# 2022 DECEMBER FORM 4

# KCSE PREDICTION 2 EXAMS

'an investment of knowledge pays'

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

# (PREDICTION 2)

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.Kiswahili 11.Mathematics 12.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 2 EXAMS

## AGRICULTURE PAPER 1

***Kenya Certificate of Secondary Exams***

## TIME:2HRS

### INSTRUCTIONS TO CANDIDATES

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

### FOR EXAMINERS USE ONLY

| SECTION | QUESTIONS | MAXIMUM SCORE | CANDIDATES SCORE |
|---|---|---|---|
| A | 1-17 | 30 | |
| B | 18-21 | 20 | |
| C | 22-24 | 40 | |
| | | | |
| TOTAL | | 90 | |

## SECTION A (30 MARKS)

***Answer all questions from this section***

**1.** What do the following terms mean? **(1 ½ mks)**

**a)** Gross domestic product **(G.D.P)**

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**b)** Gross national income (**GNI)**

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**c)** Per capita income

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**2 a)** What does the term opportunity cost in farming mean? **(1mk)**

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**b)** State ***two*** situations when opportunity cost is nil or zero **(2mks)**

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**3.** List ***four*** advantages of individual owner tenure system **(2mks)**

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**4.** State ***two*** ways to show how check dams reduce soils erosion **(1mks)**

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**5.** Identify four soil constituents**.** **(2mk)**

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**6.** Mention ***four*** ways of classifying herbicides **(2mks)**

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**7 (a)** List ***two*** ways of controlling smut disease in the field. **(1mk)**

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**(b)** Name any ***two*** pests that attack bean pods in the field **(1mk)**

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8.What four factors should a farmer consider for effective control of pests in the field **(2mks)**

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**9**. Mr. Wotsula Applied 150kg N.P.K 25:20:15 to his one hectare of groundnuts in his Kakamega farm. Calculate how many kilograms of each of the fertilizer element he applied. **(3mks)**

**10**.State ***five*** marketing functions **(2 ½mks)**

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**11.** State ***five*** functions of cooperative societies **(2½ mks)**

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**12.** List ***three*** characteristics of green manure crops **(1 ½ mks)**

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**13**.Name ***three*** types of water pumps to be used on the farm. **(1 ½ mks)**

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**14.** Name ***four*** species of trees commonly used in agroforestry **(2mks)**

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**15.** List four factors that determine the competitive ability of weeds **(2 mks)**

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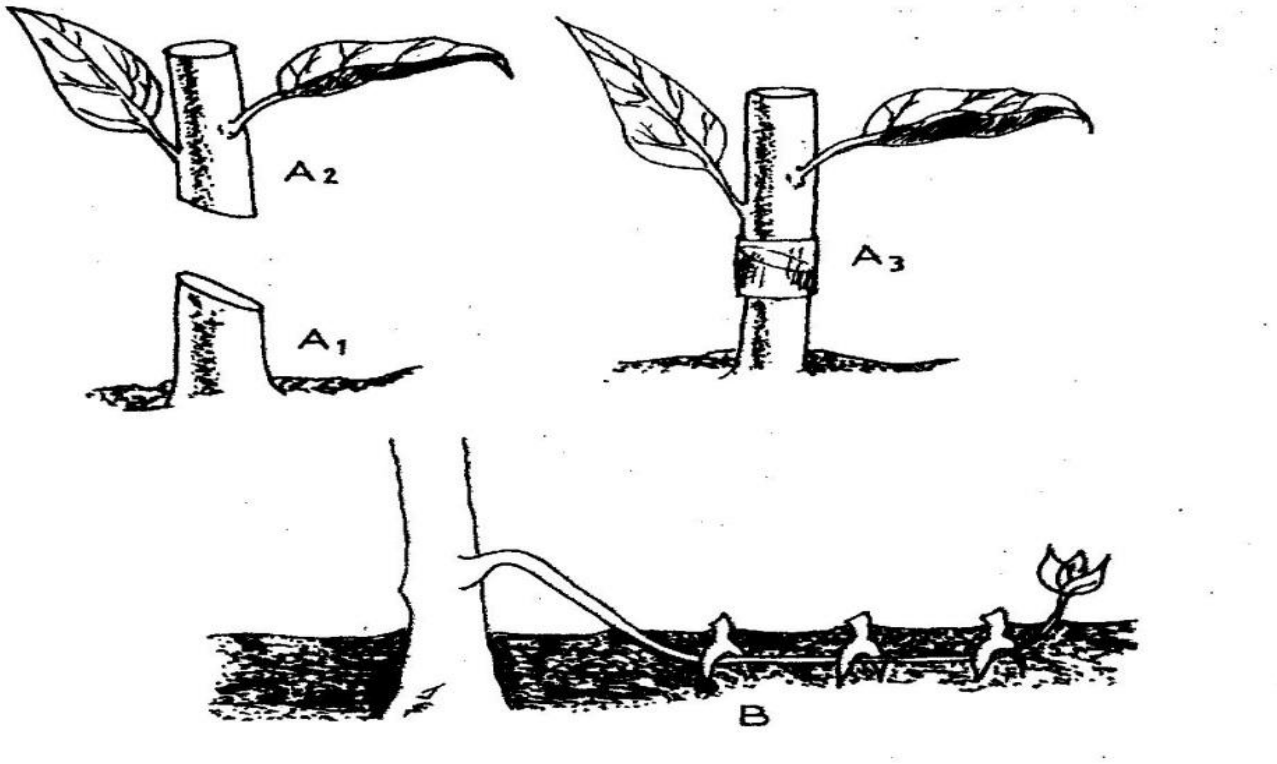
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## SECTION B: (20 MARKS)

