kwa ari, kwenda safari ya haki
Tukawa ni majabari, nyoyo zisitaharuki
Tukajizatiti

Njaa ikawa thabiti, na kiu kutamalaki
Nasi tulitia dhati, tusijali kuhiliki
Ingawa mbele mauti, dhila na mingi mikiki
Tulijizatiti.

Huu mwisho wa safari, tukaambiwa ni haki
Shangwe kwetu na fahari, utumwa hatuutaki
Kuwa mbele ya safari, juhudi iliyobaki
Tulijizatiti.

Ile ilikuwa ndoto, mwisho wake mafataki
Nguvu zimechomwa moto, sahala ‘mmekuwa dhiki
Wagombania kipato, utashi haukatiki
Na kutabakari.

Msafara ukasita, kwenye mlima wa haki
Kijasho kinatuita, mlima haupandiki
Basi soe ‘kajipeta, kukikwea kima hiki
Twataka hazina.

Tukiwa migongo wazi, tukainama kwa shaki
Tukawa’chia ukwezi, kialeni wadiriki
Wakapanda bila kazi, kuteremsha miliki
Wakaitapia.

Wakafikia makazi, ya pumbao na ashiki
Huko wakajibarizi, kwenye raha lakilaki
Wakaisahau ngazi, ya umma uliomiliki

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Mbele ya safari.

Na hazina yetu sote, kuishusha hawataki
Wamo wanatema mate, kwa umati halaiki
Imezima nia yote, kiza hakitakasiki
Mbele ya safari.

MASWALI

a) Eleza safari inayorejelewa katika shairi hili **(al. 2)**
b) Onyesha kinaya cha safari inayozungumziwa **(al. 3)**
c) Taja na ueleze bahari mbili za shairi hili ukizingatia: **(al. 2)**
   i) Mizani
   ii) Vina
d) Andika ubeti wa saba kwa lugha ya nathari **(al. 4)**
e) Eleza umuhimu wa aina mbili za uhuru wa kishairi zilizotumiwa katika ubeti wa sita **(al. 2)**
f) Bainisha aina mbili za urudiaji zilizotumiwa katika shairi hili **(al. 2)**
g) Fafanua aina mbili za taswira zinazojitokeza katika shairi hili **(al. 2)**
h) Kando na kinaya, bainisha vipengele vingine viwili vya kimtindo katika shairi hili (al. 2)
i) Eleza toni ya shairi hili **(al. 1)**

7. Soma shairi lifuatalo kasha ujibu maswali

Ee mpwa wangu,
Kwetu hakuna muoga,
Uoga ukikufikia, huenda ni wa akina mamayo,
Fahali tilichinja ili uwe mwanamume,
Eewe mpwa wangu, kisu kikali ajabu!
Iwapo utatingisa kichwa,
Uhamie kwa wasiotahiri.

Wanaume wa mbari yetu,
Si waoga wa kisu,
Wao hukatwa kuanzia macheo hadi machweo,
Wewe ndiye wa kwanza,
Iwapo utashindwa,
Wasichana wote,
Watakucheka,
Ubaki msununu,

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Simama jiwe liwe juu
Ndege zote ziangamie.

Simu nimeipokea,
Ngariba alilala jikoni,
Visu ametia makali,
Wewe ndiye wangojewa,
Hadharani utasimama,
Macho yote yawe kwako,
Iwapo haustahimili kisu,
Jiuzulu sasa mpwa wangu,
Hakika sasa mpwa wangu,
Hakika tutakusamehe, mwaka kesho unakuja.

Asubuhi ndio hiii,
Mama mtoto aamushwe,
Upweke ni uvundo,
Iwapo utatikisa kichwa.
Iwapo wewe ni mme,
Kabiliana na kisu kikali,
Hakika ni kikali!

Kweli ni kikali!
Wengi wasema ni kikali!
Fika huko uone ukali!
Mbuzi utapata,
Na hata shamba la mahindi,
Simama imara,
Usiende kwa wasiotahiri.

Maswali

a) Hili ni shairi la aina gani? Thibitisha **(al. 2)**
b) Tambua anayeimba na anayeimbiwa shairi hili **(al. 2)**
c) Toa ithibati kwenye shairi hili kuthibitisha kuwa msimulizi ana taasubi za kiume **(al. 2)**
d) Taja kwa kutolea mifano mbinu zozote nne za uandishi katika shairi hili **(al. 4)**
e) Taja shughuli zozote mbili za kiuchumi za jamii inayorejelewa katika shairi hili **(al. 2)**
f) Eleza mbinu alizotumia mshairi kutosheleza mahitaji ya kiuarudhi **(al. 4)**

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g) Msamiati ufuatao umetumika kwa maana gani katika shairi hili? **(al. 4)**

i) Mbari
ii) Msununu
iii) Ngariba
iv) Uvundo

SEHEMU E:

HADITHI FUPI

Harubu ya maisha *Paul Nganga Mutua*

"Naja. Nakamilisha shughuli ndogo hapa kisha nianze safari…"

(a) Weka dondoo hili katika muktadha wake **(al. 4)**

(b) Eleza sifa sita za msemaji wa kauli hii **(al. 6)**

(c)Jadili changamoto wanazokumbana nazo waajiriwa kwa kurejelea hadithi hii **(al. 10)**

……**HUU NDIO UKURASA WA MWISHO KUPIGWA CHAPA!**

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KCSE 2023 JOINT PREDICTION

SERIES 1

MATHEMATICS

121/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- ***a)*** *Write your name and your class in spaces provide*
- ***b)*** *The paper contains **two** sections. Section **I** and Section **II***
- ***c)*** *Answer all the questions in section **I** and any **five** questions from **section II**.*
- ***d)*** *Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.*
- ***e)*** *Marks may be given for correct working even if the answer is wrong.*
- ***f)*** *Non-programmable silent electronic calculators and KNEC Mathematical tables may be used except where stated otherwise.*

FOR EXAMINERS USE ONLY.

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

GRAND TOTAL

Question	17	18	19	20	21	22	23	24	TOTAL
Marks									

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SECTION A (50 marks)

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

1. Without using a calculator evaluate

$5x6 + (-76) \div 4 + 27 \div 3$

$(-5) \div 3 \times (-4)$ **(3mks)**

2. (a) Express 2268 in terms of its prime factors **(1mk)**

(b) Hence determine the smallest positive number x such that 2268x is a perfect square**. (2mks)**

3. Elvis arrived in Kenya with 5000 sterling pound, he exchanged it to Kenya Shilling and spent sh. 267 100. Before jetting out of the country, he exchanged the balance into Euros. Using the exchange rates below, calculate the amount he obtained in Euros in Kenya shillings. **(3mks)**

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Currency	**Buying**	**Selling**
1 Sterling pound	114.20	114.50
1Euro	101.20	101.30

4. Simplify the expression **(3mks)**

$$\frac{2x^2+3x-2}{x^3-4x}$$

5. When two wires of length 179m and 234m are divided into pieces of equal lengths a remainder of 3m is left in each case. Find the least number of pieces that can be obtained.

