# 2022 DECEMBER FORM 4

# KCSE PREDICTION 3 EXAMS

'an investment of knowledge pays'

They have been well prepared by top experienced examiners in regard to 2022 December KCSE

# (PREDICTION 3)

For marking schemes and other similar resources,Call/WhatsApp ;

# 0746 711 892

**N/B:Due to high costs incured While coming up with this and other similar resources, Marking schemes are mot free of charge**

**Questions are free of charge**

# The following subjects have been tested;

1.Agriculture 2.Biology 3.Business 4.Chemistry 5.Computer
6.CRE 7.English 8.Geography 9.History 10.Homescience
11.Kiswahili 12.Mathematics 13.Physics

# Other available resources are;

- F1–F4 termly exams
- KCSE past papers
- KCPE past papers
- Mocks
- Primary a nd secondary well summarised notes
- Lesson plans
- Schemes of work
- Setbook guides,videos and their respective questions

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## AGRICULTURE PAPER 1

## *Kenya Certificate of Secondary Exams*

## TIME:2HRS

### INSTRUCTIONS TO CANDIDATES

1. *Write your name, index number and class in the spaces provided above.*
2. *This paper consists of **THREE SECTIONS, A, B** and **C.***
3. *Answer all questions in sections **A** and **B** and two questions in section **C.***
4. *All your answers must be written in the spaces provided in this question paper.*

### FOR EXAMINERS USE ONLY

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

# 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

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**b)**Over sowing

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**c)**Ammonification

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

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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)**

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**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)**

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**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)**

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

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

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## 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**

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**B**

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

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**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)**

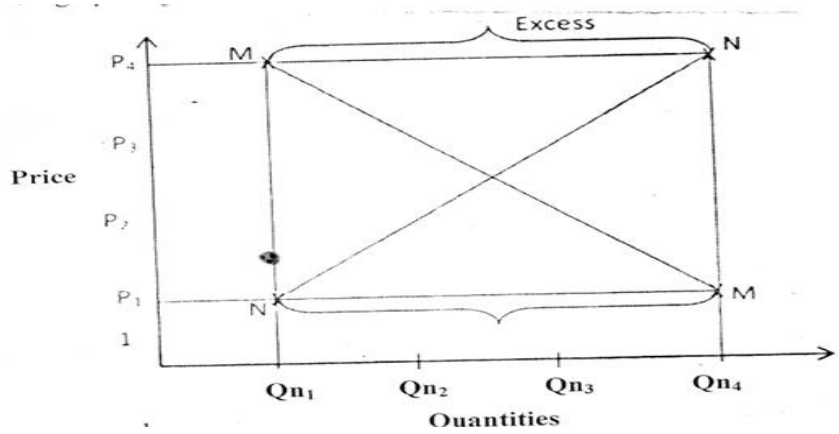
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**14**.Below is a graph showing the relationship between supply and demand in price determination.




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

**M**

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**N**

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

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**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)**

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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)**

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## 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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**NAME……ADM NO……**

**SCHOOL……..……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## AGRICULTURE PAPER 2

## *Kenya Certificate of Secondary Exams*

## TIME:2HRS

## INSTRUCTIONS TO CANDIDATES:

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

## For Examiner's Use Only

| SECTION | QUESTIONS | MAXIMUM SCORE | CANDIDATES SCORE |
|---|---|---|---|
| A | 1-18 | 30 | |
| B | 19-22 | 20 | |
| C | | 20<br>20 | |
| | **TOTAL** | **90** | |

# SECTION A : 30 MARKS

*Answer **all** questions in this section*

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

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**2.** Why is it necessary to have guard rails in a farrowing pen? **(1 mark)**

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**3**. Give ***two*** reasons for having a footbath in a cattle dip. **(1 mark)**

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**4.** Distinguish between crutching and ringing in sheep management**.** **(2 marks)**

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**5.** State ***four*** signs that indicate that a doe is about to kindle. **(2 marks)**

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**6**. Name ***two*** developmental stages of a liverfluke *(Fasciola sp.)* which occur in the fresh water snail *(Limnaea sp).* **(1 mark)**

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**7.** State ***four*** uses of a spring tine harrow**.** **(2 marks)**

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**8.** .State ***four*** signs of mite attack in poultry. **(2 marks)**

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**9.** State ***three*** advantages of natural feeding in calf rearing. **(1½ marks)**

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**10.** Give ***three*** ways in which infectious diseases can spread from one livestock to another within a farm. **(1½ marks)**

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**11.** State ***four*** reasons for castration in pig production. **(2 marks)**

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**12.** State ***four*** characteristics of roughage livestock feeds. **(2 marks)**

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**13**. State ***two*** functions of the crop in poultry digestive system. **(1 mark)**

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**14.** State ***four*** roles of worker bees in a colony. **(2 marks)**

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**15.** Give ***four*** reasons for controlling livestock diseases. **(2 marks)**

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**16.** State ***three*** ways of caponisation in poultry. **($1\frac{1}{2}$ marks)**

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**17.** State ***four*** advantages of using animals instead of tractors as a source of power on the farm. **(2 marks)**

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**18 .** Name ***one*** livestock disease that is transmitted by each of the following parasites:

**(a)** blue ticks; **(½ marks)**

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**(b)** Brown ear ticks; **(½ marks)**

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**(c)**tsetse flies. **(½ marks)**

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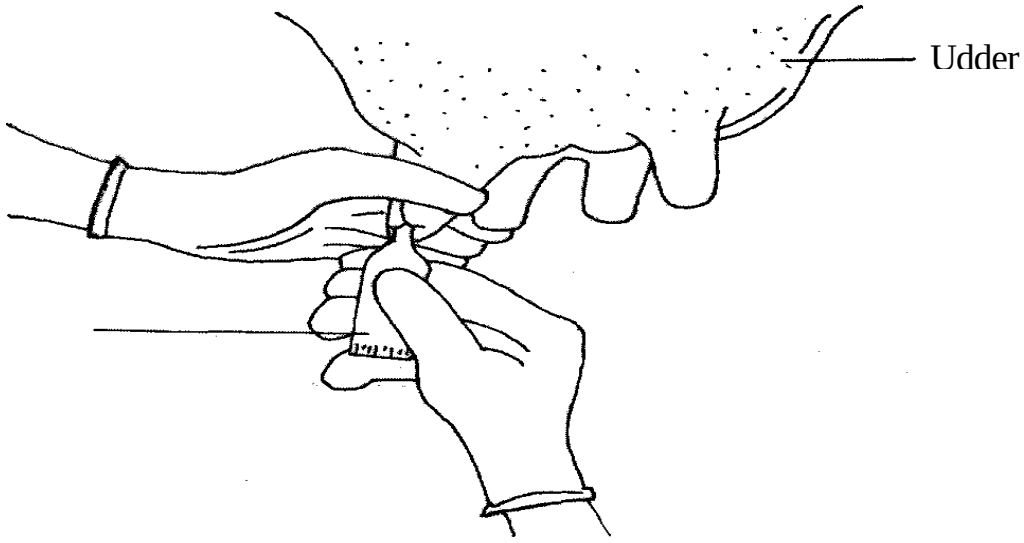
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## ***SECTION B: 20 MARKS***

### ***Answer all questions***

19.The illustration below shows a practice carried out to prevent mastitis infection in a dairy cow.




**(a)** Identify the practice. **(1 marks)**

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**(b)** At what stage is the practice carried out? **(1 marks)**

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**(c)**State ***two*** other practices that are carried out on the udder to prevent mastitis infection. **(2 marks)**

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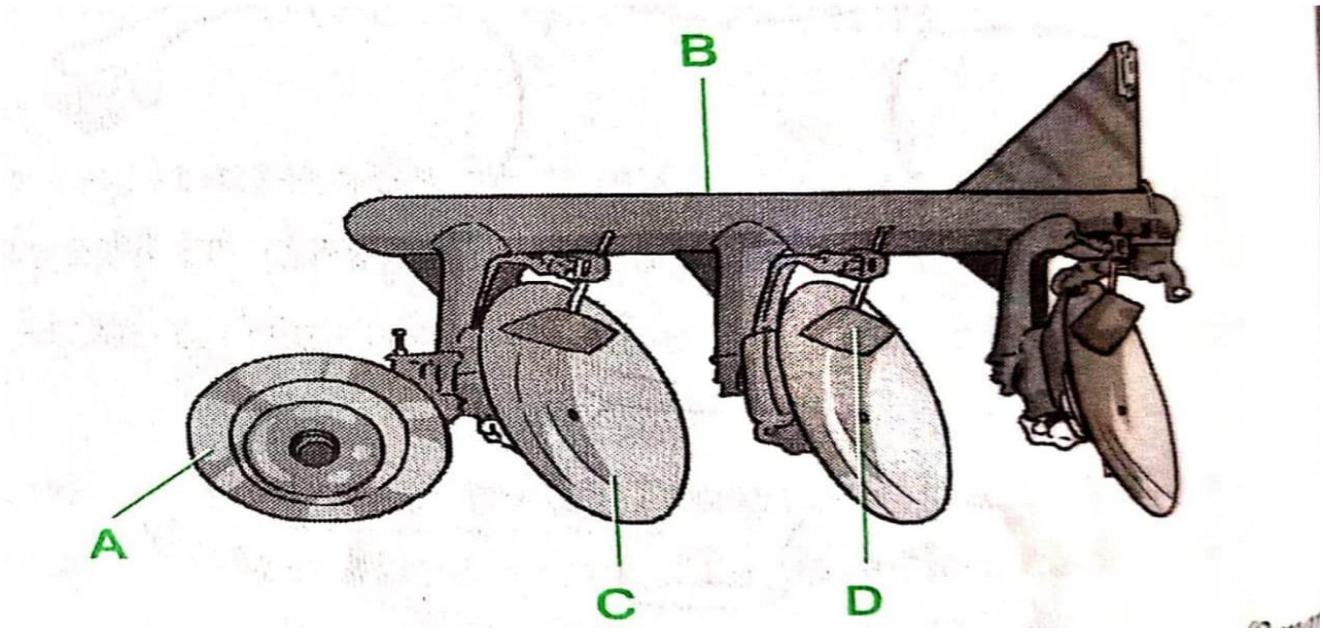
**d)**Name the equipment labelled **X** in the diagram. **(1mark)**

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**20**. A dairy farmer is required to prepare 200 kg of dairy meal containing 20% Digestible Crude Protein (D.C.P.). Using the Pearson's Square Method, calculate the quantity of soya bean (40%D.C.P.) and rice (16% D.C.P.) the farmer requires for the dairy meal. **(5 marks)**

**21.**The following diagram shows a disc plough. Use it to answer the following questions.




**a)** Name the parts labelled **A, B, C** and **D.** **(2 marks)**

**A**

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**B**

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**C**

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**b)**Give ***one*** function of each of the parts labelled **A** and **D**. **(2 marks)**

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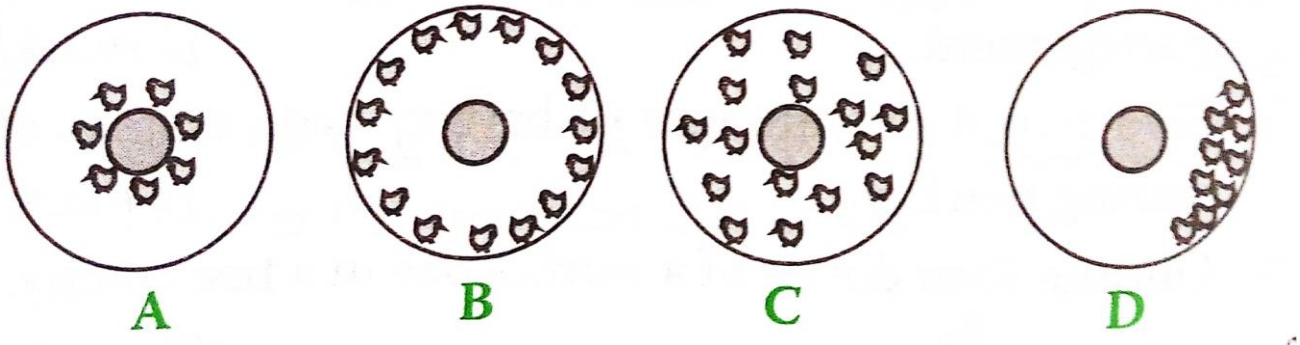
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**c)** Identify the implement. **(1 mark)**

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**22.** The following illustrations show the behavior of chicks in a brooder. Study them carefully and answer the questions that follow.



**a)** Explain the cause of behavior observed in chicks for each of the illustrations labeled **A, B** and **D.** **(3 marks)**

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**b)** Give a reason for making the brooder wall round in shape. **(1 mark)**

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**c)**State ***two*** requirements of a good brooder. **(2 marks)**

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## SECTION C : 40 MARKS

***Answer all questions***

**23. (a)** Explain the factors considered when culling livestock. **(5 marks)**

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**(b)** Describe poultry management under the following sub-headings:

**(i)** Causes of stress; **(8 marks)**

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**(ii)** Control measures for cannibalism. **(7 marks)**

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**24. a)** State the function of ***<u>any six</u>*** parts of a zero grazing unit . **(6 marks)**

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**b)** Describe Nagana disease under the following sub-headings.

**(i)** Cause.

**(1mark)**

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**(ii)** Symptoms of attack**.** **(4 marks)**

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**(iii)**Control measures of the disease**.** **(4 marks)**

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**(c)** Explain ***five*** ways in which ticks can be controlled in a livestock farm. **(5 marks)**

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**25. a)** Describe ***ten*** physical characteristics a poultry farmer would use to identify poor layers from a flock of hens. **(10 marks)**

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**b) i)** Outline ***three*** characteristics of clean milk. **(3 marks)**

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ii) Explain ***seven*** factors that affect milk composition in dairy farming. **(7 marks)**

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**NAME……..……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## BIOLOGY PAPER 1

***Kenya Certificate of Secondary Exams***

## TIME:2HRS

## INSTRUCTIONS:

***(a)*** *Write your* ***name, class, admission number*** *and* ***index number*** *on the space provided.*

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

***(c)*** *Candidates should check to ensure that all the pages are printed as indicated and that no questions are missing.*

***(d)*** *This paper consists of* ***10 pages.***

## For Examiners use only.

| Question | Maximum Score | Candidates Score |
|---|---|---|
| 1 – 25 | 80 | |

**1.(a)**Define the following terms as used in Biology.

**(i)**Chemosynthesis **(1 mark)**

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**(ii)**Mutualism **(1 mark)**

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**(b)**State the importance of photosynthesis in nature. **(2 marks)**

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2.What is the importance of the stroma in the chloroplast? **(2 marks)**

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**3.**Name ***two*** cell structures that synthesize the following cell organelles.

**(a)**Ribosomes **(1 mark)**

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**(b)**Lysosomes **(1 mark)**

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**4.**Name ***three*** plant leaf excretory products. **(3 marks)**

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**5.**A student mixed a sample of urine from a patient with Benedict's solution and boiled the mixture.

The colour changed to orange.

**(a)**What was present in the urine sample? **(1 mark)**

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**(b)**What did the student conclude about the health status of the patient? **(2 marks)**

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**(c)**Which organ in the patient may not be functioning properly? **(1 mark)**

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**6**.Name ***two*** types of values in the heart. **(2 marks)**

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**7.**Sometimes when one stands up very quickly after a long period of sitting, she may feel faint or dizzy. Explain. **(2 marks)**

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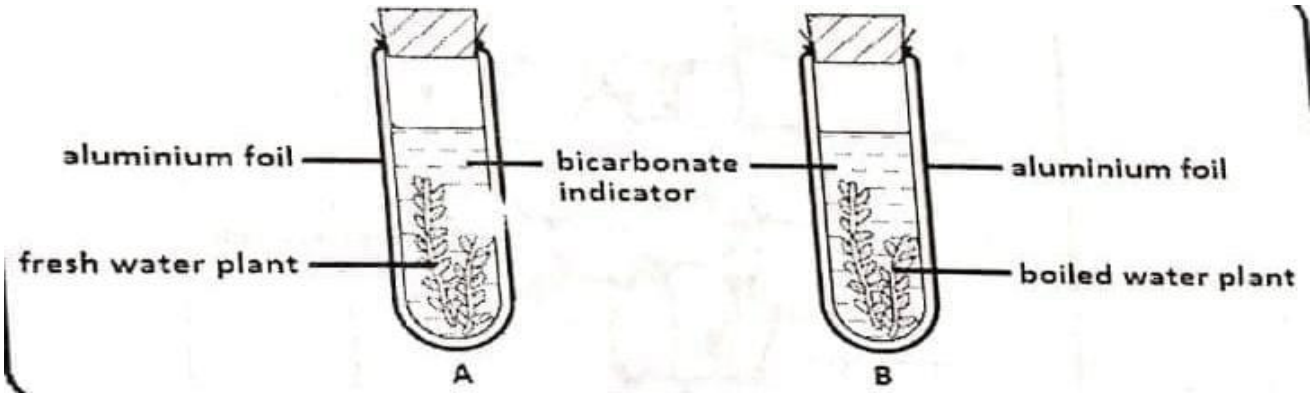
**8**.The cardiac muscles are said to be myogenic. What is the meaning of the term myogenic**.** **(1 mark)**

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**9.**A Form 3 student carried out an experimental set up as shown below.

Bromothymol blue is sensitive to pH change (bromothymol is yellow in low pH)



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

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**(b)**Why was set up B included in this experiment? **(1 mark)**

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**(c)**Why was aluminium foil used in this experiment? **(1 mark)**

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**(d)**Explain why bromothymol changed its colour from blue to yellow in tube A after 30 minutes. **(1 mark)**

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**10.**Differentiate between the cell wall found in fungi and the one in plants. **(2 marks)**

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**11**.State **three** adaptations that enable prey to evade predators. **(3 marks)**

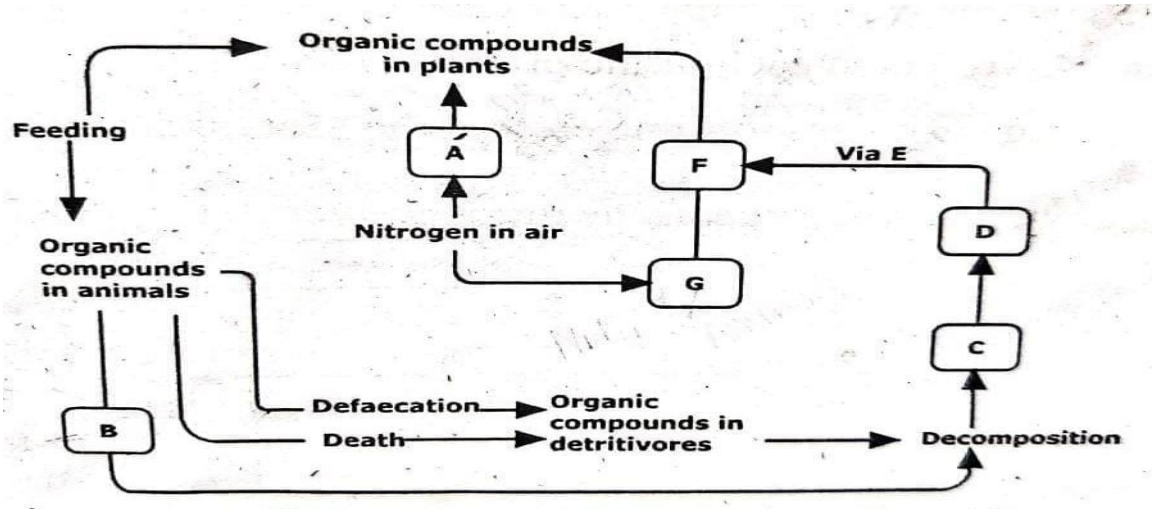
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**12**.The diagram below represents a simplified trend of nitrogen circulation in an ecosystem.




**(a)**What is the descriptive term applied to each of the organisms **A** and **D**.

**A**

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**D**

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**(b)**Name each of the processes. **(3 marks)**

**(i)**Marked **B**

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**(ii)**Facilitated by organisms **D**

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**(iii)**One group of organisms that can act as saprophytes

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**(c)**Name the chemicals **C, F** and **E**. **(3 mks)**

**C**

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**F**

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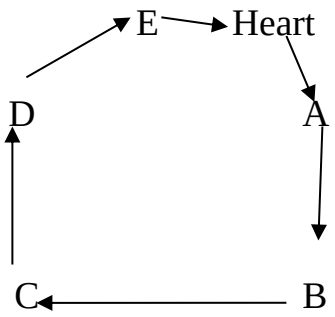
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**E**

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**13**.The diagram below is a summary of the sequence of blood flow through the heart and associated blood vessels.



**(a)**Name the blood vessels labelled **A** and **E**. **(2 marks)**

**A**

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**E**

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**(b)**State **two** differences between blood vessel **B** and **D**. **(2 marks)**

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**(c)**State ***two*** adaptations of the blood vessel labeled **C** to its functions. **(2 marks)**

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**14**.How does light as a biotic factor influence the distribution of plants in an ecosystem? **(3 marks)**

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**15.**Seed germination is affected by certain plant growth regulators.

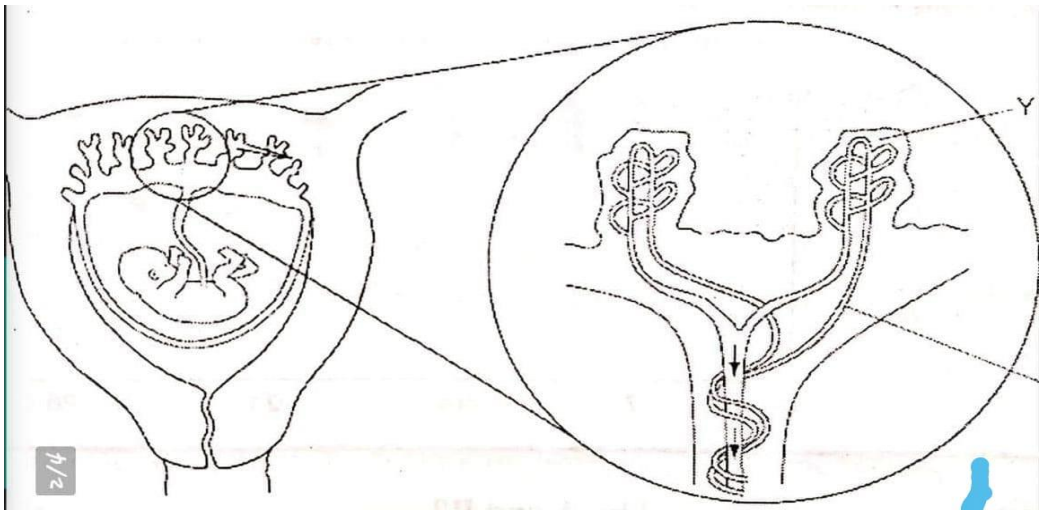
Describe ***two*** actions of gibberellins during seed germination. **(2 marks)**

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**16.**The diagram below shows a foetus in the uterus.




**(a)**Name ***two*** substances that will be at a higher concentration at **Y** that at **X.** **(2 marks)**

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**(b)**State ***two*** observable adaptations of the placenta to its functions. **(2 marks)**

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**17.(a)**Name the genetic disorder in humans that is characterized by inability of blood to clot**.** **(1 mark)**

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**(b)**A female human was found to have an extra sex chromosome in her cells.

**(i)**Give the total number of chromosomes in the male individual's cells. **(1 mark)**

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**(ii)**Explain the possible causes of this condition. **(2 marks)**

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**(iii)**State ***two*** physical characteristics observed in the female individual with such a condition. **(2 marks)**

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**18.(a)**Explain why fossil records as evidence of organic evolution are usually incomplete. **(3 marks)**

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**(b)**Name the evidence of organic evolution exhibited by occurrence of similar amino acid molecules in a range of organisms. **(1 mark)**

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**19.**Bumble bees are insects that live in the arctic tundra. They have adaptations to keep their body temperature above that of the environment. One adaptation is shivering which involves rapid muscle contraction. A second adaptation is a very hairy body.
Explain how those adaptations help to keep the body temperature above that of the environment. **(3 marks)**

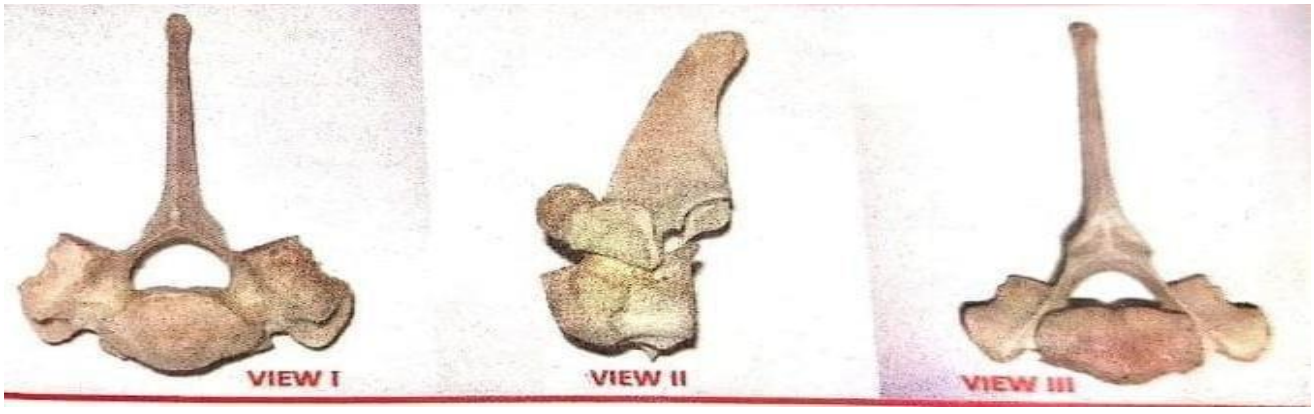
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**20.**The photograph below shows a bone from an animal.




**(a)(i)**Identify the bone shown. **(1 mark)**

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**(ii)**Give ***one*** reason for your answer. **(1 mark)**

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**(b)**Name the body region from which the bone was obtained. **(1 mark)**

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**(c)**State ***three*** adaptations of the bone in the photograph to its functions. **(3 marks)**

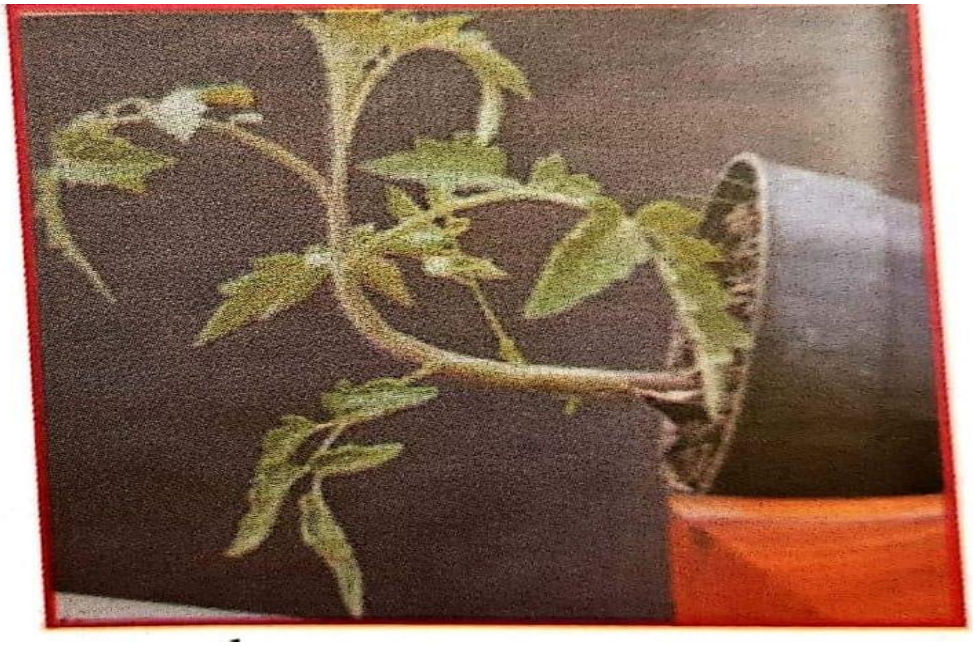
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**21.**The photograph below shows a potted plant in horizontal position.



**(a)**Name the type of response shown. **(1 mark)**

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**(b)**State the biological significance of the response above to the plant. **(1 mark)**

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**(c)**Explain the mechanisms of the response. (**4 marks)**

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**(d)(i)**State the class to which the plant belongs. **(1 mark)**

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**(ii)**Give ***one*** reason for your answer. **(1 mark)**

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**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## BIOLOGY PAPER 2

## *Kenya Certificate of Secondary Exams*

## TIME:2HRS

### ***Instructions to Candidates***

***(a)*** *This paper consists of* ***two sections; A*** *and* ***B****.*

***(b)*** *Answer* ***all*** *the questions in* ***section A*** *in the spaces provided after each question.*

***(c)*** *In* ***section B answer question 6 (compulsory)*** *and* ***either question 7 or 8*** *in the spaces provided after* ***question 8****.*

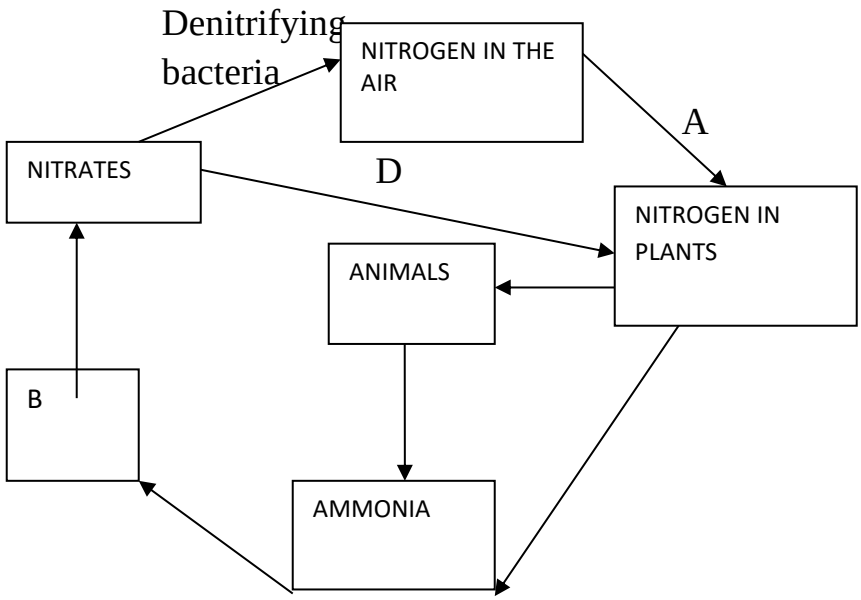
***(d)*** *Candidates should answer the questions in English*

**For Examiner's Use Only**

| SECTION | QUESTIONS | MAXIMUM SCORE | CANDIDATE SCORE |
|---|---|---|---|
| A | 1 | | |
| | 2 | | |
| | 3 | | |
| | 4 | | |
| | 5 | | |
| B | 6 | | |
| | 7 | | |
| | 8 | | |
| **TOTAL SCORE** | | | |

**1.** The diagram below represents the nitrogen cycle.

The diagram below represents the nitrogen cycle.




**(i)** Name the compound represented by **B.** **(1mark)**

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**(ii)** Name the group of organisms represented by **E**. **(1mark)**

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**(iii)** State the process labelled A and D. **(2 marks)**

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**(iv) a)** Name the part of the plant where nitrogen fixation takes place. **(1mark)**

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**(b)** What is the effect of denitrifying bacteria in the soil? **(1mark)**

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**(v)** How would excess pesticides in the soil interfere with Nitrogen fixation? **(2 marks)**

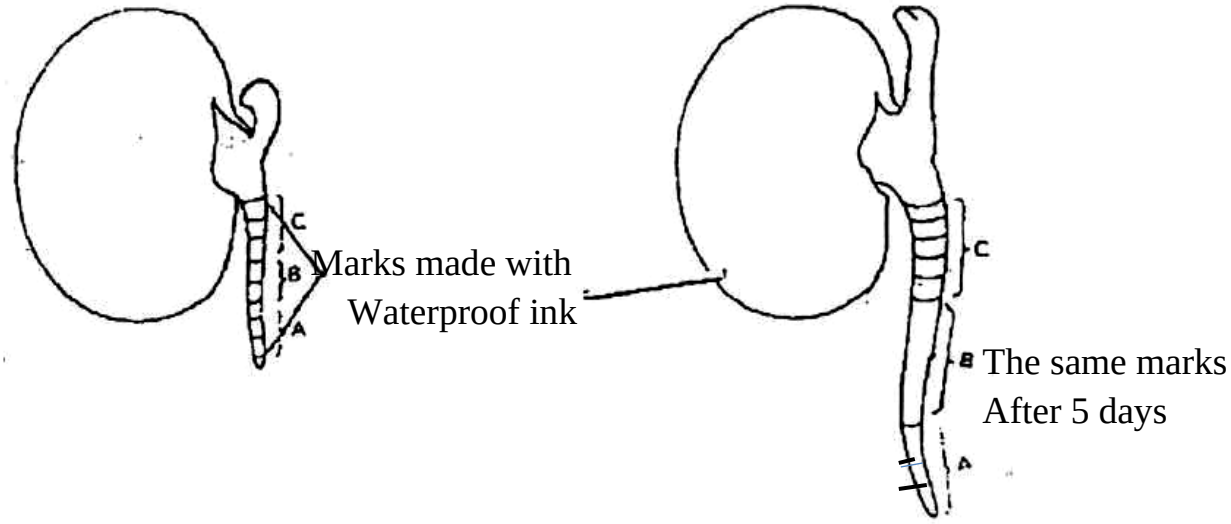
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**2.** The diagram below shows the results obtained in an experiment on graph of a bean seedling.




Start of Experiment End of Experiment

**a)** Suggest the aim of the experiment. **(1 mark)**

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**b)** State the processes that occur in each of the regions marked A, B and C**.(3 marks)**

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**c)** Account for the observations made in the regions A and C. **(4 marks)**

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**3.** **a)** What is meant by the term linked genes? **(1 mark)**

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**b)** Haemophilia is a genetic condition transmitted through a recessive gene linked to **X** chromosome. The normal gene may be represented by $\mathbf{X^H}$**.**

**i)** What is the genotype of a haemophilic female? **(1 mark)**

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**ii)** A woman who is a carrier for the haemophilia gene marries a normal man. Work out the phenotypic ratio for their offspring. **(4 marks)**

**iii)** Haemophilia is more common in males than in females. Explain this phenomenon. **(2 marks)**

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**4.** A climbing plant twines around the stem of a tall tree.

**(a) (i)** Name the type of response exhibited by the climbing stem. **(1 mark)**

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**(ii)** Explain how the response named in (a) (i) above takes place. **(3 marks)**

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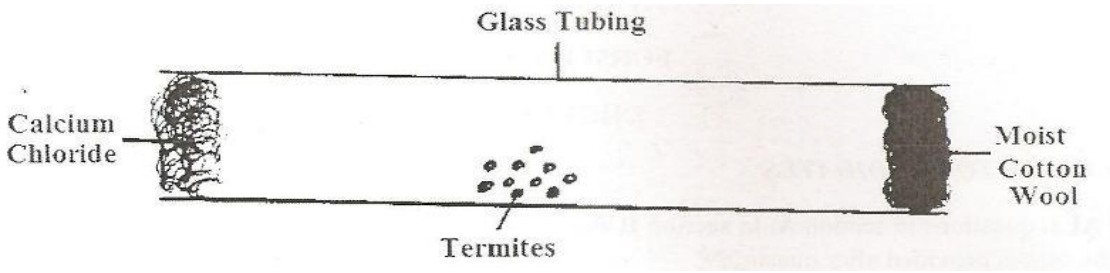
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**(b)** An experiment was carried out to investigate the response of white termites to a certain stimulus. Ten termites were placed at the centre of glass tubing. Calcium

chloride was placed one end of the tubing and moist cotton wool at the other end as illustrated below.




**(i)** What observations are made after 20 minutes? **(1 mark)**

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**(ii)** What type of response is exhibited by the termites? **(1 mark)**

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**(iii)** What is the survival value of the above response? **(1 mark)**

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**(iv)** What is Photonasty? **(1 mark)**

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5. A group of students set up the following experiments to investigate the factors that affect enzymes.

| Tube 1 | Tube 2 | Tube 3 | Tube 4 |
|---|---|---|---|
| Egg white Amylase/ptyalin at $30^{o}$ C | Boiled starch Dilute acid Amylase $36^{0}$C | Boiled starch Amylase | Boiled starch Boiled Amylase |

**a)** Identify the property of enzymes being investigated in tubes 1 and 2**.(2 marks)**

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**b)** After 3 hours thee students tested the content in the four tubes for starch. They obtained the following results in tube 2, 3 and 4.

Tube 2 – Blue – black colour

Tube 3 – Brown colour of iodine remained

Tube 4 – Blues black colour.