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

16. The diagrams labeled $A_1$, $A_2$, $A_3$, and B below illustrate materials and methods of vegetative propagation. Study them and answer the questions that follow.




**(a)** Name the parts labeled $A_1$, and $A_2$ **(2 mks)**

$A_1$ -

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$A_2$ -

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**(b)** Name the methods of propagation illustrated in diagrams $A_3$ and B **(2 mks)**

$A_3$

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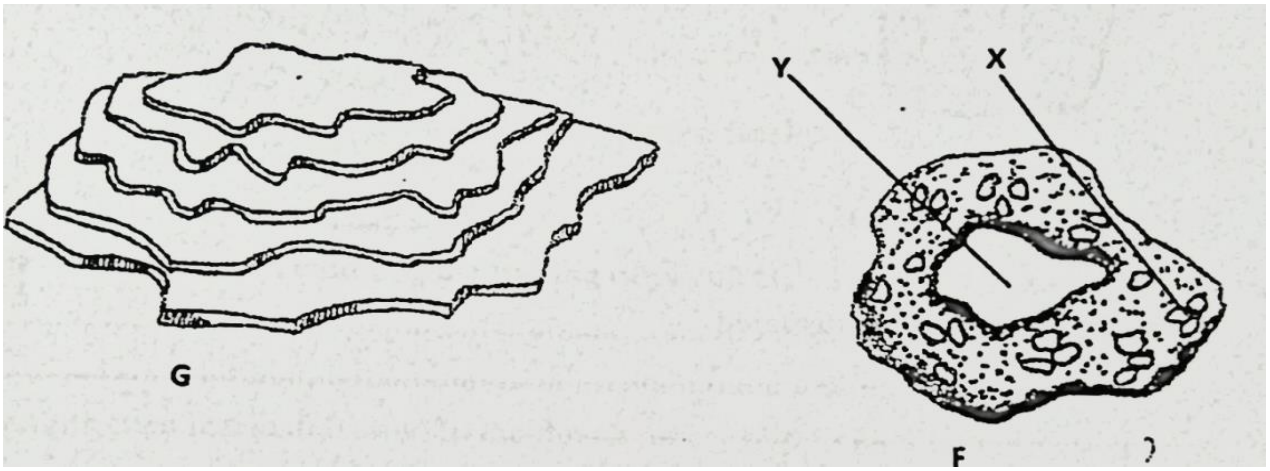
B-

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**17.** The diagram below illustrates some soil structures. Study it and answer the questions that follow.