(3mks)

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6. Without using calculator, solve for n in the equation $1 - \left(\frac{1}{3}\right)^n = \frac{242}{243}$ **(3mks)**

7. Solve for y in the equation $\frac{7-y}{4} - \frac{9-2y}{3} = \frac{1}{2}$ **(3mks)**

8. Two similar solids have surface area of 48cm^2 and 108cm^2 respectively. Find the volume of the smaller solid if the bigger solid has a volume of 162 **cm^3** **(3 mks)**

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9. Use reciprocal table only to evaluate $\frac{1}{0.325}$ **(3mks)**

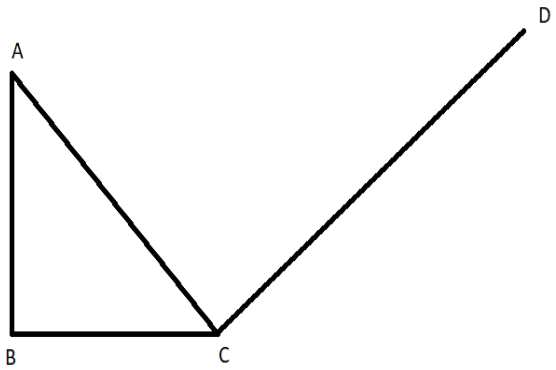
Hence, evaluate $\frac{\sqrt{0.25}}{0.325}$ to 1.d.p

10. A plot measuring 1.2m by 19.1 m is surrounded by a path 0.5m wide. Find the area of the path in square metres. **(3mks)**

11. The interior angle of a regular polygon is 60^0 more than its exterior angle, find the number of sides of the polygon. **(3mks)**

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12. **Complete** the following solid given that ABC is its cross-section **(3mks)**



13. If tan x = $\frac{1}{\sqrt{3}}$ find without using tables or calculator the value of

Sin (90-x)+ cos (90-x) leaving your answer in simplified surd **form** **(3mks)**

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14. A line perpendicular to the line 3y-2x=2 passes through the point (-3,2). Determine the equation of the line and write it in the form ax +by = c where a, b, and c are constant. **(3mks)**

15. Given that **A** = $\begin{pmatrix} 4 & 3 \\ -1 & -2 \end{pmatrix}$ and **C** = $\begin{pmatrix} 3 & 7 \\ -1 & -2 \end{pmatrix}$ **(4mks)**

Find **B** such that $\mathbf{A}^2 + \mathbf{B} = \mathbf{C}^{-1}$

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16. **Ali** travelled a distance of 5km from village A to village B in direction of $N60^0E$. He then changed direction and travelled a distance of 4km in the direction of 135^0 to village C.
Using a scale of 1cm to represent 1.0 km represent the information on an accurate diagram.

(2mks)

Using scale drawing (a) above determine

a) distance between A and C **(1mk)**

b) bearing of A from **C** **(1mk)**

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SECTION B (50mks)

Answer **only five** questions in this section, in the spaces provided below each question.

17. The table below shows marks obtained by 100 candidates at Highway secondary school in a Biology examination

Marks	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85-94
Frequency	6	14	24	14	x	10	6	4

a) Determine the value of **x** **(2mk)**

b) State the modal **class** **(1mk)**

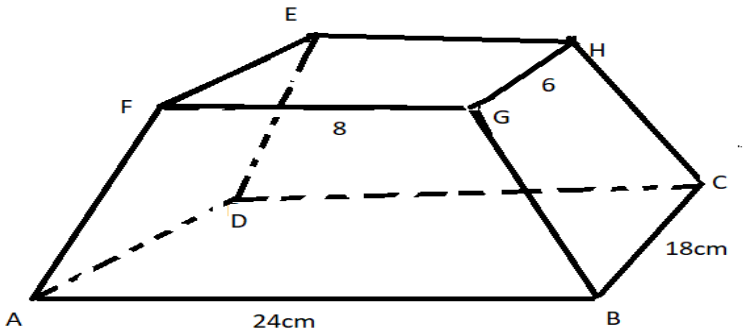
c) Calculate the median mark to 4 significant figures **(3mks)**

d) Using an assumed mean of 59.5 calculate the mean **mark** **(4mks)**

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18. The diagram below represents a frustum of a right pyramid with a rectangular base ABCD measuring 24cm by 18cm. the frustum was made by cutting off a small pyramid exactly 2/3 up the vertical height



The slant height of the original pyramid is 36cm. Calculate to 1 decimal place;

i) Vertical height of the original pyramid. **(3mks)**

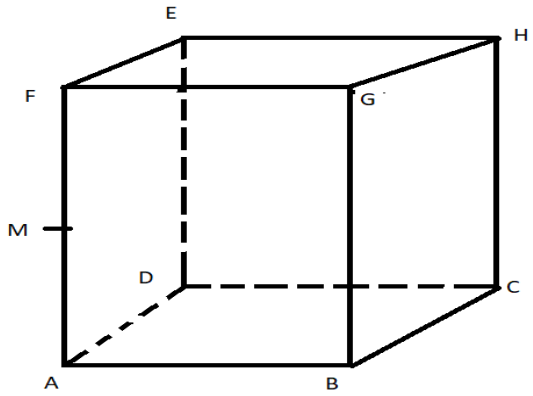
ii) Volume of the frustum. **(4mks)**

iii) Surface area of the original pyramid**.** **(3mks)**

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19. The figure below shows a cube of side 10cm. M is the midpoint of AF



Find;

a) Length HM **(4mks)**

b) The angle between HM and ABCD **(2 mks)**

c) Angle between HM and MC **(4mks)**

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20. (a) Complete the table below for $y= 3x^2+4x+6$ **(2mks)**

X	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
y											

(b) Using a trapezium rule with 5 strips determine the area enclosed by the curve $y= 3x^2 +4x+6$. The lines $x= 1$ and $x= 6$ and the x-axis. **(2mks)**

(c) Use mid-ordinate rule with 5 strips to determine the area under the curve $y= 3x^2+4x+6$ the lines $x= 1$, $x=6$ and x- axis. **(2mks)**

(d) Find the exact area enclosed by the curve $y= 3x^2+4x+6$ the lines $x= 1$, $x=6$ and x- axis. **(2mks)**

(e) Find percentage error in using trapezium rule. **(2mks)**

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21. a) Given that $\mathbf{A} = \begin{pmatrix} 3 & 4 \\ 2 & 3 \end{pmatrix}$ find inverse of **A** **(1mk)**

Two universities, TECK and KCT purchased beans and rice . TECK bought 90 bags of beans and 120 bags of rice for a total of sh 360 000 . KCT bought 200 bags of beans and 300 bags of rice for a total of sh 850 000. Use matrix method to find the price of one bag of each item . **(6marks)**

KCSE 23

C) The price of beans later decreased in the ratio 4: 5 while that of rice increased by 20 %. A businessman bought 20 bags of beans and 30 bags 0f rice. How much did he pay? **(3mks)**

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22. A commuter train moves from station A to D via B and C in that order, the distance from A to C via B is 70km and that of B to D via C is 88km. Between stations A and B the train travels at an average speed of 48km/h and it takes 15minutes. The average speed of the train between C and D is 45km/h. Find;

a) Distance between B and C **(2mks)**

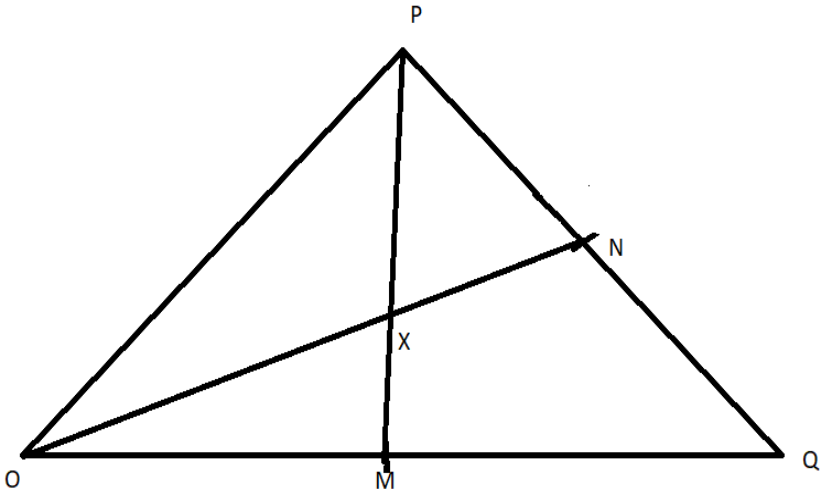
b) Time taken between C and D **(2mks)**

c) If the train halts at B for 3 minutes and at C for 4 minutes and average speed for the whole journey is 50km/h. Find its average speed between B and C. **(4mks)**

d) If the return journey was 54km/h how long did it take for the whole journey? **(2mks)**

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23. In a triangle OPQ, **OP** =**P** and **OQ**= **q** and that N is a point on PQ such that PN = $\frac{2}{3}$ PQ, M is the midpoint of OQ.



a) Find in terms of **p** and **q** the vecors

1) PQ **(1mk)**

2) PM **(1mk)**

(iii) **PN** **(1mk)**

(b) Given further that PX= nPM and OX -= mON where m and n are scalars and that x is a point of intersection of PM and ON.