Account for the results obtained in tube 3 and 4. **(2 marks)**

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**c)** What results would you expect in tube 3 if temperature was maintained at 5°C? Give a reason for your answer. **(2 marks)**

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**d)** Name ***two*** enzymes found in the pancreatic juice **(3 marks)**

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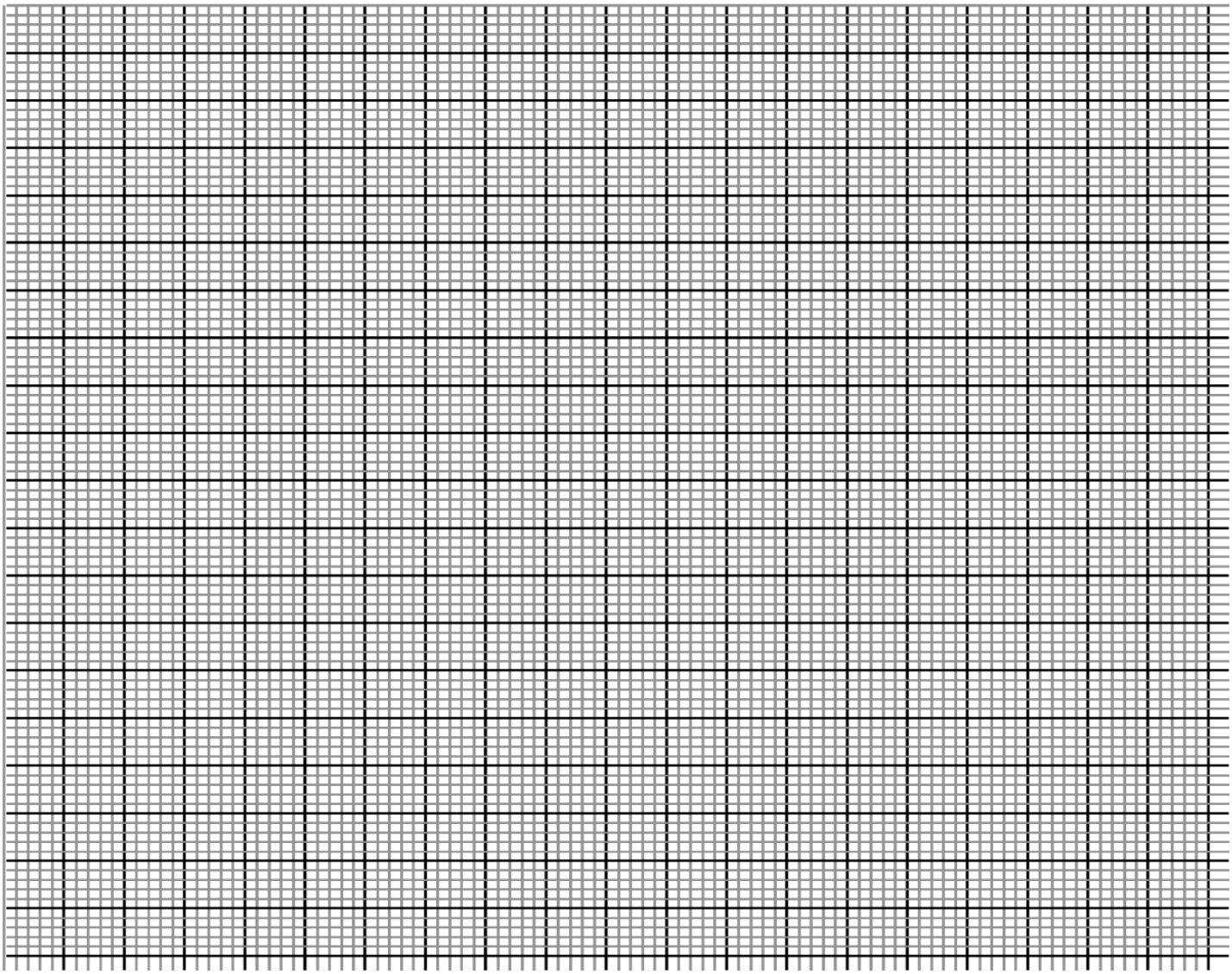
## SECTION B (40marks)

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

**6.** The table below contains information on changes that occur in a river, downstream from a sewageoutflow.

| Distance downstream from point of sewage entry(m) | Concentration of dissolved oxygen (%) | Number of organisms (arbitrary units) | | |
|---|---|---|---|---|
| | | Bacteria | Algae | Fish |
| 0 | 95 | 88 | 20 | 20 |
| 100 | 30 | 78 | 8 | 6 |
| 200 | 20 | 74 | 6 | 2 |
| 300 | 28 | 60 | 20 | 0 |
| 400 | 42 | 50 | 40 | 0 |
| 500 | 58 | 48 | 70 | 0 |
| 600 | 70 | 44 | 84 | 0 |
| 700 | 80 | 42 | 90 | 0 |
| 800 | 89 | 38 | 84 | 0 |
| 900 | 95 | 36 | 68 | 4 |
| 1000 | 100 | 34 | 54 | 20 |

a) Plot a graph of number of organisms against distance downstream. **(7 marks)**



b) Describe the changes in the concentration of oxygen dissolved in the water downstream fromthe point of sewage entry. **(2 marks)**

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c) Account for the changes in the numbers of each of the following organisms downstream.

**i.** Bacteria **(3 marks)**

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**ii.** Algae **(3marks)**

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**iii.** Fish **(3marks)**

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**c)**State ***two*** ways in which the degree of water pollution caused by sewage can be reduced. (2marks)

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**7.a)** Explain ***three*** reasons why plants lacks well developed excretory organs. **(3 marks)**

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**b)** Name ***three*** ways in which plants excrete waste products. **(3 marks)**

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**c)** State and explain the economic importance of plants excretory products **(14 marks)**

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**7**.Describe how the various parts of the human digestive system are adapted to their functions. **(20 marks)**

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**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## BIOLOGY PAPER 3

***Kenya Certificate of Secondary Exams***

## TIME:2HRS

### Instructions to Candidates

- *Write your name, Admission number and your other details in the spaces provided above.*
- *Spend the first 15 minutes of the time allocated to read through the question paper before commencing your work*
- *Answer **ALL** the questions in the spaces provided.*
- *Additional pages must **not** be inserted*

- **For Examiner's Use Only**

| Question | Maximum Score | Candidate's Score |
|---|---|---|
| 1 | 13 | |
| 2 | 16 | |
| 3 | 11 | |
| Total Score | 40 | |

**1.** You are provided with the following materials;

***Substance labelled L***

***2cm$^3$ Copper sulphate solution***

***2cm$^3$Sodium hydroxide solution***

***2cm$^3$ DCPIP solution***

***2cm$^3$ Benedict's solution***

***Source of heat***

***3 test tubes***

***3 droppers***

You are provided with a substance labeled **L**. Make a solution of substance **L** by adding 20 ml of distilled water and stir thoroughly. Design an experiment to investigate the food materials present in **L**. **(9 marks)**

| Substance | Chemical test | Procedure | Observations | Conclusion |
|---|---|---|---|---|
| **L** | | | | |
| **L** | | | | |
| **L** | | | | |

**(a)** State the importance of the food substances present in **L** to the human body.
**(2 marks)**

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**(b)** Describe how the body deals with the substances mentioned in **(a)** above when they are in excess. **(2 marks)**

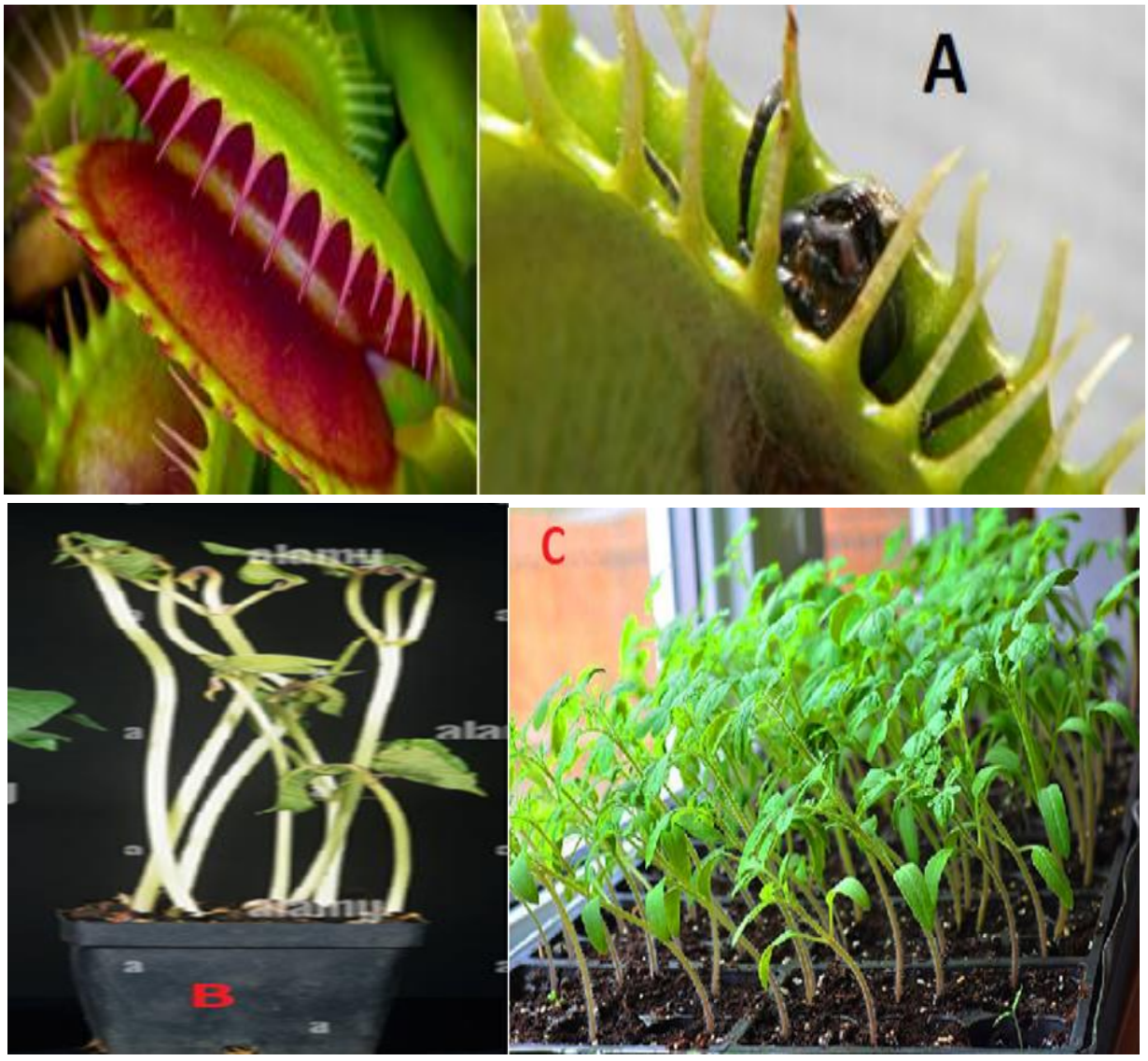
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2. Study the photographs below and answer the questions that follow.



**(a)(i)** Identify the type of response exhibited by specimen **A.** **(1 mark)**

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**(ii)**What is the survival value of the response you have identified in **(a)(i)** above. **(1 mark)**

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**(b)(i)** Identify the phenomenon exhibited by specimen **B.** **(1 mark)**

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**(ii)** State the significance of the phenomenon in **(b) (i)** above. **(1 mark)**

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**(c)** Explain how the response exhibited by seedlings in photograph **C** occurred. **(3 marks)**

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**(d)** Study the photograph below showing a certain trait in man.



**(i)** Identify the trait exhibited in the photograph above. **(1 mark)**

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**(ii)** The trait you have identified in (d)(i) above is ***sex linked***. In which chromosome is it contained. **(1 mark)**

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**(iii)** Name any other sex linked trait in man. **(1 mark)**

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**(iv)** The man in the photograph married a woman. Use a genetic cross to predict the offspring of the above marriage. Let $\mathbf{Y^H}$ represent the gene for the trait above. **(4 marks)**

**(e)** The photographs below show certain chromosomal mutations.






**(i)** Identify them

**P** **(1 mark)**

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**Q** **(1 mark)**

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**3**.Study the photographs below and answer the questions that follow.









**(a)** Give ***<u>two visible</u>*** survival adaptive features for the organism in photograph **X.** **(2 marks)**

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**(b)** Identify the dentitions exhibited in photograph **Y** and **Z** **(2 marks)**

**Y**

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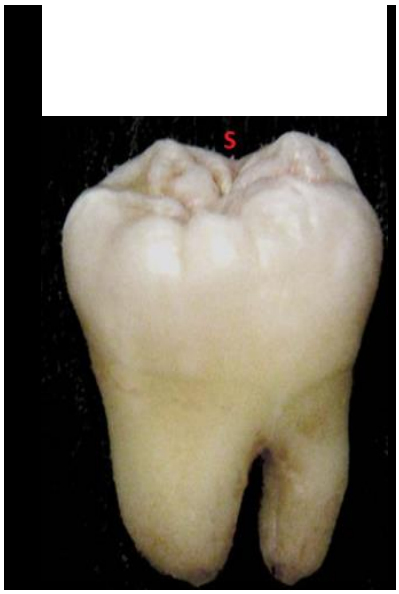
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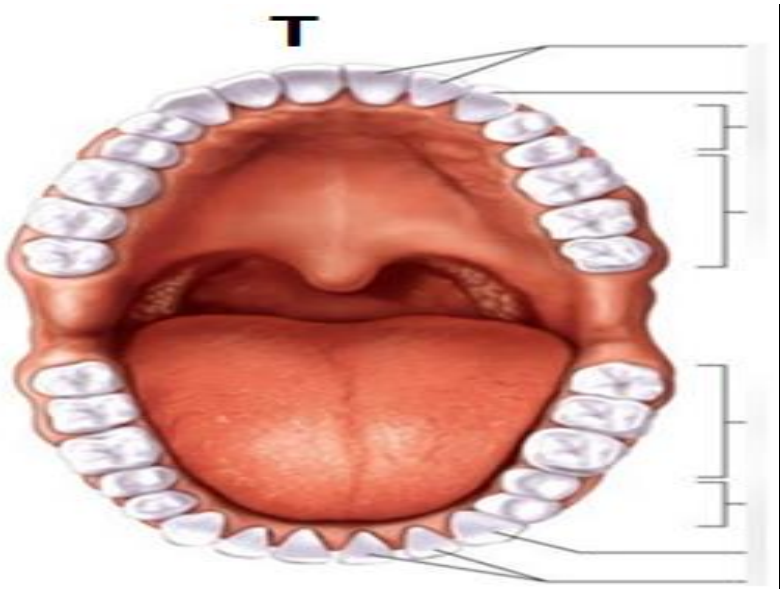
**Z**

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**(c)** Study the photographs below showing a certain type of tooth and teeth arrangement in man.



**(i)** Label any **three** parts of the tooth in photograph **S.** **(3 marks)**

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**(ii)** Give ***two*** adaptations of the tooth to its function. **(2 marks)**

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**(iii)** Write the ***dental formula*** for the teeth arrangement in photograph **T.**

**(1 mark)**

**NAME……..……ADM NO……**

**SCHOOL…….…….…….……..CLASS……**

**DATE…….……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## BUSINESS PAPER 1

***Kenya Certificate of Secondary Exams***

## TIME:2HRS

## Instructions

- *Write your **NAME, SCHOOL** and **INDEX NUMBER** in the spaces provided.*
- *Answer **ALL** questions provided in the spaces provided.*
- *This paper consists of **10 printed pages** and **25 questions.***

| 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**

**1.** Giving an example in each case, outline the difference between renewable and non-renewable resources. **(4 marks)**

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**2.** State ***four*** reasons why diagonal communication needs to be encouraged in an organization. **(4 marks)**

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**3.** Mention ***four*** benefits enjoyed by a member of a producer cooperative society. **(4 marks)**

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**4.** State ***four*** measures that the government can use to encourage increase in the country's volume of exports. **(4 marks)**

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**5.** Highlight ***four*** positive impacts of the physical environment on the operations of a business. **(4 marks)**

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**6.** Highlight ***four*** problems associated with monopoly market structure. **(4 marks)**

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**7.** Outline ***four*** roles of the mass media in promoting consumer protection. **(4 marks)**

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**8.** Outline ***four*** services offered in agency banking as a trend in the banking sector.

**(4 marks)**

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**9.** State the best type of machine one would use to perform the following tasks.

**(4 marks)**

| | **Functions** | **Name of machine** |
|---|---|---|
| **i)** | Used to trim papers into desired sizes | |
| **ii)** | To post information to ledgers and to prepare payrolls | |
| **iii)** | To transmit printed messages such as letters, maps, diagrams and photographs | |
| **iv)** | To destroy sensitive but unwanted documents | |

**10.** The following balance sheet belongs to Nyakwar Atiyo during the period ended 30th June 2000. **(4 marks)**

Nyakwar Atiyo Traders
Balance sheet
As at 30.06.2000

| Assets | Kshs | Capital + Liabilities | Ksh |
|---|---|---|---|
| Machinery | 45,000 | Capital | 65,000 |
| Current assets | | Creditors | 45,000 |
| Stock | 7,750 | Short term liability | |

| | | | |
|---|---|---|---|
| Debtors | 1,375 | Bank loan | 10,000 |
| Bank | 25,375 | | |
| | 79,500 | | 79,500 |

The following transactions took place on July 1 2000.

**(i)** Paid creditors Sh 2000 by cheque.

**(ii)** Nyakwar Atiyo took stock worth Shs 7500 from the business for his son's birthday.

**(iii)** Motor vehicle previously owned by Nyakwar Atiyo values at sh 200,000 was converted into business vehicles.

Required: Prepare the balance sheet of Nyakwar Atiyo traders as at 2nd July 2000.

**11.** Highlight ***four*** roles of advertising agencies in product promotion. **(4 marks)**

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**12.** Distinguish between the following categories of government expenditure. **(4 marks)**

**a)** Recurrent expenditure

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**b)** Capital expenditure

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**13.** Highlight ***four*** differences between hypermarkets and departmental stores.**(4 marks)**

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**14.**The information below was extracted from the books of Lemayian Traders for the year ended.

31. 12. 2015

| | |
|---|---|
| Opening stock | 45,000 |
| Closing stock | 15,000 |
| Turnover | 340,000 |
| Margin | 25% |

Required:

**(i)** Gross profit **(2 marks)**

**(ii)** Purchases **(3 marks)**

**15.** ***Distinguish*** between the following terms as used in National Income. **(3 marks)**

**a)** Gross Domestic Product

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**b)** Gross National Product

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**c)** Per capita Income

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**16.** Highlight ***four*** ways in which the government of Kenya promotes entrepreneurial development. **(4 marks)**

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**17.** State ***four*** channels of distribution for importation of agricultural produce. **(4 marks)**

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**18.** Outline ***four*** trends in transport sector. **(4 marks)**

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**19.** Outline ***four*** benefits of indirect production. **(4 marks)**

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**20.** Enter the following transactions in the relevant ledger accounts. **(4 marks)**

2015

April 1 Janet Cosmetics started a business with Ksh. 150,000 cash

,, 3 Bought stock of goods for Sh. 40,000 and paid in cash

,, 6 Opened a bank account and deposited Sh. 60,000 from the cash till

,, 9 Purchased an office machine for Sh. 25,000 and paid by cheque

**21.** Give ***four*** reasons why a producer may need to have their own warehouse.**(4 marks)**

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**22.** State the name of the source document used to record the following transactions.

**(4 marks)**

| Transaction | Source Document |
|---|---|
| **a)** Received goods returned by a buyer who bought them earlier on credit | |
| **b)** Making of payment to a casual worker at the end of the week | |
| **c)** Bought goods for sale from Gilanis Supermarkets on credit | |
| **d)** A customer, Adhiambo, send a cheque for goods she bought earlier on credit | |

**23.** Define the following terms as used in business studies. **(4 marks)**

**(i)** Annuity

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**(ii)** Proposer

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**(iii)** Speculative risk

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**(iv)** Grace period

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**24.** In the table below fill in the missing figures **S, T, U** and **V.** **(4 marks)**

| Business | Assets(shs) | Capital(shs) | Liabilities(shs) |
|---|---|---|---|
| A | 20,000 | S | 5,000 |
| B | 42,000 | 32,000 | T |
| C | U | 17,000 | 53,000 |
| D | 18,000 | V | 6,000 |

**S**

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**T**

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**U**

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**V**

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**25.** Compute the consumer price index **(CPI)** from the following data giving explanation of your outcome. **(4 marks)**

| Year | Price |
|---|---|
| 2010 | 300 |
| 2011 | 375 |

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**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## BUSINESS PAPER 2

***Kenya Certificate of Secondary Exams***

## TIME:2HRS

## INSTRUCTIONS

1. *Write your **NAME, SCHOOL** and **INDEX NUMBER** in the spaces provided.*
2. *Answer **ANY FIVE** questions provided in the answer booklet provided.*
3. *This paper consists of **6 questions***
4. *All answers must be written in **English.***

**FOR EXAMINERS USE ONLY**

| Questions | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Mark | | | | | | |

| TOTAL |
|---|
| |

**1. a)** Explain ***five*** characteristics of underdeveloped countries. **(10 marks)**

**b)** Discuss ***five*** measures that can be used to reduce unemployment in Kenya **(10 marks)**

**2. a)** Explain ***five*** ways in which the central bank regulates the operations of commercial banks in Kenya. **(10 marks)**

**b)** Explain ***five*** roles played by insurance industry in promoting the development of Kenyan economy. **(10 marks)**

**3. a)** The following trial balance was extracted from the books of Baite Traders on 31st August. 2009.

| | Dr (sh) | Cr (sh) |
|---|---|---|
| Sales | | 350,000 |
| Purchases | 160,000 | |
| Cash at bank | 290,000 | |

| | | |
|---|---|---|
| Return inwards | 5,000 | |
| Carriage inwards | 20,000 | |
| Carriage outwards | 14,000 | |
| Salaries and wages | 10,000 | |
| Debtors | 56,000 | |
| Creditors | | 90,000 |
| Stock | 35,000 | |
| Machinery | 265,000 | |
| Rent | | 25,000 |
| Discount received | | 18,000 |
| Lighting and heating | 12,000 | |
| Building | 240,000 | |
| Advertising | 13,000 | |
| Drawings | 3,000 | |
| Capital | | 667,000 |
| | 1,150,000 | 1,150,000 |

Additional information;

Stock on 31st August. 2009 was valued at sh 50,000.

**Required;**

Prepare Trading profit and loss account for the year ended 31st August. 2009.

**(12 marks)**

**b)** Savings and credit cooperatives have been registering an increasing number of members. Explain ***four*** reasons for such a development. **(8 marks)**

**4. a)** Highlight ***five*** roles of the Nairobi Stock exchange as a market for securities.

**(10 marks)**

**b)** During a trader's workshop, a speaker presented a speech on ethical issues in business. Highlight some ethical issues that he may have raised, affecting business.

**(10 marks)**

**5. a)** Discuss ***five*** benefits of filing office documents to an organisation. **(10 marks)**

**b)** Explain ***five*** benefits that a country derives from transporting oil through pipeline.

**(10 marks)**

**6. a)** The income approach is one of the methods used to measure the national income of the country. Explain four types of incomes included in this approach. **(8 marks)**

**b)** On 1st June 2009, Muli Enterprises had cash in hand sh. 87,000 and cash at bank sh. 250,000.During the month, the following transactions took place.

June 2 Sales in cash sh. 50,000

3 Paid salaries sh.101, 500 by cheque.

6 Received a cheque for sh. 76,800 from Mwelu after allowing her a cash

discount of 4%.

12 Bought office furniture by cheque sh. 85,000

16 Settled Musau's account of sh. 40,000 in cash, having deducted shs 800 cash discount.

18 Received a cheque for shs 150,000 in respect of cash sales.

21 Paid wages shs 24,000 in cash.

22 Withdrew shs 30,000 from bank for office use.

25 Withdrew shs 5000 cash for private use.

28 Received shs 16500 cash from Kasiva in settlement of her account less shs 660 cash discount.

30 Deposited all the money into bank except shs 25,000

Prepare a ***three column cash book*** and balance it off. **(12 marks)**

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## CRE PAPER 1

***Kenya Certificate of Secondary Exams***

## TIME:2 ½HOURS

## *Instructions to candidates*

***1. This paper consists of six questions.***

***2. Answer any five questions from this paper in the answer booklet provided.***

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

***4.Each question is 20 marks.***

***5.This paper consists of 2 printed pages***

## FOR EXAMINERS USE ONLY

| NUMBER | 1 | 2 | 3 | 4 | 5 | 6 | TOTAL SCORE |
|---|---|---|---|---|---|---|---|
| MARKS SCORED | | | | | | | |

**1. a)** Identify ***five*** books of the Holy Bible referred to as Writings. **(5 marks)**

**b)** Describe ***five*** teachings about marriage from the Genesis stories of creation. **(10 marks)**

**c)** What are the consequences of evil in the traditional African society. **(5 marks)**

**2. a)** Identify the ***five*** animals used by Abraham during the covenant making process. **(5 marks)**

**b)**What problems did Moses face as he led the Israelites during the Exodus **(7 marks)**

**c)** Give ***eight*** ways in which Christians in Kenya show their respect to God. **(8 marks)**

**3.a)**Outline **six** promises that God gave to King David through Prophet Nathan **(6 marks)**

**b)** Describe 8 ways in which King Solomon turned away from the covenant way of life**.** **(8 marks)**

**c)** Which lessons can the political leaders in Kenya learn from King Solomon? **(7 marks)**

**4.a)**Describe the message of hope prophet Amos gave to Israelites when they turned back to God. **(8 marks)**

**b)** Identify ***six*** evils Israel neighbours had committed to attract God's judgement. **(6 marks)**

**c)** State lessons Christians learn about God from Amos prophecies against Israel and other neighbouring nations. **(6 marks)**

**5. a)**State ways in which God prepared Jeremiah for his prophetic mission. **(5 marks)**

**b)**Describe the fall of Jerusalem city and temple. **(8 marks)**

**c)** State ***seven*** ways how Christians can evade God's judgment today. **(7 marks)**

**6. a)**State ***five*** reasons why grandparents educate the youth in the Traditional African Society. **(5 marks)**

**b)**Explain ***five*** ways the virtue of unity is promoted in the traditional African society. **(10 marks)**

**c)**Explain ***five*** ways in which modern science and technology has affected traditional African Kinship. **(5 marks)**

**NAME……ADM NO……**

**SCHOOL……..……..……..CLASS……**

**DATE……..……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## CRE PAPER 2

## *Kenya Certificate of Secondary Exams*

## TIME:2 ½HOURS

### *Instructions to candidates*

***1. This paper consists of six questions.***

***2. Answer any five questions from this paper in the answer booklet provided.***

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

***4.Each question is 20 marks.***

***5.This paper consists of 2 printed pages***

**FOR EXAMINERS USE ONLY**

| NUMBER | 1 | 2 | 3 | 4 | 5 | 6 | TOTAL SCORE |
|---|---|---|---|---|---|---|---|
| MARKS SCORED | | | | | | | |

**1.** **(a)*Outline*** Psalmist's prophecies about the coming of Messiah. **(7 marks)**

**(b)**Basing your answer on the infancy narratives in Luke 1:5-56, ***describe*** what took place when Mary visited Elizabeth. **(7 marks)**

**(c)**What lessons can Christians learn from the visit of Mary to Elizabeth. **(6 marks)**

**2.** **(a)*Describe*** the incident when Jesus was baptized in River Jordan by the John the Baptist **Luke 3:21-22**. **(6 marks)**

**(b)**Explain ***four*** reasons why Jesus was baptized and yet He was not a sinner. **(8 marks)**

**(c)**Explain ***six*** reasons why Christians undergo baptism. **(6 marks)**

**3.** **(a)*Outline*** the events that took place on the Mount of Olives before the arrest of Jesus. **(7 marks)**

**(b)**State ***four*** accusations that were made against Jesus during his trial **Luke 22:66-23:1-23**. **(8 marks)**

**(c)**Give ***five*** ways in which Christians should take care of those in jail. **(5 marks)**

**4.** **(a)**Identify the fruits of the Holy Spirit as taught by Saint Paul in the early church. **(7 marks)**

**(b)**Explain the teaching of Peter concerning the people of God (**1st Peter 2: 9 - 10**). **(8 marks)**

**(c)**State how kindness as a fruit of Holy Spirit is abused in church in Kenya today. **(5 marks)**

**5.** **(a)**Identify ***seven*** sources of Christian ethics. **(7 marks)**

**(b)**What are some of the challenges that youths today in Kenya face. **(7 marks)**

**(c)**What is the importance of studying of life skills to youths today. **(6 marks)**

**6.** **(a)**What is the role of laws in our country? **(6 marks)**

**(b)**Identify the practices that promote law, order and justice in Traditional African Society **(7 marks)**

**(c)**What are obstacles to effective maintenance of Law and justice. **(7 marks)**

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## CHEMISTRY PAPER 1

## *Kenya Certificate of Secondary Exams*

## TIME:2 HOURS

**INSTRUCTIONS TO CANDIDATES**

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

**FOR EXAMINERS USE ONLY**

| Questions | Maximum Score | Candidate's Score |
|---|---|---|
| **1 – 28** | **80** | |

**1. a)** A hydrocarbon consists of 92.3% carbon. Its molecular mass is 26. Calculate it's Molecular formula. **(2 marks)**

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**b)** Draw the structure of the hydrocarbon. **(1 mark)**

**2. a)** Explain why melting point of chlorine gas is greater than that of Argon. **(l mark)**

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**b)** Using dot(•) and cross (×) to represent electrons draw a diagram to show bonding in carbon (iv) oxide. **(l mark)**

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**c)** In terms of structure and bonding. Explain why Graphite is used as a lubricant. **(1 mark)**

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**3. a)** What is observed when a few drops of phenolphthalein indicator is added to a solution whose pH value is 3.0? **(l mark)**

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**b)** Write an equation for the reaction between Lead (**ii)**oxide and dilute Nitric acid. **(l mark)**

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**4**. State and explain the observation that would be made when zinc powder is heated with copper (II) oxide. **(2 marks)**

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**5.** Why is it dangerous to run a motor car engine in a closed garage? **(2 marks)**

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**6.** 2 grams of sodium hydroxide is added to 30 cm3 of IM sulphuric (VI) acid. What volume of 0. 1M potassium hydroxide solution will be needed to neutralize the excess acid. (Na23,016,H1**)** **(3 marks)**

**7.** An aqueous solution of hydrogen chloride gas reacts with manganese (IV) oxide to form chlorine gas while a solution of hydrogen chloride gas in methylbenzene does not react with manganese (iv) oxide. Explain **(2 marks)**

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**8.** A small piece of potassium Manganate (VII) was placed in a glass of water and was left standing for 6 hrs without shaking. State and explain the observations made. **(2 marks)**

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**9.** Magnessium reacts with both dilute and concentrated sulphuric (VI) acid. Write a balanced equation for the two reactions**.** **(2 marks)**

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**10.** The table below gives the atomic numbers of elements **W, X, Y** and **Z**.

| Element | W | X | y | Z |
|---|---|---|---|---|
| Atomic number | 14 | 17 | 16 | 19 |

**a)** Name the type of bonding that exists in the compound formed when **X** and **Z** reacts.

**(1 mark)**

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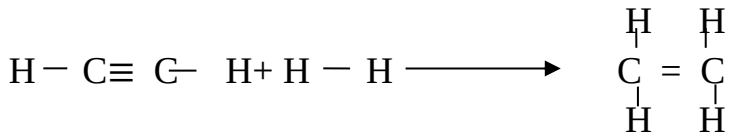
**b)** Select the letter representing the strongest reducing agent. Give a reason for your answer. **(2 marks)**

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**11.** Ethyne reacts with hydrogen as shown below



Use the bond energies below to calculate the enthalpy changes for the above reaction.

**(3 marks)**

| BOND | ENERGY |
|---|---|
| H-H | 435 |
| C-H | 413 |
| C ≡ C | 835 |
| C=C | 611 |

**12.a)** Explain the role of common salt in defrosting ice on roads in ice cold countries.

**(1 mark)**

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**b)** Explain why the long term effects of use of common salt is costly to motorists.

**(1 mark)**

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**13**. Given the equation below

$NH_{3(aq)} + H_2O_{(l)} \longrightarrow NH_4^+{}_{(aq)} + OH^-{}_{(aq)}$

Identify the species that acts as;

**i)** A base. Explain **(1 mark)**

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**ii)** An acid**.** **( ½ mark)**

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**14.a)** State Grahams law of diffusion. (**1mark)**

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**b)** The rate of diffusion of sulphur(IV)oxide gas through a porous material is 40cm3s $^{-1}$. Calculate the rate of diffusion of carbon(IV)oxide gas through the same porous material *(S=32,O=16,C=12)* **(2 marks)**

**15.** Describe how a solid sample of lead(II) chloride can be prepared using the following reagents : dilute nitric acid, dilute hydrochloric acid and lead carbonate **(3 marks)**

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**16.** The production of ammonia is given by the equation

$$3H2\,(g) + N_2(g) \rightleftharpoons 2NH_3\,(g);\ \Delta H = -ve$$

**(i)** State and explain the effect of addition of dilute hydrochloride acid on equilibrium.

**(2 marks)**

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**(ii)** Explain the effect of increase in temperature on the yield of ammonia. **(2 marks)**

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**17.** $Cr_2O_7^{2-} + 14\ H^+\,(aq) + 6Fe^{2+} \longrightarrow Cr_2^{3+} + 7H_2O(l) + 6Fe^{3+}$.

The above equation show a redox reaction

**(a)** Calculate the oxidation state of chromium in $Cr_2O_7^{2-}$ **(2 marks)**

**(b)** What is the role of $H^+$ in the above reaction. **(1 mark)**

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**18.** a)Define the standard heat of formation. **(1 mark)**

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**b)** Draw energy cycle diagram to show how the standard heat of formation of ethanol ($C_2H_5OH$) can be determined from standard heats of combustion of its elements.

**(2 marks)**

**c)** Given that $\Delta H_C(C) = -393 kJmole^{-1}$, $\Delta H_C(H_2) = -286 kJmole^{-1}$ and $\Delta H_C(C_2H_5OH) = -1368 kJmole^{-1}$. Calculate the enthalpy of formation of $C_2H_5OH$. **(2 marks)**

**19.** 3.78g of a hydrated salt of iron (II) sulphate, $FeSO_4$, in $H_2O$ were heated until all the water of crystallization was driven off. The anhydrous salt left had a mass of 1.52g. Determine the formula of the hydrated salt. (Fe = 56, S = 32, H = 1, O = 16) **(3 marks)**

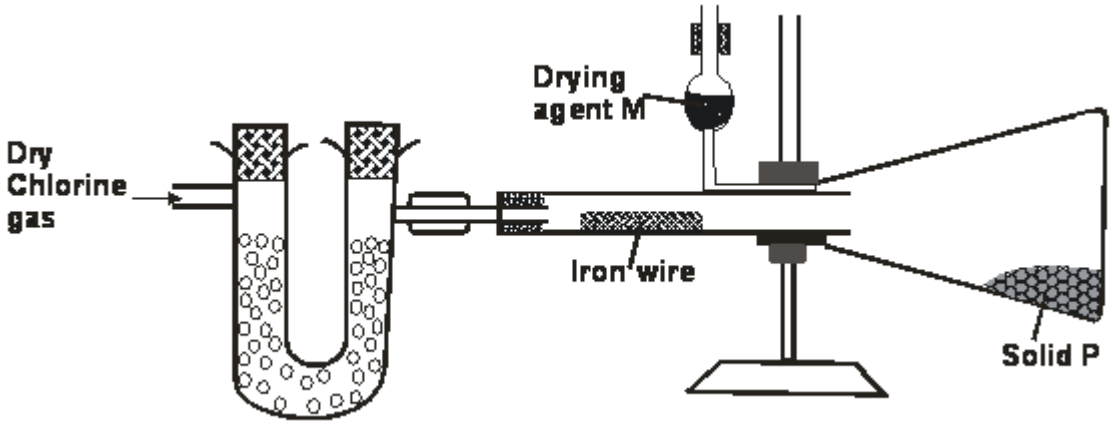
**20.** A steady current of 0.2 Amperes was passed through molten silver bromide for 80 minutes.

**a)** Calculate the quantity of electricity that passed through the set up. **(1 mark)**

**b)** Calculate the mass of product deposited at the cathode. (1F = 96500C; Ag = 108, Br = 80) **(2 marks)**

**c)** If a sample of cobalt has an activity of 1000 counts per minute, determine the time it would take for its activity to decrease to 62.50 if the half-life of the element is 30 minutes. **(2 marks)**

**21.** The apparatus set up below was used to prepare an anhydrous solid P




**a)** Write an equation for formation of solid P **(1 mark)**

**b)** Suppose the gas used in the set up was dry hydrogen chloride gas; what would be the product obtained after the reaction? Give a reason for your answer.

**(1 mark)**

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**22.** Aluminium is obtained from the ore with the formula $Al_2O_3.2H_2O$. The ore is first heated and refined to obtain pure aluminium oxide ($Al_2O_3$). The oxide is then electrolysed to get Aluminium and oxygen gas using carbon anodes and carbon as cathode.

**a)** Give the common name of the ore from where aluminium is extracted from.

**(½ mark)**

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**b)** What would be the importance of heating the ore first before refining it? **(1 mark)**

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**c)** The refined ore has to be dissolved in cryolite first before electrolysis. Why is this necessary? **(1 mark)**

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**d)** Why are the carbon anodes replaced every now and then in the cell for electrolysing aluminium oxide? **(1 mark)**

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**23.** Use the cell representation below to answer the questions that follow

$V(s) / V^{3+}(aq) // Fe^{2+}(aq) / Fe(s)$

**i.** Write the equation for the cell reaction **(1 mark)**

**ii.** If the E.M.F of the cell is 0.30 volts and the $E^{\theta}$ value for $V^{3+}aq / V(s)$ is -0.74V, calculate the $E^{\theta}$ of $Fe^{2+}(aq)/ Fe(s)$ **(2 marks)**

**24.** When $50cm^3$ 1M potassium hydroxide was reacted with $50cm^3$ of 1M hydrochloric acid, the temperature rose by $8^0C$. When the same volume of Potassium hydroxide was reacted with $50cm^3$ of 1M Pentanoic acid, the temperature rose by $3^0C$.

**i)** Give reasons for the above difference in temperature. **(2 marks)**

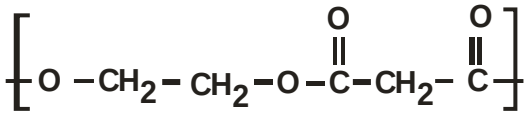
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**ii)** Write an equation to show dissociation of pentanoic acid? **(1 mark)**

**25.** The following is structural formula of polyester.



**a)** Draw the structural formula and name the alkanoic acid and alkanol that react to form the polymer. **(2 marks)**

**b)** Give **one** use of polyester. **(1 mark)**

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**26.** A heavy metal P was dissolved in dilute nitric acid to form a solution of compound $P(NO_3)_2$. Portions of the resulting solution were treated as follows:

**a)** To the first portion a solution of dilute hydrochloric acid is added, where a white precipitate (S) is formed, which dissolves on warming.

**b)** The second portion is treated with two drops of 2M Sodium hydroxide solution where a white precipitate T is formed. The white precipitate dissolved in excess sodium hydroxide to form a colourless solution.

**c)** A solution of potassium iodide is added to the third portion where a yellow precipitate (U) is formed.

**d)** When the resulting solution is evaporated to dryness and heated strongly a yellow solid (V) is formed and a brown gas (W) and a colourless gas (X) are formed.