**a)** Identify the soil structures **F** and **G** **(2mks)**

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**b)** Name the parts labeled **X** and **Y** in diagram **F** **(1mk)**

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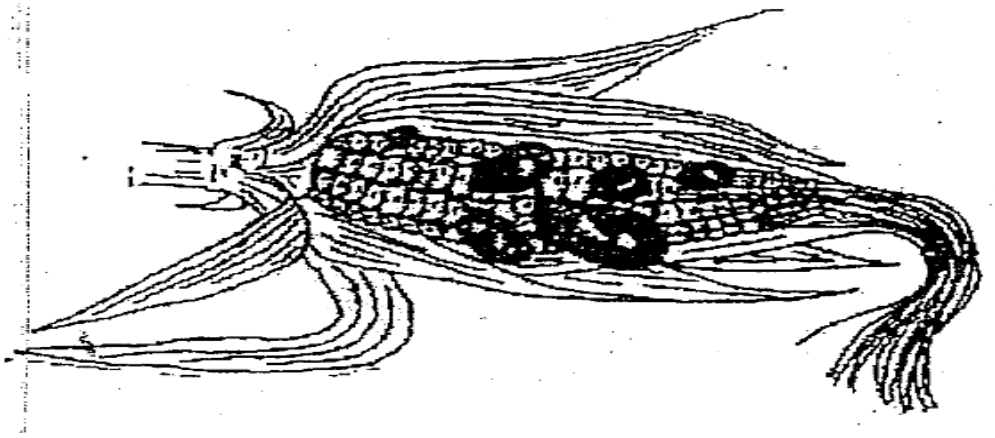
**c)** Sate ***two*** ways through which structure G influences crop production **(2mks)**

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**18.** Below is an illustration of a maize cob attacked by smut disease. Study it carefully and answer the questions that follow:



**a)**Beside what is visible on the maize cob, state two other symptoms of the disease **(2mks)**

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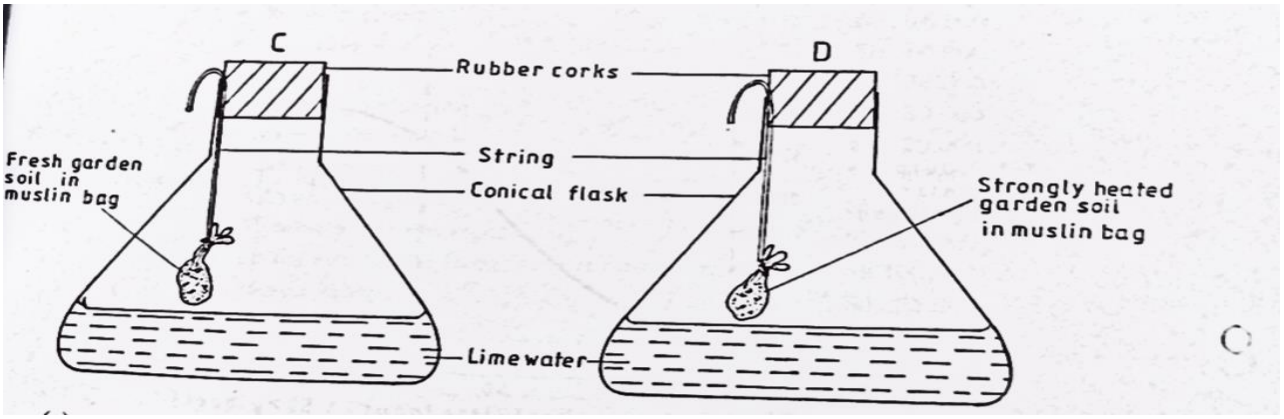
**b)** State ***three*** control measures of the above disease. **(3mks)**

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**19.** The diagram below shows a set up used to study an aspect of soil. The set up was left undisturbed for five hours. Study it and answer the questions that follow.




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

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

C-

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D-

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**c)** Give a reason for your answer in (b) above **(2mks)**

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**d)** Apart from the aspect under the study above, state any other soil component that could be studied **(1mk)**

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## SECTION C: (40 MARKS)

### *Answer any TWO questions from this section*

**20.** The following table shows an illustration of production of maize (in tons) using various levels of inputs.

| **Units of variable input (Man hours)** | **Total output of maize (Tons)** | **Marginal Product** | **Average product** |
|---|---|---|---|
| 0 | 0 | | |
| 1 | 6 | | |
| 2 | 18 | | |
| 3 | 33 | | |
| 4 | 40 | | |
| 5 | 45 | | |

| | | | |
|---|---|---|---|
| 6 | 48 | | |
| 7 | 48 | | |
| 8 | 40 | | |

**a)** Work out the marginal product and average product and fill in the table . **(9mks)**

**b)** On the same graph paper, plot the graph showing total output, marginal product and average product against variable input. **(8mks)**