Express OX in terms of;

P**, q** and m **(1mk)**

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P, q and n **(1mk)**

(c)Determine the values of m and n**.** **(5mks)**

(d) find ratio OX= ON **(1mk)**

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24. The floor of a rectangular room can be covered completely by a carpet costing sh. 200 per square metre. The total cost of the carpet would be sh. 5600. Taking the length of the room to be x m;

a) Express width of the room in terms of x **(2mks)**

b) If a uniform width of $\frac{1}{2}$ m is left uncovered all round. The cost is sh. 2000 less. Form and solve an equation to determine the value of x. **(5mks)**

c) Later it was decided that the floor left uncovered in (b) above should also be covered. However the cost of the carpet had then gone up by sh. 150 per square metre. Determine the cost in covering the previously uncovered region. **(3mks)**

THE END

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KCSE 2023 JOINT PREDICTION

SERIES 1

MATHEMATICS

121/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

a) *Write your name and your class in spaces provide*

b) *The paper contains two sections. Section I and Section II*

c) *Answer all the questions in section I and any five questions from section II.*

d) *Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.*

e) *Marks may be given for correct working even if the answer is wrong.*

f) *Non-programmable silent electronic calculators and KNEC Mathematical tables may be used except where stated otherwise.*

FOR EXAMINERS USE ONLY.

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

GRAND TOTAL

Question	17	18	19	20	21	22	23	24	TOTAL
Marks									

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SECTION 1 (50 MARKS)

Answer **all** questions in this section

1. Use logarithm tables to evaluate to 4 significant figures

$$90.35 + \left[\frac{1}{0.03506}\right]^{1/3}$$ **(4mks)**

2. Simplify $\frac{3}{2+\sqrt{2}} + \frac{4-\sqrt{2}}{2-\sqrt{2}}$. Write your answer in the form a+ b$\sqrt{C}$ **(3mks)**

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3. Expand $(p - 3q)^5$ **(1mks)**

hence state

i. Coefficient of p^4q **(1mks)**

ii. Fourth term in the expansion **(1mk)**

4. Make c the subject of the formula $b = \sqrt{k - ac}$, hence find the value of c when k= 1, a=4 and b= 2 **(3mk**

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5. Given that A= $\begin{bmatrix} 3x & x-36 \\ -6 & 2x-2 \end{bmatrix}$ Find value of *x* such that A is a singular matrix**.** **(3mks)**

6. **The** dimensions of a rectangle are 40cm and 45cm. If there is an error of 5 % in the dimensions find the percentage error in calculating area of the rectangle**.** **(3 mks)**

7. Solve the equation

$\text{Log}_2 (2 + 3x) + 3\log_2 2 = 2 + \log_2 (2x+6)$ **(3mks)**

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8. The cash price of a TV set is Ksh 13800. A customer opts to buy the set on hire purchase terms by paying a deposit of Ksh. 2280. If the simple interest of 20% p.a is charged on the balance and customer is required to pay 24 equal monthly instalments calculate the amount of each instalment. **(2mks)**

9. Chords PQ and RS intersect internally at point T. Given that PT = 3.2 cm, TQ= 4.7cm and TS = 5.2cm, find the length of chord RS. **(3mks**

=

10. On the line AB below show by shading the region R above the line such that

i. R is nearer A than B

ii. R is not more than 3.0 cm from **A** **(4mks)**

iii. $< ARB \geq 90^0$

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11. Determine the radius and centre of a circle whose equation is

$3x^2 + 3y^2 - 18x + 12y - 9 = 0$ **(3mks)**

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12. Grade A coffee costs sh.100 per kg while grade B costs sh150 per kg. Find the ratio in which the two grades should be mixed so that by selling the mixture at sh.147 per kg a 5% profit is realised. **(3mks)**

13. The following table shows income tax rates

Income Ksh per month	**Rate in ksh per every sh.20**
1-8400	2
8401-18000	3
18001-30000	4
Above 30000	5

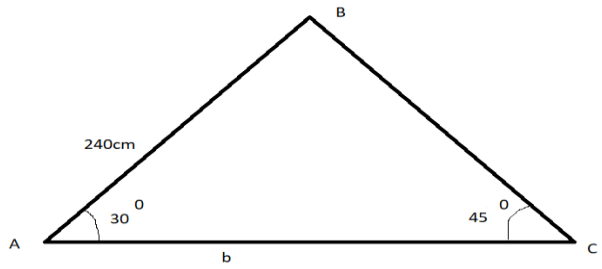
Mr Ngondu is a non-director of a company, he is housed freely therefore for purpose of taxation 15 % of his basic salary is added to his income to obtain a taxable income. He is also entitled to a family relief of sh. 1162 and his P.AY.E is sh. 3038. Determine his income. **(3 mks)**

'

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14. In a transformation, an object A of area $4cm^2$ is mapped into B of area $48cm^2$ by a transformation whose matrix is $\begin{pmatrix} y & 1 \\ 4 & 2 \end{pmatrix}$ determine possible values of y**.** **(3mks)**

15. The figure below shows a triangle ABC not drawn to scale. Calculate the length marked b given that AB= 240cm <BAC = 30^0 and <ACB =45^0 **(3mks)**