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

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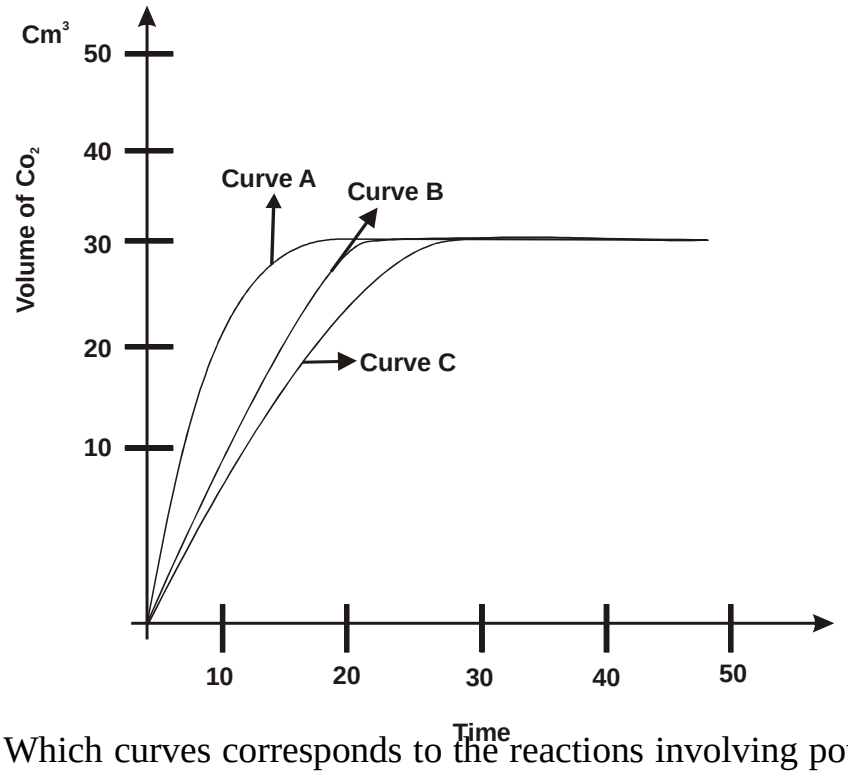
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**27.** The graphs below were drawn when 15g of marble chips in different physical states were reacted with 50cm$^3$ of 2M Hydrochloric acid. They are drawn by measuring the volume of carbon (iv) oxide produced with time.




**a)** Which curves corresponds to the reactions involving powdered calcium carbonate and large sized marble chips with the dilute acid?

**(i)** Powdered calcium carbonate **(½ mark)**

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**(ii)** Large sized calcium carbonate **(½ mark)**

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**b)** All the graphs eventually flatten out at the same level but at different time. Why do the graphs flatten out at the same level? **(1 mark)**

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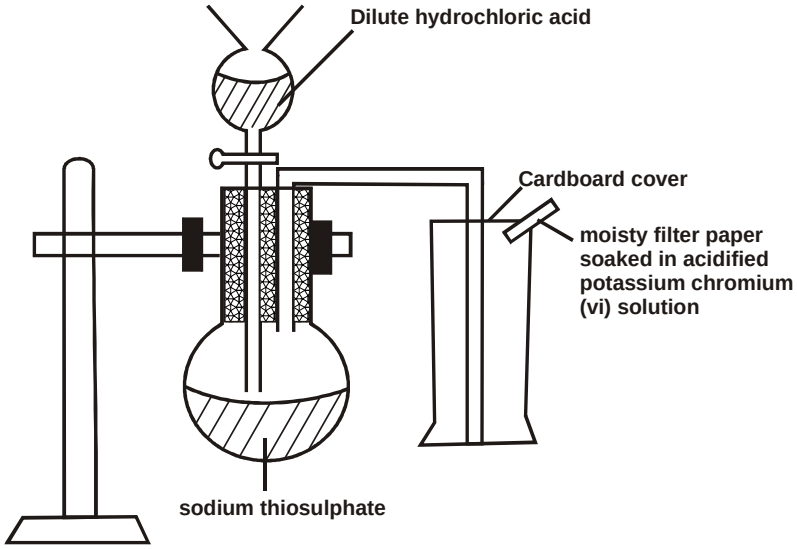
**c)** Why is curve A very steep at any given point compared to the other curves. **(1 mark)**

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**28.** Sodium thiosulphate was reacted with dilute hydrochloric acid in a round bottomed flask as shown below. The gas evolved was collected by downward delivery in a gas jar.




**a)** Write an equation to show the reaction going on in the reaction in vessel.

**(1 mark)**

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**b)** State the observation noted on the filter paper. Give a reason for your answer.

**(1 mark)**

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**c)** Give a reason why the filter paper soaked in the acidified potassium chromium **(VI)** is used at the top of the flask. **(1 mark)**

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**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## CHEMISTRY PAPER 2

## *Kenya Certificate of Secondary Exams*

## TIME:2 HOURS

**INSTRUCTIONS TO CANDIDATES**

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

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

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

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

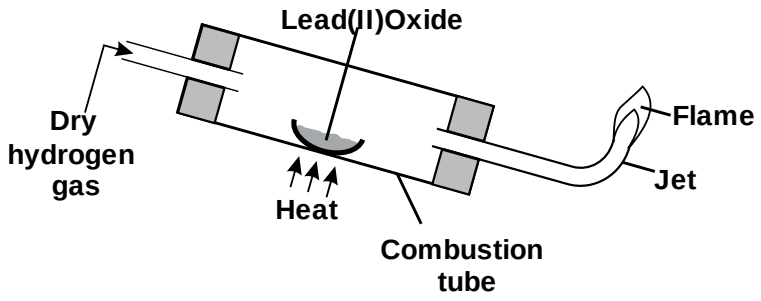
***e)*** *All **working must be clearly shown** where necessary.*

***f)*** *This paper **consists** of **13 printed pages**.*

**FOR EXAMINERS USE ONLY**

| Questions | Maximum Score | Candidate's Score |
|---|---|---|
| 1 | 11 | |
| 2 | 14 | |
| 3 | 12 | |
| 4 | 11 | |
| 5 | 12 | |
| 6 | 10 | |
| 7 | 10 | |
| **TOTAL** | **80** | |

1.The diagram below shows an experiment to demonstrate the properties of hydrogen as a reducing agent. Study it and answer the questions that follow.




**a)** Before lighting hydrogen gas at the jet, it is important to drive off all the air in the combustion tube. Explain. **(1 mark)**

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**b)** State what would be observed in the boat containing lead (II) oxide at the end of the experiment. **(1 mark)**

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**c)** Write chemical equations for the reaction taking place;

**i)** In the combustion tube. **(1 mark)**

**ii)** At the jet as the flame burns. **(1 mark)**

**d)** Why should the supply of hydrogen continue until the apparatus are cool? **(1 mark)**

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**e)** Why is it important to clamp the glass tube or combustion tube in a slanting position? **(1 mark)**

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**f) i)** Cars in Mombasa rust faster than in Kisumu. Explain. **(1 mark)**

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**ii)** Give the factors that are necessary for rusting. **(1 mark)**

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**iii)** Name ***two*** methods used to prevent rusting. **(1 mark)**

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**iv)** Explain why a nail paced in a sealed tube containing tap water rusts while a nail placed in a sealed tube containing boiled water fails to rust. **(1 mark)**

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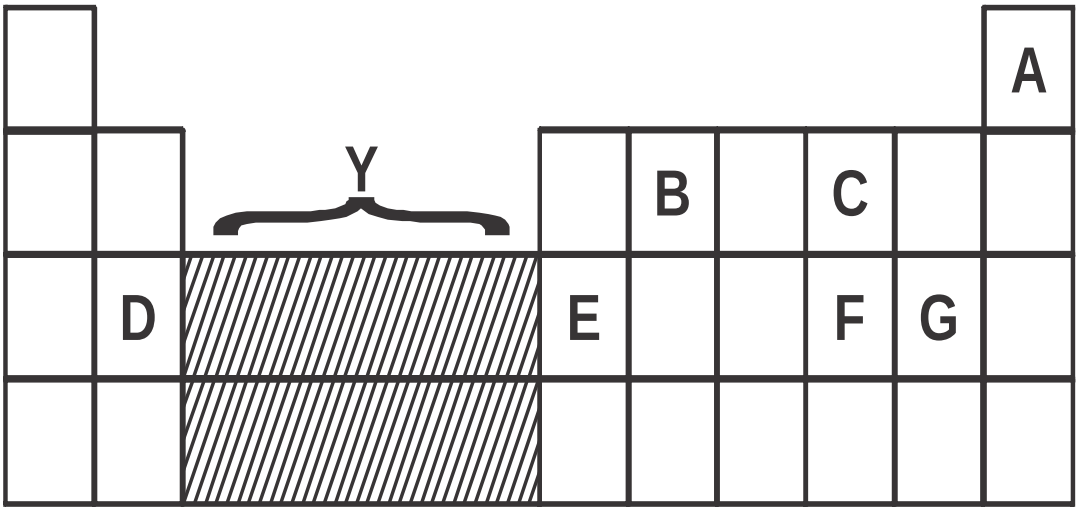
**v)** State ***two*** industrial uses of oxygen gas. **(1 mark)**

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**2.** The grid shown below represents part of the periodic table. Study it and answer the question that follow. The letters do not represent the actual symbol of the elements.




**a)** What type of bonds would be formed between C and G. Explain. **(2 marks)**

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**b)** Write the formulae of the compounds that would be formed between:

**i) D** and **G** **(1 mark)**

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**ii) E** and **G** **(1 mark)**

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**c)** State and explain how the compounds formed in (b) above compare in their melting points in terms of structure and bonding. **(2 marks)**

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**d)** Give the formulae of the oxides of the elements D and F and state the nature of each oxide.

**i**) D oxide **(2 marks)**

Formulae

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Nature

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**ii)** F oxide **(2 marks)**

Formulae

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Nature

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e) Which of the elements shown does not form an oxide? Explain. **(1 mark)**

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**f)** Which two elements shown on the grid are good conductors of electricity? Explain. **(2 marks)**

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**g)** What name if given to the group of elements represented by letter Y in the periodic table**?** **(1 mark)**

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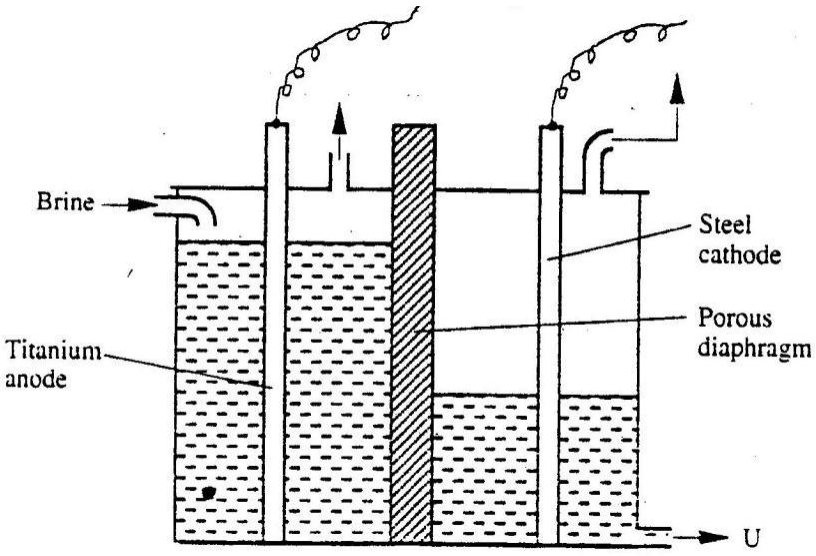
**3. (a)**Brine usually contains soluble calcium and magnesium salts. Explain how sodium carbonate is used to purify brine. **(2 marks)**

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**4**.The diagram below represents a diaphragm cell used to electrolysed pure brine




**(a)** Write the equations for the reactions that take place at :-

**I** Cathode **(1 mark)**

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**II** Anode **(1 mark)**

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**(b)**Name: **I** Product at U. **(1 mark)**

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**II** Another material that can be used instead of titanium **(1 mark)**

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**III** The impurity present in the product at U **(1 mark)**

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**IV** State ***two*** functions of the diaphragm **(2 marks)**

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**c)** Give ***one*** industrial use of the product at U. **(1 mark)**

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d) State ***two*** environmental hazards associated with extraction of sodium metal. **(2 marks)**

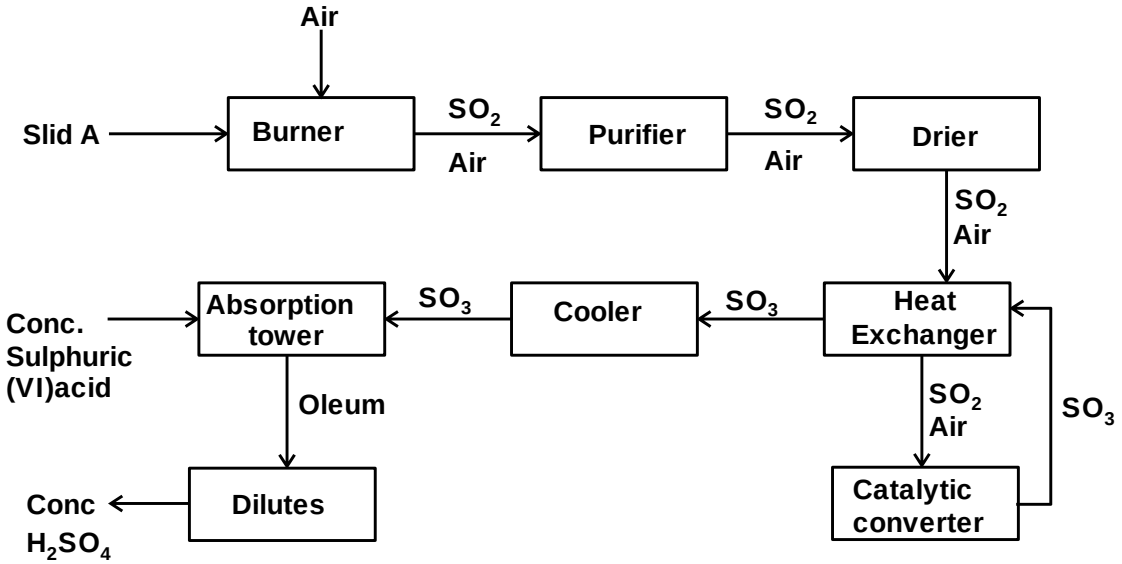
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4. The diagram below illustrates the contact process for the manufacture of sulphuric (VI) acid.

Study it and answer the questions that follow.




**a)** Name ***three*** possible identities of solid A. **(1½ marks)**

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**b) i)** Name ***two*** impurities removed by the purifier. **(1 mark)**

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**ii)** Why is it necessary to remove the impurities? **(1 mark)**

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**c)** Write down the equation for the reaction that takes place in the catalytic converter**.** **(1 mark)**

**d) i)** Name **two** catalysts that can be used in the converter. **(2 marks)**

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**ii)** Which of the ***two*** catalysts is most commonly used and why? **(1 mark)**

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**e)** Why is sulphur (VI) oxide not absorbed directly into water? **(1 mark)**

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**f)** Give the equation for the reaction that takes place in the absorption chamber**.** **(1 mark)**

**g)** Name the main pollutant in the contact process. **(½ mark)**

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**h)** Name ***one*** method by which the pollution is controlled in the contact process. **(1 mark)**

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**5.** Study the table below and answer the questions that follow;

Reduction Half-reaction $E^{q}$(Volts)

$Ag^{+}_{(aq)} + e^{-} \rightarrow Ag_{(s)}$ + 0.80

$Cu^{2+}_{(aq)} + 2e^{-} \rightarrow Cu_{(s)}$ + 0.34

$2H^{+}_{(aq)} + 2e^{-} \rightarrow H_{2(g)}$ 0.00

$Zn^{2+}_{(aq)} + 2e^{-} \rightarrow Zn_{(s)}$ -0.76

$Na^{+}_{(aq)} + e^{-} \rightarrow Na_{(s)}$ -2.71

**a)** Which is the strongest reducing agent in the above half equations? Explain. **(2 marks)**

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**b)** Calculate the electromotive force of a cell consisting of Zinc and silver electrodes immersed in solutions of their respective ions. **(2 marks)**

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**c)** Give the cell representation of the cell in (b) above. **(1 mark)**

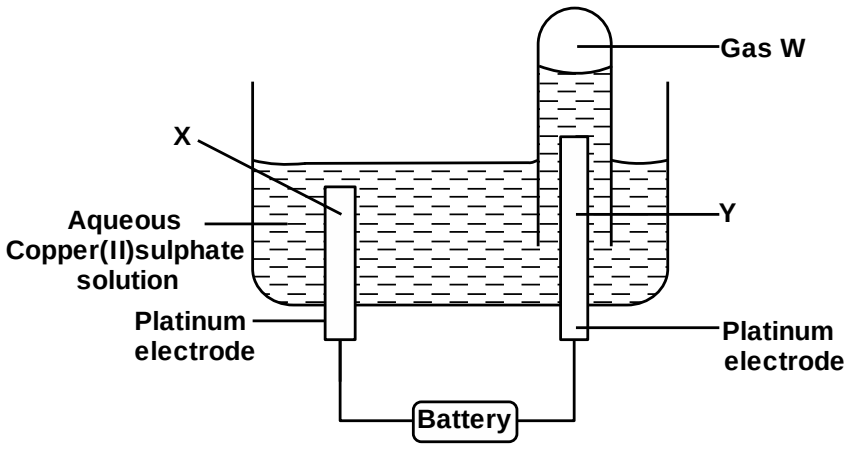
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d) The diagram below represents an experiment set up used for the electrolysis of aqueous copper (II)

sulphate solution. Study it and answer the questions that follow;



**i)** Name electrodes X and Y. **(2 marks)**

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**ii)** Name gas W **(1 mark)**

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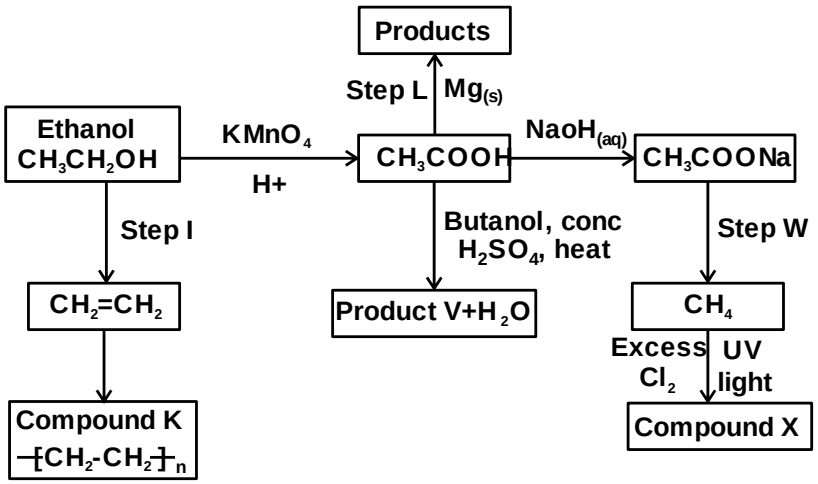
**iii)** Write the overall equation of the reactions taking place at electrodes X and Y.

**(1 mark)**

**iv)** If a current of 0.4A was passed through the cell for 15 minutes, calculate the mass of copper that would be liberated. (*Relative atomic mass of copper = 64, 1F = 96,500C)*

**(3 marks)**

**6.**The scheme below shows a series of reactions starting with ethanol. Study it and answer the questions that follow.




**a)** Give the type of reaction, the reagent(s) and the condition(s) necessary for step 1 to take place**.** **(1 mark)**

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**b)** Write the equation for the reaction that takes place in step L. **(1 mark)**

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**c)** Name product V and give the equation responsible for its formation. **(2 marks)**

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**d)** Give the reagent(s) and condition(s) necessary for step W to take place. **(1 mark)**

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**e)** Give the IUPAC name and structural formula of compound X. **(1 mark)**

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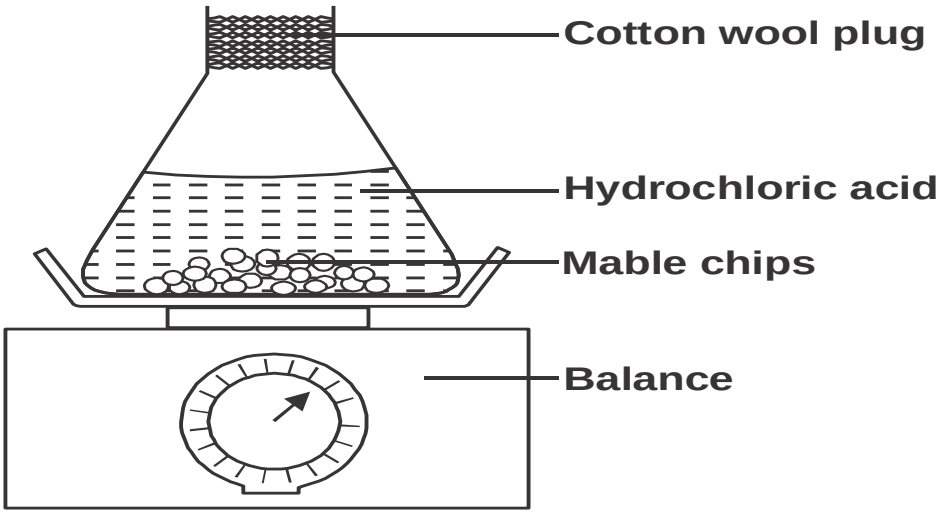
**f)** Name compound K and state the type of reaction involved in its formation. **(2 marks)**

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**g)** If the relative molecular mass of K is 44800, determine the value of n. (*C = 12, H = 1)*
**(2 marks)**

**7.**The set up below is used to measure the change in mass during the course of the reaction between dilute hydrochloric acid (excess) and marble chips at 22°C.



Changes in mass were noted at one minute intervals and were as follows.

**a)** Give an equation for the reaction taking place in the flask. **(1 mark)**

**b)** Why did the mass of the flask change with time? **(1 mark)**

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**c)** What is the role of cotton wool at the mouth of the flask? **(1 mark)**

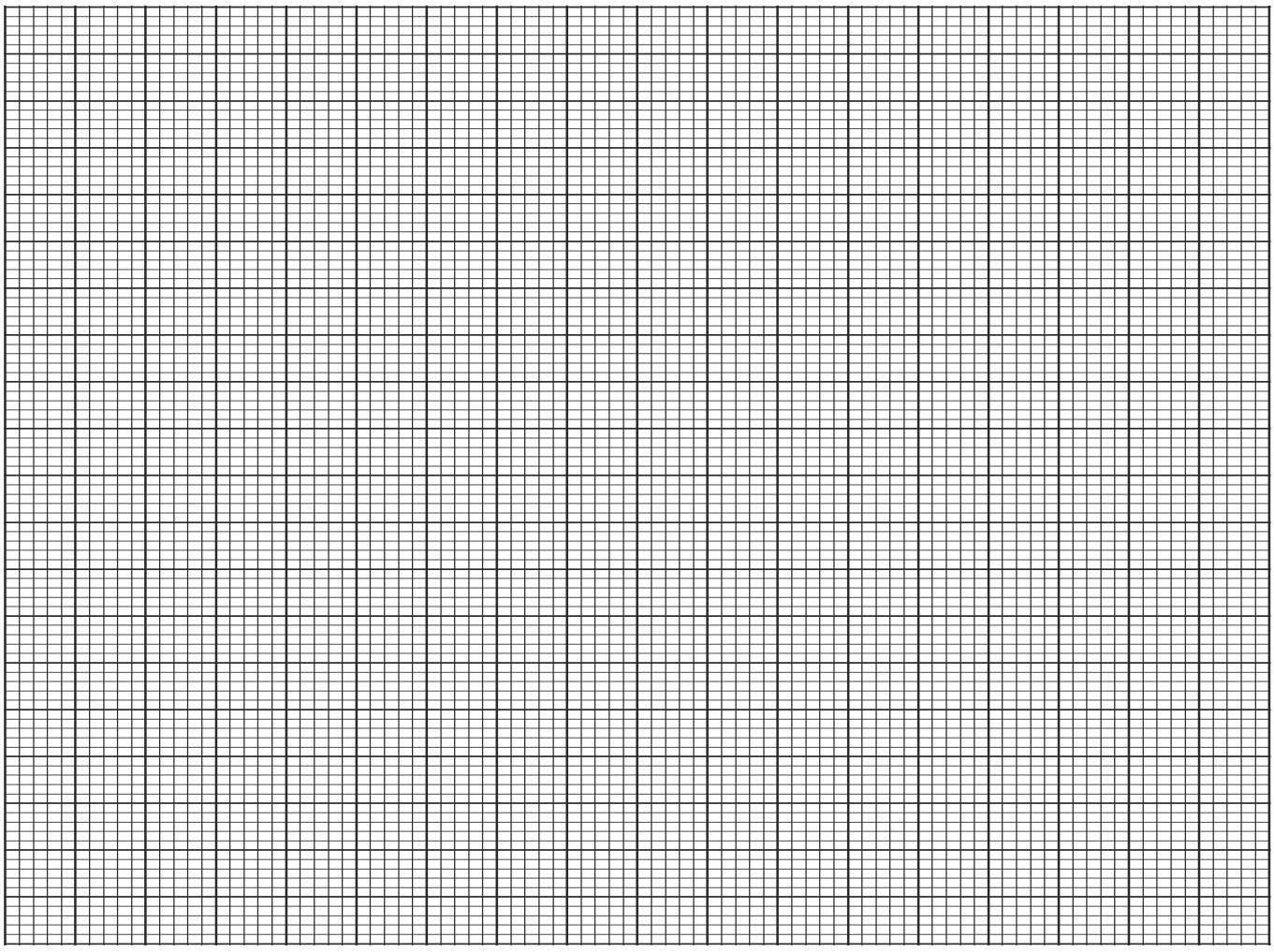
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**d)** Plot a graph of loss in mass (Y-axis) against time (X-axis). Label the curve 22°C.

**(3 marks)**

| Time (min) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Loss in mass(g) | 0.26 | 0.46 | 0.60 | 0.69 | 0.73 | 0.73 | 0.73 |



**e)** On the graph same axis as in (d) above, sketch the graph you would expect to obtain if the experiment was repeated at 35°C. Label the curve 35°C. **(2 marks)**

**f)** State what would happen if the marble chips were replaced with the same mass of marble powder. Explain **(2 marks)**

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**g)** Why is it not advisable to use sulphuric (VI) acid in place of hydrochloric acid in this experiment? **(1 mark)**

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**NAME……ADM NO……**

**SCHOOL……..……..……..CLASS……**

**DATE……..……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## CHEMISTRY PAPER 3

## *Kenya Certificate of Secondary Exams*

## TIME: $2^1/_4$ HOURS

### Instructions to Candidates

***a)*** *Write your **Name** and **Index numbers** in the spaces provided above.*
***b)*** *Sign and write the date of examination in the spaces provided above.*
***c)*** *Answer **ALL** the questions in the spaces provided in the question paper.*
***d)*** *Mathematical tables and silent electronic calculators may be used.*
***e)*** *All working **MUST** be clearly shown where necessary.*
**f)** *Candidates should check the question paper to ascertain that **all** pages are printed as indicated and that no questions are missing.*

### For Examiner's Use Only

| Question | Maximum Score | Candidate's Score |
|---|---|---|
| 1 | 20 | |
| 2 | 10 | |
| 3 | 10 | |
| TOTAL SCORE | 40 | |

**1.** You are provided with:

- 6.2 g of an alkanoic acid labelled **solid A** in a boiling tube.
- 2 M sodium hydroxide solution labelled **solution B.**

***You are required to***:

**i)** Determine the solubility of solid A at different temperatures.

**ii)** Find the molar mass of the alkanoic acid.

## Procedure 1

**i)** Using a burette, add 10cm$^3$ of distilled water to **solid A** in the boiling tube. Heat the mixture while stirring with the thermometer to about 75 $^0$C. When the entire solid had dissolved, allow the solution to cool while stirring with the thermometer. Note the temperature at which crystals of solid M appear. Record this temperature in table I.

**ii)** Using the burette, add 2cm$^3$ of distilled water to the contents of the boiling tube. Warm the mixture while stirring with the thermometer until all the solid dissolves. Allow the mixture to cool while stirring. Note the temperature at which crystals of **solid A** appear.

**iii)** Repeat procedure (ii) two more times and record the temperatures in table I.

**Retain the contents of the boiling tube for use in procedure II.**

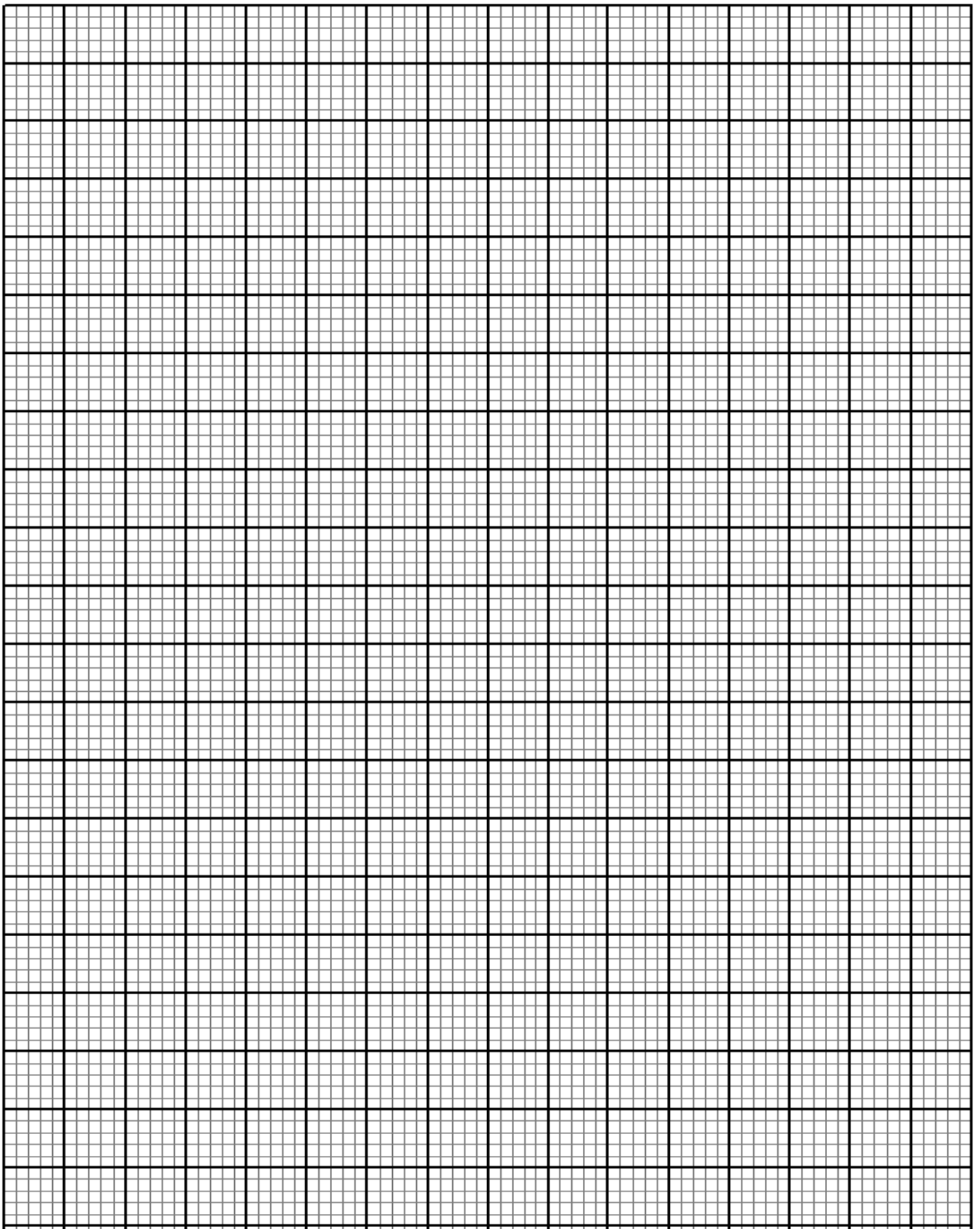
**a)i)**Complete table I by calculating the solubility of solid A at different temperatures. **(6 marks)**

## Table I

| **Volume of water in the boiling tube (cm$^3$)** | **Temperature at which crystals of solid A appear ($^0$C)** | **Solubility of A (g/100g water)** |
|---|---|---|
| 10 | | |
| 12 | | |
| 14 | | |
| 16 | | |

**ii)**On the grid provided, plot a graph of the solubility of solid A against temperature.

**(3 marks)**



**iii)** Using the graph determine the temperature at which 52 g of solid A would dissolve in 100cm$^3$ of water. **(1 mark)**

## Procedure II

**i)** Transfer the contents of the boiling tube in procedure I into a 250ml volumetric flask. Rinse both the boiling tube and the thermometer with distilled water and add it to the volumetric flask. Add more distilled water to make up to the mark. Transfer the solution into a 250ml beaker. Label this **solution E**. Rinse the volumetric flask with distilled water ready for use in step (ii).

**ii)** Using a measuring cylinder, place 25cm$^3$ of solution B into a 250ml volumetric flask. Add about 200cm$^3$ of distilled water and shake well. Add more distilled water to make up to the mark. Label this **solution F**.

**iii)** Fill the burette with **solution E**. Using a pipette and a pipette filter, place 25cm$^3$ of **solution F** into a conical flask. Add 2 – 3 drops of **phenolphthalein indicator** and titrate with **solution E**. Record your results in table II. **Repeat** the procedure **(iii)** two more times to complete the table.

## Table 2

| Titration | 1 | 2 | 3 |
|---|---|---|---|
| Final burette reading (cm$^3$) | | | |
| Initial burette reading (cm$^3$) | | | |
| Volume of solution E used (cm$^3$) | | | |

**(4 marks)**

**Determine:**

**i)** Average volume of solution E used. **(1 mark)**

**ii)** Concentration of solution F in moles per litre **(1 mark)**

**iii)** Number of moles in 25cm$^3$ of solution B **(1 mark)**

**iv)** Moles of alkanoic acid, solution E used **(1 mark)**
( 1 mole of acid reacts with 2 moles of base)

**v)** Concentration of solution E in moles per litre **(1 mark)**

**vi** Relative formula mass of the alkanoic acid, solid B. **(1 mark)**

**2.** You are provided with solid **E**, carry out the tests below and record your observations and inferences in the spaces provided

**a)** Place all the solid **E** provided into a test tube. Add about $6cm^3$ of distilled water and shake thoroughly. Filter and rinse the residue thoroughly with distilled water. Keep the Residue for use in procedure (c). Divide the filtrate into four portions.

**i.** To the first portion add sodium hydroxide solution dropwise until in excess

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

**ii.** To the second position dip a clean glass rod and hold its tip in the non-luminous Bunsen burner flame.

| **Observations** | **Inferences** |
|---|---|
| **(1 mark)** | **(1 mark)** |

**iii.** To the third portion add two drops of barium nitrate solution

| Observations | Inferences |
|---|---|
| **(1 mark)** | **(1 mark)** |

**iv.** To the fourth portion add two drops of acidified potassium manganite (VII)

| Observations | Inferences |
|---|---|
| **(1 mark)** | **( 1 mark)** |

**b.** Put the residue in a boiling tube and add about 5 cm3 of dilute nitric (V) acid provided and shake thoroughly.

| Observations | Inferences |
|---|---|
| **( ½ mark)** | **( ½ mark)** |

Divide the solution into two equal portions.

**i.** To the first portion add sodium hydroxide solution dropwise until in excess

| Observations | Inferences |
|---|---|
| **( 1 mark)** | **(1 mark)** |

**ii.** To the second portion add two drops of sodium iodide solution.

| Observations | Inferences |
|---|---|
| | |

| | |
|---|---|
| **( ½ mark)** | **(1 mark)** |

**3.** You are provided with liquid L in stoppered container. Carry out the tests and record your observations and inferences.

**a)** Place about 3 drops of liquid L on a watch glass and ignite using a Bunsen burner flame.

| Observations | Inferences |
|---|---|
| **(1 mark)** | **(1 mark)** |

**b)** Divide the remaining liquid L into four portions in test tubes.

**(i)** To the first portion, add about $6cm^3$ of distilled water and shake well.

| Observations | Inferences |
|---|---|
| **( ½ mark)** | **( ½ mark)** |

**(ii)** To the second portion, add the sodium hydrogen carbonate solid provided.

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

**(iii)** To the third portion, add two drops acidified potassium manganite (VII) solution.

| Observations | Inferences |
|---|---|

| | |
|---|---|
| **( ½ mark)** | **( 1 mark)** |

**(iv)** To the last portion, add two drops acidified potassium dichromate **(VI)** solution.

| Observations | Inferences |
|---|---|
| **( 1 mark)** | **( 1 mark)** |

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## COMPUTER PAPER 1

## *Kenya Certificate of Secondary Exams*

## TIME: 2½ HOURS

**INSTRUCTIONS TO CANDIDATES**

- *Answer **ALL** the questions in **section A***
- *Answer **question 16 (compulsory)** and **ANY OTHER THREE questions** from **section B.***

## For Official Use Only

| Question | Maximum score | Actual score |
|---|---|---|
| 1-16 | | |
| 17 | | |
| 18 | | |
| 19 | | |
| 20 | | |
| TOTAL SCORE | | |

## SECTION A: (40 MARKS)

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

**1. i)** Explain the ***emerging trends*** in microcomputer technology in relation to Size

**(1 mark)**

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**ii)** Mention ***two*** Analogue devices**.** **(2 marks)**

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**2. i)** Identify and briefly describe ***three*** advantages of using computers in banking **(1½ marks)**

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**ii)** State ***two*** advantages of using a mouse instead of a keyboard**.** **(1 mark)**

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**3.** State ***two*** reasons why Magnetic tapes are not commonly used as computer data storage medium today**.** **(1 mark)**

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**4. i)** Give ***two*** advantages of the higher number of pixels per square centimeter. **(1 mark)**

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**ii)** Differentiate between ***Data interface cable*** and ***power cable*****.** **(1 mark)**

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**iii)** Explain ***two*** differences between ***serial*** and ***parallel*** communication ports of a computer . **(2 marks)**

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**5. i)** What is ***line spacing*** as used in word processing? **(½ mark)**

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**ii)** Describe any ***two*** line spacing specification used in Microsoft Word. **(1 mark)**

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**iii)** Name the ***two*** documents used in mail merge. **(1 mark)**

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**iv).** With reference to the concept of graphics as used in Microsoft word. Explain the ***difference*** between object linking and embedding? **(1 mark)**

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**6.** Who am I? **(3 marks)**

**i)** Am is skilled in software/program development as per requirement and technical operations of computer hardware. I also develop and update both system and application software together with the associated documentations.

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**ii)** Am is skilled in designing computer hardware and also improves on existing ones.

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**iii)** I maintain, update & modify information on the websites to meet new demands by the users. I also monitor the access & use of internet connection by enforcing security measures

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7. During the COVID 19 pandemic, the government advised the citizens to use electronic funds transfer and other popular mobile phone money transactions to make payments.