**c)** On the graph draw lines to show the following zones. **(3mks)**

**i)** Increasing return production function

**ii)** Decreasing return Production function

**iii)** Diminishing return production function

**21(a)** Outline five benefits of trees and shrubs to the economic wellbeing of Kenyans **(5mks)**

**b)** Explain 7 ways on how farmers overcome risks and uncertainties in a farming business **(7mks)**

**c)** Explain the factors that influence the type of irrigation to be used in a farm **(8 mks)**

**22 (a**) State the principles involved in planning a crop rotation programme. **(6mks)**

**(b)** Discuss the production of maize under the following subheadingsMaize

I Seedbed preparation **(2mks)**

**ii)** Planting **(2mks)**

**iii)** Weed control **(2mks)**

**iv)** Field management practices **(2mks)**

**v)** Pests control **(2mks)**

**vi)** Disease control **(2mks)**

**vii)** Harvesting **(2mks)**

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**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## AGRICULTURE PAPER 2

## *Kenya Certificate of Secondary Exams*

## TIME:2HRS

### INSTRUCTIONS TO CANDIDATES

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

### FOR EXAMINERS USE ONLY

| SECTION | QUESTIONS | MAXIMUM SCORE | CANDIDATES SCORE |
|---|---|---|---|
| A | 1-17 | 30 | |
| B | 18-21 | 20 | |
| C | 22-24 | 40 | |
| | | | |
| **TOTAL** | | **90** | |

## SECTION A: (30 MARKS)

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

**1.** State the use of each of the following tools **(1½mks)**

**(i)** Strip cup:

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**(ii)** Sickle:

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**(iii)** Stock and die:

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**2.** Name ***two*** reasons why rabbits hutches should be raised above the ground. **(1mks)**

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**3.** Name ***two*** predisposing factors of coccidiosis,. **(1mks)**

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**4.** Define the following terms as used in livestock production.

**(i)** Crutching **(1mk)**

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**(ii)** Farrowing: **(1mk)**

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**5.** Name the infective stage of the liver flake in livestock. **(1mk)**

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**6.** State ***four*** disadvantages of using human power instead of tractors as a source of power in a farm.

**(2mks)**

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**7.** Name ***two*** tractors drawn implements attached to the tractor at one- point hitch. **(1mks)**

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**8.** ***Distinguish*** between pen mating and flock mating in poultry. **(2mks)**

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**9.** Give ***two*** ways in which proper breeding and selection helps to control livestock diseases**.** **(1mk)**

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**10.**(a) Name ***two*** types of feed additives. **(1mk)**

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(b) Give ***two*** reasons why it is important to include additives in commercial feeds. **(1mk)**

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**11.(a)** Name ***four*** pig breeds commonly reared in Kenya. **(2mks)**

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**(b)** Name ***four*** characteristics of dairy cattle breeds. **(2mks)**

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**12.**Outline ***four*** qualities of eggs used for incubation. **(2mks)**

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**13.(a)** Name ***two*** hormones that control milk let down in dairy cow. **(1mk)**

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**(b)** State ***four*** factors that influence milk let – down. **(2mks)**

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**14.**State ***four*** reasons why bees may swarm from a hive . **(2mks)**

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**15.**Name ***three*** sources of water in the body of livestock. **($1\frac{1}{2}$mks)**

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**16.**Name ***four*** cattle diseases whose outbreak calls for quarantine. **(2mks)**

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**17.**State ***two*** functions of ventilation in a pig house. **(1mk)**

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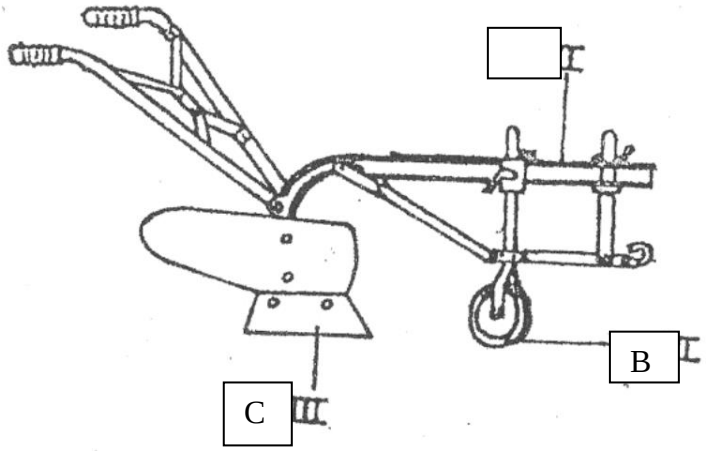
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## SECTION B: (20MARKS)

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

**18.**The diagram below shows a farm implement used by small scale farmers for several operations in the farm. Study it carefully and then answer the questions that follow.