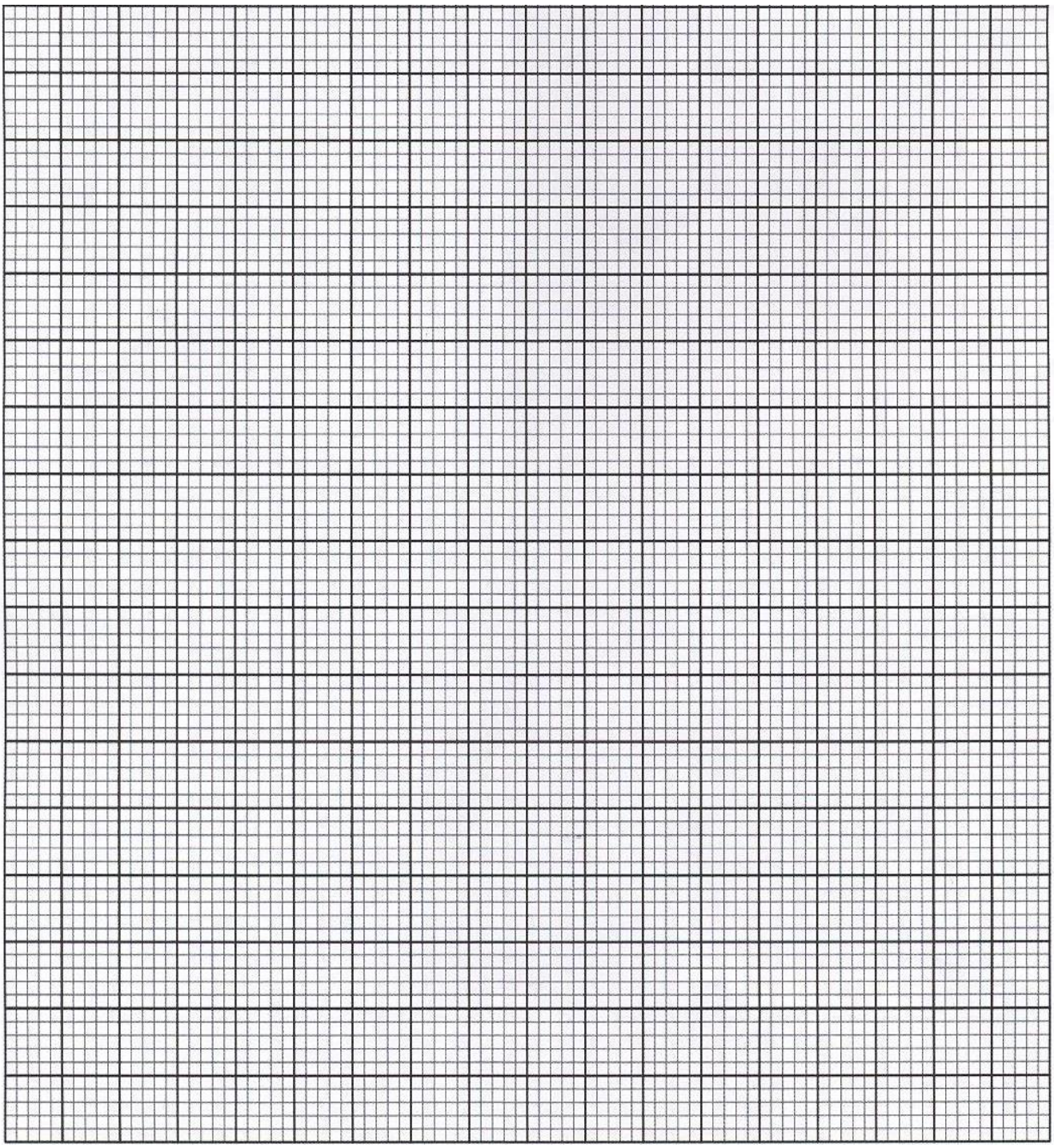


16. Two variables R and V are such that $R= kv^n$ where k and n are constants. The table below shows values of logR and logV to 2d.p.

Log V	0.48	0.60	0.70	0.78	0.85	0.90
Log R	1.43	1.68	1.88	2.03	2.16	2.28

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On the grid provided draw a graph of Log R against log V hence find value of **n** **(4 mks)**



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SECTION II (50 MARKS)

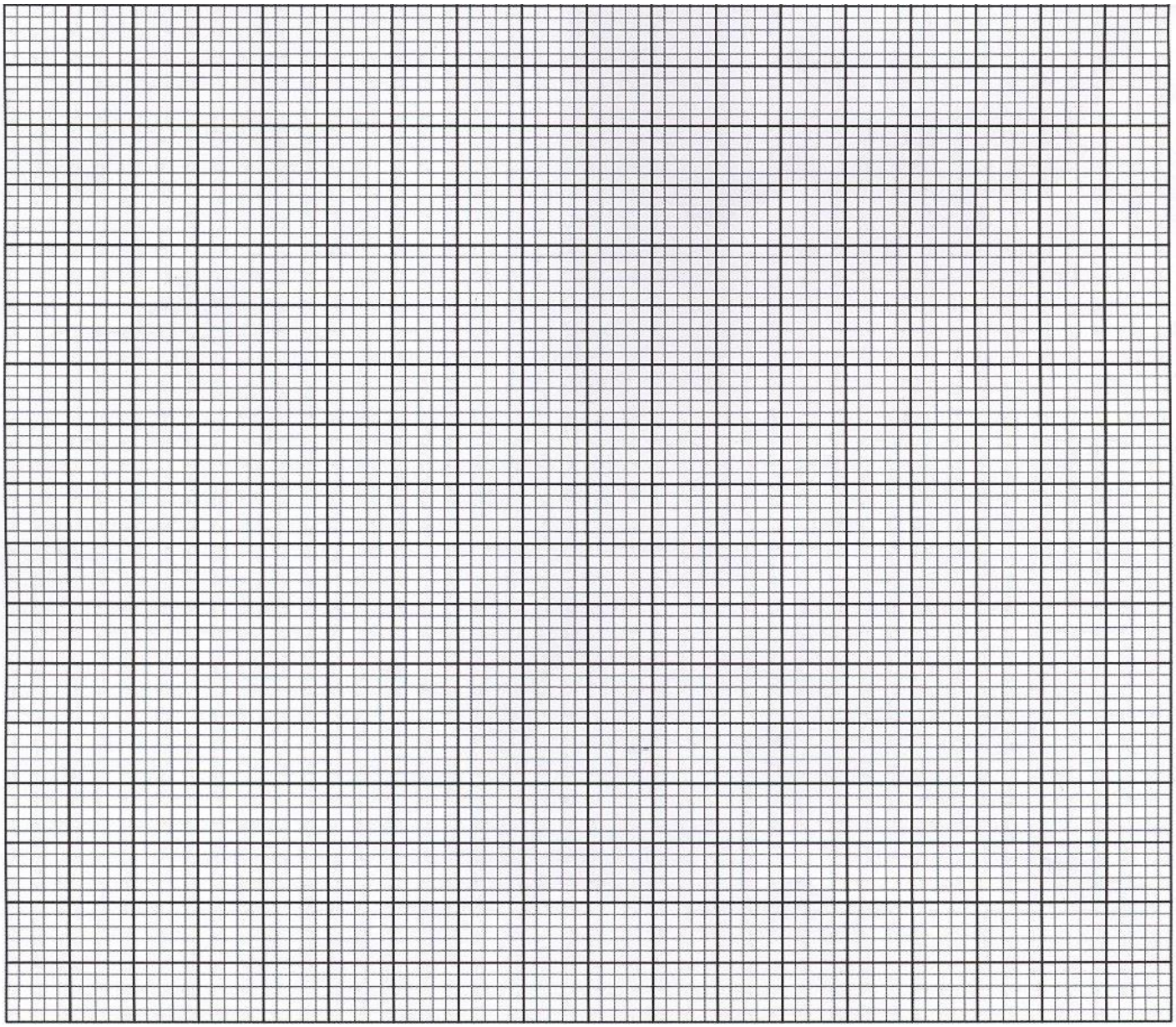
ANSWER ONLY *FIVE* QUESTIONS IN THIS SECTION

17. (a) Complete the table below for values of y for the curve

$Y= x^3-5x^2+2x+9$ for $-2\leq x \leq 5$ **(2mks)**

X	-2	-1.5	-1	0	1	2	3	4	5
y									

(b) Draw a graph of $y= x^3-5x^2+2x+9$ for $-2 \leq x \leq 5$ **(3mk**



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(c) Use your graph to solve the equations

$X^3-5x^2+2x+9 =0$ **(2mks)**

$X^3-5x^2+6x = -5$ **(3 mks)**

KCSE 23

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18. The cost Y of producing a number of items varies partly as X and partly inversely as X. To produce 2 items it costs sh. 135 and to produce 3 items it costs sh.140.

a) find Law connecting Y and X. **(5mks)**

b) Cost of producing 10 items. **(2mks)**

c) Number of items produced at a cost of sh.180 **(3mks)**

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19. The first, fourth and thirteenth terms of an AP correspond to the first three consecutive terms of an increasing Geometric progression.

Given that the first term of the AP is **a** and common difference is **d**

(a) Write down the first three terms of the GP in terms of **a** and **d**. **(1mk)**

(b) The sum of the third and eleventh terms of the AP is 30.

Calculate;

(i) The first term and common difference of the AP **(5mks)**

(ii) Common ratio of the GP **(2mks)**

(iii) Sum of the first 10 terms of the GP **(2mks)**

KCSE 23

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20. (a) Two towns on latitude 30^0 N are 3000km apart. Find the longitude difference of the two towns. (Take $\pi = \frac{22}{7}$ and radius of earth to be 6370km) **(2mks)**

(b) The position of the airport P and Q are P (60^0N, 45^0W) and Q (60^0N, K^{0}E)

It takes a plane 5 hrs to travel due East from P to Q at an average speed of 600 knots.

i) Calculate the value of K **(3mks)**

ii) The local time at P is 10.45 am when is the local time at Q when the plane reached there?**(3mks)**

(c) Calculate the shortest distance between A(30^0S, 36^0E) and B (30^0S, 144^0W) **(2mks)**

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21. The probability that Andrew goes to bed on time is $^{2}/_{3}$. If he goes to bed on time the probability that he wakes up early is $^{3}/_{5}$ otherwise it is $^{1}/_{7}$. If Andrew wakes up late, the probability that he will be punctual for class is $^{1}/_{4}$ otherwise its is $^{2}/_{7}$.