**i)** State ***how*** the above method of conducting business would help to curb on the spread of the disease. **(2 marks)**

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**ii)** What is the meaning of ***Electronic Funds Transfer?*** **(1mk)**

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**8.** Define the term ***dual booting*** as used in computing**.** **(1 mark)**

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**9**. Differentiate between ***cropping*** and ***grouping.*** **(2 marks)**

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**10**.Other than flow chart, state **two** tools that can be used to present an algorithm**(2 marks)**

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**11.** Differentiate between a ***deadlock*** and ***interrupt*** as used in operating system**.(2 marks)**

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**12. (a)** Securem is a company that deals with providing security services to its clients. Name any ***two*** ways the company can protect its computer network from hackers**.** **(2 marks)**

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**(b)** State ***three*** characteristics of a suitable password. **(3 marks)**

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**13.** During system development the system analyst should consider the correct requirement specifications for the new system. State any **four** outcomes that may result from using incorrect requirement specifications. **(3 marks)**

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**14. (a)** Define the term ***Computer Aided Design.*** **(1 mark)**

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**(b)** List **two** advantages of using Computer Aided Design. **(2 marks)**

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15. Explain **two** arithmetic errors that may occur during computerised data processing. **(2 marks)**

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# SECTION B (60 marks)

***Answer question 16 and ANY OTHER THREE questions from this section in the spaces provided.***

**16. (a)** Give ***two*** examples of syntax errors in programming. **(2 marks)**

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**(b)**Scrabble™ is a word game where the players are awarded points by creating words from a combination of letters each of which carry a different point value. A player is awarded the points for creating words from the combination. Write a ***pseudocode using CASE*** to read a letter and output the value equivalent to that letter from the following table.

**(8 marks)**

| **LETTER** | **VALUE** |
|---|---|
| **A,E,I,L,N,O,R,S,T,U** | 1 |
| **D,G** | 2 |
| **B,C,M,P** | 3 |
| **F,H,V,W,Y** | 4 |
| **K** | 5 |
| **J,X** | 8 |
| **Z,Q** | 10 |

**(c)** Classify the following programming languages according to their category**:(3 marks)**

| Programming language | Category |
|---|---|
| HTML | |
| JAVA | |
| JAVASCRIPT | |

| | |
|---|---|
| PASCAL | |
| VISUAL BASIC | |
| LISP | |

**(d)** With aid of a diagram, explain the "Repeat Until" construct as used in structured programming . **(2 marks)**

**17. (a)** State the ***stage*** in system development life cycle where each of the following activities are carried out:

**i.** Identifying shortcomings of a system. **(1 mark)**

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**ii**. Preparing the system migration plan **(1 mark)**

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**iii.** Identifying the technologies that may be used in the proposed system. **(1 mark)**

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**(b)** State ***three*** roles of a programmer in system development life cycle. **(3 marks)**

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**(c)** E-mail technology has become a very important part of today's communication. Explain any ***three*** problems associated with using e-mail technology for communication. **(6 marks)**

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**(d)** Sarafina wants to download her favourite movie from YouTube. State any three factors that may determine how long it will take her to complete the download**.** **(3 marks)**

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18. The following Digital Club Member details were to be entered in a database: Name, Date of registration, Registration fee and Class.

**(a)** Prepare a suitable structure showing field names and their field types (4 marks)

| Field | Data type |
|---|---|
| Name | Text |
| Date of registration | Date |
| Registration fee | Currency or Number |
| Class | Text |

**(b)** Name one other field that the Club Patron may need to add to uniquely identify the records **(1 mark)**

.....

.....

**(c)** Write the statement that can be used to select members of the class form 3. **(2 marks)**

| | Name | Date of registration | Registration fee | Class |
|---|---|---|---|---|
| | | | | |
| Criteria/ Expression | | | | |

**(d)** The following is an extract from a spreadsheet created to manage sales. Use it to answer the questions that follow.

| | A | B | C | D |
|---|---|---|---|---|
| 1 | ITEM NAME | UNIT PRICE | UNITS SOLD | |
| 2 | HDD 300 GB | 7,500 | 2 | |
| 3 | Optical Drive | 4,500 | 8 | |
| 4 | DELL Latitude core i5 | 44,500 | 3 | |
| 5 | DDR4 8GB RAM | 10,000 | 4 | |
| 6 | Lenovo Yoga Smart Tab | 28,953 | 1 | |

**(i)** Write a formula that will compute the number of items whose unit price whose price more than 10,000 **(3 marks)**

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**(ii)** If the formula =$B2*C$2 was placed in D2, state the output if copied to D3**(2 marks)**

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**(iii)** Write the cell referencing used in c(ii) above. **(1 mark)**

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**(iv)** Write the data type that is stored in cell C5 and A6 respectively **(2 marks)**

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19.a.Define the term attenuation as used in networking and data communication.**(1 mark)**

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**b)** The following are figures of networking cables. Identify each. **(2 marks)**



Figure 1

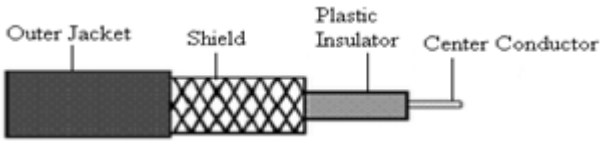



Figure 2

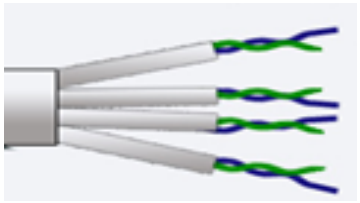


Figure 3

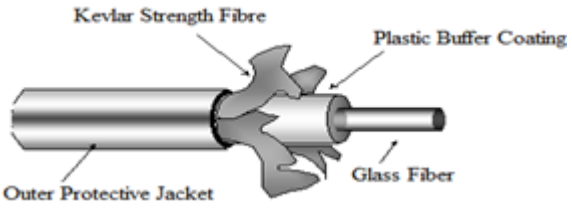



Figure 4

**Figure 1**

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**Figure 2**

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**Figure 3**

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**Figure 4**

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**c) (i)** Give ***two*** examples of network software **(2 marks)**

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**(ii)** In a network setup, list any **two** items that may be referred to as data terminal equipment. **(2 marks)**

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**d)** Explain the following terms as used in networking **(4 marks)**

**(i)** Remote Communication

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**(ii)** Distributed processing

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**e)** State ***four*** functions of a server in a network **(4 marks)**

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**20. (a)** Determine the binary equivalent of the octal number 253243. **(2 marks)**

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**(b)** Carry out the following binary arithmetic using *ones complement*. In each case leave your answer in ***base 10***.

**(i)** $10_{10}$-$10_8$ **(5 marks)**

**(ii)** 2BH-9H **(6 marks)**

**(c)** Arrange the following numbers in ascending order. **(2 marks)**

$10_{16}$, $10_{10}$, $15_8$, $1011_2$

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## COMPUTER PAPER 2(PRACTICAL)

## *Kenya Certificate of Secondary Exams*

## TIME: 2½ HOURS

## INSTRUCTIONS TO CANDIDATES

1. *Type your name and Index number at the right hand corner of each print out.*
2. *Write your name and Index number on the CD provided.*
3. *Write the name and version of the software used for each question attempted in the answer sheet*
4. *Answer **all** the questions*
5. *Passwords **should not be used** while saving in the CD provided.*
6. *All answers **must** be saved in your CD provided.*
7. *Arrange your printouts and staple them together*
8. *Hand in all the **printouts** and the CD used*
9. ***This paper consists of 4 printed pages.***
10. ***Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.***

## QUESTION 1: WORD PROCESSING

**1. a)** Open your word processing application and type the following letter on a new blank page (include the dashed line). Save the letter as **Course Letter**. **(15mks)**

---

**12 George Street**
**Sydney**
**NSW 2000**

**RE: NEW COURSES ON OFFER**

Dear Participant,

As you may be aware we have been running a variety of courses at the college ranging from 1 week to 12 weeks. We are now happy to inform you that we are introducing a number of

2-day courses, which will be held both at weekends and mid-week to suit the varying needs of potential students.
Please find enclosed an application form and a program schedule. We look forward to your participation.

Yours truly,

**Morgan Reilly**
**Course Director**

**b)** Open a new blank document and create the table below. Save the file as **Course Participant Data.** **(12mks)**

| TITLE | FIRST_NAME | SURNAME | ADDRESS_1 | ADDRESS_2 | CITY |
|---|---|---|---|---|---|
| Mrs | Mary | Collins | 10 Bally Rd | Bondi | Sydney |
| Mr | Tom | Thompson | 15 Bondi Rd | Coogee | Sydney |
| Ms | Roberta | Reynolds | 85 Oxford Street | Maroubra | Sydney |
| Mr | Scott | Brooke | 45 Scott Rd | Randwick | Sydney |
| Ms | George | Stephens | 34 George Street | Bondi | Sydney |
| Mr | Frank | Hunter | 23 Mullins Rd | Tamworth | NSW |
| Mrs | Shiela | Goddins | 45 Llandaff Rd | Rushcutters Bay | Sydney |

c) Using the **Course Letter** as a form letter and the **Course Participants Data** as the data source merge the two documents and insert the merged fields Title, First_Name, Surname, Address and City fields above Dear Participant in the letter, as shown below.

**(12mks)**

<<Title>> <<First_Name>> <<Surname>>

<<Address_1>>

<<Address_2>>

<<City>>

Dear Participant

**d)** Save the mail merge document as **Course2021**. **(2mks)**

**e)** Prepare envelopes for the participants. Save them as Participant envelopes. **(7mks)**

**f)** Print the letter and envelope for **Mrs. Mary Collins** **(2mks)**

## QUESTION 2: DATABASE

**2.** The following records were provided by a Uchumi Bora Supermarket . Study the table and answer the questions that follow. The products having the ProductID starting with value 1 are premium products, others starting with 2 are ordinary products.

| ProductID | SalesID | Product Description | Package Quantity | Sales Date | Sales Rate | Sales Quantity(Kgs) |
|---|---|---|---|---|---|---|
| 1001 | 1 | Cassava Flour | 1Kg | 12/08/2020 | 340 | 25 |
| 2002 | 2 | Wheat Flour | 2Kg | 14/08/2020 | 32 | 45 |
| 2003 | 3 | Millet Flour | 1Kg | 23/08/2020 | 63 | 50 |
| 2004 | 4 | Maize Flour | 2Kg | 27/08/2020 | 50 | 47 |
| 1001 | 5 | Cassava Flour | 1Kg | 02/09/2020 | 340 | 20 |
| 1005 | 6 | Amaranth Flour | 1/2Kg | 09/09/2020 | 34 | 30 |
| 2003 | 7 | Millet Flour | 1Kg | 11/09/2020 | 63 | 23 |
| 1006 | 8 | Moringa Flour | 1/2Kg | 17/09/2020 | 78 | 45 |

**(a)** Create a database file named “Uchumi Bora Products”. **(2mks)**

**(b)** Split and design the above table into “Products” and “Sales” tables to record products items and sales made respectfully. Set the SalesID to Auto Number. **(7mks)**

**(c)** Add appropriate key fields and create a relationship between the two tables. **(2mks)**

**(d)** Create the following forms: **(6mks)**

- **(i)** Columnar Products form named “ProductsForm”, having the title “Product Entry Form”.
- **(ii)** Columnar Sales form named “SalesForm”, having the title “Sales Details Entry Form”.

**(e)** Using the forms in (d) above post the products and sales details to their respectful tables. **(8mks)**

**(f)** Create the following queries.

- **(i)** A query named **Sales Query** that computes sales amount as a product of Sales Quantity and Sales Rate **(5mks)**
- **(ii)** A query named **Premium Query** to generate a list of premium products, having the fields; Product ID, Product Description, Package Quantity. Order the list in ascending order of ProdID. **(6mks)**

**(iii)** A query name **Date Query** to generate sales made between 23/08/2020 and 09/09/2020, having the fields ProductID, Product Description, SalesID, Sales Date and Sales Quantity. **(4mks)**

**(g)** Generate the following reports.

**(i)** Sales report named **Sales Report**, having the fields ProductID, Product Description, Package Quantity, SalesID, SalesDate, SalesRate and SalesQuantity, grouped by ProductID. **(3mks)**

**(ii)** A report named **VAT Report** displaying ProductID, SalesQuantity, SalesRate and SalesAmount from (f) (i); add field named "VAT 16%" and compute VAT as 16% of the SalesAmount. **(4mks)**

**(h)(i)** Print the tables, Products and Sales **(1mk)**

**(ii)** Print the queries, Sales Query and Premium Query **(1mk)**

**(iii)** Print the reports, Sales Report and VAT Report **(1mk)**

**NAME……ADM NO……**

**SCHOOL……..……..……..CLASS……**

**DATE……..……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## ENGLISH PAPER 1*(Functional skills)*

## *Kenya Certificate of Secondary Exams*

## TIME: 2 HOURS

## *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 check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*
6. *Candidates should answer the questions in English.*

## *For Official use only*

| Question | Maximum Score | Candidate's Score |
|---|---|---|
| e) Functional skills | 20 | |
| f) Cloze test | 10 | |
| g) Oral skills | 30 | |
| TOTAL | 60 | |

# 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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**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)

***a) 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

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

**1.** Identify and illustrate two mnemonic effects (sound devices) in the poem. **(2 marks)**

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**2.** You have been asked to perform the above poem.Explain how you will prepare for it. **(2marks)**

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**3.** What non-verbal aspects would you use in the performance of the poem and where? **(2 marks)**

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**4.** 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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***b)*** 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**.

**a)** ……

**b)** ……

**c)** ……

**d)** ……

**c)** Identify the silent letter in the following words **(4 marks)**

**(i)** Debut ……

**(ii)** Patois ……

**(iii)** Lesson ……

**(iv)** Heaven ……

**d)** 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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**e)** The underlined indicates the stressed word in the sentence below.Briefly explain what each sentence means. **(3 marks)**

**(i)** Tom visited <u>Mary</u> yesterday

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**(ii)** Tom <u>visited</u> Mary yesterday

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**(iii)** Tom visited Mary <u>yesterday</u>

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……

**f)** 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 marks)**

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**NAME……ADM NO……**

**SCHOOL……..……..……..CLASS……**

**DATE……..……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## ENGLISH PAPER 2

***Kenya Certificate of Secondary Exams***

## TIME: 2 ½ HOURS

## Instructions to students

- *Write your **name, admission number** and **class** in the spaces provided.*
- *Sign and write the date of the examination in the spaces provided.*
- *Answer **all** questions in the spaces provided*
- *All your answers must be written in the spaces provided in this question paper.*
- *This paper consists of **11 printed** pages.*
- *Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing*
- *Candidates must answer all questions in English*

| Question | Maximum Score | Student's Score | Examiner's Initials |
|---|---|---|---|
| 1 | 20 | | |
| 2 | 25 | | |
| 3 | 20 | | |
| 4 | 15 | | |
| TOTAL | 80 | | |

1. ***Read the passage below and answer the questions that follow 20 marks***

Writing skills are an important part of communication. Good writing skills allow you to communicate your message with clarity and ease to a far larger audience than through face-to-face or telephone conversations.

You might be called upon to write a report, plan or strategy at work; write a grant application or press release within a volunteering role; or you may fancy communicating your ideas online via a blog. And, of course, a well written CV or resume with no spelling or grammatical mistakes is essential if you want a new job.

Today, when anyone can be their own publisher, we see more and more examples of poor writing skills both in print and on the web. Poor writing skills create poor first impressions and many readers will have an immediate negative reaction if they spot a spelling or grammatical mistake. As just one example, a spelling mistake on a commercial web page may cause potential customers to doubt the credibility of the website and the organization.

Correct grammar, punctuation and spelling are key in written communications. The reader will form an opinion of you, the author, based on both the content and presentation, and errors are likely to lead them to form a negative impression.

If you are unconvinced about the importance of accurate writing, think of the clues we use to identify spam emails, “phishing” websites, and counterfeit products: poor grammar and spelling.

Similarly, some employers state publicly that any CV or resume containing spelling or grammatical mistakes will be rejected immediately, whilst a BBC news article quotes research that calculates spelling mistakes cost online businesses “millions” in lost sales.

Checking for poor writing and spelling mistakes should be seen as a courtesy to your readers since it can take them much longer to understand the messages in your writing if they have to think and re-read text to decipher these.

All written communications should therefore be re-read before sending to print, or hitting the send button in the case of emails, as it is likely that there will be errors. Do not assume that spelling and grammar checkers will identify all mistakes as many incorrect words can indeed be spelt correctly (for example, when “their” is used instead of “there” or “principle” instead of “principal”) or entire words may be missing. If at all possible, take a break before re-reading and checking your writing, as you are more likely to notice problems when you read it fresh.

Even if you know spelling and grammar rules, you should still double-check your work or, even better, have it proof-read by somebody else. Our brains work faster than our fingers can type the accidental typographical errors (typos) inevitably creep in.

The good news is that writing is a skill which can be learned like any other. One trick for checking and improving your work is to read it aloud. Reading text forces you to slow down and you may pick up problems with the flow that your eye would otherwise skip over.

As well as grammar, spelling and punctuation, it's important to remember your audience.

Always write with your audience in mind, and it can also help to bear in mind the medium in which you plan to publish. This knowledge will help you decide whether you need to write in a formal style or a more informal one, and will also help you to decide on a suitable structure.

**1.** Why are good writing skills important? **(3 marks)**

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**2.** What effect does poor writing skills have? **(2 marks)**

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**3.** In a paragraph of not more than 50 words, summarise the steps involved in good writing. **(5 marks)**

Rough copy

.....

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Final copy

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**4.** Explain the irony in paragraph three**.** **(3 marks)**

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**5.** 'The good news is that writing is a skill which can be learned like any other.'

Rewrite beginning with a participle. **(1 mark)**

……

……

**6.** Mention four things, apart from grammar, spelling and punctuation that the writer advocates we should remember when writing**.** **(2 marks)**

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**7.** Explain the meaning of the following expressions as they are used in the passage.

**(4 marks)**

**i)** Counterfeit products

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**ii)** Decipher

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**iii)** Phishing

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**iv)** Typographical errors

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***2. <u>Read the passage below and answer the questions that follow</u> 25 marks***

Nasila River – cool, smooth and silent – swirled quietly about the boulders that were half submerged in it. It was deep and wide. She stood at its bank for a long time, staring down, into the water. Could the answer to her woes be in that river? Yes, it could be! Just a swift, cold shock as she fell into the water and then there would be peace. Yes, peace all over, from her father, from Oloisudori and from the fact that she had failed to get admission to Egerton University. As the idea floated in her mind, she felt a tap on her shoulder. Shocker, she turned around. It was Olarinkoi.

"What are you doing here at the river side"? he asked with little interest.

"Nothing," Resian said nonchalantly. "I am just relaxing."

"Don't be foolish, little girl," Olarinkoi said seriously. "You may not want to tell me what is happening, but Iam not foolish and I can put one and one together. Oloisudori's men are now looking for you everywhere. They have instructions to seize you and take you to Nakuru to be his wife.

"Just leave me," Resian said angrily, "Go tell them to come and find me here."

"Listen, you stupid girl," Olarinkoi said in his caustic language. "If you do not want to marry Oloisudori, I can rescue you the way I rescued you from those vagabonds who had accosted you and your sister. I know where Minik ene Enkoitoi the *Emakererei* lives and where she keeps girls rescued from the situation you are now in. There is no need to despair in life. There is always another chance."

That could be something to consider, Resian thought, new hope rising in her heart. Yes, it would be wonderful to be received by *Emakererei.* And who knows, there could still be a chance to enrol at the Egerton University, through *Emakererei.*

"How could we ever get there?" asked Resian a flicker of hope lighting her heart. "I hear it is very very far from here."

"Yes it is far," confirmed Olarinkoi. "But where there is hope things always work out. The *Maa* people say home is never far for one who is still alive."

**a)** Place this excerpt in its immediate context. **(4 Marks)**

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**b)** Describe the incident that Olarinkoi claims to have rescued Taiyo and her sister.

**(2Marks)**

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**c)** Discuss a thematic concern found in the excerpt. **(2 marks)**

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**d)** What does the author imply when he says, "could the answer to her woes be in that river?" **(2 marks)**

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**e)** Explain the irony in the excerpt. **(2 marks)**

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**f)** Apart from irony, comment on any other **two** aspects of style that the writer has used in the excerpt. **(4 marks)**

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**g)** From elsewhere in the novel, state the prophecy that Olarinkoi is trying to fulfill when he plans to rescue Resian. **(3 marks)**

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**h)** Comment on the **character** of Olarinkoi later in the novel. **(2 marks)**

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**i)** What is the **attitude** of Resian towards Oloisudori's proposal? **(2 marks)**

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……

**j)** Give the meaning of the following words. **(2 marks)**

i) Nonchalantly

……

……

**ii)** Put one and one together

……

……

***3. <u>Read the poem below and answer the questions that follow</u> 20 marks***

**<u>NATURALLY</u>**

I fear the workers: they writhe in bristling grass
And wormy mud: out with dawn, back with dusk
Depart with seed and return with fat-bursting fruit
And I eat the fruit

And still they toil: at boiling point

In head-splitting noise and threatening saws
They suck their energy from slimy cassava
And age-rusty taps: till they make a Benz

And I ride in the Benz: festooned
With striped rags and python copper coiling monsters
While the workers clap their blistered hands
And I overrun their kids

They build their hives: often out
Of the broken bones of their mates:
And I drone in them – 'state-house'
Them, 'collegize' them, 'officialize' them

And I . . . I whore their daughters
Raised in litter-rotting hovels
And desiring a quickquick highhigh life
To break the bond

And I tell the workers to unite
Knowing well they can't see hear or understand:
What with sweat and grime sealing their ears
And eyes already blasted with wielding sparks
And me speaking a colourless tongue

But one day a rainstorm shall flood
The litter-rotten hovels
And wash the workers' eyes clean
Refresh the tattered muscles for a long-delayed

Blow

*(By Austin Bukenya in An Introduction to East African poetry)*

**(a)** Who is the persona in the above poem? **(2 marks)**

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**(b)** What is the poem about? **(3 marks)**

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**(c)** Identify and comment on any two stylistic devices used in this poem**.** **(4 marks)**

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**(d)** Describe the tone of the poem. **(2 marks)**

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**(e)** Identify one character trait of the persona as shown in the poem. **(2 marks)**

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**(f)** Explain the meaning of the following lines as used in the poem**.** **(4 marks)**

**(i)** Depart with seed and return with fat-bursting fruit

And I eat the fruit

.....

.....

……..

**(ii)** But one day a rainstorm shall flood
The litter-rotten hovel
And wash the workers' eyes clean
Refresh the tattered muscles for a long-delayed
Blow

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**(g)** Identify two instances in the poem which describe the workers living in deplorable conditions. **(2 marks)**

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**(h)** Comment on the use of coordinating conjunction "And" in this poem. **(1 mark)**

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**4. GRAMMAR**

**a)** ***Rewrite the following sentences according to the instructions given without changing the meaning.*** **(3 marks)**

**i)** Maria said the young men had stolen her sweet potatoes. (Rewrite beginning with: Maria accused…)

……

……..……

**ii)** It required a lot of planning and great courage to introduce free primary education in Kenya. (Begin: The…)

……

……..……..

**iii)** The judges declared that Cheptoo had won. (Finish: winner)

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……...……..

**b)** ***Rewrite the following sentences using participle phrases*** **(3marks)**

**i)** Some people who are afraid of technology believe that technology will take over their lives.

……

……

**ii)** He knew nothing about the area so he decided to look for a house at a different place.

……

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**iii)** The teacher repeated his favourite joke as he was encouraged by the applause of the students.

……

……

***c) Use the correct form of the word in brackets in each of the sentences below (3 marks)***

**i)** Your performance was…….. (theatre)

**ii)** Maimuna is an …… girl. (adventure)

**iii)** Do you think the seats will fit in the …… space? (avail)

***d) Complete the following sentences with a phrasal verb that begins with the word in brackets.*** ***(2 marks)***

**i)** The athlete …….. his competitors in the 800 metres race. (drop)

**ii)** Despite the court order, the governor ……organizing the county meeting. (go)

**e)** ***Correct the underlined idiomatic expressions.*** ***(2 marks)***

**i)** After the thorough beating by the crowd, the thief was <u>living a borrowed life.</u>

……

……

**ii)** The young man was asked <u>to clean up his state</u> by the counselor.

……

……

***f) Explain two different meanings of the following sentence.*** ***(2 marks)***

**i)** The chicken is ready to eat.

……

……

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## ENGLISH PAPER 3

## *Kenya Certificate of Secondary Exams*

## TIME: 2 ½ HOURS

## Instructions to students

- *Write your **name, admission number** and **class** in the spaces provided.*
- *Sign and write the date of the examination in the spaces provided.*
- *Answer **all** questions in the spaces provided*
- *All your answers must be written in the spaces provided in this question paper.*
- *This paper consists of **2 printed** pages.*
- *Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing*
- *Candidates must answer all questions in English*

| Question | Maximum Score | Student's Score | Examiner's Initials |
|---|---|---|---|
| 1 | 20 | | |
| 2 | 20 | | |
| 3 | 20 | | |
| TOTAL | 60 | | |

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

**Either**

**a)** Write a story ending with: . . .*I wish things did not end like this.*

**OR**

**b)** Write a story to illustrate the saying: 'Pride comes before a fall.'

**2. Compulsory Set Text**

*A Doll's House* by Henrik Ibsen

Women in *A Doll's House* challenge society's perception of the female gender. Write an essay justifying the assertion. **(20 marks)**

**3. Optional set text**

*Answer any one of the two questions*

**Either**

**a) The Short story:**

*Memories We Lost and Other stories* ED. Chris Wanjala

Children are imprisoned by mental ailments because of superstitious beliefs of those around them. Write an essay in support of the above statement drawing illustrations from Lidudumalingani Mqombothi's story *Memories We Lost***.** **(20 marks)**

**OR**

**b) The Novel:**

*The Pearl by John Steinbeck*

Good fortune does not necessarily guarantee happiness. Elucidate the truth of this statement drawing illustrations from the Pearl by John Steinbeck. **(20 marks)**

**NAME……ADM NO……**

**SCHOOL……..……..……..CLASS……**

**DATE……..……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## GEOGRAPHY PAPER 1*(Theory)*

## *Kenya Certificate of Secondary Exams*

## TIME: 2 HOURS

## INSTRUCTIONS TO CANDIDATES

1. *Write your name and index number in the spaces provided at the top of the page*
2. *Answer all the questions in section **A.**. In section **B** answer question **6** and any other **two** questions from this section.*
3. *All answers must be written in the answer booklet provided.*
4. *This paper consist of 5 printed pages.*
5. *Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no question is missing.*

**1. a)** State how the corriolis force affects the direction of wind. **(2 marks)**

**b)** Give ***three*** characteristics of cumulonimbus clouds **(3 marks)**

**2.** The table below shows the mean monthly rainfall and temperature for station

| Months | J | F | M | A | M | J | J | A | S | O | N | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean monthly rainfall (mm) | 15 | 8 | 8 | 13 | 31 | 51 | 51 | 51 | 28 | 25 | 18 | 20 |
| Mean monthly temperature ($^0$C) | -22 | -18 | -12 | -1 | 4 | 10 | 11 | 11 | 5 | -11 | -18 | -22 |

Describe the climatic characteristics represented by the mean monthly rainfall and temperature table station **X.** **(5 marks)**

**3.** **a)** What is an earthquake **(2 marks)**

**b)** Identify the scales used to measure **(2 marks)**

**(i)** The intensity of earthquake

**(ii)** The magnitude of earthquake

**4.** **a)** Name **two** types of boundaries according to the plate tectonic theory **(2 marks)**

**b)** Give **three** effects of the movement of tectonic plates. **(3 marks)**

**5.** **a)** State **three** conditions that influence the process of solifluction in mass wasting **(3 marks)**

**b)** Give **two** negative effects of mass wasting on the physical environment **(2 marks)**

## SECTION B

***Answer question 6 and ANY OTHER TWO questions from this section.***

**6**. Study the map of kijabe 1;50, 000 (Sheet 134/3) provided and answer the following questions.

**(a)(i)** What type of map is the Kijabe **(1 mark)**

**(ii)** In which hemisphere is the area covered by the Kijabe Map located? **(2 marks)**

(**iii)** Give the longitudinal extent of the area covered by the Kijabe Map. **(2 marks)**

**(b) (i)** Covert the linear scale of the map into a statement. **(2 marks)**

**(ii)** Give ***six*** figure grid reference of trigonometrical station 2610. **(2 marks)**

**(c)** On the graph paper provided, reduce the area enclosed by Eastings 34 to 40 and Northings 91 to 97 by a scale factor of 2 **(3 marks)**

**(i)** On the new map, accurately mark the following;

**(a)** All weather road bound surface **(1 mark)**

**(b)** Forest guard post **(1 mark)**

**(c)** Githoito plantation **(1 mark)**

**(ii)** Give the new scale of the reduced map **(2 marks)**

**(d)** Describe the vegetation of the area covered by the map **(4 marks)**

**(i)** Citing evidence from the map, explain two factors influencing trade in the area covered by the map **(4 marks)**

**7.** **a)** **(i)** Identify ***three*** features found in the sea floor **(3 marks)**

**(ii)** State **three** sources of ocean salts **( 3 marks)**

**b)** Explain how the following factors may cause horizontal movement of ocean water

**(i)** Prevailing winds **(2 marks)**

**(ii)** The earth's rotation **(2 marks)**

**c)** **(i)** Identify ***two*** cold ocean currents that flows along the west coast of

Africa. **(2 marks)**

**(ii)** State ***four*** characteristics of the currents defined in b (ii) above. **(4 marks)**

**d)** **(i)** Explain **three** effects of cold ocean currents to the climate of the adjacent land. **(6 marks)**

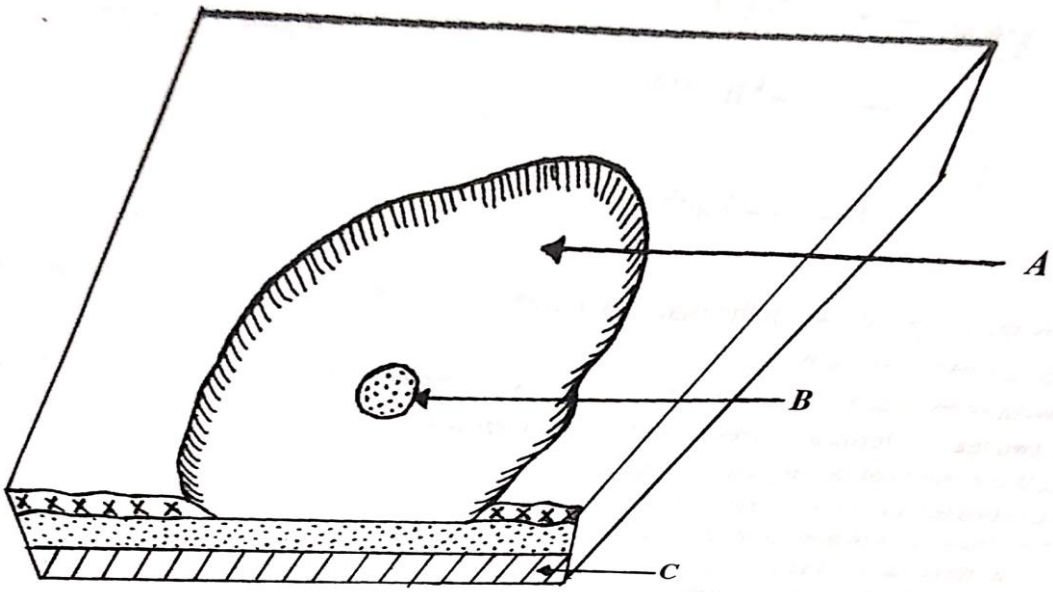
**(ii)** You intend to carry out a field study on tides in Mombasa. State the type Of information you would collect. **(3 marks)**

**8. a)** Describe the following wind erosion processes

**(i)** Abrasion **(2 marks)**

**(ii)** Deflation **(2 marks)**

**b)** Use the diagram below to answer the following questions.




**(i)** Name the feature marked A and B **(2 marks)**

**(ii)** State ***four*** significances of feature A to the human environment **(4 marks)**

**c)** Using a well-labelled diagram, explain how the following features are formed.

**(i)** Canyon **(6 marks)**

**(ii)** Zeugen **(6 marks)**

**d)** State ***four*** characteristics of a barchan **(4 marks)**

**9 a)** **(i)** Define a coastline **(2 marks)**

**(ii)** Give **three** types of a coral reef **(3 marks)**

**b)** Using a well labelled diagram describe the formation of the following coastal landforms.

**(i)** A Tombolo **(6 marks)**

**(ii)** Off-shore bar **(6 marks)**

**c)** **(i)** Give ***three*** factors that determine the size of a wave in the open sea. **(3 marks)**

**(ii)** State ***three*** uses of coral reefs **(3 marks)**

**(iii)** Students from Mombasa high school carried out a field study along the coastline of Indian Ocean. Give the reason for carrying the following items **(2 marks)**

- Stop watch
- Camera

**10. (a)** **(i)** State ***three*** characteristics of a maximum thermometer. **(3 marks)**

**(ii)** Explain how a maximum thermometer is used to measure temperature **(6 marks)**

**b)** **(i)** Describe How lake Victoria influences the temperature of the surrounding region. **(4 marks)**

**(ii)** How south east trade wind. Influence temperature at the coast. **(2 marks)**

**c)** **(i)** Explain ***two*** ways in which vegetation adapts to climate. **(4 marks)**

**(ii)** Describe the characteristics of equatorial climate **(6 marks)**

**NAME……ADM NO……**

**SCHOOL……..……..……..CLASS……**

**DATE……..……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## GEOGRAPHY PAPER 2*(Theory)*

## *Kenya Certificate of Secondary Exams*

## TIME: 2 ¾ HOURS

**INSTRUCTIONS TO CANDIDATES**

**a)** Write your **name** and **Index numbers** in the spaces provided above.
**b)** Sign and write the date of examinations in the spaces provided above
**c)** Candidates should check the question paper has two sections **A Question 1 to 5** and **B Question 6 to 10**.
**d)** Answer question **6** and any **other 2** questions in section **B**.