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

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**(b)** State the function of the part labeled A, B and C. **(3mks)**

**A**

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**B**

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**C**

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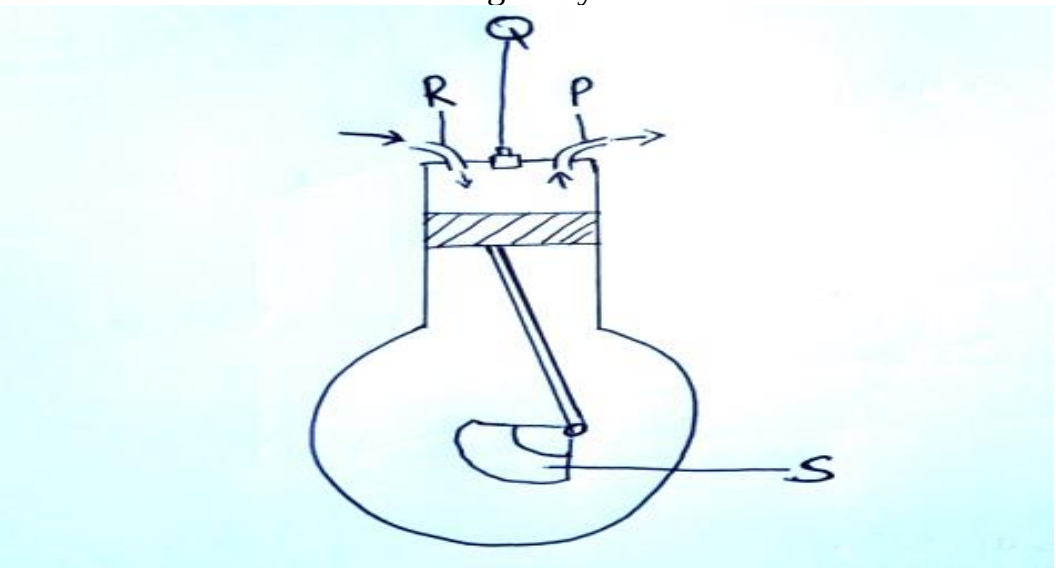
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**(c)** Apart from land preparation, state any other one operations that can be done using the above implement. **(1mk)**

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**19.** The illustration below shows an engine cylinder.



**(i)** Identify the parts labeled P, Q, R and S **(2mks)**

**P** .....

**Q** .....

**R** .....

**S** .....

**(ii)** Give the function of the part labeled **Q** above. **(1mk)**

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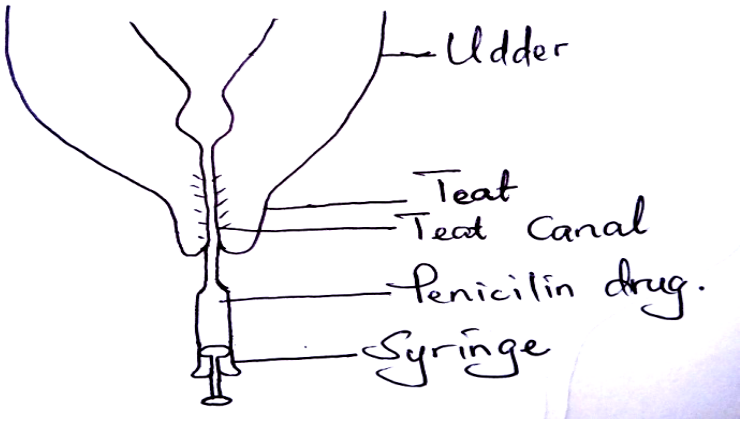
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**(iii)** Give ***<u>two</u>*** disadvantages of four-stroke engines. **(2mks)**

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**20.** The activity illustrated below indicates a task undertaken in farm animals.