(a) Draw a tree diagram to represent above the information. **(2mks)**

(b) Determine the probability that;

a) He will wake up late **(2mks)**

b) He will wake up early and arrive in class late **(2mks)**

c) He will go to bed late but arrive class early **(2mks)**

d) He will be late for class. **(2mks)**

KCSE 23

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22. A shear parallel to x-axis (x-axis invariant) maps point (3,1) onto (5,1). If **S** is the transformation find the matrix that defines **S** **(3mks)**

(b) A transformation X maps points (1,3) and -2,3) onto (2,4) and (-3, -1) respectively.
Determine the matrix of transformation **(4mks)**

(c) Transformations R and **T** are represented by matrices $\begin{pmatrix} 2 & 1 \\ 0 & 2 \end{pmatrix}$ and $\begin{pmatrix} 3 & 0 \\ 1 & 3 \end{pmatrix}$ respectively, point P has coordinates (3,-2)
Find coordinates of **RT**(P) **(3mks)**

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23. A transport company runs a fleet of two types of buses operating between Meru and Nairobi.

Coach buses and Minibuses. A coach bus carries 52 passengers and 200kg of luggage while a minibus carries 32 passengers and 300kg of luggage. On one Saturday, there were 500 passengers with 3500 kg of luggage to be transported, the company could only use a maximum of 15 buses all together.

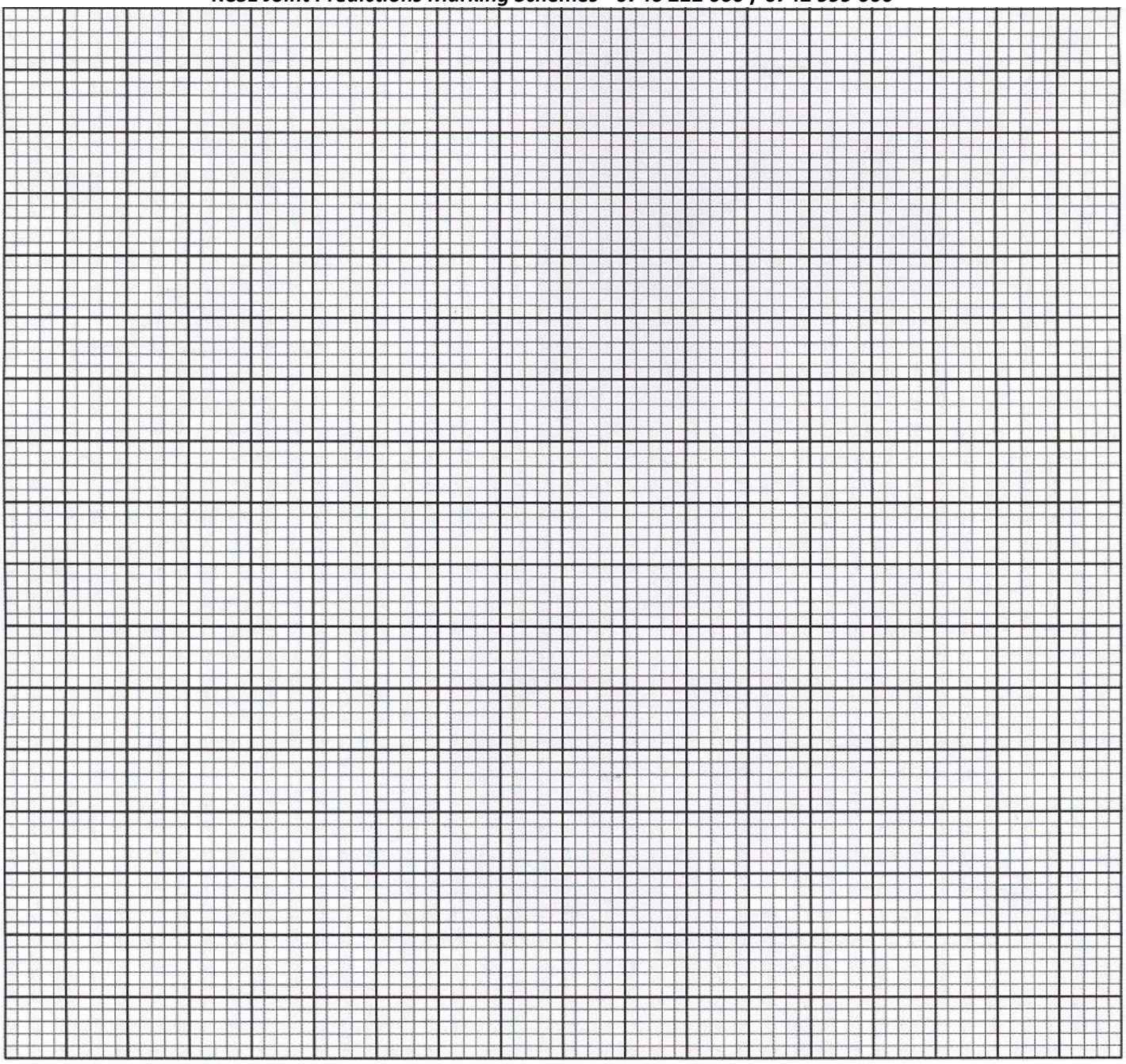
(a) if the company uses x coach buses and y minibuses write down all inequalities that satisfy the given conditions. **(4mks)**

KCSE 23

(b) Represent the inequalities graphically in the grid provide

(use a scale of 1cm to represent 1 unit**)** **(3mks)**

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(c) if the cost of running one coach bus is sh.7200 and that of running one minibus is sh. 6000 use the graph above to determine the minimum cost of running the vehicles **(3 mks)**

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24. The velocity of a particle after **t** seconds is given by $\mathbf{V= t^2 – 4t+4.}$

(a) Find displacement of the particles during the third second **(4mks)**

(b) Determine the time when the particle is momentarily at rest **(3mks)**

(c) The acceleration of the particle after 2 seconds **(3mks)**

THE END

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KCSE 2023 JOINT PREDICTION

SERIES 1

COMPUTER STUDIES

451/1

PAPER 1 (THEORY)

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

Instructions to Candidates

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

ii) *This Paper consists of two sections **A** and **B**.*

iii) *Answer **ALL** the questions in section **A**.*

iv) *Answer **question 16 (compulsory)** and any other **THREE** questions from section **B**.*

v) ***All** answers should be written in the spaces provided.*

FOR EXAMINER'S USE ONLY

Section	Questions	Candidate's score
A	1- 15	
B	16	
	17	
	18	
	19	
	20	
	TOTAL SCORE	

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SECTION A (40 Marks)

Answer all questions in this section

1) For each of the following computer generations, state the technology used to control the internal operations. **(2marks)**

a) 1st generation:

……

b) 2nd generation:

……

c) 3rd generation:

……

iv) 4th generation:

……

2) State **three** ways in which computers have been used to fight the spread of corona virus in Kenya. **(3marks)**

……

……

……

3) Define two types of booting in computer. **(2 marks)**

……

……

……

……

4) Explain the term **"log on"** as applied in internet **(2marks)**

……

……

……

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5) a) What is disk formatting? **(1mark)**

……

……

b) State **two** reasons for disk formatting **(2 marks)**

……

……

6) State a stage in system development life cycle where each of the following activities are carried out:

a) identifying the technologies that may be used in a proposed system; **(1 mark)**

……

b) identifying shortcomings of a system; **(1 mark)**

……

c) Preparing a system for migration plan. **(1 mark)**

……

7) State **three** reasons why an organisation may opt to develop its own software in-house rather than buy off-the-shelf software. **(3 marks)**

……

……

……

8) A particular computer stores numbers in a single 8-bit word. How would it represent? $\mathbf{0.3125_{10}}$ **(3marks)**

……

……

……

……

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9) A computer technician found it necessary to disable a firewall when working on a computer system.

(a) What is a firewall? **(1mark)**

……

……

(b) State **two** reasons that may have necessitated disabling of the firewall**.** **(2marks)**

……

……

……

……

10)Differentiate between absolute cell references and relative cell references as applied to spreadsheets. **(2 Marks*)***

……

……

……

……

.