**FOR EXAMINER'S USE ONLY**

| | QUESTION | MARKS |
|---|---|---|
| **SECTION A** | **1-5** | |
| **SECTION B** | **6** | |
| | **7** | |
| | **8** | |
| | **9** | |
| | **10** | |
| | **TOTAL SCORE. (100 %)** | |

## SECTION A: (25 marks)

***Answer ALL questions in this section.***

**1.** **a)** Give ***three*** reasons why it is important to study Geography. **(3 marks)**
**b)** State ***two*** factors that may influence occurrence of minerals**.** **(2 marks)**

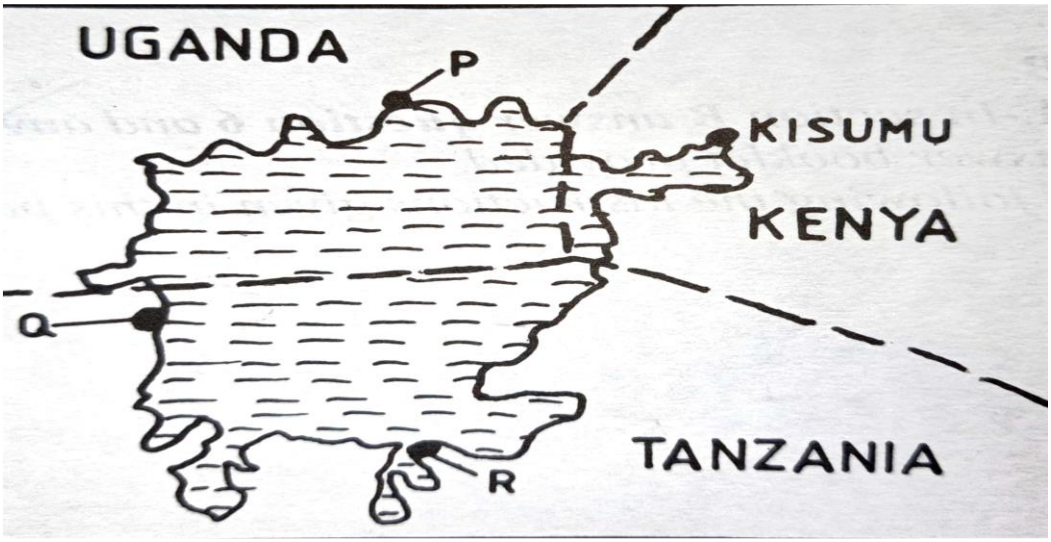
**2.** **a)** List ***two*** problems facing dairy farming in Kenya. **(2 marks)**

**b)** State ***three*** factors that have encouraged dairy farming in Denmark. **(3 marks)**

**3.** **a)** State ***three*** differences between natural forests and manmade forests**.** **(3 marks)**

**b)** Name any ***four*** industries associated with forestry. **(2 marks)**

**4.** Use the sketch map of Lake Victoria below to answer question **(a)**




**a)** Name the lake ports marked **P, Q** and **R**. **(3 marks)**

**b)** Outline ***two*** advantages of using containers while handling goods at the port of Kisumu. **(2 marks)**

**5.** **a)** Apart from water and air pollution, name two other types of pollution. **(2 marks)**

**b)** Identify ***three*** ways through which water is polluted. **(3 marks)**

## SECTION B. (75 marks)

***Answer question 6 and ANY OTHER TWO questions.***

**6.** The table below shows the percentage of exports of country **Y** by Commodity.

| **COMMODITY.** | **%.** |
|---|---|
| Tea | 47.3 |
| Horticulture | 21.6 |
| Coffee. | 18.1 |
| Beef Products | 13 |

**a)** Draw a divided rectangle with a length of 10 cm to represent the above data. **(7 marks)**

**b)** Give ***five*** characteristics of Horticultural Farming. **(5 marks)**

**c)** Explain ***four*** factors that favour beef farming in Argentina. **(8 marks)**

**d)** Explain ***three*** disadvantages of Plantation Farming. **(6 marks)**

**7.** **a)i)**Apart from draining swamps give two other methods through which land has been reclaimed in Kenya. **(2 marks)**

**ii**)Give ***two*** methods that are used to reclaim swamps in Kenya. **(2 marks)**

**b) i)** Name ***two*** rivers that supply water to the Mwea Tebere Irrigation scheme. **(2 marks**)

**ii)** Explain how the following factors influenced the establishment of the Mwea Tebere Irrigation scheme.

- Topography. **(2 marks)**
- Soils. **(2 marks)**
- Population Density. **(2 marks)**
- Government Policy **(2 marks)**

**c) i)** Name ***three*** areas which make up the Zuider Zee reclamation project in the Netherlands. **(3 marks)**

**ii)** Give ***four*** differences between Land Reclamation in Kenya and the Netherlands. **(8 marks)**

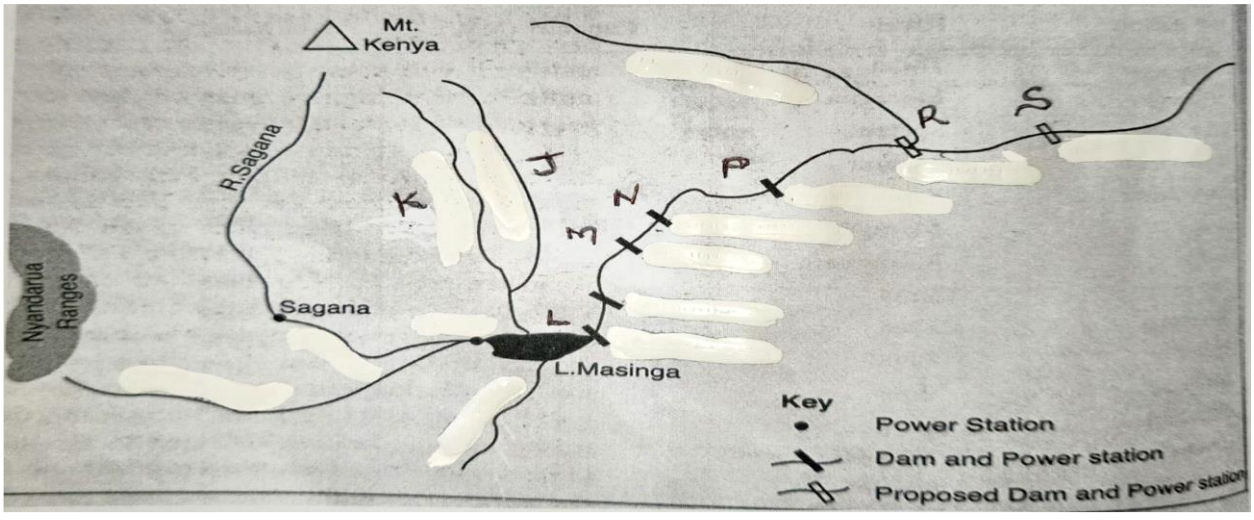
**8.** **a)** **i)** ***Define*** the term energy. **(1 mark)**

**ii)** ***Distinguish*** between renewable and non-renewable sources of energy. **(2 marks)**

**iii)** Give **three** renewable sources of energy. **(3 marks)**

**b)** Explain ***three*** ways in which Kenya has benefited from the development of hydro-electric power station. **(6 marks)**

**c)**Use the sketch map of the seven folk's scheme in Kenya below to answer the questions that follow.



**i)** Name the river marked **J** and **K.** **(2 marks)**

**ii)** Identify the dams marked **L, M, N** and **P**. **(4 marks)**

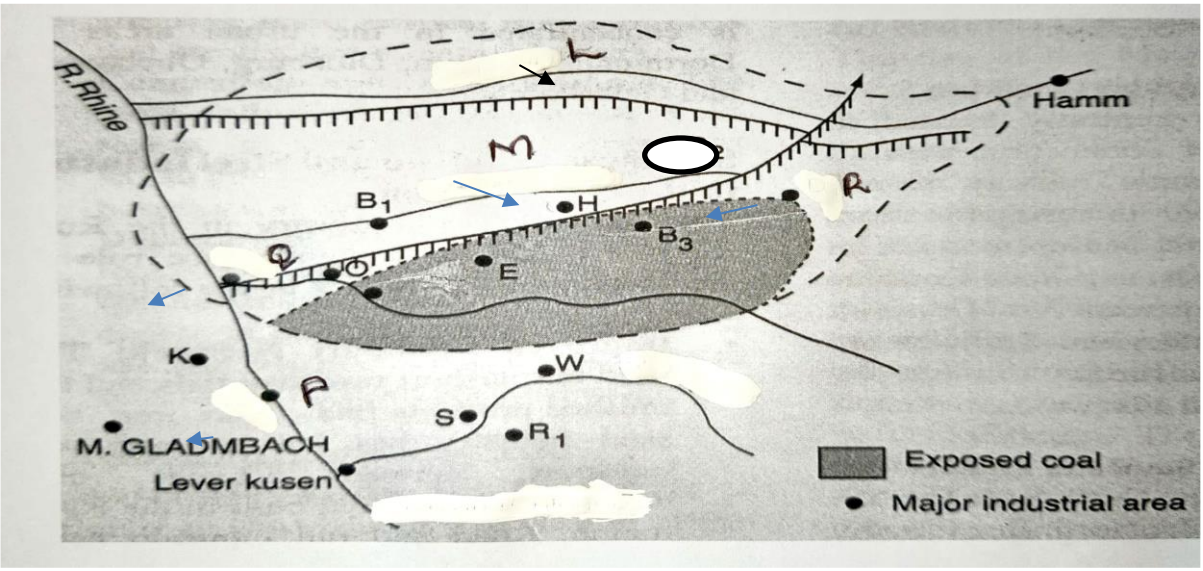
**iii)** Name the proposed hydroelectric power stations labeled **R** and **S**. **(2 marks)**

**d)** **i)** Give ***two*** reasons why geothermal power has not been fully exploited in Kenya. **(2 marks)**

**ii)** State ***three*** causes of Energy Crisis in the world. **(3 marks)**

**9.** **a)** **i)** Distinguish between Industry and Industrial Inertia. **(2 marks)**

**b)** Use the map below to answer the questions that follow.




**i)** Name the towns **P, Q** and **R.** **(3 marks)**

**ii)** Name rivers marked **L** and **M.** **(2 marks)**

**c)** **i)** Apart from Iron and Steel Industries name three industries in the Ruhr Industrial region. **(3 marks)**

**ii)** State ***five*** reasons why the use of coal as a source of energy in the Ruhr region declined. **(5 marks)**

**d)** **i)**State ***two*** significance of Car and Electronic Industries in Japan. **(2 marks)**

**ii)**Explain ***three*** factors which have favoured the development of car manufacturing industry in Japan. **(6 marks)**

**iii)** Name ***two*** towns in Kenya where Motor Vehicle Assembling Plants are located. **(2 marks)**

**10.** **a)** **i)** Differentiate between Internal and Regional trade. **(2 marks)**

**ii)** List ***three*** major exports from Kenya to European countries. **(3 marks)**

**b)** Give ***four*** reasons why the southern African development cooperation (**SADC**) was formed. **(4 marks)**

**c)** Explain ***four*** problems facing trade in Kenya. **(8 marks)**

**d)** Explain how the future of International trade in Kenya can be improved. **(8 marks)**

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## HISTORY PAPER 1

***Kenya Certificate of Secondary Exams***

## TIME:2 ½ HOURS

## *INSTRUCTIONS TO CANDIDATES*

***i.*** *This paper consist of three sections; A, B and C.*

***ii.*** *Answer all the questions in section A, three questions from section B and two questions from section C.*

***iii.*** *All questions must be answered in the space provided*

## FOR EXAMINERS USE ONLY

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

# SECTION A (25 marks)

## *Answer ALL the questions in this section.*

1. Give ***two*** limitations of using anthropology as a source of information on History and Government. **(2 marks)**
2. Name ***one*** any one place where the remains of homo sapiens were found in Kenya. **(1 mark)**
3. Name the dispersal area of the Eastern Bantu. **(1 mark)**
4. Name the section of the maasai that practiced mixed economy. **(1 mark)**
5. Give the main factor that enabled the early visitors to come to the Kenyan coast by 1500. **(1 mark)**
6. Outline ***two*** importance of being a good citizen. **(2 marks)**
7. Give ***two*** ways in which education has promoted national unity in Kenya. **(2 marks)**
8. Identify ***two*** key changes contained in the New 2010 Constitution**.** **(2 marks)**
9. Name any ***two*** groups that monitor human rights in Kenya. **(2 marks)**
10. State ***one*** method that the British used to administer the Kenyan colony. **(1 mark)**
11. What was the main contribution of Thomas Joseph Mboya to the history of Kenya? **(1 mark)**
12. What was the main reason for the formation of Kenya African Democratic Union in 1960**?** **(1 mark)**
13. State ***two*** demands made by the African Elected Members organization (AEMO) in 1957. **(2 marks)**
14. Why was the independent constitution of 1963 known as a Majimbo constitution? **(1 mark)**
15. State the main function of the correctional services in Kenya. **(1 mark)**
16. Name the chief administrator and accounting officer of the Judiciary. **(1 mark)**
17. Identify ***two*** principles of devolution of government in Kenya. **(2 marks)**
18. Identify the political event which threatened the stability of Kenya in 1978 **(1 mark)**

## *SECTION B (45 marks)*

## *Answer any THREE questions from this section.*

18. **a)** Name ***five*** communities that comprise the eastern Cushites. **(5 marks)**
    **b)** Explain ***five*** results of the interactions between the Bantu and the Cushites in Kenya during the pre- colonial period. **(10 marks)**
19. **a)** Give ***three*** causes of the Somali resistance to the British rule in Kenya during The 19$^{th}$century. **(3 marks)**

**b)** Explain ***six*** effects of the Maasai collaboration with the British in the early 20th Century. **(12 marks)**

**20. a)** Give ***five*** grievances of Kikuyu Central Association which were presented by Jomo Kenyatta to the Colonial Secretary in 1929. **(5 marks)**

**b)** Explain ***five*** factors that promoted the rise of African nationalism in Kenya after 1945. **(10 marks)**

**21. a)** State ***five*** features that characterized African socialism in Kenya. **(5marks)**

**b)** Explain ***five*** ways in which the Harambee philosophy has promoted the development of education in Kenya. **(10 marks)**

## *SECTION C (30 marks)*

## *Answer ANY TWO questions from this section in the answer booklet provided.*

**22. a)** Outline ***five*** rights enjoyed by Children in Kenya. **(5 marks)**

**b)** Discuss ***five*** ways the Kenyan government have promoted national integration since independence. **(10 marks)**

**23. a)** Outline ***three*** sources of the Kenyan law. **(3 marks)**

**b)** Describe the stages in the constitution making process in Kenya since independence. **(12 marks)**

**24. a)** Give ***five*** functions of the police service in Kenya. **(5 marks)**

**b)** Explain ***five*** challenges facing the National Intelligence Service in Kenya. **(10 marks)**

**NAME……ADM NO……**

**SCHOOL……..……..……..CLASS……**

**DATE……..……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## HISTORY PAPER 2

***Kenya Certificate of Secondary Exams***

## TIME:2 ½ HOURS

## INSTRUCTIONS TO CANDIDATES

1. *This paper consists of **three** sections; **A, B** and **C***
2. *Answer **All** the questions in section **A, three** questions from section **B** and **two** questions from section C*
3. *All questions must be answered in the answer booklet provided.*

## FOR EXAMINERS' USE

| SECTION A | SECTION B | | | SECTION C | | TOTAL |
|---|---|---|---|---|---|---|
| 1-17 | | | | | | |
| | | | | | | |

## SECTION A (25MARKS)

***Answer All questions from this section***

1. Identify ***two*** areas of study of political history **(2 marks)**
2. ***Mention*** the earliest stone tool that was used by early man during the Old Stone Age. **(1 mark)**

3. Give the main reason why early agriculture developed in Egypt. **(1mark)**
4. Give ***two*** inventions which encouraged production of perishable agricultural goods during the agrarian revolution. **(2 marks)**
5. State ***two*** ways in which Africans participated in the Trans-Atlantic Trade. **(2 marks)**
6. State ***two*** ways in which railway transport promoted industrialization in Europe. **(2marks)**
7. Give one reason why coal was used as the main source of industrial power in Britain during the Industrial Revolution. **(1mark)**
8. Identify ***one*** social functions of the Ancient city of Athens in Greece. **(1mark)**
9. State the main function of the Golden stool in the Asante Empire during the pre-colonial period. **(1mark)**
10. Give ***one*** contribution of religion in the Maji Maji rebellion. **(1mark)**
11. Why was Ethiopia not colonized by the Europeans in the nineteenth century? **(1mark)**
12. Identify ***two*** ways in which Samori Touré acquired fire arms during the Mandinka Resistance. **(2 marks)**
13. Identify ***one*** political reform introduced by President de Klerk that led to the achievement of black majority rule in South Africa. **(1mark)**
14. Give ***one*** weapon used during the cold war. **(1mark)**
15. Name ***two*** agencies of the United Nations Organization which deal with the problem of health. **(2marks)**
16. Give ***two*** non-British colonies who are members of the Commonwealth. **(2marks)**
17. State ***two*** components of Congress in U.S.A. **(2 marks)**

## SECTION B (45 MARKS)

### *Answer only THREE questions from this section*

**18.a)** State ***three*** disadvantages of hunting as an economic activity of the early man. **(3marks)**

**b)** Describe the way of life of human being during the old Stone Age period. **(12 marks)**

**19 a)** Highlight ***five*** problems faced by factory works in Europe during the industrial revolution **(5 marks)**

**b)** Explain ***five*** factors that enabled West Germany to recover her industrialization quickly after the Second World War. **(10 marks)**

**20. a)** Outline ***three*** tactics employed by Samori Touré of the Mandinka to resist the French rule **(3 marks)**

**b)** Explain ***six*** results of Lozi collaboration **(12 marks)**

**21 (a)**Give ***three*** principles of Arusha Declaration of 1967 in Tanzania. **(3 marks)**

**(b)**Explain ***six*** political challenges in Democratic Republic of Congo (DRC) since independence **(12 marks)**

## SECTION C (30 MARKS)

***Answer only TWO questions from this section***

**22. a)** State ***five*** Terms of the Versailles Treaty **(5 marks)**

**b)** Explain ***five*** social results of the Second World War **(10 marks)**

**23. a)** Highlight ***five*** aims for the formation of Pan Africanism **(5 marks)**

**b)** Explain ***five*** problems the African Union has encountered since its formation in 2001. **(10 marks)**

**24. a)** State ***five*** sources of the British constitution**.** **(5 marks)**

**b)** Explain ***five*** functions of the U.S Federal Government. **(10 marks)**

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## HOME SCIENCE PAPER 1

***Kenya Certificate of Secondary Exams***

## TIME:2 ½ HOURS

## INSTRUCTIONS TO CANDIDATES:

- *Write your **name** and **index number** in the spaces provided above.*
- *This paper consists of **three** Sections: **A**, **B** and **C***
- *Answer **all** the questions in **sections A** and **B.***
- *Answer **any two** questions from **section C.***
- *All answers must be written in **English.***
- *The paper **consists of 13 printed pages.***

## FOR EXAMINER'S USE ONLY

| *Section* | *Question* | *Maximum* | *Score* |
|---|---|---|---|
| ***A*** | 1-17 | 40 | |
| ***B*** | 18 | 20 | |
| ***C*** | 19 | 20 | |
| | **20** | 20 | |
| | **21** | 20 | |
| | ***Total score*** | 100 | |

## SECTION A (40 MARKS)

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

**1.** State ***two*** precautions to take when storing gas cylinders in the home. **(2 marks)**

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**2.** Suggest ***two*** areas in a garment in which darts are used to dispose fullness. **(2 marks)**

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**3.** Outline ***two*** characteristics of well-made gathers. **(2 marks)**

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**4.** State ***two*** functions of each of the following ingredients in cake making. **(4 marks)**

**(a)** Fat

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**(b)** Liquid

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**5.** Mention ***three*** sections of a garment where facings are applied. **(3 marks)**

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**6.** Outline ***two*** ways of shortening the cooking time of beef. **(2 marks)**

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7. Mention ***two*** areas where shell tucks can be used on a child's garment. **(1mark)**

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**8.** What is an air conditioner? **(2 marks)**

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**9.** Suggest ***two*** patches that can be used to repair a torn table cloth. **(1 mark)**

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**10.** State ***three*** benefits of using lampshades. **(3 marks)**

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**11.** Explain the following terms; **(2 marks)**

**(a)** Inflation

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**(b)** Consumer rights

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**12.** Give ***two*** changes which occur in the body of an elderly person affecting the diet.

**(2 marks)**

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**13.** State ***two*** qualities of a well-made zip opening. **(2 marks)**

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**14.** Differentiate between a casing and a hem. **(2 marks)**

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**15.** State ***one*** function of the fishbone stitch. **(1 mark)**

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**16.** Give ***three*** symptoms of Goitre. **(3 marks)**

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**17.** State ***two*** reasons why charcoal must red hot before roasting meat**.** **(2 marks)**

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**18.** Mention ***four*** methods of sterilizing bath towels. **(2 marks)**

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**19.** Differentiate between food spoilage and food poisoning.(2

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# SECTION B

## *This question is compulsory.*

## *Write your answers on the space provided after the question.*

**20.** You mother has requested you to assist her with household chores.

**(a)** Thorough clean a stained plastic chair. **(7 marks)**

(**b)** Launder a coloured cotton handkerchief. **(7 marks)**

**(c)** A neglected painted dining table. **(6 marks)**

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# SECTION C

***Answer ANY TWO questions from this section.***

***Answers should be written on the space provided after the questions.***

**21.** **(a)**State ***five*** points to consider when buying fabrics for soft furnishing **(5 marks)**

(**b)**Discuss ***three*** reasons it would ***not*** be advisable to buy a refrigerator on hire purchase. **(6 marks)**

**(c)**Explain ***three*** principles of food preservation. **(6 marks)**

**(d)**Outline ***three*** ways of lengthening a short dress. **(3 marks)**

**22.** **(a)** Give ***five*** points on how to ensure the purchase of quality goods by consumers. **(5 marks)**

**(b)** Explain ***five*** precautions to observe when using an electric iron. **(5 marks)**

**(c)** State ***five*** precautions to take when caring for the sick to avoid the spread of infection. **(5 marks)**

**(d)** State ***five*** qualities of a well made round bottom patch pocket. **(5 marks)**

**23.** **(a)**Explain ***five*** factors to consider when reheating left over foods **(5 marks)**

**(b)**Explain ***five*** measures that lead to proper maintenance of clothes **(5 marks)**

**(c)**Outline ***five*** points to bear in mind when choosing a pair of cutting out shears. **(5 marks)**

**(d)**Discuss **five** factors that determine the efficiency of a detergent. **(5 marks)**

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**NAME……ADM NO……**

**SCHOOL……..……..……..CLASS……**

**DATE……..……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## HOME SCIENCE PAPER 2

## *Kenya Certificate of Secondary Exams*

## TIME:2 ½ HOURS

## ***Instruction to Candidates***

***a)*** *This paper consist of 3 printed pages*

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

***c)*** *Candidates **MUST** use machine stitches appropriately in the construction of the garment. Hand worked stitches used **INSTEAD** of machine stitches will not be marked.*

***d)*** *Hand worked stitches will **ONLY** be allowed for*

***i.*** *Hemming stitches at Nos. 6*

***ii.*** *Tacking stitches at Nos. 7*

***iii.*** *Hemming stitches at Nos. 8*

***iv.*** *Button holes stitches at Nos. 9*

A pattern of a child's dress is provided. You are advised to study the sketches, the question paper and the layout before the test.

## 1. MATERIALS PROVIDED

Pattern pieces

**A.** Front bodice

**B.** Back bodice

**C.** Sleeve

**D.** Collar

**E.** Cuff

**F.** Neck binding

**G.** Sleeve opening strip

N.B pattern piece to cut interfacing for collar

**2**. Light weight plain cotton fabric 65cm by 90 cm wide

**3.** Sewing cotton thread to match the fabric

## THE TEST

Using the materials provide, cut and make up the **left of half child's** dress bodice to show the following

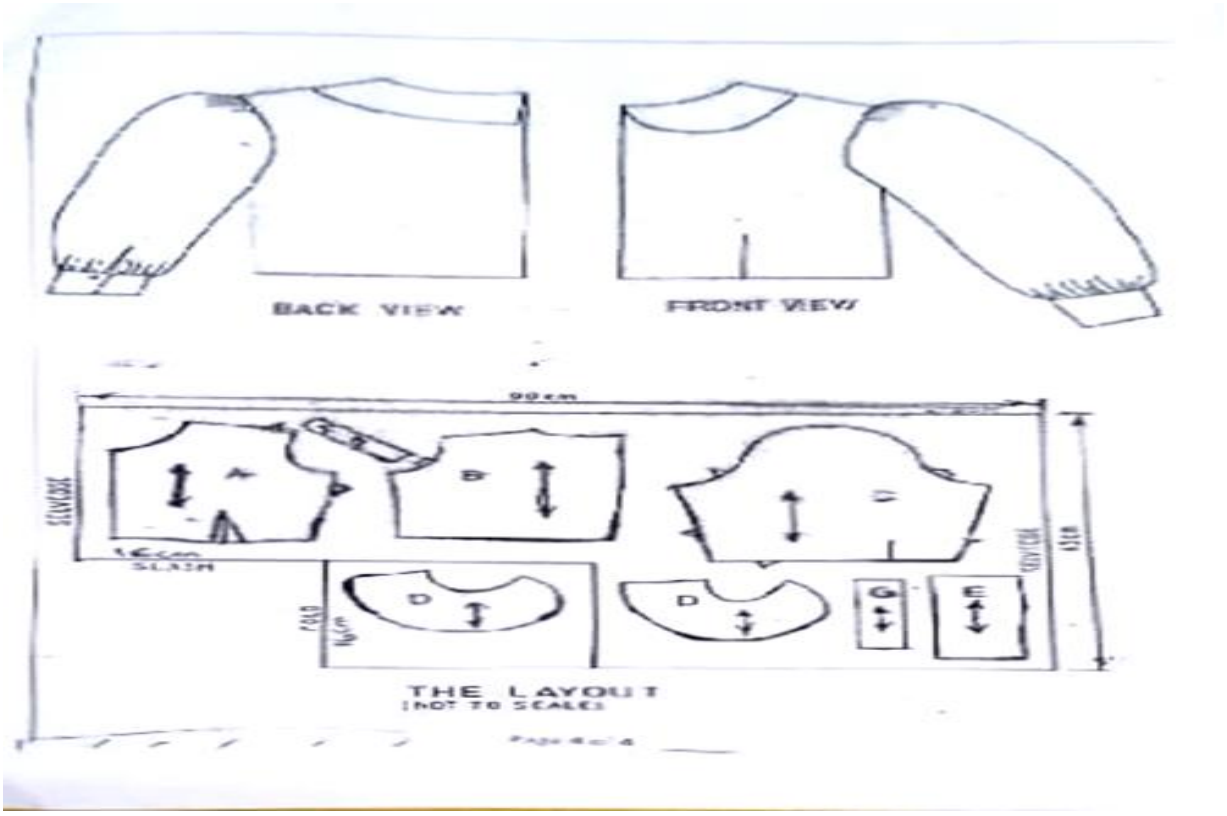
1. Presentation **(6 ½ marks)**
2. Cutting out **(22 marks)**
3. The working of the waist dart **(6 ½ marks)**
4. The working of a machine fell at shoulder **(8mks).**

   Working of French seams at the side seams and under arm seams **(13mks)**
5. The preparation of an interfaced collar and attaching it to the bodice **(8 marks)**
6. The making of the continuous straight strip opening at the sleeve **(5 marks)**
7. The attaching of the sleeve cuff and held on **w.s** with tacking stitches. **(7 marks)**
8. The preparation and attaching of the sleeve to the bodice and trimming and neatening a half of the armhole using loop stitches. **(9 marks)**
9. The making of the button hole stitches **(5 marks)**

At the end of the examination, firmly sew on your work, on a single fabric a label bearing your name and index number. Remove the needles and pins from you r work, then fold your

work carefully and place it in the envelop provided. Do not put scraps of fabric in the envelop.

NB. Cut pattern pieces that are not made should be put in the envelop, in readiness for marking. Pattern



**JINA……..……NAMBARI YA USAJILI……**

**SHULE…….……..….SAHIHI……**

**TAREHE……..…….……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## KISWAHILI KARATASI YA KWANZA

## MUDA : 1 ¾

### ***Maagizo***

***(a)*** *Andika insha* ***mbili.*** *Insha ya kwanza ni ya* ***lazima.***
***(b)*** *Kisha chagua insha nyingine kutoka tatu zilizobakia.*
***(c)*** *Kila insha isipungue maneno* ***400.***
***(d)*** *Kila insha ina alama* ***20.***
***(e)*** *Watahiniwa lazima waangalie kama kurasa zote za karatasi hii zimepigwa chapa sawasawa na kuwa maswali yote yamo.*

### 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...**

**JINA……..……NAMBARI YA USAJILI……**

**SHULE……..…..…….……..….SAHIHI……**

**TAREHE…….……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## KISWAHILI KARATASI YA 2

## MUDA : SAA 2 ½

**MAAGIZO KWA MTAHINIWA**

- *Jibu maswali yote.*
- *Majibu yote yaandikwe katika nafasi zilizoachwa katika kijitabu hiki cha maswali.*
- *Karatasi hii ina kurasa kumi. Watahiniwa ni lazima waangalie kama kurasa zote za karatasi hii zimepigwa chapa sawasawa na kuwa maswali yote yamo.*

**KWA MATUMIZI YA MTAHINI PEKEE**

| SWALI | UPEO | ALAMA |
|---|---|---|
| **1.** UFAHAMU | **15** | |
| **2.** UFUPISHO | **15** | |
| **3.** MATUMIZI YA LUGHA | **40** | |
| **4.** ISIMUJAMII | **10** | |
| **JUMLA** | **80** | |

# 1. UFAHAMU (ALAMA 15)

**Soma taarifa ifuatayo kisha ujibu maswali yanayofuata.**

Ushauri na uelekezaji ni mojawapo ya mikakati ambayo inatumiwa na taasisi na mashirika mengi katika kurekebisha tabia. Msimamo wa kijadi kuwa adhabu kali ndiyo njia mufti ya kumshinikiza binadamu kuacha mienendo hasi unaendelea kufifia na mahali pake kutwaliwa na nasaha na ushawishi. Hata katika mazingira magumu kama gerezani, ushauri na uelekezaji umeonekana kuzaa matunda kwa kuwasaidia wafungwa kubadili mienendo hasi na kukabiliana na makali ya matendo yao.

Kila mwanajamii, wazee kwa vijana, wake kwa waume, wenye furaha kwa wenye majonzi huhitaji nasaha. Nasaha humwezesha mtu kustahimili hali ngumu katika maisha. Wanaougua magonjwa sugu kama vile iri huhitaji ushauri ili kuishi kwa mitazamo chanya na kupunguza makali ya unyanyapaa na hali ya kujihurumia inayotokana na maradhi hayo.

Halikadhalika, binadamu huhitaji mawaidha wakati anapovuka kutoka daraja moja la maisha hadi jingine. Kila awamu katika maisha ya binadamu huwa na changamoto, majukumu na matarajio yake. Maarusi, kwa mfano, huhitaji nasaha ya kuwawezesha kukabiliana na changamoto za ndoa. Aidha vijana wanaotiwa jandoni hihitaji ushauri wa kuwasaidia kuyamudu majukumu ya utuuzima. Si ajabu kuwa tangu jadi manyakanga wamekuwa wakiwausia wanaotiwa jandoni kuhusu kunga za utuuzima.

Ingawa kila mwanajamii anahitaji ushauri na uelekezaji, vijana ndio wanaouhitaji zaidi kwa sababu hawana uzoefu mpana wa maisha. Vijana wanaohitimu masomo ya shule za upili, kwa mfano, wanahitaji kuelekezwa kuhusu taaluma katika vyuo vikuu, umuhima na mahitaji ya taaluma hizo. Isitoshe, wakati wa kukfanya mitihani vijana huhitaji nasaha.

Mazingira ya binadamu hubadilika, nayo maisha yake hutwaa mabadiliko yanayotokana na hali mpya. Baadhi ya watu wanapojipata katika mazingira mageni wasiyoyaweza, hupatwa na woga au unyonge Fulani ambao huenda ukawaathiri. Wengine, pengine kwa sababu ya maisha duni ya awali, huweza kuathiriwa na kujiona kuwa wenye thamani ya chini wakijilinganisha na wenzao. Kuna wanafunzi au hata wafanyikazi ambao kwa sababu ya kutofikia malengo yao shuleni au kazini, hufa moyo na hata kutaka kuiacha shule au kazi hiyo. Watu kama hawa huhitaji nasaha ili wajikubali jinsi walivyo na hata waweze kutumia udhaifu wao kuboresha maisha yao ya usoni.

Wengi hudhani kuwa wanaohitaji nasaha ni wale wenye matatizo tu. Ukweli ni kwamba, hata wale ambao wanaonekana kuwa na furaha na vyeo wanahitaji ushauri wa aina Fulani. Wenye mali, kwa mfano, wanaweza kushauriwa kuhusu namna ya

kuwekeza ili wasifilisike. Viongozi nao wanahitaji nasaha ili waandame sera bora za uongozi pamoja na jinsi ya kuishi kwa mwamana na wanajamii wenzao.

Ushauri na uelekezaji, kwa hakika, unahitajika katika nyanja zote za maisha. Ni muhimu kukumbuka kuwa ushauri huanzia nyumbani. Mzazi au mlezi ndiye mshauri wa kwanza. Haifai wazazi kuchelea kuwashauri watoto wao mapema, kwa maana mchelea mwana kulia hulia mwenyewe.

**Maswali**

**a)** Ipe taarifa hii anwani mwafaka. **(alama 1)**

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**b)** Tofautisha urekebishaji tabia wa kijadi na wa kisasa. **(alama 2)**

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**c)** Taja mazingira yoyote manne ambapo binadamu huhitaji nasaha na uelekezaji. **(alama 4)**

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**d)** Eleza umuhimu wa kushauri watu wafuatao: **(alama 2)**

**(i)** Viongozi.

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**(ii)** Wenye mali.

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**e)** Wazazi wasiowausia watoto wao wataathirika vipi hatimaye? **(alama 2)**

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**f)** Andika methali yoyote inayohusiana na nasaha. **(alama 1)**

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**g)** Eleza maana ya maneno haya kama yalivyotumiwa katika taarifa: **(alama 3)**

**(i)** Unyanyapaa.

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**(ii)** Manyakanga

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**(iii)** Mitazamo chanya.

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## 2. UFUPISHO (ALAMA 15)

***Soma makala yafuatayo kisha ujibu maswali:***

Kila jambo tufanyalo kuhusiana na lugha husitawisha ufahamu wetu wa mambo tusomayo. Mazoezi katika kuandika husitawisha ufahamu katika kusoma kwa sababu katika kuandika ni lazima tujaribu kuyatumia maneno vizuri na kufahamu ugumu wa usemi. Twajifunza matumizi ya kugha katika kuzungumza na kuwasikiliza wengine wakizungumza. Lugha tusomayo ikiwa imeandikwa hasa huwa ni aina ya lugha ya mazungumzo vile vile. Kuna ujuzi mwingi katika kuzungumza upatikanao katika shule – kama vile michezo ya kuigiza, hotuba, majadiliano na mazungumzo katika darasa na haya yote husaidia katika uhodari wa matumizi ya lugha.

Ujuzi wa kila siku hutasaidia katika maendeleo ya kusoma na usitawi wa msamiati. Ikiwa mwanafunzi amemwona ndovu hasa, atakuwa amejua maana ya neno ndovu vizuri zaidi kuliko mwanafunzi ambaye hajapata kumwona ndovu bali ameelezwa tu vile alivyo. Vile vile ujuzi wa kujionea sinema au michoro husaidia sana katika kusoma. Kwa hivyo kwa njia fulani mambo yote juu ya ujuzi wa kila siku husaidia kufahamu mambo yaliyoandikwa. Ikiwa mwanafunzi ana huzuni au ana furaha, akiwa mgonjwa au amechoka au amesifiwa, haya yote ni ujuzi. Wakati ujao mwanafunzi asomapo juu ya mtu ambaye amepatikana na mambo kama hayo hana budi kufahamu vizuri zaidi.

Karibu elimu yote ulimwenguni huwa imeandikwa vitabu lakini lugha zote hazina usitawi sawa kuhusu fasihi. Kwa bahati mbaya lugha nyingine hazijastawi sana na hazina vitabu vingi lakini katika lugha nyingine karibu mambo yote yanayohusiana na elimu huweza kupatikana katika vitabu. Inambidi mwanafunzi anayejifunza asome vitabu au majarida juu ya sayansi au siasa au historia, lakini haimbidi kusoma tu juu ya taaluma fulani anayojifunza. Inafaa asome juu ya michezo, mambo ya shani, na juu ya mahali pageni ili kupata ujuzi wa mambo mengi mbali mbali.

**Maswali**

**a)** Fupisha aya za kwanza mbili kwa kutumia maneno 65. (alama10,2 za utiririko)

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**Jibu**:

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**b)** Kwa kuzingatia habari zote muhimu na bila kupoteza maana asilia, fupisha aya ya mwisho. (Maneno 30, alama 5, 1 ya utiririko).

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**Jibu:**

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## 3. MATUMIZI YA LUGHA (ALAMA 40)

**a)** Andika maneno yenye sifa zifuatazo za sauti:

**i)** Kilainisho ghuna cha midomo, irabu ya mbele-juu, kipua ghuna cha midomo, kizuiwa ghuna na irabu ya nyuma-wastani. **(alama 1)**

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**ii)** Kikwaruzo hafifu cha ufizi, irabu ya chini-kati, kikwamizo cha mdomo-meno hafifu, irabu ya mbele-juu. **(alama 1)**

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**b)** Tunga sentensi ukitumia nomino ya ngeli ya **KU** pamoja na kirai husishi cha uhusiano. **(alama 2)**

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**c)** Ainisha uamilifu wa kisarufi wa mofimu katika kitenzi hiki. **(alama 3)**
Kilivijisha.

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**d)** Yakinisha kwa **udogo** ukitumia kiambishi cha masharti ya **uwezekano**. **(alama 2)**
Mtoto aliyeiba kitabu hajakamatwa.

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**e)** Andika upya sentensi kulingana na maagizo. **(alama 1)**
Kiroboto huyo alituuma.Kiroboto aliuawa.(Tumia kivumishi kirejeshi cha kati kuunganisha sentensi hizi.)

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**f)** Eleza Matumizi ya viambishi vilivyopigiwa mstari katika sentensi ifuatayo.**(alama 2)**
Mola ata<u>ku</u>kirimu u<u>ki</u>mtolea sadaka.

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**g)** Andika upya sentensi hii kwa wakati ujao hali katavu. **(alama 2)**
Mwanariadha alishiriki mbio za Tokyo.

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**h)** Tunga sentensi moja kutofautisha vitate **mji** na **mchi**. **(alama 2)**

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**i)** Unda kitenzi kutokana na nomino **maskani**, kisha ukitungie sentensi. **(alama 2)**

.....

.....

.....

j)Bainisha kiima na yambwa katika sentensi hii. **(alama 2)**

Omari alipewa vipuli na fundi stadi kwa bahasha.

.....

.....

**k)** Tunga sentensi katika hali ya wastani ukitumia kihusishi cha hali**.** **(alama 2)**

.....

.....

.....

**l)**Ainisha aina za vishazi katika sentensi hii. **(alama 2)**

Marekebisho ya katiba ya BBI yatapita iwapo wananchi watahusishwa.

.....

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.....

**m)** Changanua sentensi hii kwa kielelezo cha mstari. **(alama 2)**

Zohali na Zuhura ni majina ya sayari.

.....

.....

.....

**n)** Tunga sentensi **moja** ya kuonyesha Matumizi mawili ya vielezi vya silabi moja.

**(alama2)**

.....

.....

.....

**o)** Andika kinyume cha maneno yafuatayo. **(alama 2)**

Dhahiri

.....

.....

Kavu

.....

.....

**p)** Tambua hali katika sentensi ifuatayo. **(alama 1)**

Ukulima wa sampuli hii wasumbua wengi.

.....

.....

**q)** Eleza maana ya msemo **shika sikio**. **(alama 1)**

.....

.....

**r)** Tumia kibadala cha kiasi cha kuonyesha nafasi katika orodha kwenye sentensi. **(alama 2)**

.....

.....

**s)** Andika kwa wingi sentensi hii. **(alama 2)**

Ukwato wa mnyama huyo aliufikisha ufuoni.

.....

.....

**t)** **i)** Tunasema baraza la wazee**.....**wa wagomaji na

**.....**la nafaka. **(alama 2)**

**ii)** Audhubilahi ni tunapoapa**.....**tunapokana na

**.....**tunapohimiza. **(alama 2)**

4. **<u>ISIMU JAMII ( ALAMA 10)</u>**

**Mtu 1:** Je, familia ya mahabusu huyo imetoa bond?

**Mtu 2 :** Idont think so. Na wakiendelea kuchelewa huyo atapandishwa...

**a)** Tambua sajili ya kifungu hiki. **(alama 2)**

.....

.....