**(i)** Name the above activity. **(1mk)**

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**(ii)** State the importance of the above activity. **(1mk)**

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**(iii)** Name the disease controlled by the above practice. **(1mk)**

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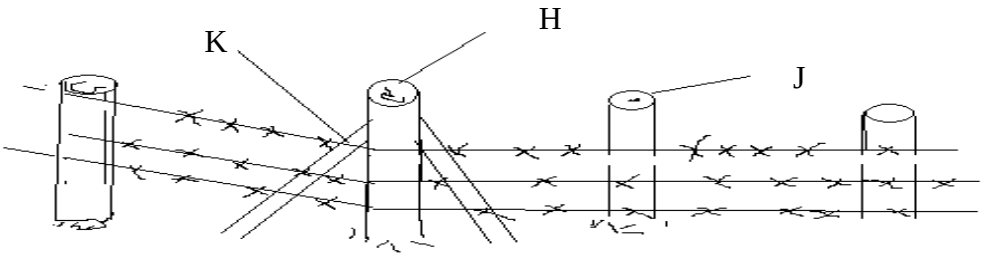
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**(iv)** Name ***two*** other diseases that only attack female cattle. **(2mks)**

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**21.** Below is a diagram showing parts of a fence. Use it to answer the questions that follow.




**(a)** Identify the type of fence above. **(1mk)**

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**(b)** Name the parts labeled **H** and **J.** **(2mks)**

**H** ……

**J** ……

**(c)** What is the role of the part labeled **K?** **.(1mk)**

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**(d)** On the diagram, draw a dropper in the right position. **(1mk)**

# SECTION C: (40MARKS)

***Answer any two questions from this section on the spaces provided after the last question.***

**22.(a)** ***Discuss*** bloat under the following sub-headings.

**(i)** Species of animals effected. **(3mks)**

**(ii)** Causes of the disease. **(4mks)**

**(iii)** Symptoms

**(iv)** Control. **(2mks)**

**(b)** Discuss various types of tools required to construct a barbed wire fence. **(5mks)**

**23.(a)** ***Describe*** various cultural uses of livestock. **(8mks)**

**(b)** ***Describe*** various livestock rearing practices. **(12mks)**

**24.(a)** State ***four*** functions of vitamins in livestock nutrition. **(4mks)**

**(b)** ***Tabulate*** the differences between digestion in ruminants and non-ruminants. **(6mks)**

**(c)** ***Discuss*** the components of the cooling system of a tractor. **(10mks)**

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**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## BIOLOGY PAPER 1

### *Kenya Certificate of Secondary Exams*

### TIME:2HRS

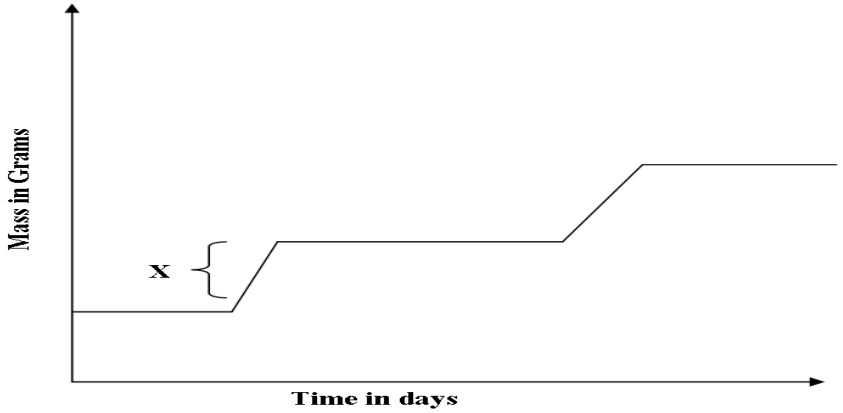
**INSTRUCTIONS TO CANDIDATES**

- *Write your name and Index Number in the spaces provided above.*
- *Sign and write date of examination in the spaces provided above.*
- *Answer **ALL** questions in the spaces provided.*
- *All workings **MUST** be clearly shown where necessary.*

**For Examiners use only.**

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

**1.** The graph below represents the growth pattern of animals in a certain phylum.




**a)**Name the type of growth curve shown above. **(1mk)**

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**b)i)**Identify the process represented by **X**. **(1mk)**

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**ii)**Name the hormone responsible for the process in **b(i)** above. **(1mk)**

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**c)**State the importance of the growth of a pollen tube to a plant. **(1mk)**

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**2.a)**What is the function of Sodium hydrogen Carbonate that is added to test solution of non-reducing sugar. **(1mk)**

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b)The equation below represents a process X which is controlled by enzymes .