11) Mwanzo Micro finance organization has offices in Kericho and Nairobi connected into a network. The management is convinced that someone is illegally gaining access to the data in their computers. State **three** ways the company can overcome this problem. **(3marks)**

……

……

……

……

……

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12) The following worksheet represents the number of litres of milk produced by different cows' species at Kajiado Ranch Ltd.

s/no	A	B	C	D	E
1	**Month**	**Friesian**	**Ayrshire**	**Guernsey**	
2	Jan	70	80	65	
3	Feb	120	62	75	
4	Mar	110	65	45	
5	Apr	70	45	60	
6					

The cost of each litre of milk is **Kshs.30/=.** This amount is typed in cell **B10**

1) Write a **function** that will calculate the total number of liters of Friesian in all the months.

(1mark)

……

……

2) Write a **formula** that can be typed in cell **E2** and then be copied down to obtain monthly sales of milk. **(1mark)**

……

……

(a) **Identify** the data type in cell **C1** and cell **D3** **(1mark)**

……

13). State **three** main types of looping control structures as used in **programming.** **(3 marks)**

……

……

……

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14)A school intends to install wireless media in their communication system.

a) State any **two** types of wireless communication media. *(1mark)*

……

……

b) Give **two** advantages of this mode of communication media. ***(2marks)***

……

……

15) State the functions of the following keys on the computer keyboard:

(a) Backspace (1 mark)

……

……

(b) Tab key (1 mark)

……

……

SECTION B (60 MARKS)

*Answer **question 16** and any other **THREE** questions from this section in the spaces provided*

16)(a) What is meant by each of the following terms as used in programming. **(3marks)**

(i) Pseudocode

(ii) Flowchart

(iii) Dry run

(III) Outline **two** disadvantages of low level programming languages. **(2marks)**

(IV) Differentiate between compilers and interpreters as used in programming. **(2marks)**

(V) A trader bought a car from a manufacturer and later sold it to another person. Write a pseudocode for a program that will accept the buying price and the selling price of the car, determine whether the trader made a profit /or loss, calculate the profit/loss and display it. **(4marks)**

(VI) Draw a flowchart for the above pseudocode **(4marks)**

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17)(a) State **three** limitations of traditional filing methods **(3marks)**

(b) Below are two table structures of files in a database.

TABLE A

FIELD	DATA TYPE
Employee name	Text
Employee number	Auto number
DOB	Date/time
Address	Text

TABLE B

FIELD	DATA TYPE
Employee no.	Number
Date employed	Date/time
Department	Text
Salary	Currency

i) Which of the **two** tables is likely to be the parent table **(1mark)**

ii) It is advisable to **'enforce referential integrity'** when creating a relationships. What do you understand by the term referential integrity? **(2marks)**

iii) The field **'Employee no'** in **TABLE B** is likely to be the foreign key. What is a foreign key? **(2marks)**

iv) Which fields in both tables is most appropriate for creating **relationship?** **(1mark)**

v) What would make the relationship between the tables fail to work? **(2marks)**

c) In databases the field properties specify finer details related to the fields and the table entries expected. State **four** field properties in database. **(4marks)**

18) (a) Describe any **two** characteristics octal number system. **(2marks)**

(b) Convert each of the following to the number system indicated:

i) 111.101_2 to decimal **(3marks)**

ii) 14.6875_{10} to binary **(4marks)**

3) Convert the number -17_{10} into 8-bit:

i.signed magnitude representation **(2marks)**

ii.two's complement **(2marks)**

d) Perform the arithmetic operation.

$110.11_2 + 11.011_2$ **(2marks)**

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19)a) distinguish between Computer Aided Instructions (CAI) and Computer Aided Learning(CAL) (4marks)

(b) i) State **four** activities that may be carried out when disposing off an old system in an organization. **(4 marks)**

ii) State **four** ways of getting user specifications during system design**.** **(4 marks)**

(c) State any **three** reasons why people may resist the introduction of computers at their place of work **(3 marks)**

20)a) State the role of each of the following data communication devices:

i) repeater; **(1mark)**

ii) router. **(1mark)**

3) Figure 3 shows a network based on the bus topology

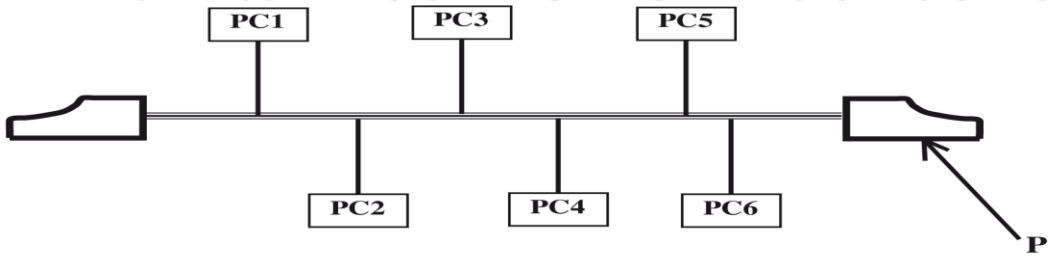


Figure 3

- Identify the component labelled p **(1mark)**
- State the function of component labelled p **(2marks)**

4) Students of Neema secondary school formed an environmental club with a goal of taking part in environmental conservation activities. Outline **three** ways in which they can use the internet to achieve this goal. (3marks)

5) i) A company has three branches A, B and C where A is the headquarter. The local area network (LAN) is directly connected to LAN at B and directly to the LAN at C. Explain **two** benefits of having the LAN at B also directly connected to the LAN at C. **(4marks)**

e) List three ways by which parents can protect their children from accessing inappropriate content from the internet**.** **(3 marks)**

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KCSE 2023 JOINT PREDICTION

SERIES 1

COMPUTER STUDIES

451/2

PAPER 2 (PRACTICAL)

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

Instructions to candidates

a) Type your Name and Index No at the top right hand corner of each printout.
b) Write your **Name** and **Index No** on the **CD**
c) Write the Name and version of software used in each question on the answer sheet
d) Passwords should not be used
e) Answer **ALL** the questions
f) All answers must be saved in a **CD**
g) Make printouts of the answers

QUESTION	MARKS
QN1	
QN2	
TOTAL	

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QUESTION ONE

Tip Top consultants has shortlisted candidates for an interview for various positions in their organization. The following is a standard letter for each of the candidates to be interviewed.

The information enclosed in << >> represents details about recipients, position, date and time of the interview.

g) Using a word processor, type the documents as it appears and save it as **letterMain (16 marks)**

Tip Top consultants

Top Human Resources Consultants

P.O. Box 456, Tel: 03221345

Nairobi. Email:info@tiptop.co.ke

Monday, 11 April 2015.

<< First Name >> << Second Name >>,

P.O. Box << Adress>>,

<< Town >>.

Dear<<Title>> << Second Name>>,

RE: INVITATION FOR AN INTERVIEW

Following your application for the position of << Position >>, I am glad to inform you that you have been shortlisted. You will be required to report for an interview on <<Date>> at <<Time>>. You are required to bring the following documents with you.

(iv) Identity card

(v) Original certificates

(vi) Two passport size photographs

(vii) A reference letter

We are looking forward to seeing you.

Yours faithfully,

Pascal Sasha

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Consulting partner

h) Insert the following as a footer:

Vision: "To *be a leader in the provision of quality Human Resource for development*"

(2 marks)

i) Create the logo in Figure 1 and position it below the statement 'Top Human Resources Consultants'. (6 marks)

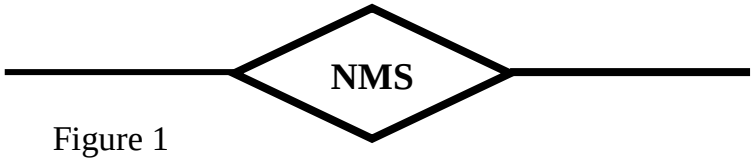


Figure 1

j) Table 1 shows details about shortlisted candidates. Create a data source to store information in the table and save it as **ListFile**. (11 marks)

Title	First Name	Second Name	Address	Town	Position	Date	Time
Miss	Anyango	Patricia	3656	Kisumu	ICT Assistant	6th Dec	11:30 am
Ms	Caroline	Kandai	3456	Kajiado	Accountant	6th Dec	12:30 pm
Mr	Zachary	Esokon	123	Lodwar	ICT Assistant	7th Dec	1:30 pm
Mrs	Susan	Chemutai	721	Kericho	Accountant	7th Dec	2:30 pm
Mr	Jilo	Buya	222	Mombasa	Accountant	8th Dec	12:00 pm
Mr	Sospeter	Kamau	912	Kiambu	Accountant	9th Dec	12:30 pm

Table 1

k) Using mail merge feature, merge the files **letterMain** and **ListFile** and save the document as **Merged Document.** **(5 marks)**

l) Insert page numbers at the top right hand sight in the merged document saved in (e) above

(2 marks)

m) Using **listfile** as a data source, create a list of addresses to be printed on envelops as shown in figure 2 and save it as **envelopes.**

(4marks)

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<< Title>> << First Name>> << Second Name>> ,

P.O. Box <<Address>>,

<<Town>>.