**b)** Bainisha sifa nane za sajili hii. **(alama 8)**

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**JINA……NAMBARI YA USAJILI……**

**SHULE…….……..….SAHIHI……**

**TAREHE…….……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## KISWAHILI KARATASI YA 2

## MUDA : SAA 2 ½

## Maagizo

***(a)*** *Andika jina lako na nambari yako ya mtihani katika nafasi ulizoachiwa hapo juu.*

***(b)*** *Tia sahihi yako kisha uandike tarehe ya mtihani katika nafasi ulizoachiwa hapo juu.*

***(c)*** *Jibu maswali* ***manne*** *pekee.*

***(d)*** *Swali la* ***kwanza*** *ni la* ***lazima****.*

***(e)*** *Maswali hayo mengine matatu yachaguliwe kutoka sehemu nne zilizobaki; yaani:*

*Riwaya, Ushairi, Hadithi Fupi na Fasihi Simulizi.*

***(f)*** *Usijibu maswali* ***mawili*** *kutoka* ***sehemu moja****.*

***(g)*** *Majibu yote* ***lazima*** *yaandikwe kwa lugha ya Kiswahili.*

***(h)*** *Majibu yote* ***sharti*** *yaandikwe kwenye nafasi ulizoachiwa katika kijitabu cha maswali.*

## *Kwa Matumizi ya Mtahini Pekee*

| **Sehemu** | **A** | **B** | | **C** | | **D** | | **E** |
|---|---|---|---|---|---|---|---|---|
| **Swali** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| **Alama** | | | | | | | | |

## SEHEMU YA A:
## TAMTHILILA
## *(Kigogo – Pauline Kea)*

**1.** Swali la lazima.

**a)** ''Yaani umenonaje wewe? Waona mimi ni ganda la muwa la juzi.''

**i.** Eleza muktadha wa dondo hili. **(al. 4)**

**ii.** Tambua mbinu mbili za kimtindo katika dondoo hili. **(al. 2)**

**iii.** Fafanua jinsi wahusika walivyogeuzwa ganda la muwa katika tamthilia. **(al. 6)**

**b)** '' Niko tayari kuwaweka pahali pao mmoja baada ya mwingine.''
''… Wamesahau vipi wasilolijua?''
Eleza umuhimu wa matumizi ya mbinu rejeshi ukirejelea dondoo hili. **(al. 12)**

## SEHEMU YA B: RIWAYA
***(Chozi la Heri – Assumpta Matei)***
***Jibu swali la 2 au 3***

**2. a)** Baba, umewahi kumwona mtoto wa miaka hamsini ambaye hajasota; sikwambii kusimama dede?''

**i.** Eleza jazanda iliyotumika katika dondoo hili. **(al. 2)**

**ii.** Thibitisha kuwa mtoto anayerejelewa hajasota wala kusimama dede. **(al. 8)**

**b)** Eleza umuhimu wa mazungumuzo baina ya Tila na Ridhaa. **(al. 10)**

**3. i)** Eleza umuhimu wa barua aliyoiandika Bwana Kalima kwa Lunga. **(al. 10)**

**ii)** Soma kifungu hiki kisha ujibu swali.

Mkuu wa shule, walimu na wanafunzi wenzangu, swala la uhifadhi wa mazingira ni jukumu la kila mmoja wetu. Tumeona jinsi misitu imevamiwa na viongozi wenye mate ya fisi. Nasikia baadhi ya vinara wa taasisi mbalimbali ya umma wamewaacha wanyama kama mayatima kwa kuwapoka makazi yao. Maelfu ya maekari ya misitu yamefyekwa na kujengwa viwanda. Badala ya mibambakofi na miti mingine inayosafisha hewa, michai imetwa nafasi yake. Wanaohusika na matendo haya wanapoulizwa hudai kuwa michai si adui wa mazingira! Wengine wanasema kwamba misitu haina budi kukatwa ili kupanda mimea inayotoa chakula. La kuhuzunisha ni kwamba hawa hawa wanaosema hivyo ndio wanakita majengo ya kifahari katika maeneo yanyofaa

kutengewa upanzi wa chakula! Wengine wamediriki kunyakua hata madhabahu kwenye Mlima wa Nasibu ili kujenga hoteli kubwa za kitalii. Wazee wetu hawana hata pahali pa kuchomea kafara! Tunakata miti bila kupanda mingine. Tazameni shuleni humu! Hata mabustani ya maua tunashindwa kuyastwisha! Tukiendelea hivyo, bila shaka sehemu sehemu yetu itakuwa jangwa!

Fafanua maudhui yoyote kumi yanayojitokeza katika dondoo hili. **(al. 10)**

# SEHEMU YA C: USHAIRI

## *Jibu swali la 4 au 5*

***4. Soma shairi lifuatalo kisha ujibu maswali***

Sikilizeni wimbo huu:
Niliokuwa mtoto nilitwa chacha
Kwa matamshi yangu ya sasa
Nilipokuwa mtu mzima niliitwa Manywele
Nilipokuwa mwalimu nikaitwa Bure.

Huu utakuwa wimbo wako
Utakapostaafu urudipo nyumbani
Umelewa kangara na nyayo zako
Zikishindwa kulenga njia nyembamba
vijijini. Utakuwa kichekesho cha watoto
Watakaoukuita, Ticha! Popote upitapo.

Kumbuka mwalimu utakapostaafu,
Mijusi watataga mayai ndani ya viatu
Vyako vilivyokwisha visiginino.
Na ndani ya sidiria chakavu
Zilizoshikizwa Kamba kwa pini
Mende watazaliana ndani ya chupa tupu
Za marashi na za bia.

Na manyigu yatajenga ndani ya kofia
Zilizosahaulika kutani

Utakapokufa nge watazaliana
Chini ya jiwe juu ya kaburi lako,
Na mlevi fulani akipita atapenga

Na kupangusa vidole kwenye jiwe pweke
Mwanzo na mwisho wako ndio huo.

Lakini wakati ungali hai
Unaweza kubadilisha mkondo wa maji
Lakini kwanza mzungumze. Wewe na mimi.
Acha mioyo yote izungumzwe
Baada ya kunyanyaswa Na
kisha nusu mshahara.

Utafundisha tena nyimbo kuwasifu viongozi?
Utafundisha tena ngonjera?
Utapeleka tena wanafunzi asubuhi
Wakajipange barabarani kusubiri
Mgeni afikaye saa kumi na apitapo
Apunga tu mkono kuwatia kichaa cha shangwe
Na huku nyuma mwasambaa na njaa?
Tazama hilo runda madaftari mezani
Utalimaliza kwa mshahara mkia wa mbuzi?
Tuzungumze. Ninyi na mimi.
Acha mioyo yetu izungumze
Mkiwa waoga na kujikunja kama
jongoo Mtawekwa kwenye vijiti na
kutupwa Nje ya ua, ndani mtawaacha
Wacheza ngoma wakitunga nyimbo mpya

Sikilizeni walimu,
Anzeni kufundisha hesabu mpya

Mjinga mmoja kujumlisha na wezi ishirini
Ni sawa na sifuri. Hapana utawala
Fundisheni historia historia mpya
Hapo zamani za sasa
Hapakuwa na serikali.
Sikilizeni kwa makini
Umoja hatuna
Twasambaratika kama nyumba
Tulicho nacho ni woga,
Na kinachotuangusha ni unafiki.
Lakini tusikate tamaa kama mbuni.
Tukiupata umoja bado tunayo silaha.
Kura.

**Maswali**

**(a)**Fafanua sifa za shairi huru zinazojitokeza katika shairi hili. **(al. 5)**

**(b)**Eleza jinsi maudhui ya utamaushi yanavyojitokeza ukimrejelea nafsi-nenewa. **(al. 4)**

**(c)**Nafsi-nenewa anapaswa kujilaumu kwa masaibu yake. Thibitisha. **(al. 2)**

**(d)(i)**Bainisha nafsi-neni katika shairi hili. **(al. 1)**

**(ii)**Taja toni ya shairi hili. Toa mfano. **(al. 2)**

**(e)**Eleza matumizi mawili mawili ya usambamba na jazanda katika shiri hili.**(al. 4)**

**(f)**Eleza maana ya kufungu kifuatacho:

Mjinga mmoja kujumlisha na wezi ishirini ni sawa na sufuri. **(al. 2)**

## *5.soma shairi kisha ujibu maswali.*

Leo ‘mekuita,
Kwa upole nitanena,
Tabiya hii yako mwana

Uli wa kulaza damu,
Pahala nawe hudumu,
Hutufai nawe humu,

Nikupe ya moyo
“Kayatiye masikiyo
Si yetu tujuwapo

Na uzembe uzidiyo
Uchaoni mbiyombiyo
Na hiyo shambiroyo

Wapendani naumi,
Hulimi na walimi
Haya sijaona mimi,

Mwiza kazi yu wa chira
Asiyeta ajira
Ndiye muja wa hasara,

Unavitaka vya bure
Lako ndizo hamurere
Uchao ‘wa ‘tuza bure.

La mno lako ni ung’are
Uturi ujirashire
Hukosi kuzua ghere
Unazani utaoa?
Jasho nalo hujatoa,
Utaithibiti ndoa?

Unafaa kujitoa,
Na mali ukayazoa,
Ndipo utapopoa

Si mambo ya kutanga,
Chunga utajikaanga
Mchumba chumbiya mwenga

Utafanyani kiwatunga
Na hilo likawe janga,
Mwanangu hutochenga

Uniizia gange
wataka ukajitenge
Nakuasa ujichunge

Ni andewaye tenge
Wala hashiki shilange
Hubomoa asijenge

Hulitoa jasho lako
Umebaki mitiko
Sizo zetu nyendo zako

Uzirembe nyele zako
Ukatembee kwa deko
Na marashi ya mnuko
Utamwoa wa nani?
Utachokishika nini?
Wa kukubali nani?

Fanye kazi kwa manani
Hamadi i kibindoni
Ukamtafute mwendani

Fi na huhu fi na yule
Umetujile uwele
Na yule ukamuole

Himila wakahimile
Na lije likulemele
Na wote wakikujile

Kisomo ndiyo unayo,
Ujuzi unao kocho,
Upate ukitakacho

Shahada umejitwaliya
hutaki kuutumiya
Kile cha kukufaiya

Mwana wa ‘ntiya kichocho
Umekuwa kitumiwacho
Unawapa wapendacho

Kwona umejiachiya
Kidhani wawatumiya
Na wanachokutakiya

Komu mwanangu ukome
Usombombi uukome,
Sitakwita te’niseme

Usinifishe mveyeleo
Ukome kwanzia leo
Ishapita hii leo

Ukware si kuwa dume
Wa itaha ndiye dume
Muungwana ja kimeme

Dume ni ajira
Anakheshimu nafseo
Fikira nokwelezeo

Mradi unayo masikizi
Kazituwe nyendo hizi,
Ukasuhubiye kazi,

Haya umenisikiya
Ukawe wa kutuliya
Halafu itakufaiya

Nakoma zaidi s’ezi
mekwambiya Nimekuweko na juzi,
Nimejizolea ujuzi,
haya

Yametosha
Miyaka menipitiya
Na ndiyo ha ‘nakupa

## ***Maswali***

**a)** Fafanua sifa za kiarudhi za shairi hili. **(al. 3)**

**b)** Kando na kigezo cha idadi ya mishororo, chambua bahari nyingine tatu za shairi hili**.** **(al. 3)**

**c)** Huku ukitolea mifano mwafaka, fafanua mambo mawili aliyofanya mshairi ili kukidhi mahitaji ya kiarudhi**.** **(al. 2)**

**d)** Andika ubeti wa nane kwa mtindo tutumbi. **(al. 3)**

**e)** Tambua mbinu zozote mbili za lugha zilizotumiwa na mshairi. **(al. 2)**

**f)** Eleza dhamira ya shairi hili. **(al. 1)**

**g)** Tambua nafsi-nenewa katika shairi hili. **(al. 1)**

**h)** Ni nini toni ya shairi hili? Eleza. **(al. 2)**

**i)** Eleza maana ya misamiati ifuatayo kama iliyotumika katika shairi hili. **(al. 2)**

(i) ghere

(ii) sitaha

## SEHEMU YA D: HADITHI FUPI

***(Tumbo Lisilodhiba na Hadithi nyingine –A. Chokocho na D. Kayanda)***

***Jibu swali la 6 au 7***

**5.** ''Dunia we' duinia. Dunia ya mwenye nguvu, si ya mimi dhaifu wa nguvu. Dunia ya msumari moto juu ya donda bichi.''

a) Thibitisha jinsi dunia ilivyokuwa msumari moto juu ya donda bichi kwa mhusika katika dondoo hili.(al. 10)

b) Eleza jinsi maudhui ya ushirikina ulivyojitokeza katika hadithi ya Tulipokutana Tena.(al. 10)

**6. Shibe Inatumaliza**

**(a)** ''Mh! Ati kama mimi. Kwani wewe umekula nini?'' ''Mimi? Hata sikutazama. Nimekomba tu. Wewe je?''

**b)** Eleza muktadha wa dondoo hili. **(al. 4)**

**c)** Tambua mbinu zozote mbili za uandishi zilizotumika katika dondoo hili. **(al. 2)**

**d)** Eleza jinsi wahusika mbali mbali walivyokomba rasilimali bila kutazama. **(al. 8)**

**e)** Tambua umuhimu wa DJ katika hadithi ya Shibe Inatumaliza. **(al. 6)**

## SEHEMU YA E: FASIHI SIMULIZI

***7.Soma kifungu kifuatacho kisha ujibu maswali.***

Wekamaya ndiye aliyemuumba binadamu wa kwanza akamwita Omwami. Jina hili Wekamaya alipewa kwa sababu wanajamii wa Omukwasi waliamini yeye ni mungu mwenye wema. Kwa sababu hii, siku moja alipokuwa

akitembea katika bustani yake, Wekamaya alijiambia, ‘’Singependa Omwami wangu wawe wakifa kabisa, nataka afufuke.’’
Wakamaya alikuwa na wake wawili, Shiswitswi na Ngoitsi. Katika ndoa yao, Wamukaya aliweza kungamua kuwa Ngoitsi alikuwa mke aliyependa kutia chumvi katika maneno na hata kusema kinyume ya aliyoambiwa. Pia, alikuwa kigeugeu kama kinyonga. Kwa upande mwingine, Shiswitswi alikuwa mwadilifu na aliyejawa na busara kedekede. Alikuwa mkweli.
Wamukaya alipoona kuwa wakati umefika wa kumpasha Omwami habari ya uzima, alimwita mkewe Shiswitswi na kumwambia, ‘’Nenda bustanini na umwambie Omwami kuwa atakayekufa atafufuka.’’ Shiswitswi akaiitika na kusema, ‘’Ndio Wakamaya!’’ Katika harakati hizi, kumbe Ngoitsi alikuwa kasikia alivyotumwa Shiswitsi. Akajiambia mwenyewe, siwezi kugeuzwa ganda la muwa, ujumbe huu ntaipeleka mimi, ndiyo Omwami aniheshimu. Kwa kuwaza, akakumbuka udhaifu wa mke-mwenza wake ambao ulikuwa kuwa mpole. Akala yamini kuutumia.
Shiswitswi alianza safari na kuwaaga kwenda kwa bustani. Akatembea, akatembea, akatembeaaaaa! Alipofika baada ya siku mbili alishangaa kumpata Ngoitsi tayari bustanini. Tayari keshampa Omwami ujumbe, ‘’Wamukaya amesema kwamba watakokufa wataangamia milele’’ na Omwami kwa mshutuko tayari alishatoweka kutoka bustanini kwa kilio.
Na huu ndio mwisho wa hadithi yangu.

**Maswali**

**a)** Tambua kipera hiki cha hadithi. **(al. 2)**

**b)** Kwa nini mtambaji anatumia maneno ‘’Na huu ndio mwisho wa hadithi yangu**.** **(al.4)**

**c)** Tambua sifa zozote sita za kimtindo zinazojitokeza katika hadithi hii. **(al. 6)**

**d)** Fafanua njia zozote nne ambazo unaweza kutumia kukusanya data kuhusu kipera hiki. **(al. 6)**

**e)** Eleza njia zozote nne zinazoweza kutumika katika jamii ya kisasa kuendeleza kipera hiki. **(al. 4**

**NAME……..……ADM NO……**

**SCHOOL…….…….……..CLASS……**

**DATE…….……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## MATHEMATICS PAPER 1

## *Kenya Certificate of Secondary Exams*

## INSTRUCTIONS TO CANDIDATES

1. *Write your name, stream, admission number and index number in the spaces provided above.*
2. *The paper contains two sections, Section I and II*
3. *Answer all questions in section I and **ONLY** any **FIVE** questions from section II.*
4. *All answers and working must be shown on the question paper in the spaces each question*
5. *Show all steps in your calculations, giving answers at each stage*
6. *Marks may be given for each correct working even if the answer is wrong*
7. *Non-programmable silent electronic calculators and KNEC mathematical tables may be used.*

**FOR EXAMINERS USE ONLY**

**Section I**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | |

**Section II**

| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | **Total** |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

**Grand Total**

## ***SECTION I (50 MARKS)***

## ***Answer all questions in this Section***

**1.** Evaluate : $\dfrac{\sqrt{\frac{1}{9}} of\ 2\frac{1}{3}+\frac{2}{3}\left(\frac{5}{3}-\frac{3}{2}\right)}{\frac{2}{5} of\ 3\frac{1}{3}\div\frac{1}{3}}$ **(3 mks)**

**2.** Simplify completely **(3 mks)**

$$\frac{12x^2-11xy+2y^2}{18x^3-8xy^2}$$

**3.** Use the exchange rates below to answer this question.

| | Buying | Selling |
|---|---|---|
| 1 US dollar | 63.00 | 63.20 |
| 1 UK £ | 125.30 | 125.95 |

Abwanja, a tourist arriving in Kenya from Britain had 9600 UK Sterling pounds (£). He converted the pounds to Kenya shillings at a commission of 5%. While in Kenya, he spent ¾ of this money. He changed the balance to US dollars after his stay. If he was not charged any commission for this last transaction, calculate to the nearest US dollars, the amount he received.

**(3 mks)**

4. Solve for x in the following equation. **(3mks)**

$4^{x}\,(8^{x-1}) = \tan 45^{o}$

**5.** The sum of interior angles of two regular polygons of sides; n and n + 2 are in the ratio 3:4. Calculate the sum of the interior angles of the polygon with n sides.

**(3mks)**

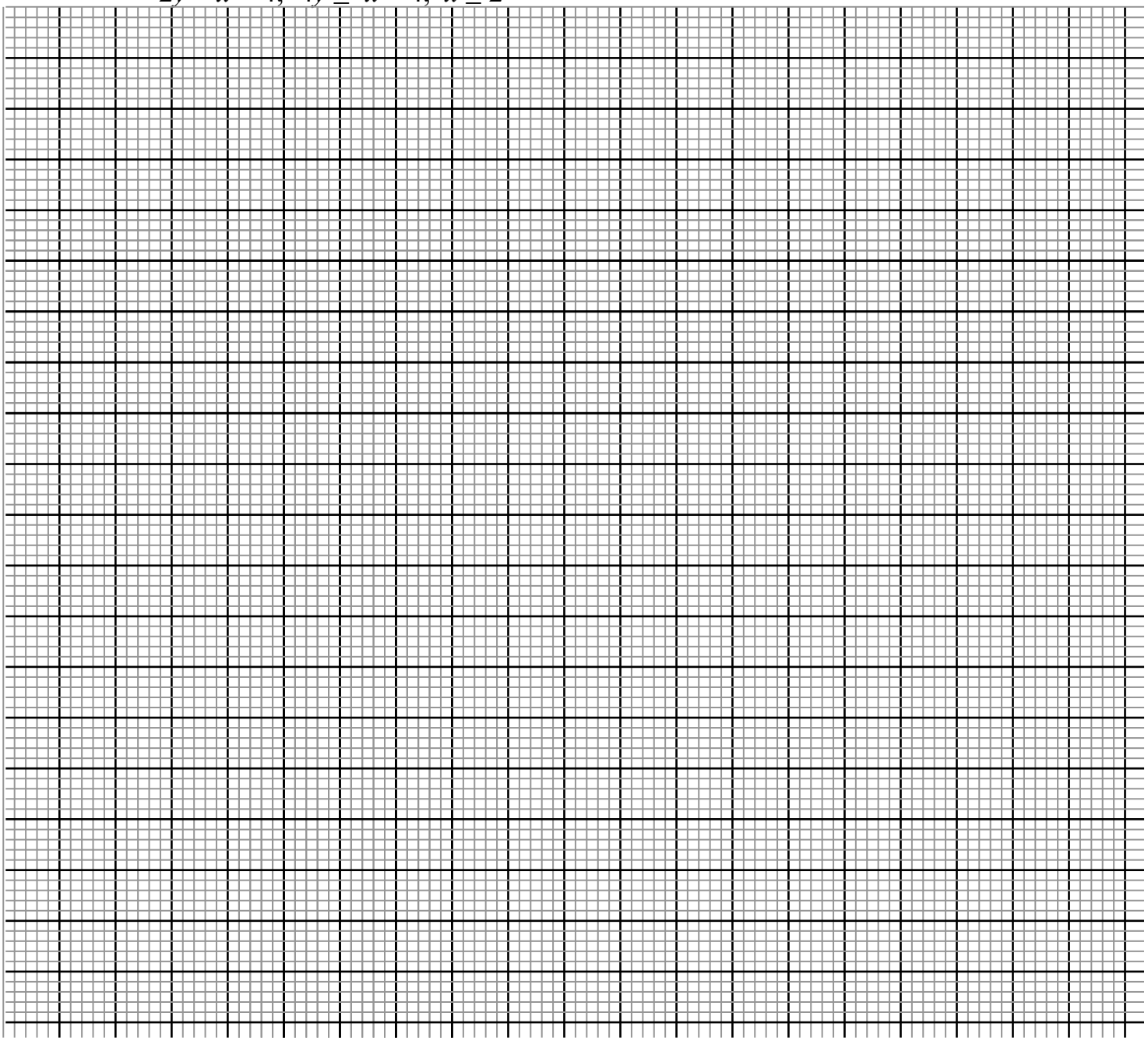
6. Use logarithms to evaluate the following correct to 4 decimal places.

$$\sqrt[4]{\frac{2\times 1.764^{-2}\times 0.324}{5.42}}$$

**(3mks)**

7. By shading, show the region defined by the following linear inequalities **(3mks)**

$2y < x + 4;\ \ 4y \geq -x - 4;\ \ x \leq 2$



**8.** Find the equation of locus of points equidistant from points A (6, 5) and B (-2, 3) in the form

$y = mx + c$ **(3mks)**

**9.** The GCD of three numbers is 6 and their LCM is 900. If two of the numbers are 36 and 60, find the least possible third number. **(3mks)**

**10.** Use the tables of squares, cube roots and reciprocals to evaluate **(3mks)**

$$\frac{\sqrt[3]{0.008}}{0.375} - \frac{10}{37.5^2}$$

**11.** Solve the following pair of simultaneous equations using substitution method **(3mks)**

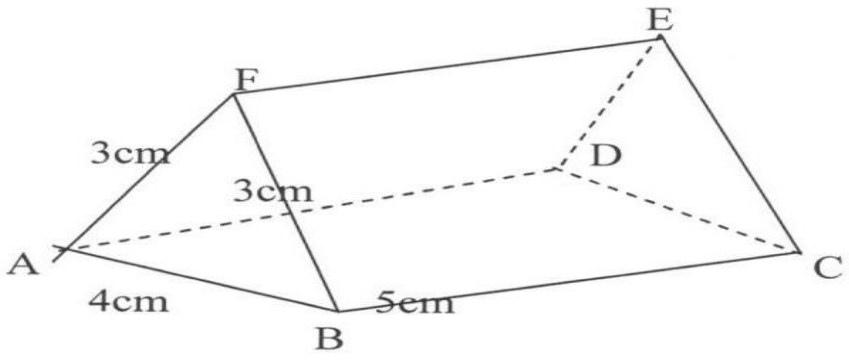
$$4x + 3y - 475 = 0$$
$$2x + 5y - 325 = 0$$

**12.** Given that *Sin* $\theta = 0.8$ and $\theta$ is an acute angle, find without using tables or calculators

**(a)** *Tan*$\theta$ **(2mks)**

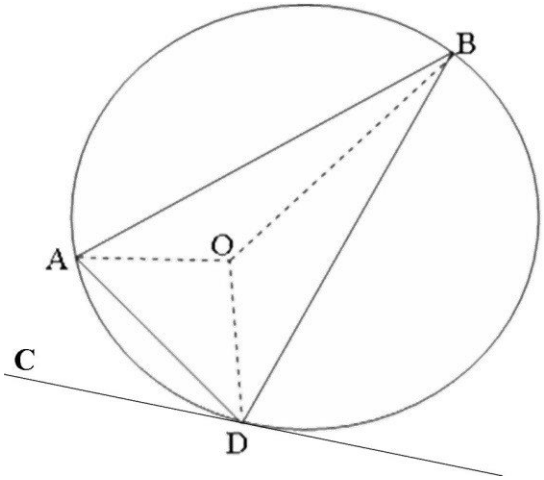
**(b)** *Cos (180 - $\theta$)* **(1mk)**

**13.** The figure below is a triangular prism of uniform cross-section in which AF = FB =3cm, AB = 4cm and BC = 5cm. Draw a clearly labeled net of the prism. **(3mks)**



**14.** The mass of two similar cans is 960g and 15000g. If the total surface area of the smaller can is $144cm^2$, determine the surface area of the larger can. **(3mks)**

15. In the circle below, O is the centre, angle DAB = $87^0$ , minor Arc AB is twice minor arc AD. CD is a tangent to the circle at D.




Giving reasons, Calculate the size of;

**(i)** Angle AOB. **(2mks)**

**(ii)**Angle ADT **(2mks)**

**16**. A sector of a circle of radius 42cm subtends an angle of $120^0$ at the centre of the circle. The sector is folded into an inverted right cone. Calculate

**(i)** The radius of the cone **(3mks)**

**(ii)** To one decimal place the vertical height of the cone **(1mk)**

# SECTION II: 50 MARKS

***Answer any FIVE questions in this section***

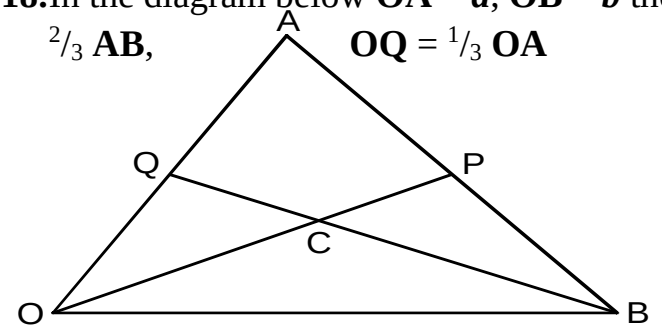
**17.** A bus and a Nissan left Nairobi for Eldoret, a distance of 340 km at 7.00 a.m. The bus travelled at 100km/h while the Nissan travelled at 120km/h. After 30 minutes, the Nissan had a puncture which took 30 minutes to mend.

**(a)** Find how far from Nairobi did the Nissan caught up with the bus **(5mks)**

**(b)** At what time of the day did the Nissan catch up with the bus? **(2mks)**

**(c)** Find the time at which the bus reached Eldoret **(3mks)**

**18.** In the diagram below **OA** = ***a***, **OB** = ***b*** the points P and Q are such that **AP** = $^2/_3$ **AB**, **OQ** = $^1/_3$ **OA**




**(a)** Express **OP** and **BQ** in terms of ***a*** and ***b*** **(2 mks)**

**(b)** If **OC** = *h***OP** and **BC** = *k***BQ**, Express OC in two different way and hence

**(i)** Deduce the value of *h* and *k*. **(5 mks)**

**(ii)** Express vector OC in terms of ***a*** and ***b*** only. **(2 mks)**

**(iii)** State the ratio in which C divides BQ **(1 mk)**

**19.** The table below shows the marks scored in a Mathematics examination.

**(a)** Calculate the mean mark **(3mks)**

| **Marks** | **Frequency** | | | | |
|---|---|---|---|---|---|
| 5 – 14 | 2 | | | | |
| 15 – 34 | 22 | | | | |
| 35 – 54 | 50 | | | | |
| 55 – 84 | 24 | | | | |
| 85 – 94 | 2 | | | | |

**(b)** Draw a histogram to represent the above information **(4mks)**

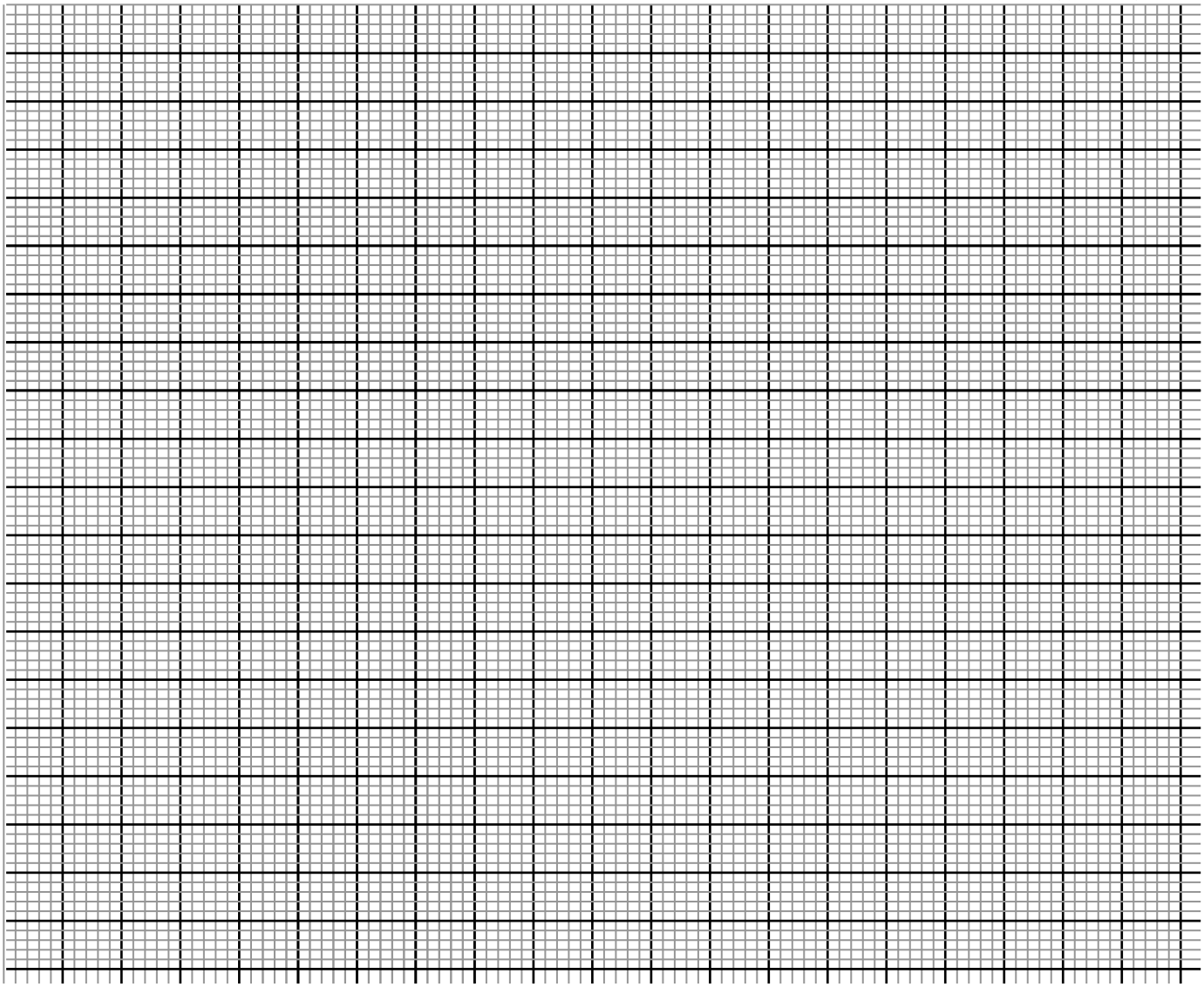
**(c)** Using the histogram, find the median mark **(3mks)**

**20.** Given the quadratic function $y = 3x^2 + 4x - 2$

**a)** Complete the table below for values of x ranging $-4 \leq x \leq 3$. **(2mks)**

| x | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 |
|---|---|---|---|---|---|---|---|---|
| y | | | | | | | | |

**b)** Using the grid provided draw the graph of $y = 3x^2 + 4x - 2$ for $-4 \leq x \leq 3$ **(3mks)**



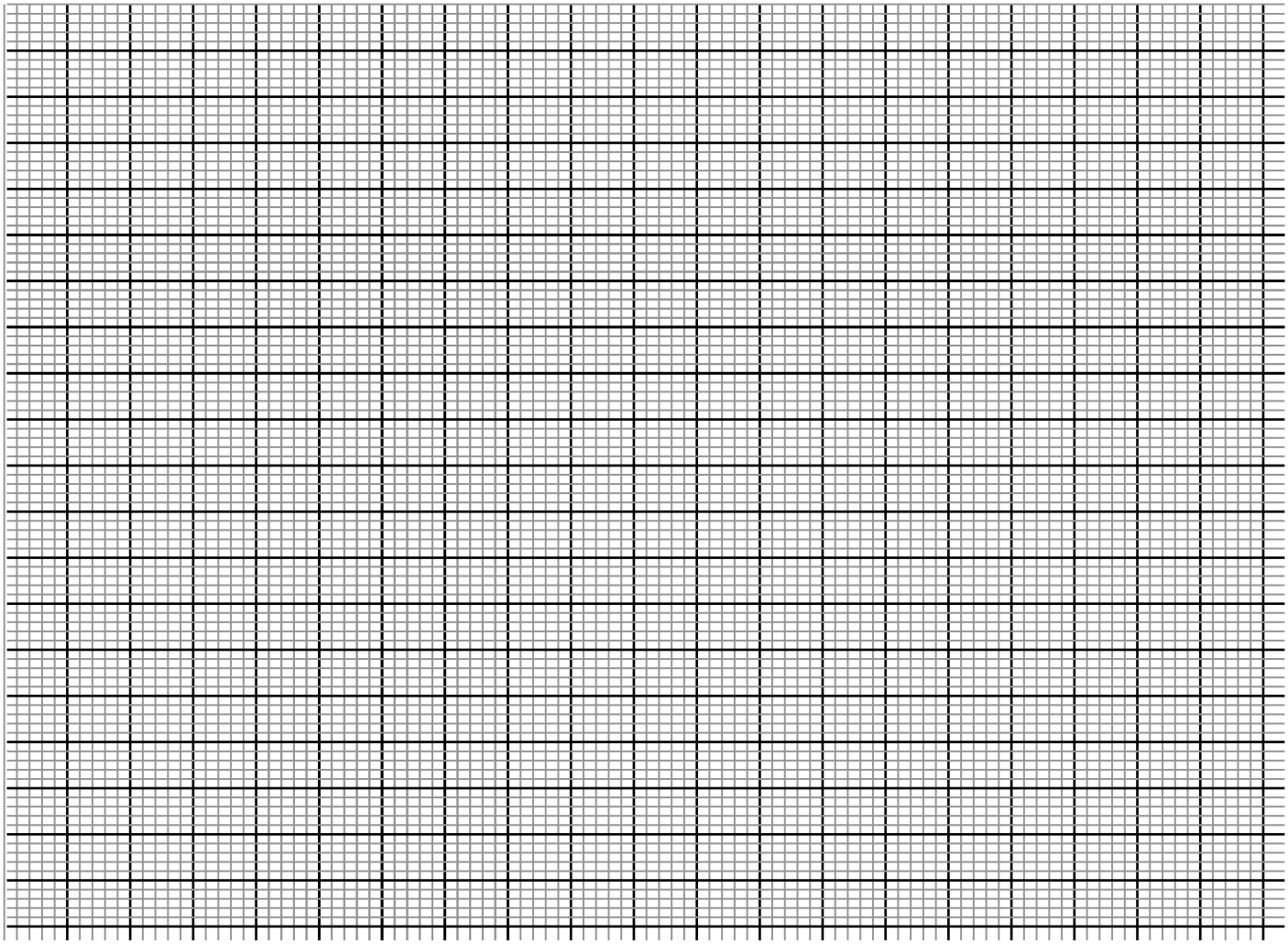
**c)**Using the graph, find the solution to the equations.

**i)**$3x^2 + 4x - 2 = 0$ **(2mks)**

**ii)**$3x^2 + 7x + 2 = 0$ **(3mks)**

**21**. A triangle ABC has vertices A(2,1), B(5,2) and C(0,4).

**(a)** On the grid provided plot the triangle ABC. **(2 mks)**



**(b)** $A^1B^1C^1$ is the image of ABC under a translation $\begin{pmatrix} 2 \\ -5 \end{pmatrix}$. Plot $A^1B^1C^1$ and state its coordinates. **(2mks)**

**(c)** Plot $A^{11}B^{11}C^{11}$ the image of $A^1B^1C^1$ under a rotation about the origin through a negative quarter turn. State its coordinates. **(3 mks)**

**(d)** $A^{111}B^{111}C^{111}$ is the image of $A^{11}B^{11}C^{11}$ under a reflection on the line y = 0. Plot $A^{111}B^{111}C^{111}$ and state its coordinates. **(3 mks)**

**22**.Two Airstrips P and Q are such that Q is 500km due East of P. Two warplanes M and NLeave from P and Q respectively at the same time. Warplane M moves at 360km/h on a bearing of $030^0$. Warplane N moves at a speed of 240km/h on a bearing of $315^0$. The two warplanes landed at Police camps A and B respectively after 90 minutes. Using a scale of 1cm represent 100km

**a)**Show the relative positions of the two police camps A and B **(6mks)**

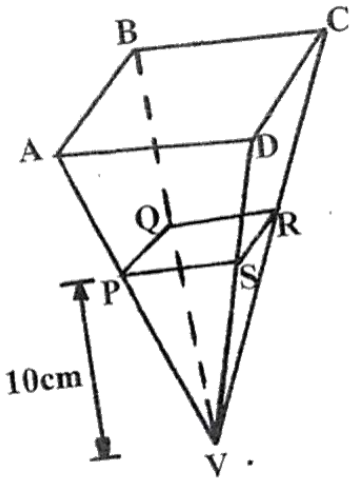
**(b)**Find the shortest distance between the police camps A and B. **(2mks)**

**(c)**Find the true bearing of;

**i)**Police camp A from B **(1mk)**

**ii)**Police camp B from A **(1mk)**

**23.**The diagram below represents square based pyramid standing vertically. AB = 12cm, PQ = 4cm and the height of pyramid PQSV is 10cm.




**(a)** If PQRSV is a solid, find the volume of material used to make it. **(2mks)**

**(b)** Find the

**(i)** height of the frustum ABCDPQRS **(2mks)**

**(ii)** Volume of the frustum **(3mks)**

**(c)** The liquid from a hemisphere is poured into PQRS. Find radius correct to 4 significant figures of the hemisphere if the liquid from hemisphere filled the solid completely. $Use\ \pi = \frac{22}{7}$ **(3mks)**

**24.** The displacement h metres of a particle moving along a straight line after t seconds
is given by $h = -2t^3 + {}^3/_2\ t^2 + 3t$

**(a)** Find the initial acceleration. **(3mks)**

**(b)** Calculate

**(i)** The time when the particle was momentarily at rest. **(3mks)**

**(ii)** Its displacement by the time it comes to rest momentarily. **(2mks)**

**(c )** Calculate the maximum speed attained. **(2mks)**

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## MATHEMATICS PAPER 2

### *Kenya Certificate of Secondary Exams*

**INSTRUCTIONS TO CANDIDATES**

1. Write your name, stream, admission number and index number in the spaces provided above.
2. The paper contains two sections, Section I and II
3. Answer all questions in section I and **ONLY** any **FIVE** questions from section II.
4. All answers and working must be shown on the question paper in the spaces below each question
5. Show all steps in your calculations, giving answers at each stage
6. Marks may be given for each correct working even if the answer is wrong
7. Non-programmable silent electronic calculators and KNEC mathematical tables may be used.