$$C_6H_{12}O_6 + C_6H_{12}O_6 \underset{\mathbf{R}}{\overset{\mathbf{X}}{\rightleftharpoons}} C_{12}H_{22}O_{11} + H_2O$$

Glucose + Fructose ⇌ Sucrose + Water

**i)** Name the process **X** and enzyme **R**

Process **X** **(1mk)**

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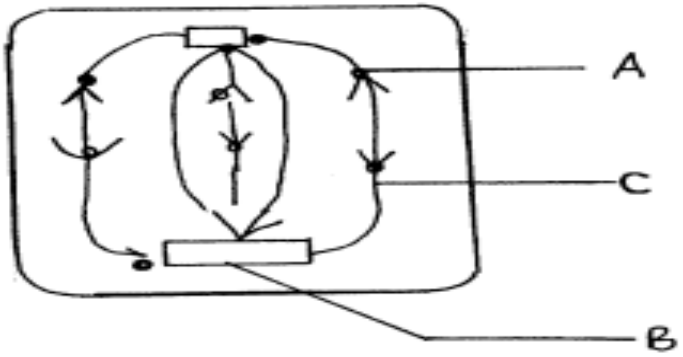
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Enzyme **R** **(1mk)**

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**3.** The diagram shows an epidermal cell undergoing mitotic cell division.




**(i)** Name the stage of mitosis it represents **(1mk)**

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**(ii)** Name the structures

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

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**C** **(1mk)**

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**4.** What is the effect of gibberellins on the shoots of plants? **(4mks)**

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**5.(a)** Give ***two*** forms in which carbon (IV) oxide is transported in human blood. **(2mks)**

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**(b)** ***Name*** the enzyme that enhances the loading and off – loading of carbon (IV) oxide in the human blood. **(1mk)**

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**6.a)**What is the importance of the counter current flow in the exchange of gases in a fish. **(2mks)**

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**b)**State ***two*** ways in which the tracheoles of an insect are adapted to their functions.**(2mks)**

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**7.**The equation below represents a reaction that occurs during respiration in a cell.

K + Phosphate ⟶ Adnenosine triphosphate

**a)**Identify the compound **K**. **(1mk)**

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**b)**State ***two*** differences between **K** and **ATP.** **(2mks)**

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**c)** Name the organelle responsible for the production of energy in a cell muscle **(1mk)**

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

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**9**.***Explain*** why plants growing in low altitude areas grow faster than those in high altitudes. **(3mks)**

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**10**.List down **four** phenotypic characteristics that have been selected for the production of strains suitable for modern agricultural purposes. **(4mks)**

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**11.** Name the type of eye defects that can be corrected by;

**i)** Use of bifocal lens **(1mk)**

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**ii)**Use of artificial lens **(1mk)**

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**iii)**Use of concave lens **(1mk)**

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**12.** **a)**The length from the tail tip to the anus of a certain tilapia fish is 10cm. The length from the tail tip to the mouth is 35cm. Calculate the tail power of the fish. (Show all your working**).** **(2mks)**

**b)**What is the significance of high tail power in fish? **(1mk)**

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**13**. List down three differences between the endocrine system and nervous system.

**(3mks)**

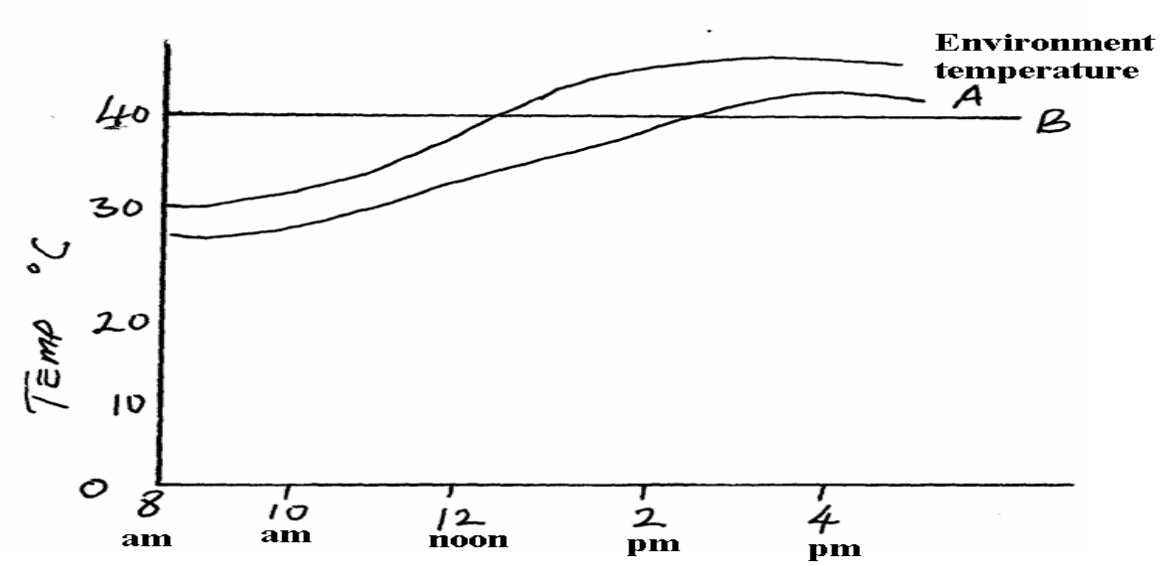
| Endocrine system | Nervous system |
|---|---|
| | |