Figure 2

n) Print the following: (4marks)

1. Lettermain

2. Listfile

3. Page 5 of the merged document

4. Addresses to be printed on the first envelope.

QUESTION TWO

Company XYZ sells products P, Q and R. figure 3 shows an extract of a spreadsheet for the company's salespersons and their respective sales in shillings for each product.

	A	B	C	D	E	F	G	H
1	**SALES PERSON**	**PRODUCT P**	**PRODUCT Q**	**PRODUCT R**	**TOTAL SALES**	**POINTS**	**CATEGORY**	**TOTAL PAY**
2	Clifford	4,000.00	6,230.00	7,500.00				
3	Kamau	4,500.00	6,700.00	8,000.00				
4	Shantel	5,678.00	10,000.00	7,800.00				
5	Melinda	3,200.00	4,000.00	9,600.00				
6	Kipkoech	8,000.00	7,005.00	8,900.00				
7	Wekesa	9,800.00	9,670.00	10,000.00				
8	Anyango	2,700.00	3,400.00	2,300.00				
9	TOTAL							

Figure 3

iii) i) Using a spreadsheet package, enter the above information and save it as **SALES-TABLE**

(9 marks)

ii) Format the worksheet to appear as it is. **(4 marks)**

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iv) i) type a formula:

13. at cell B9 to compute the total sales for product P; **(1 mark)**

14. at cell E2 to compute total sales for Clifford. **(1 mark)**

ii) Apply the formulae to the appropriate cells. **(2 marks)**

v) A salesperson earns points for the sale of each product based on the following criteria;

f) 1 point for every shs 50 for product P,

g) 2 points for every shs 65 for product Q,

h) 3 points for every shs 40 for product R,

d) Type a formula in cell F2 to compute the total points earned by Clifford; **(3 marks)**

e) Apply the formula in(c) (i) to the rest of the persons. **(1 mark)**

vi) A salesperson is categorized based on points earned as follows.

POINTS RANGE	CATEGORY
Over 1300	Gold
1101-1300	Silver
Up to 1100	Bronze

Those salespersons attaining a Gold category earn a promotion

a) Type a formula in G4 to determine Shantel's category. **(5 marks)**

b) Apply the formula in (d) (i) to other appropriate cells. **(1 mark)**

c) Type a formula in G10 to determine the number of salespersons who will earn a promotion. **(4marks)**

vii) Each salesperson earns a total pay of shs 20,000 plus 2% commission of their total sales. Using absolute referencing, determine the total pay for each salesperson if value 2 is entered in cell B12. (**5 marks)**

viii) Create a bar chart showing product P and product R sales for each salesperson. Insert appropriate labels on the chart. **(9 marks)**

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ix) Rename the worksheet containing the data as **salesData** and the chart sheet as **salesChart.**

(2 marks)

x) Print the following: **(3 marks)**

k) SalesData;

l) SalesData showing the formula;

m) SalesChart

This is the last printed page

KCSE 23

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KCSE 2023 JOINT PREDICTION

SERIES 1

HOME SCIENCE

441/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES:

- *Write your **name** and **index number** in the spaces provided.*
- *This paper consists of three section **A,B** and **C***
- *Answer **all** the questions in section **A** and **B***
- *Answer any **two** questions in section **C.***
- *Answers should be written in the spaces provided in this booklet.*

For Examiner's Use Only:

QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
1-15	40	
16	20	
17	20	
18	20	
19	20	
Total	**100**	

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SECTION A (40 marks)

Answer all the questions in this section.

1. Mention two methods of preserving fruits when in season. **(2mrks)**

……

……

2. List three natural means of ventilating a room. **(3mrks)**

……

……

……

3. State two points to remember about clothing when caring for the sick at home. **(2mrks)**

……

……

4. Mention three examples of fans. **(3mrks)**

……

……

……

5. Mention three points on how to ensure safety when storing paraffin. **(3mrks)**

……

……

……

6. List three factors to consider when buying a gas cylinder. **(3mrks)**

……

……

……

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7. Give three reasons why the wall paper is becoming popular. **(3mrks)**

……

……

……

8. State two reasons for using floor coverings in a house. **(2mrks)**

……

……

9. List the stages involved in bottling as a method of preservation. **(2 ½ mrks)**

……

……

……

……

……

10. List two importance of blanching vegetables before preservation. **(2mrks)**

……

……

11. Define case goods and give an example. **(½ mrk)**

……

……

12. List four tertiary colours. **(2mrks)**

……

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……

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13. List four common dehydrated foods which are used as the main ingredients in a dish. **(4mrks)**

……

……

……

……

14. Mention three reasons for wrapping food before storing in the refrigerator. **(3mrks)**

……

……

……

15. Give three reasons for cooling foods before storing in a refrigerator. **(3mrks)**

……

……

……

SECTION B: COMPULSORY (20 MARKS)

Answer all the questions in this section.

16. You are planning to go for a picnic.

(a) Giving reasons outline the procedure you would use to thoroughly clean a synthetic bag. **(8mrks)**

(b) Outline the steps to follow when laundering the woolen sweater you will wear. **(12mrks)**

SECTION C (40 MARKS)

Answer any two questions in this section.

17. (a) State reasons why a consumer needs to be protected. **(6mrks)**

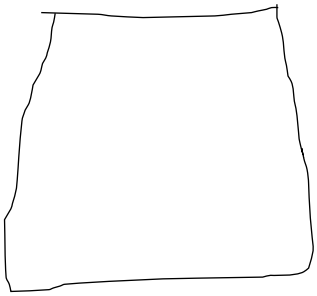
(b) Mention six reasons that has popularized the use of convenience foods. **(6mrks)**

(c) Discuss four problems related to breast feeding. **(8mrks)**

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18. (a) List six qualities of a well-made collar. **(6mrks)**

(b)Use the sketch of a skirt below to answer the questions that follow:



(i) State six methods of disposing fullness in the skirt sketch shown above. **(2mrks)**

(ii) Apart from the disposal of fullness symbols, indicate three pattern markings on the sketch above. **(3mrks)**

(c) Explain four finishing processes carried out during laundry. **(8mrks)**

19. (a) Explain three causes of malnutrition when sick. **(6mrks)**

(b)Explain six points on the importance of budgeting. **(6mrks)**

(c) Mention eight points to look for when choosing a toy for a child. **(8mrks)**

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KCSE 2023 JOINT PREDICTION

SERIES 1

HOME SCIENCE

441/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

441/2 HOME SCIENCE

(CLOTHING & TEXTILE CONSTRUCTION)

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A pattern of a child's dress is provided. You are advised to study the sketches, instructions and the layout well before you begin the test.

MATERIALS PROVIDED:

1. Pattern pieces for the dress:
A – Dress front
B – Dress back
C – Sleeve
D – Cuff
E – Pocket
F – Cuff interfacing
G – Sleeve opening binding
1. Plain light weight cotton fabric 70cm long by 90cm wide.
2. Cotton sewing thread to match the fabric.

THE TEST:

Using the materials provided cut out and make the LEFT HALF of the child's dress to show the following:

(a) The working of the shoulder dart.

(b) The preparation and attachment of the pocket.