**FOR EXAMINERS USE ONLY**

**Section I**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | |

**Section II**

| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | **Total** |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

**Grand Total**

# SECTION I

## *Answer all the questions in the spaces provided (50 marks)*

**1.** The expression $x^2 + 10x + c + 2 = 0$ is a perfect square. Find the value of c if it is a scalar. **(2mks)**

**2.** Muya was asked to truncate $^7/_9$ to 3 significant figures. He rounded it off instead to 3 decimal places. Calculate the percentage error resulting from his rounding off. **(3mks)**

**3.** The co-ordinates of a point A is (2, 8, 3) and B is (-4, -8, -5). A point P divides AB externally in the ratio 7: -3.
Find the co-ordinates of P **(3mks)**

**4.** In a triangle XYZ, XY = 2cm, YZ $(2\sqrt{3}-1)$ cm, and angle YXZ = $60^0$. Determine Sine XZY giving your answer in the form $\underline{m + \sqrt{3}}$, where M and N are integers **(4mks)**

**5.** Find the independent term of x in the expansion of $(x^3 - {}^2/_{x^3})^6$ **(3mks)**

**6.** Solve for x: $(\log_3 x)^2 - ½ \log_3 x = {}^3/_2$ **(3mks)**

**7.** The cash price of a T.V set is Ksh.13,800. Walter opts to buy the set on hire purchase terms by paying deposit of Ksh.2,280. If simple interest of 20% p.a is charged on the balance and the customer is required to pay by monthly installments for 2 years, calculate the amount of each installment**.** **(3mks)**

**8.** Make x the subject of the formula $ax = \frac{3r}{2} - \frac{x^2}{2}$ **(3mks)**

**9.** Calculate the area under the curve $y = 3x^2 + 8$ and bounded by lines; $y = 0$, $x = 1$ and $x = 6$, using the mid-ordinate rule with 5 strips. **(3mks)**

**10.** A circle is tangent to the y – axis and intersects the x- axis at (2,0) and (8,0). Obtain the equation of the circle in the form $x^2 + y^2 + ax + by + c = 0$, where a, b and c are integers **(4mks)**

**11.** A variable y varies as the square of x and inversely as the square root of z. Find the percentage change in y when x is changed in the ratio 5:4 and z reduced by 19% **(3mks)**

**12.** Solve for X in the equation:

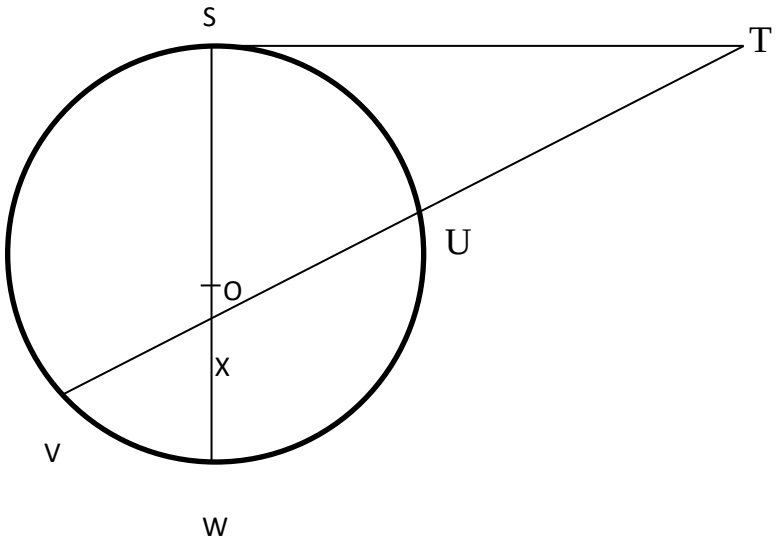
$2\ Sin^2x - 1 = Cos^2x + Sin\ x$, for $0^0 \leq x \leq 360^0$ **(3mks)**

**13.** A die is biased so that when tossed, the probability of a narrator of a number n showing up, is given by p(n) = kn where k is a constant and n = 1, 2, 3, 4, 5, 6 (the numbers of the faces of the die)

**i)** Find the value of k **(1mk)**

**ii)** If the die is tossed twice, calculate the probability that the total score is 11 **(2mks)**

**14.** In the figure below, the tangent ST meets chord VU produced at T. Chord SW passes through the Centre, O of the circle and intersects chord VU at X. Line ST = 12cm and UT = 8cm.




**a.** Calculate the length of chord VU **(1mk)**

**b.** If VX : XU = 2 : 3, Find SX **(2mks)**

**15.** Dota measured the heights in centimeters of 104 trees seedlings are shown in the table below

| Height | 10 - 19 | 20 - 29 | 30 - 39 | 40 - 49 | 50 - 59 | 60 - 69 | 70 - 79 |
|---|---|---|---|---|---|---|---|
| No. of Seedlings | 9 | 16 | 19 | 26 | 20 | 10 | 4 |

Calculate the quartile deviation **(4mks)**

**16.** Given that the ratio x:y = 2:3, find the ratio (5x – 2y) : (x +y) **(2mks)**

## SECTION II

***Answer ONLY five questions in this section (50 marks)***

**17.** A curve is represented by the function, $y = 2x^3 + 3x^2$

**a)** Find**:** **(i)** the x-intercept of the curve **(2mks)**

**(ii)** the y-intercept of the curve **(1mk)**

**b)** **(i)** Determine the stationary points of the curve of the curve **(3mks)**

**(ii)** For each point in b(i) above, determine if it is maximum or minimum

**(2mks)**

**c)** Sketch the curve in the space below **( 2mks)**

**18.** Use ruler and a pair of compasses only in this question

**a)** Construct**; (i)** triangle ABC in which AB = 8.5cm, BC = 7.5cm and <BAC = $30^0$ and <ABC = $105^0$ **(3mks)**

**ii)** a circle that passes through the vertices of triangle ABC. Measure the radius **(3mks)**

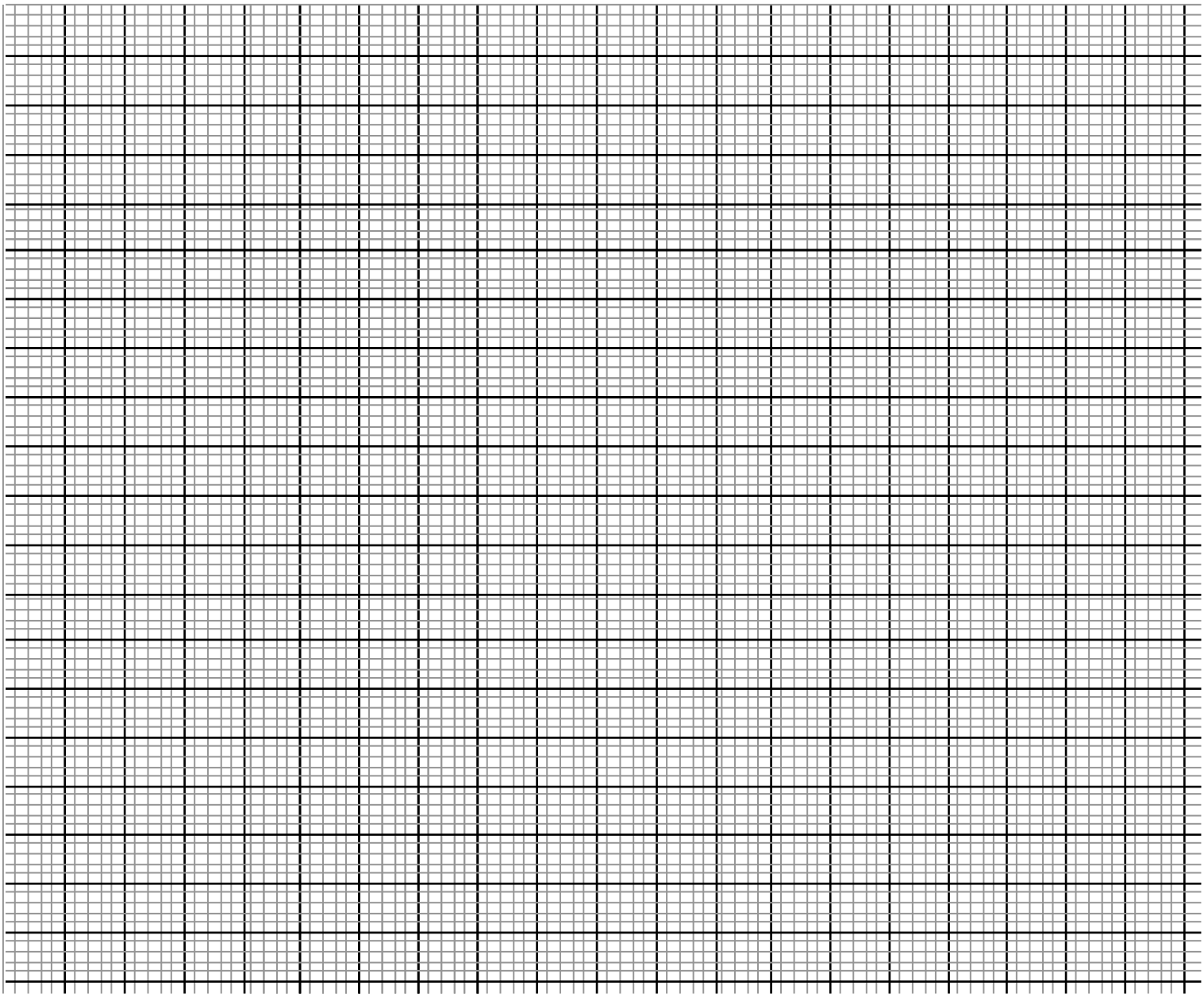
**iii)** the height of triangle ABC with line AB as the base. Measure the height. **(2mks)**

**b)** Determine area of the circle that lies outside the triangle **(2mks)**

**19.a)**Complete the table below, giving your values to 2 decimal places **(2mks)**

| x | 0 | 30 | 60 | 90 | 120 | 150 | 180 | 210 | 240 | 270 | 300 | 330 | 360 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (2cos x) -1 | | | 0 | | -2 | | -3 | | -2 | -1 | 0 | | 1 |
| Sin x | 0 | | | 1 | | 0.50 | 0 | | | -1 | | | 0 |

**b)**Draw the graph of y= (2 co x) – 1 and y=sin x on the grid provided below. Use the scale 1cm represent $30^0$ horizontal 2 cm represent 1 unit vertically and 2cm for 1 unit on the y-axis **(4 mks)**



**c)**Use the graph to solve:

**i)(**2cos x) – 1 = -1.5 **(1mk)**

**ii)**2 cos x – sin x =1 **(2mks)**

**d)**State the amplitude of the wave $y=2\cos x - 1$ **(1mk)**

**20**.A bag contains blue, green and red pens of the same type in the ratio 8:2:5 respectively. A pen is picked at random without replacement and its colour noted.

**a)**Determine the probability that the first pen picked is

**i)**Blue **(1mk)**

**ii)**Either green or red. **(2mks)**

**b)**Using a tree diagram, determine the probability that

**i)**The first two pens picked are both green **(4mks)**

**ii)**Only one of the first two pens picked is red. **(3mks)**

**21**.A and B are two points on the earth's surface and on latitude $30^0$N.The two points are on the longitude $40^0$W and $104^0$E respectively.

Calculate

**(a)(i)**The distance from A to B along a parallel of latitude in kilometres. **(3mks)**

**(ii)**The shortest distance from A to B along a great circle in kilometre **(4mks)**

(Take $\pi = \frac{22}{7}$ and radius of the earth =6370km)

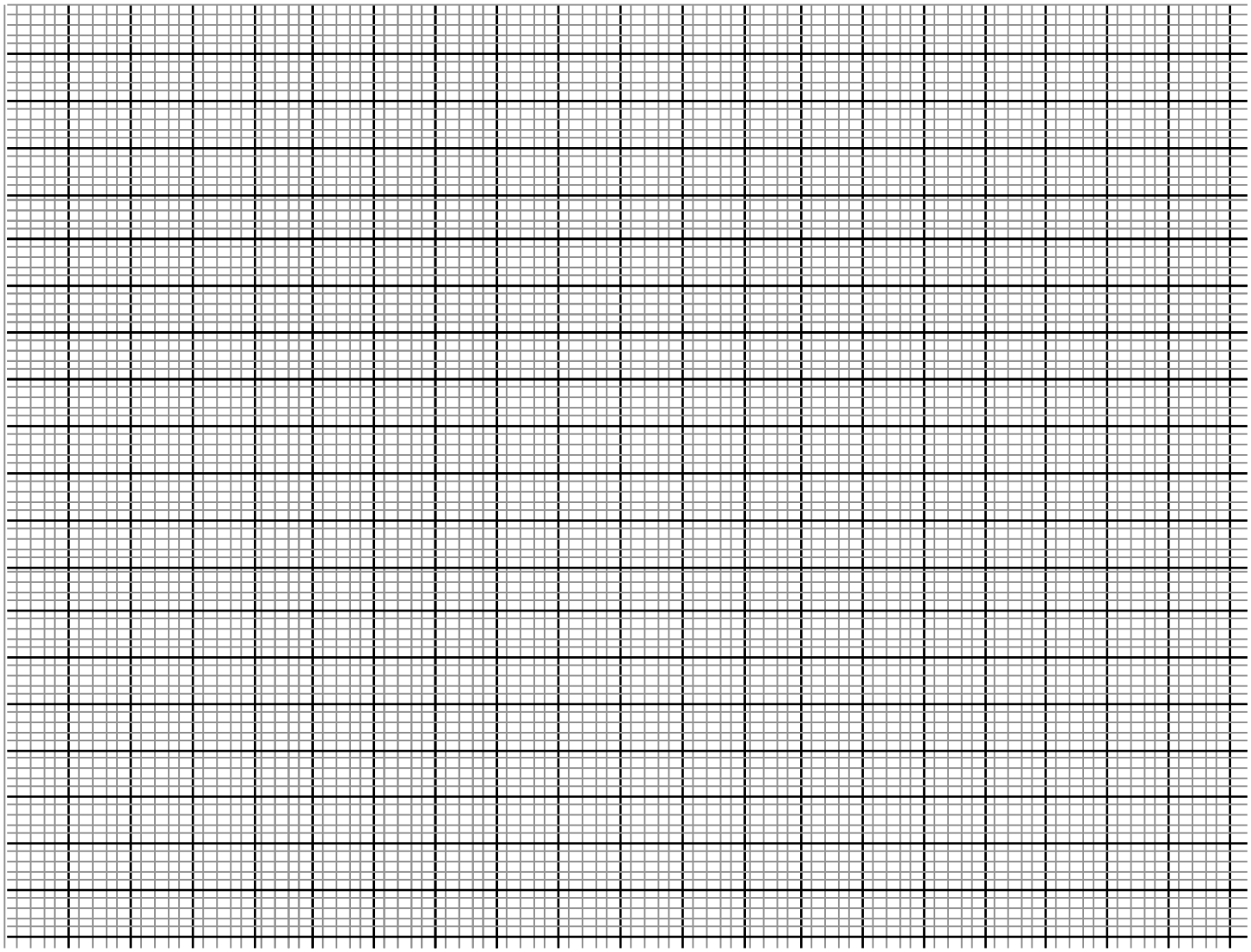
**(b)**If the local time at B is 8.00am, calculate the local time at A **(3mks)**

**22.** Lengths of 100 mango leaves from a certain mango tree were measured t the nearest centimeter and recorded as per the table below,

| Length in cm | 9.5-12.5 | 12.5-15.5 | 15.5-18.5 | 18.5-21.5 | 21.5-24.5 |
|---|---|---|---|---|---|
| No. of Leaves | 3 | 16 | 36 | 31 | 14 |
| Cumulative frequency | | | | | |

**a)** Fill in the table above. **(2 mks)**

**b)** Draw a cumulative frequency curve from the above data. **(3 mks)**



**b)** Use your graph to estimate

**i)**The quartile deviation of the leaves **(3mks)**

**ii)**The number of leaves whose lengths lie between 13cm and 17cm. **(2mks)**

**23.a)**Use the trapezium rule with 7 ordinates to estimate the area enclosed by the curve $y = \frac{1}{2}x^2 + 3$ and the lines x = 0, x = 6 and the x-axis. **(4 mks)**

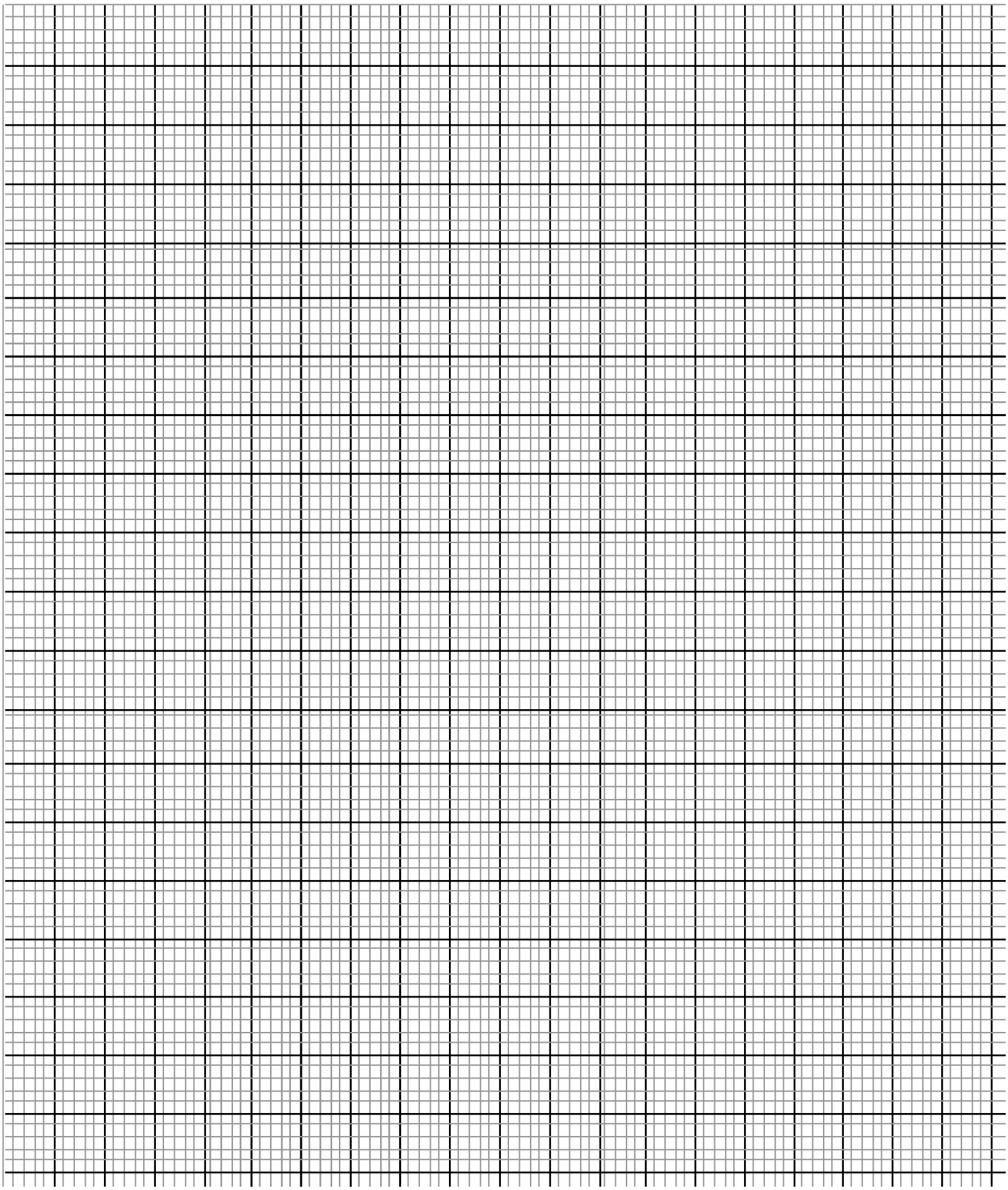
**b)**Determine the exact area bounded the curve and the lines in section a) above **(3 mks)**

**c)** Calculate the percentage error from the trapezoidal rule **(3 mks)**

**24.**A manufacturer sells two types of books X and Y. Book X requires 3 rolls of paper while Book Y requires $2^1/_2$ rolls of paper. The manufacturer uses not more than 600 rolls of paper daily in making both books. He must make not more than 100 books of type X and not less than 80 of type Y each day

**a)** Write down four inequalities from this information. **(4mks)**

**b)** On the grid provided, draw a graph to show inequalities in (a) above **(3mks)**



**c)** If the manufacturer makes a profit of sh 80 on book X and a profit of sh 60 on book Y, how many books of each type must it make in order to maximize the profit. **(3mks)**

**NAME……..……ADM NO……**

**SCHOOL…….…….……..CLASS……**

**DATE…….……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## PHYSICS PAPER 2

## TIME:2 HRS

## *Kenya Certificate of Secondary Exams*

**INSTRUCTIONS TO CANDIDATES**

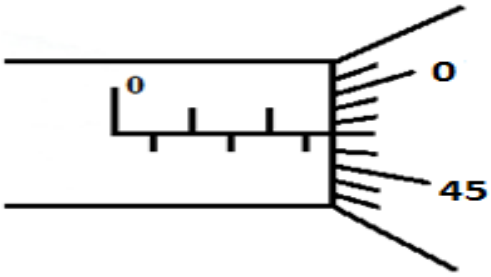
***i)*** *Write your name and admission number in the spaces provided above.*
***ii)*** *Sign and write the date of examination in the spaces provided above*
***iii)*** *This paper consists of **TWO** sections **A** and **B.***
***iv)*** *Answer **ALL** the questions in section **A** and **B** in the spaces provided.*
***v)*** *All working **MUST** be clearly shown.*
***vi)*** *Non programmable silent calculators may be used.*
***vii)*** *ALL numerical answers must be expressed in decimal notation.*
***viii)*** *This paper has 12 pages. It is the responsibility of the candidate to ascertain that all the pages are printed as indicated and that no questions are missing.*
***ix)*** *Candidates should answer the questions in English.*
*Constant: g=10N/kg or 10m/s²*

**FOR OFFICIAL USE**

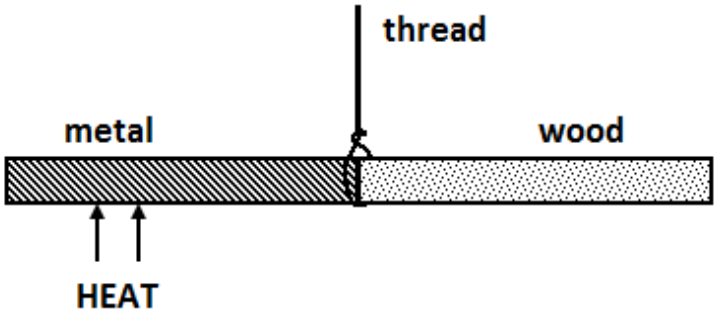
| Section | Question | Max. Score | Candidate's score |
|---|---|---|---|
| **A** | 1-13 | 25 | |
| **B** | 14 | 12 | |
| | 15 | 14 | |
| | 16 | 09 | |
| | 17 | 08 | |
| | 18 | 12 | |
| TOTAL SCORE | | **80** | |

## SECTION A: 25 MARKS

**1.** The figure below shows a part of micrometer screw gauge with a zero error of -0.04mm. Write down the exact length measured. **(2 marks)**




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




The side made of metal is now heated with a Bunsen flame. State and explain the observation that will be made after some time. (**2marks)**

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**3.** Estimate the size of an oil molecule if a drop of oil of volume $6.0 \times 10^{-10}$ $m^3$ forms a patch of diameter 32 cm on a water surface. **(2marks)**

**4.** An immersion heater rated at 180W is placed in a liquid of mass 2kg. When the heater is switched on for 7.5 minutes the temperature of the liquid rises by 40°C. Determine the specific heat capacity of the liquid. **(3marks)**

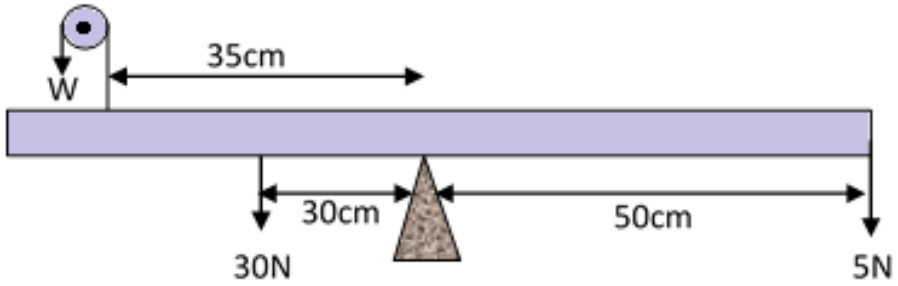
**5.** Other than increase in temperature state one other way of lowering the surface tension of a liquid. **(1mark)**

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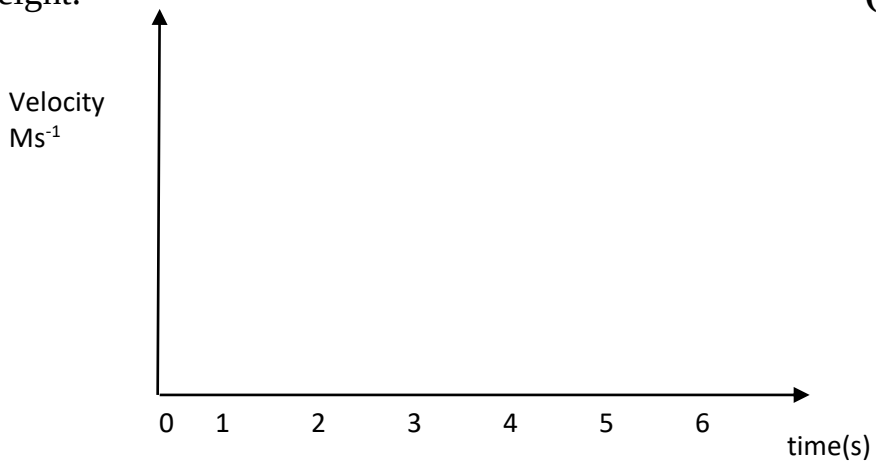
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**6.** The figure below shows a uniform bar pivoted at its centre and is at equilibrium.




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

**7.(i)** Sketch a velocity – time graph on the axes provided for an object thrown vertically upwards with initial velocity 20 $ms^{-1}$ and takes 2 seconds to reach maximum height. **(1 mark )**



**(ii)** Calculate the maximum height attained by the object in 7 (i) above **( 2 marks)**

**8.** In an experiment to demonstrate Brownian motion, smoke was placed in a smoke cell and observed under a microscope. State and explain the observation. **(2marks)**

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**9.** State a reason why a burn from steam at $100^0$C is more severe than a burn from boiling water at the same temperature **(1 mark)**

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**10**. Explain why the rate of heat flow in a conductor increases with increase in cross-section area. **(1 mark)**

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**11.**A piece of paper is held in front of the mouth and air blown horizontally over the paper, it is observed that the paper get lifted up. Give reason for the observation. **(1mark)**

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**12.** In the study of free fall, it is assumed that the gravitational force F acting on a given body of mass, m is given by F = mg. State two other forces that act on the same body. **(2marks)**

**13.**A girl in a school in Nakuru plans to make a barometer using a liquid of density $1.25gcm^{-3}$. If the atmospheric pressure in the school is $93750Nm^{-2}$. Determine the minimum length of the tube that she will require? **( 2 marks)**

## SECTION B (55MARKS)

***Answer all questions in this sections***

**14 a) (i)** State Archimedes' Principle. **(1mk)**

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**(ii)** A metal block weighs 1.04N in air, 0.64N when fully immersed in water and 0.72N when fully immersed in a liquid. If the density of water is 1000 kg $m^{-3}$, find:

**I)** the density of the liquid. **(2mks)**

**II)** The density of the metal block. **(2mks)**

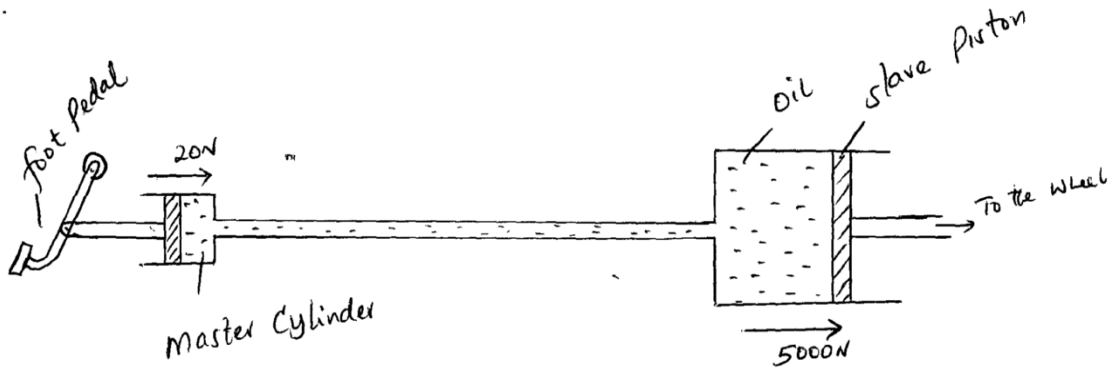
**b)** A crane lifts a load of 2000Kg through a vertical distance of 3.0m in 6 seconds. Determine the;

**i)**Work done by the crane. **(2mks)**

**ii)**Power developed by the crane. **(2mks)**

**iii)**Efficiency of the crane given that it is operated by an electric motor rated 12.5kW. **(2mks)**

**15**. (A) The figure below shows a hydraulic brake system.




A force of 20 N is applied on the foot pedal connected to a master cylinder piston of area 500cm$^2$. This causes a stopping force of 5,000N on one wheel. Calculate.

**i)** Pressure on the master cylinder **(2 marks)**

**ii)** Area of the slave cylinder piston. **(2 marks)**

**iii)** Velocity ratio of the system. **(2 marks)**

**B) I)**State the reason why a body in uniform circular motion is said to be accelerating. **(1 mark)**

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**II)** A particle moving along a circular path of radius 5cm describes an arc of length 2cm every second. Determine:

**(i)** Its angular velocity. **(1mark)**

**(ii)** Its periodic time. **(2marks)**

**c)** A stone of mass 150g is tied to the end of a string 80cm long and whirled in a vertical circle at 2rev/s. Determine the maximum tension in the string. **(3marks)**

**(d)** State ***one*** factor affecting centripetal force. **(1mark)**

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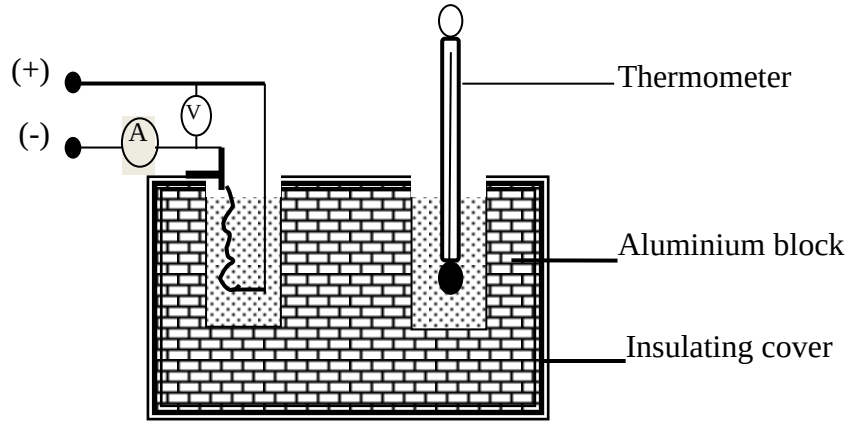
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**16a)** Define "specific heat capacity" of a substance. **(1mark)**

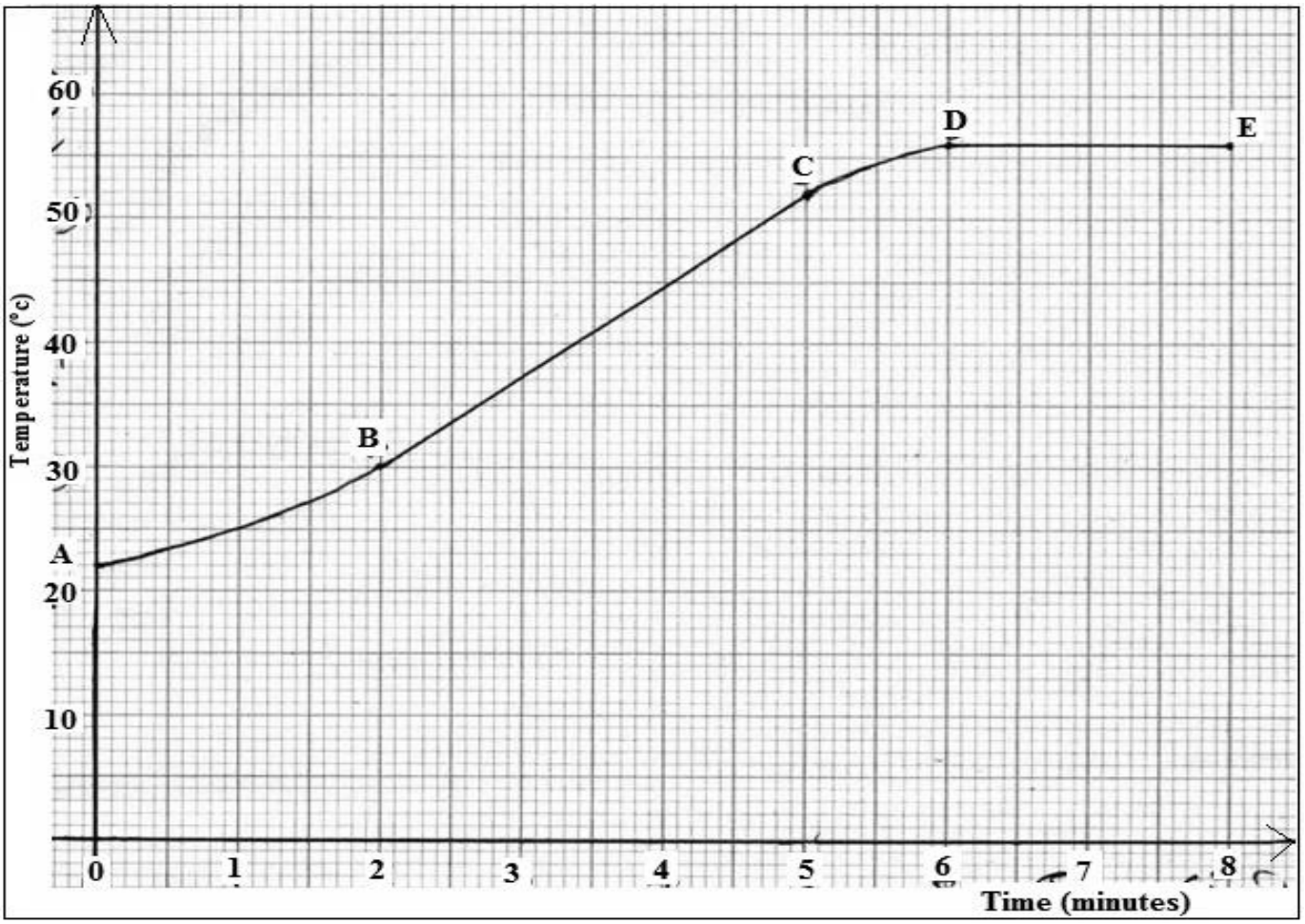
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**b)** In an experiment, an aluminum block of mass 2kg was heated using an immersion heater as shown in figure below.




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 $^{o}C$ against time in minutes for the experiment is shown below.




Using the graph, 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)**

**iii)** Use the straight portion of the graph (B to C) to calculate the specific heat capacity of the aluminum given that the voltmeter reads 22.0 V and ammeter 10.0 A throughout the experiment. **(3 marks)**

**c)** Giving a reason explain why the value calculated in **b) (iii)** will not be accurate.
**(1 mark)**

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**d)** A faulty thermometer reads $40^0$Cwhen dipped in pure melting ice and $240^0$C when in contact with steam above pure boiling water. What would the same thermometer read when put in water at $50^0$C? **( 2 marks)**

**16 (a)** A stone is thrown horizontally with a velocity of 45m/s from the top of a vertical tower 50m high. Determine:

**i.** The time taken by the bullet to reach the bottom of the ground
**(2 marks)**

**ii.** The maximum horizontal distance covered by the bullet
**(2marks)**

**b) i)** Distinguish between elastic and inelastic collision. **(1mark)**

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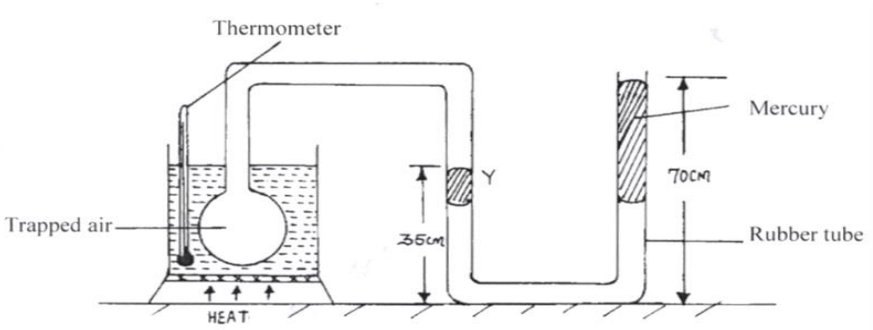
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**ii)** A car of mass 800 kg collides heads on with a truck of mass 5000kg travelling at 40 m/s. The car is thrown to the bonnet of the truck which continues to move after impact at 10 m/s in the original direction. How fast was the car moving?

**(3marks)**

**18.** Figure below shows the apparatus that a student used to investigate the relationship between temperature and pressure of a fixed mass of a gas at constant volume.




**a) i)** Describe how the student should ensure that all air trapped has the same temperature as indicated by the thermometer. **(2 marks)**

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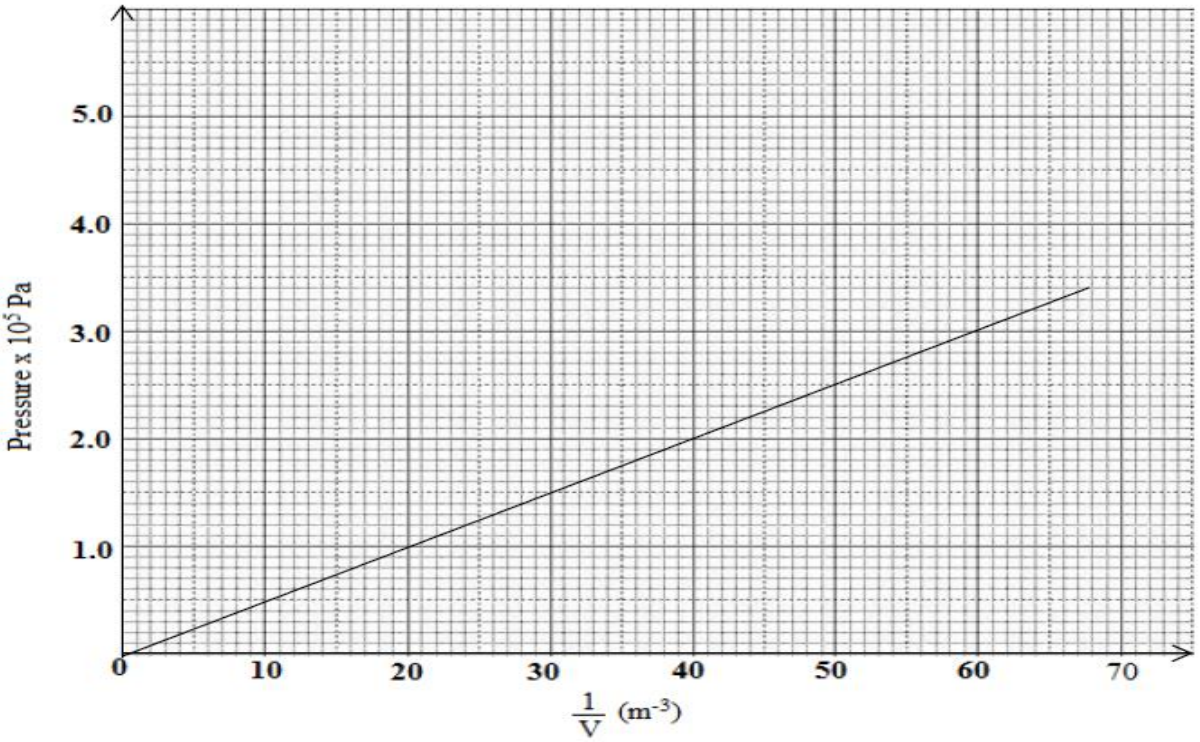
**ii)**Give a reason why it is necessary to ensure that before taking any reading on pressure, the liquid level should reach the level marked Y. **(1 mark)**

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**(b)**The pressure P of a fixed mass of a gas at a constant temperature of T = 200K is varied continuously and values of corresponding volume recorded. A graph P against $\frac{1}{V}$ is shown on grid below.




**(i)** determine the volume of the gas when the pressure reads 2.8 x $10^5$pa **(2 marks)**

**(ii)** find the value of R given that the pressure P and volume V of the gas are related by the equation $T = \frac{PV}{2R}$ , where R is a constant . **(4 marks)**

**(c)** The pressure of the air inside a car tyre increases if the car stands out in the sun for some time on a hot day. Explain the pressure increase in terms of the kinetic theory of gases**.** **(2 marks)**

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**(d)** A gas is put into a container of fixed volume at a pressure of $3.6 \times 10^5$ $Nm^{-2}$ and temperature 27°C. The gas is then heated to a temperature of 177°C. Determine the new pressure. **(3 marks)**

**NAME……..……ADM NO……**

**SCHOOL…….…….……..CLASS……**

**DATE…….……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## PHYSICS PAPER 2

## TIME:2 HRS

## *Kenya Certificate of Secondary Exams*

**INSTRUCTIONS:**

1. *Write your **name** and **admission number** in the spaces provided above.*
2. *Sign and write the date of examination in the spaces provided above.*
3. *This paper consists of **TWO Sections**: **A** and **B**.*
4. *Answer **all** questions in **section A** and **B** in the spaces provided.*
5. *All working **MUST** be clearly shown.*
6. *Nonprogrammable silent electronic calculators and KNEC mathematical tables may be used.*
7. *Candidate should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*

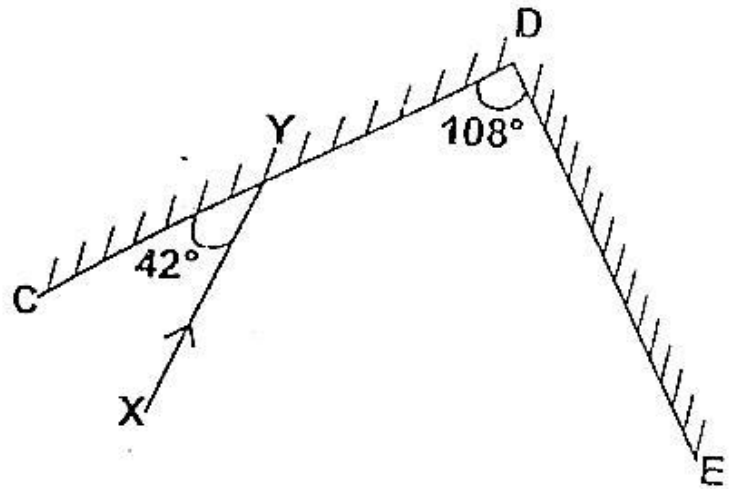
**FOR EXAMINER'S USE ONLY**.

| SECTION | QUESTION | MAX SCORE | CANDIDATE'S SCORE |
|---|---|---|---|
| A | 1-14 | 25 | |
| B | 15 | 12 | |
| | 16 | 10 | |
| | 17 | 11 | |
| | 18 | 12 | |
| | 19 | 10 | |
| **TOTAL SCORE** | | 80 | |

# SECTION A (25 MARKS)

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

1. **Figure 1** shows a ray of light XY striking the mirror CD held at an angle of 108° to mirror DE.




Complete the path of the ray XY and state the final angle of reflection. **(3 marks)**

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2. When storing a pair of bar magnets, it is advisable to put a keeper at each end.

   **(a)** Draw a diagram in the space below to show the above arrangement and label the poles of each magnet **(1 mark)**

   **(b)** Explain briefly how the above arrangement can minimize the loss of magnetism in the bar magnets **(1 mark)**

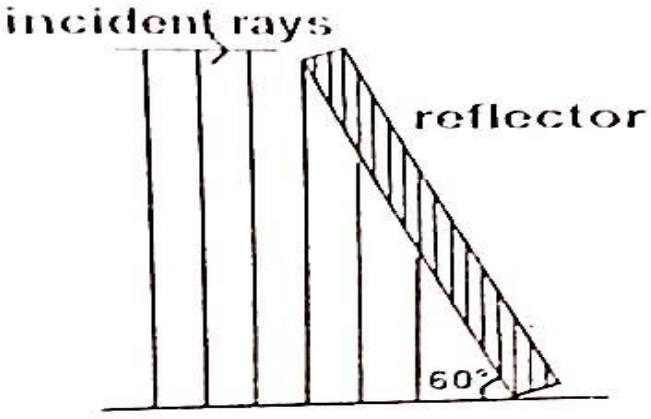
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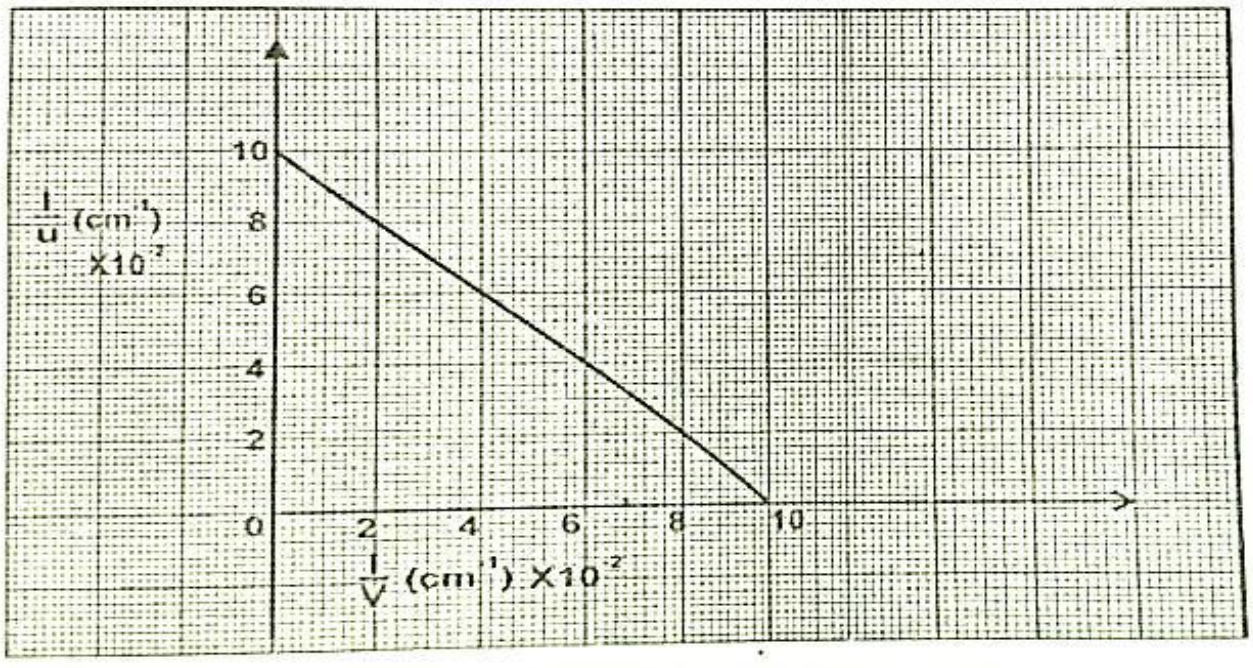
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3. **Figure 2** below shows plane waves incident on a plane reflector inclined at 60°C to the horizontal




Complete the diagram to show reflected waves **(1 mark)**

4. A student while investigating the focal length of a certain concave mirror, measured object and image distances and drew a graph 0f $^1/_u$ against $^1/_v$ shown below.




From the graph, determine the focal length **(2 marks)**

5. It is advisable to top up acid level of an accumulator with distilled water and not acid. Give a reason for this **(1 mark)**

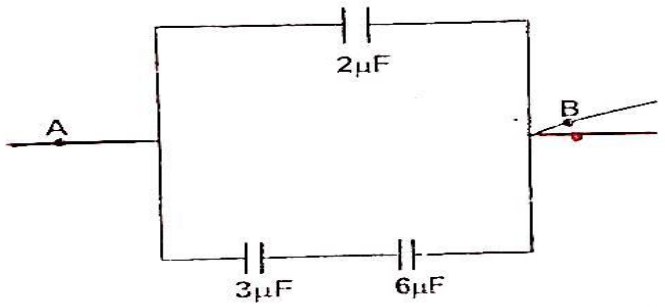
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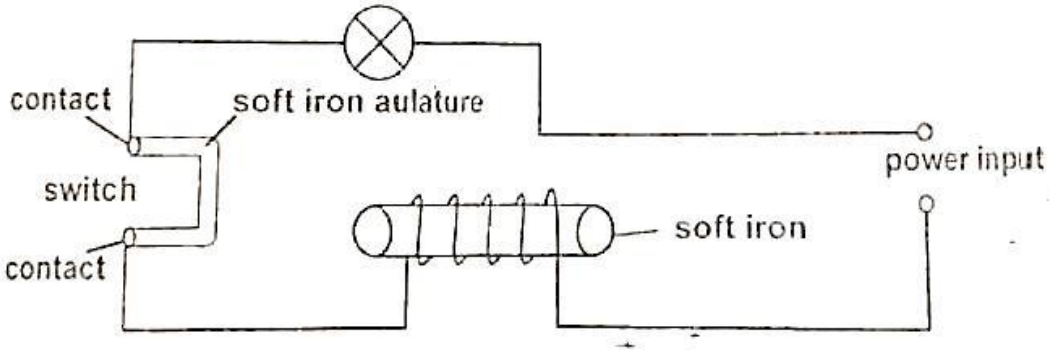
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6. Find the combined capacitance between A and B of the arrangement shown in the figure below.

(2 marks)




7. **Figure 3** shows a simple circuit breaker.




Explain briefly how it works **(3 marks)**

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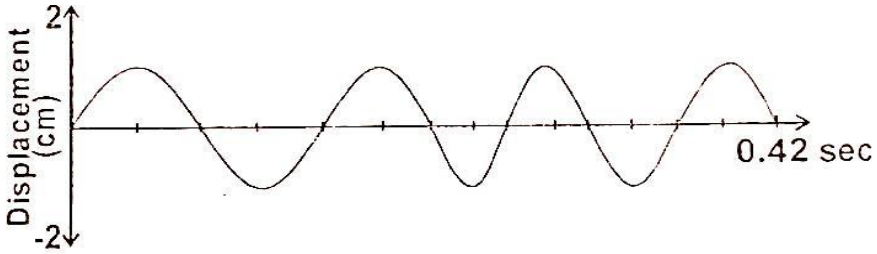
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8. **Figure 4** shows a transverse wave.




**(a)** Calculate the frequency of the wave **(2 marks)**

**(b)** Sketch another wave on the diagram that has double the frequency and half the amplitude **(1 mark)**

9. For an echo to be heard, the minimum distance between the obstacle and the observer must be 17m.If the minimum time for hearing an echo is 0.1 seconds, Determine the speed of sound in air **(2 marks)**

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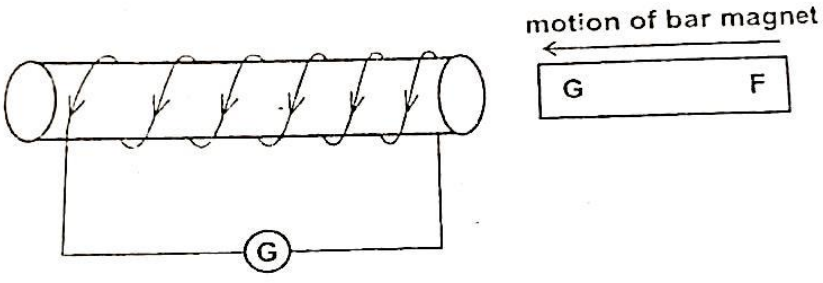
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10. **Figure 5** shows a bar magnet FG being pushed into a coil connected to a Centre zero galvanometer. The current induced in the coil is shown.




State the polarity of F **(1 mark)**

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**11.** Name ***one*** electromagnetic wave whose energy is higher than that of visible light. **(1 mark)**

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**12.** Below is part of radioactive decay series of uranium 238.

$$^{238}_{92}U \xrightarrow{a} {}^{234}_{90} \xrightarrow{b} {}^{234}_{91}Pa \xrightarrow{C} {}^{239}_{92}U \rightarrow {}^{230}_{90}Th$$

Identify isotopes from the series above. **(1 mark)**

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**13.** State how polarization is reduces in a simple cell **(1 mark)**

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**14.** Explain why it is not advisable to use a 10A fuse for hair drier rated 2.5Kw, 240V. **(2 marks)**

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## SECTION B (55 MARKS)

### *Answer all questions*

**15.**

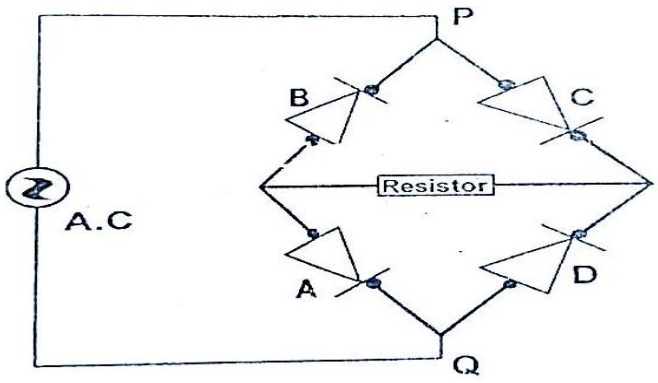
**(a)** What is meant by the term "A.C rectification" **(1 mark)**

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**(b)** **Figure 6** shows one method of A.C rectification using four diodes A,B,C,D.




Explain how the A.C rectification is achieved in the above circuit **(2 marks)**

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**(c)** In a transformer, a voltage of 240V is to be stepped down to 24V. The primary current is found to be 1.5 A while the secondary current is 14A. Calculate:

**(i)** Power input **(1 mark)**

**(ii)** Power output **(1 mark)**

**(iii)** Power wasted **(1 mark)**

**(iv)** Efficiency of the transformer **(3 marks)**

**(d)** State ***two*** ways in which the power in a transformer is wasted **(2 marks)**

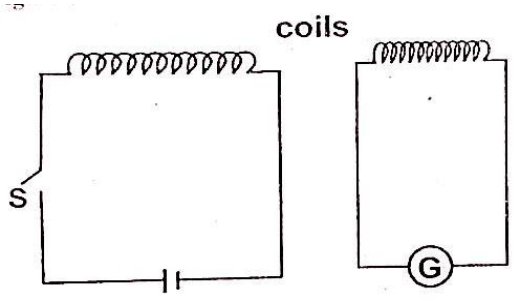
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**16.**

**(a)** **Figure 7** below shows the circuits close to each other




When the switch is closed, the galvanometer shows a reading and then returns to zero.

**(i)** Explain the observation **(2 marks)**

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**(ii)** Give ***one*** adjustment that can be done to the arrangement so that:

**(I)** The galvanometer gives a bigger deflection in the same direction **(1 mark)**

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**(II)** The galvanometer deflects in opposite direction when the switch is closed **(1 mark)**

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**(b)** In an X-ray tube, the electrons are accelerated by a p.d of 24000V. Assuming that 2% of energy produced is converted to X-rays. Determine the:

**(i)** Energy of the X-rays produced **(3 marks)**

**(ii)** Frequency of X-rays reduced (Take planks constant h= $6.6\times 10^{-34}$Js and charge on an electron e= $1.6\times 10^{-19}$C). **(3 marks)**

**17.**

**(a)** State the function of the grid of a cathode ray oscilloscope (CRO) **(2 marks)**

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**(b)** State what is observed on the screen of a CRO when:

**(i)** Low voltage alternating current is connected to the time base and the y-gain switched off. **(1 mark)**

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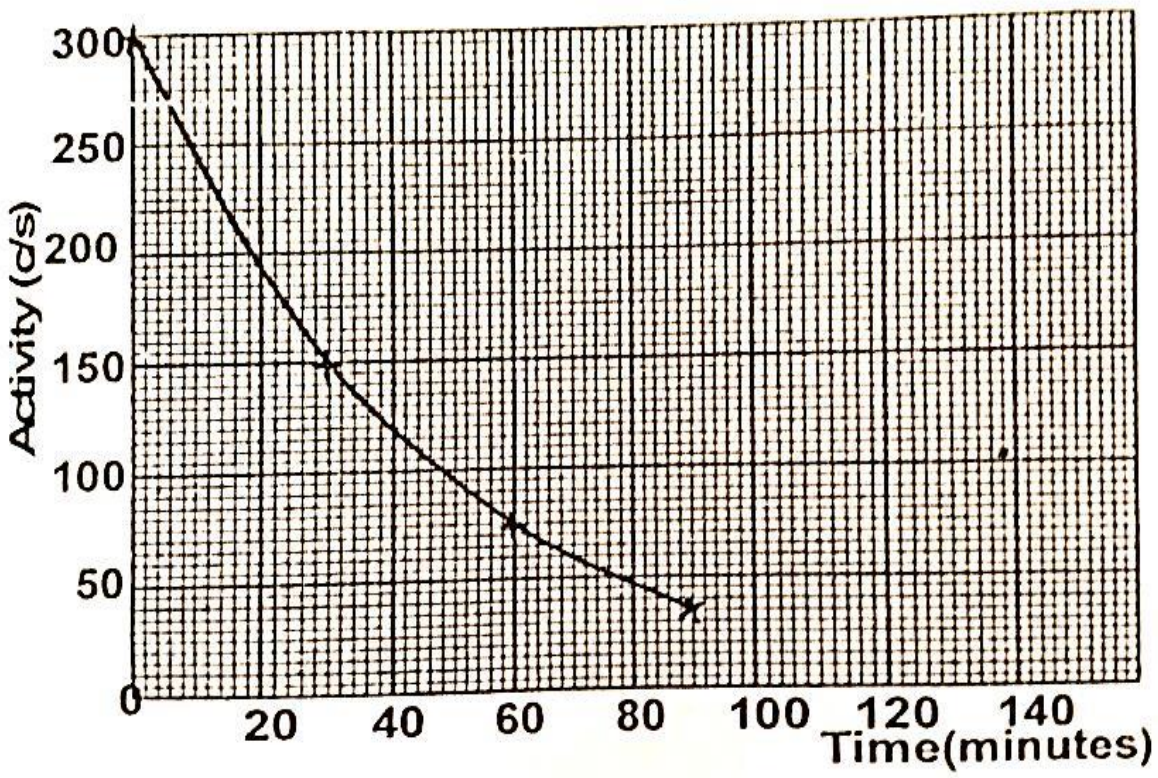
**(ii)** A high voltage ac is connected to the y-gain and the time base is switched off **(1 mark)**

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**(c)** The graph shows the activity versus tie for a sample of radioactive material.




Use the graph to determine:

**(i)** The half life of the sample **(3 marks)**

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**(ii)** The number of half-life's needed for the activity to reduce from 300C/S to $37.5CS^{-1}$ **(3 marks)**

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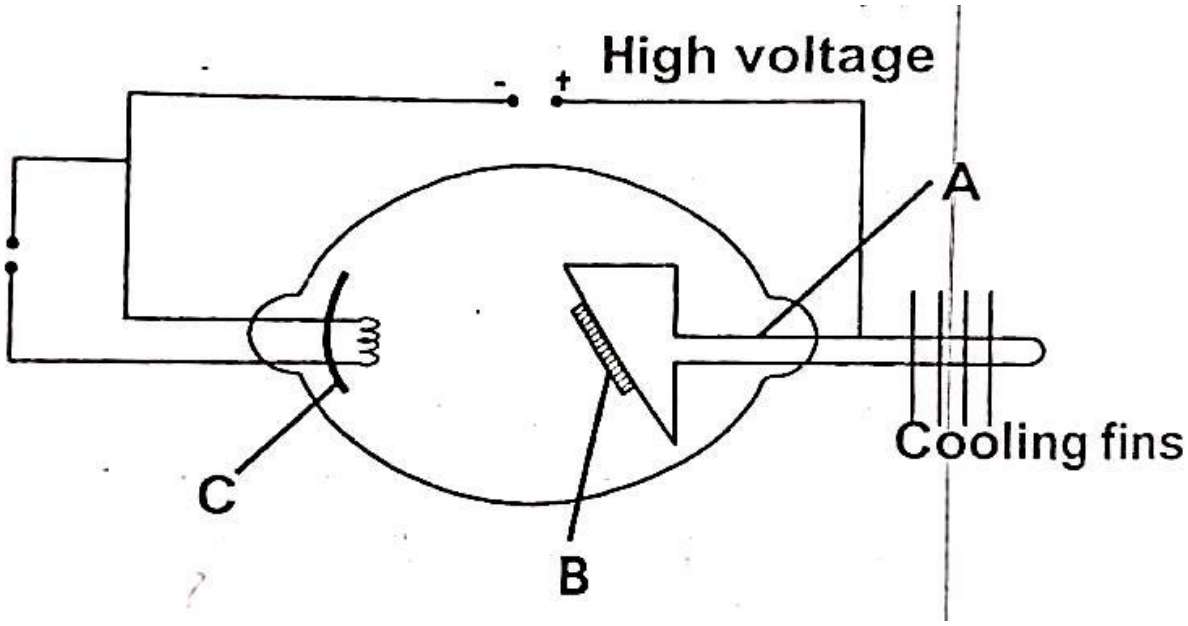
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**18.** The figure 8 below shows the construction and circuit of the modern physics X-ray tube.




**(a)** Indicate on the diagram the path of the X-ray beam **(1 mark)**

**(b)** Name the part marked C and state its function **(2 marks)**

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**(c)** Name the metal used in parts A and B and state why they are suitable for use in the tube **(4 marks)**

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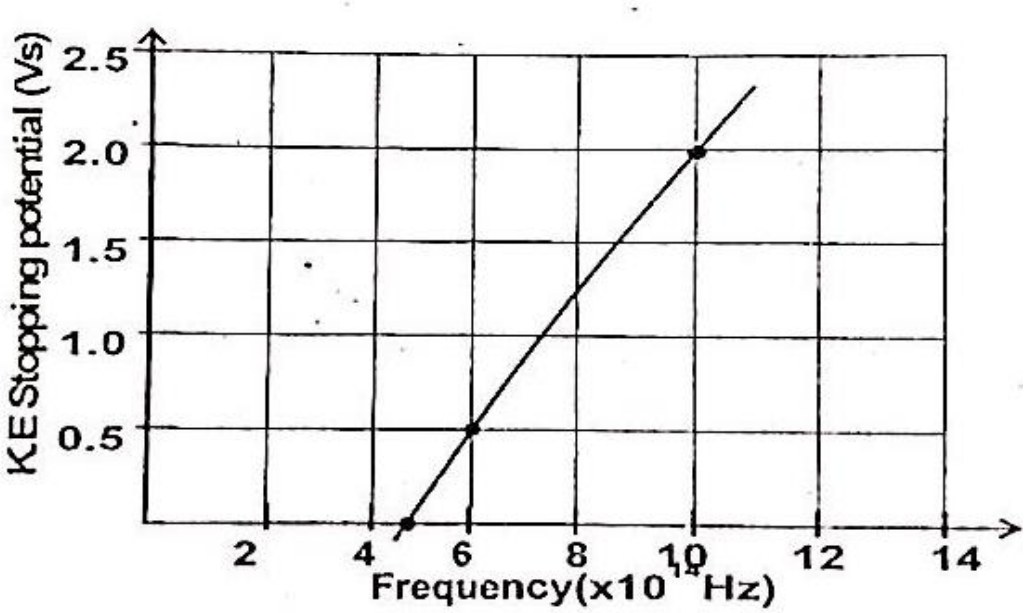
**(d)** Why are cooling fins necessary? **(1 mark)**

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**(e)** Form four students performed an experiment in photoelectric effect and drew the graph below from the data collected




From the graph determine:

**(i)** Threshold frequency **(1 mark)**

**(ii)** Planks constant (take charge on an electron, e= $1.6 \times 10^{-19}$C**) ( 3 marks)**

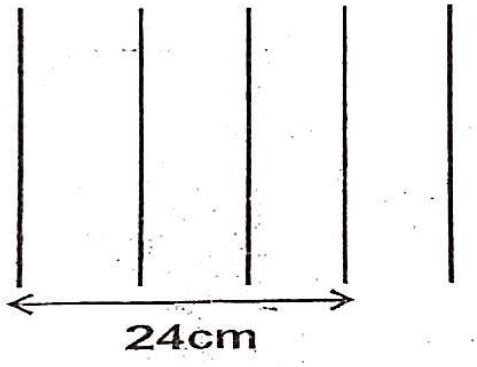
**19.**

**(a)** A person standing behind a wall hers a bell ringing although he cannot see the bell. What property of sound enables him hear the sound **(1 mark)**

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**(b)** The figure 9.0 below is a sketch of ripples caused by a vibrator in a ripple tank whose frequency is 50Hz.




Using the above information, determine the speed of the wave motion **(3 marks)**

**(c)** The speed of sound in air determined o a warm day is 330m/s. Explain any difference you would expect in the results if the measurement is done on a cold day. **(2 marks)**

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**(d)** In an experiment to determine the speed of sound, an observer stood in front of a high wall at a distance of 80m. he clapped two boards together at such a rate that each clap coincided with the echo from the wall. A second observer noted a time of 9.5seconds starting with the first clap and ending with the 21$^{st}$ clap.

**(i)** Calculate the speed of sound under these conditions **(3 marks)**

**(ii)** Describe one probable source of error in this experiment **(1 mark)**

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**(iii)** State ***<u>two</u>*** ways in which sound wave differ from light waves **(2 marks)**

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**NAME……..……ADM NO……**

**SCHOOL…….…….……..CLASS……**

**DATE…….……**

# FORM 4 KCSE PREDICTION 3 EXAMS

## PHYSICS PAPER 3

## TIME: 2 ½ HRS

## *Kenya Certificate of Secondary Exams*

**INSTRUCTIONS TO CANDIDATES:-**

- *Write your **name**, **indexnumber** and **school** in the spaces provided above.*
- *Answer **all** the questions in the spaces provided in the question paper*
- *You are supposed to spend the first **15 minutes** of 2 ½ hours reading the whole paper carefully before commencing your work.*
- *Marks are given for a clear record of the observations actually made, their suitability, accuracy and the use of them*
- *Record your observations as soon as you make them.*
- *Mathematical tables, slide rules and silent non-programmable electronic calculators may be used.*
- *Take $g = 10ms^{-2}$*

**For Examiners' Use Only:**

| QUESTION | MAXIMUM SCORE | CANDIDATE SCORE |
|---|---|---|
| **1** | 20 | |
| **2** | 20 | |
| **TOTAL SCORE** | **40** | |

## 1. PART A

You are provided with the following:

- a voltmeter (0 – 5V)
- a carbon resistor labelled R
- Two new size D dry cells
- cells holder
- a capacitor labelled C (2200μF)
- a stopwatch
- eight connecting wires at least four of which have crocodile clips
- a switch

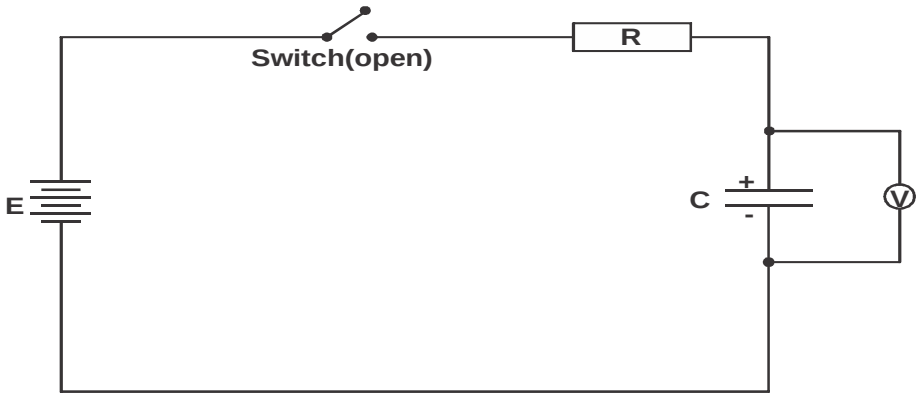
Proceed as follows :

**i) a)** Draw a circuit diagramhaving a switch, voltmeter, two dry cells and connecting wires that can be used to determine the Emf of the cells provided. **(1mk)**

**b)** Use the above circuit to determine theEmfof the cells

Emf =.....V **(1mk)**

**ii)** Connect the circuit as shown in figure 1 below.




**iii)** Close the switch and note the maximum voltage attained on the voltmeter. Record it as $V_{max}$

$V_{max}$=……..……..**V(1 mark)**

**iv)**Open the switch and simultaneously start your stopwatch and note the time taken for the voltmeter reading to decrease from $V_{max}$ to 0.2V. record this value in table 1 below. Short the terminals of the capacitor C to attain a reading of zero volts on the voltmeter.

**v)** Repeat procedure iii and iv for the other values of the voltage indicated in table 1

Table **16MKS**

| Voltage, V (volts) | 0.2 | 0.5 | 0.8 | 1.0 | 1.5 | 1.8 |
|---|---|---|---|---|---|---|
| Time (t)(s) taken for voltage to decrease from $V_{max}$ to V | | | | | | |

**vi)**determine the resistance R of the resistor given that t =70/11CR. Where t is the time at which V=0.5V and C is the capacitance of the capacitor. **3mks**

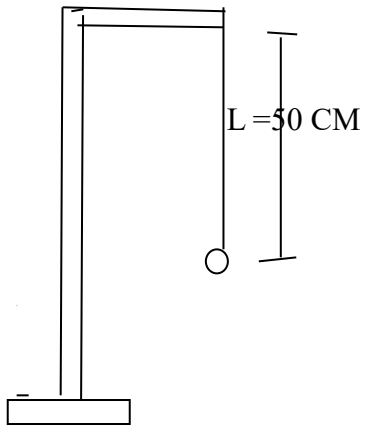
# PART B

You are provided with:

- A complete stand
- A stop watch
- A light string
- A pendulum bob or a 50g mass
- A metre rule or a half metre rule

Proceed as follows:

**i)** Set up the apparatus as shown in the figure below




**ii)** Displace the bob slightly at a small angle from the vertical line and record the time taken 20 oscillations in the table below. Repeat the for two more trials

**Table 2** **1 ½ mks**

| Trials | Trial 1 | Trial 2 | Trial 3 |
|---|---|---|---|
| Time for 20 oscillations | | | |

**iii)** Find the average time for 20 oscillations **1 ½ mks**

**iv)** Calculate the average periodic time $T_{av}$ **2mks**

**v)** Given that $T_{av}=2\pi\sqrt{l/g}$ find the value of g **3mks**

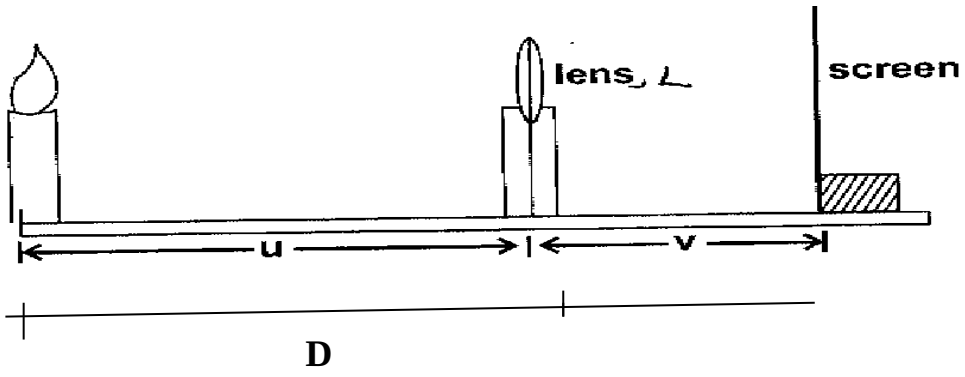
## Question 2

You are provided with the following:-

- A biconvex lens.
- A lens holder.
- A screen.
- A meter rule.
- A candle
- A cross wire

Proceed as follows:

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




**NB: THE CROSS WIRE PROVIDED MUST BE PLACED JUST INFRONT OF THE CANDLE TO ACT AS THE OBJECT**

**(b)** Place a lit candle and a cross wire at a distance U = 20cm from the lens

**(c)** Adjust the position of the screen until a sharp image of the cross wire is focused on the screen. Record d in the table 2.

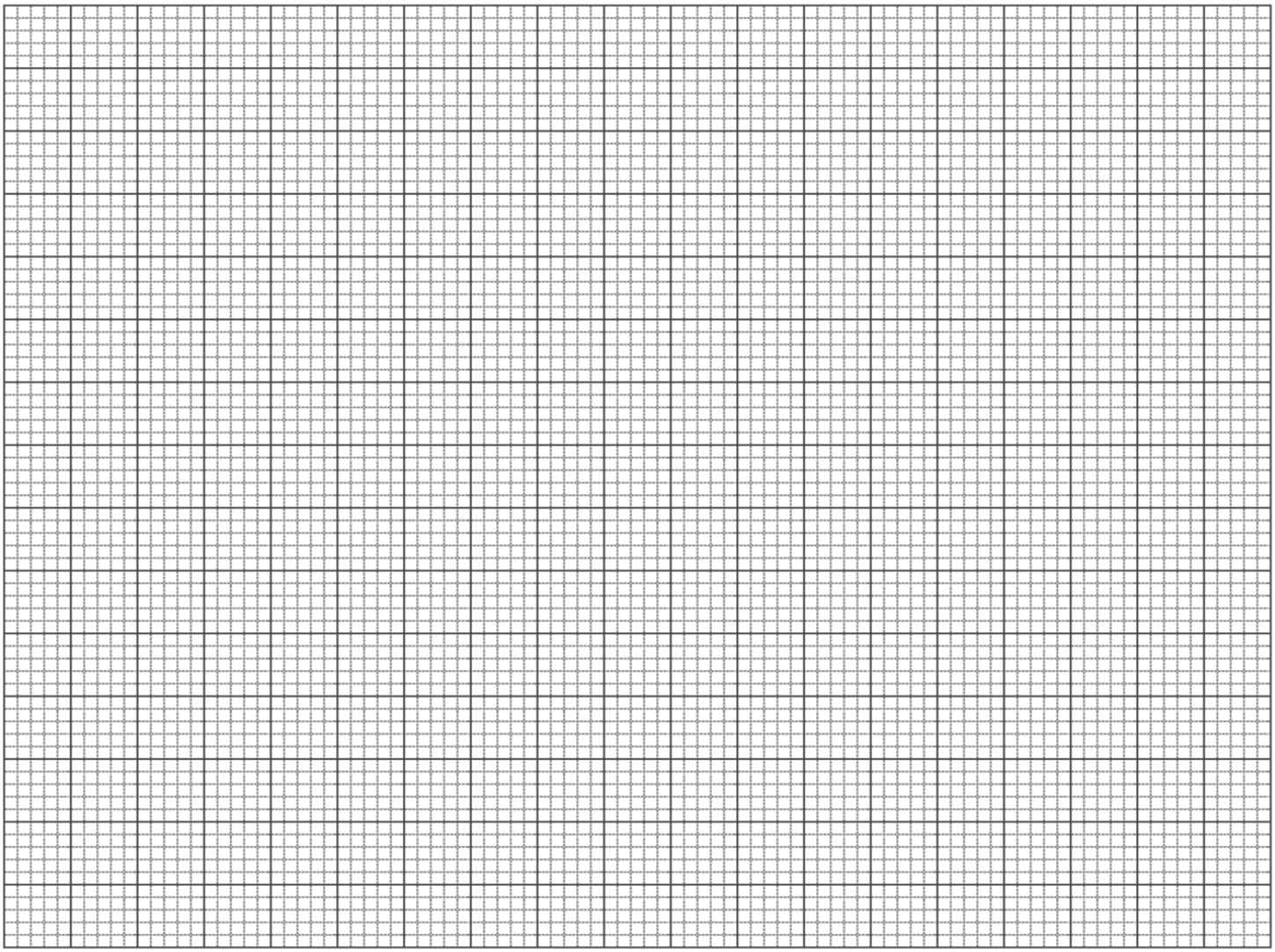
**(d)** Repeat part (b) and (c) for other values shown in table 2 and complete the table.

**(8mks)**

## Table 2

| U(cm) | 20 | 25 | 30 | 35 | 40 | 45 |
|---|---|---|---|---|---|---|
| D (cm) | | | | | | |
| V=D-U(cm) | | | | | | |
| 1/m =u/v | | | | | | |

**(e)** Plot a graph of 1/m against U. **(5mks)**



**f)**determine the slope S of the graph **(3mks)**

**g)** given that 1/f=1/v +1/u, use the graph to determine the focal length of the lens4mks

'an investment of knowledge pays

# The following KASNEB notes are available;

- ATD
- CPA
- CS
- CIFA

Call Mdm.Mariam:0746711892 to acquire them