(c) The joining of the shoulder seam using a neatened plain seam.

(d) The joining of the side seam using a neatened open seam.

(e) The making of the bound opening of the sleeve.

(f) The joining of the under arm seam using a French seam.

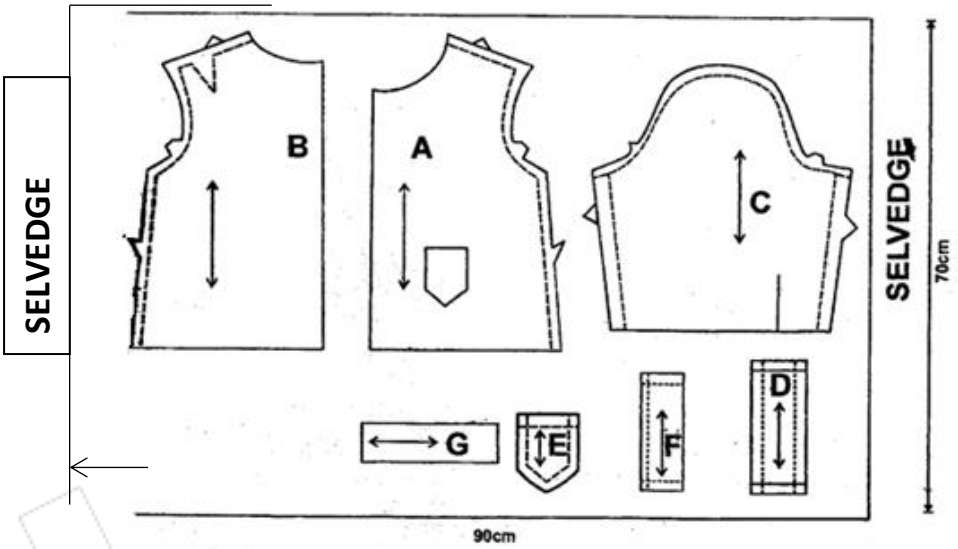
(g) The preparation and attachment of an interfaced cuff.

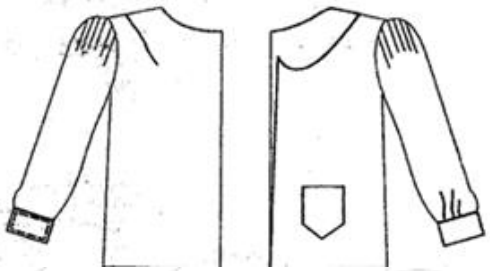
(h) The preparation and attachment of the sleeve, without trimming the seam allowance.

At the end of the examination, firmly sew onto your work, on a single fabric, a label bearing your name and index number. Remove the needles and pins from your work, and then fold your work neatly.

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THE LAYOUT IS NOT DRAWN TO SCALE





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KCSE 2023 JOINT PREDICTION

SERIES 1

HOME SCIENCE

441/3

PAPER 3

TIME: 1¾ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

PLANNING SESSION: 30 MINUTES

PRACTICAL TEST SESSION: 1¼HOURS

INSTRUCTIONS TO CANDIDATES:

- Read the test carefully
- Text books and recipes may be used during the planning session as reference material. You will be expected to keep to your order of work during the practical session.
- You are allowed to take away only your reference materials at the end of the planning session. You are not allowed to bring additional notes to the practical session.

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THE TEST

Your uncle is a manual labourer in a nearby quarry. Due to his busy work schedule in the quarry, you will be responsible for his meals. Therefore you will be expected to prepare, cook and serve him and yourself a one course meal to include a refreshing drink that you will take using ALL the ingredients provided below:

Ingredients:

- Chicken/beef/green grams
- Wheat flour/ green bananas/ Irish potatoes/ Nduma
- Kales/ cabbage
- Fat/ oil
- Onions
- Tomatoes
- Royco/ beef stock/ chicken stock
- Carrots
- Sugar
- Fruits in season

PLANNING SESSION:

Write the lists of the tasks to be performed on separate sheets of paper in duplicate copies using a carbon paper.

1. Identify the dishes and write down their recipes.
2. Write down the order of work.
3. Make a list of the food, materials and equipment needed for the task.

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KCSE 2023 JOINT PREDICTION

SERIES 1

ISLAMIC RELIGIOUS EDUCATION

314/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- *Write your name and admission number in the spaces provided above.*
- *This paper consists of six questions.*
- *Answer any **FIVE** questions in the answer sheet provided*
- *Each Question carries 20 marks*

FOR EXAMINERS USE ONLY

Questions No.	1	2	3	4	5	6	GRAND TOTAL
Marks							

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*Answer any **FIVE** questions*

1 a) *Highlight* **six** lesson derived from suratul An-Nasr **(6marks)**

b) *What* are the results of compiling Quran in one volume? **(6marks)**

c) *Explain* the modern ways adapted in teaching the Quran **(8marks)**

2 a) *Explain* the difference between Abubakar's Mashaf and Uthman's Mashaf **(8marks)**

b) *Explain* the significance of reciting Ayatul Kursy Q2:255 **(6marks)**

c) *Show* **six** similar themes found in Suratul Hujrat Q49 and Suratul Nur Q. 24 **(6marks)**

3 a) *Enumerate* **five** shia collections of Hadith **(5marks)**

b) **Give** reasons why the fourth period of Hadith collection is regarded as golden age **(8marks)**

c) The holy Prophet (S.A.W) said, "Looking for lawful earning is an obligatory act next to the obligatory worship" in reference to the above hadith, how can Muslims eradicate poverty. **(7marks)**

4 a) ***Discuss*** the relevance of punishment according to Sharia law. **(8marks)**

b) *Describe* **six** factors that led the emergence of schools of thought. **(6marks)**

c) *Mention* **six** obligatory rites main activities of *Haj* **(6marks)**

5 a) ***Discuss*** the relevance of the *sunnah* acts observed during the month of Ramadhan. **(7marks)**

b) *Highlight* ***five*** ways of asking for *tawbah* (forgiveness) **(5marks**

c) *Discuss* the challenges of zakat collection in Kenya **(8marks)**

6 a) ***Give*** the rational of forbidding Shirk in Islam. **(6marks)**

b) *Discuss* the relevance of the belief in Qadar. **(8marks)**

c) *Explain six* characteristics of the revealed books of Allah (sw) **(6marks)**

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KCSE 2023 JOINT PREDICTION

SERIES 1

ISLAMIC RELIGIOUS EDUCATION

314/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- *Write your name and admission number in the spaces provided above.*
- *This paper consists of six questions.*
- *Answer any **FIVE** questions in the answer sheet provided*
- *Each Question carries 20 marks*

FOR EXAMINERS USE ONLY

Questions No.	1	2	3	4	5	6	GRAND TOTAL
Marks							

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*Answer any **FIVE** questions*

1) a) *Discuss* the importance of marriage in Islam**.** **(6marks)**

b) *Outline* **six** Islamic teaching on an ideal Muslim home. **(6marks)**

c) *Why* is it important for Muslims to conserve the environment? **(8marks)**

2) a) *State* the Islamic rule governing the treatment of employees**.** **(6marks)**

b) *Outline* the rationale for eddat**.** **(6marks)**

c) *Discuss* impact of Talaq (divorce) on **children** **(8marks)**

3) a) *Mention* the Islamic manners of eating. **(5marks)**

b) *Identify* **five** legal ways of earning in Islam. **(5marks)**

c) *Discuss* the rights of a woman in Islam. **(10marks)**

4) a) *State* the importance of the battles of Hunain**.** **(8marks)**

b) *Give* **five** lessons Muslims can learn from the treaty of hudaibiya**.** **(5marks)**

c) *Discuss* the religious conditions of Pre-islamic Arabia**.** **(7marks)**

5) a) *Explain* **five** the factors that led to the spread of Islam in Mumias. **(10marks)**

b) *Assess* the achievements of the Abbassids to education. **(10marks)**

6) a) What were the views of Ib Khaldun on politics**?** **(10marks)**

b) *Explain* the reasons for the decline of the Fatimid Dynasty. **(10marks)**

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THE END

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