1**4.**Distinguish between the struggle for existence and survival for the fittest as used in the theory of natural selection. **(2mks)**

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**15.** The body temperatures of two animals A and B varied as below with environmental Temperature




**a)**Which of the animals is;

**i)** Endothermic **(1mk)**

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**ii)**Ectothermic **(1mk)**

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**b)**With a reason, state which of the animals is likely to be widely distributed **(2mks)**

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**16.**State ***three*** roles of oestrogen during the menstrual cycle **(3mks)**

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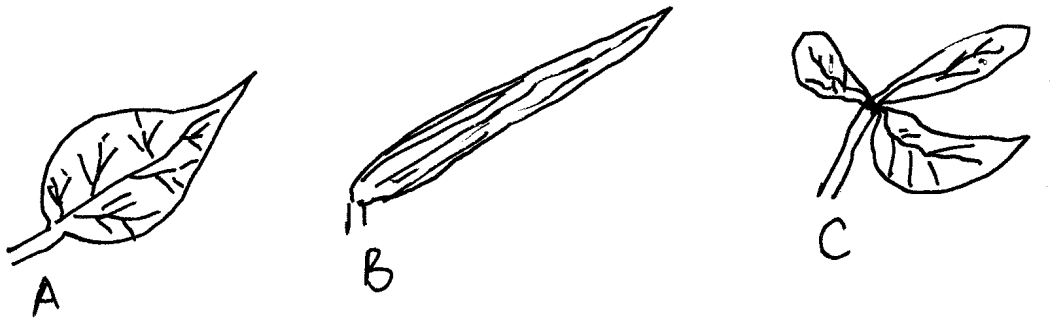
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**17.**State ***three*** characteristics of cells at the zone of cell division in an apical merintem **(3mks)**

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**18**.Below are diagrams of three leaves A, B and C. Construct a two step dichotomous key which can be used to identify each of them. **(4mks)**




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**19.a)** Name ***two*** mutagenic agents. **(2mks)**

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**b)**Identify the type of gene mutations represented by the following pairs of words.

**i)**Shirt instead of skirt **(1mk)**

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**ii)**Hopping instead of shopping **(1mk)**

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**20.**Liver damage leads to impaired digestion of fats. Explain this statement. **(2mks)**

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**21.**Explain why several lateral buds sprout when a terminal bud in a young tree is removed**.** **(3mks)**

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**22.(a)**State ***two*** structural adaptations that make xylem vessels suitable for transport of water and mineral salts. **(2mks)**

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**(b)**List any ***three*** adaptations of the root hair cells to their functions **(3mks)**

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**23.(a)**Define the following terms:- **(2mks)**

**(i)**Species:

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**(ii)**Binomial nomenclature:-

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**24.**What is the significance of active transport in the human body. **(3mks)**

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**25.** Explain how the biceps and triceps muscles bring about the movement at the hinge joint of the elbow in man. **(2mks)**

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**NAME……..…ADM NO……...……**

**SCHOOL……..……..CLASS……..……..……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## BIOLOGY PAPER 2(THEORY)

***Kenya Certificate of Secondary Exams***

## TIME:2HRS

**INSTRUCTIONS TO CANDIDATES**

- *This paper consists of two sections **A** and **B**.*
- *Answer **ALL** questions in section **A***
- *Answer question **6** (compulsory) and either question **7** or **8** in section **B**.*

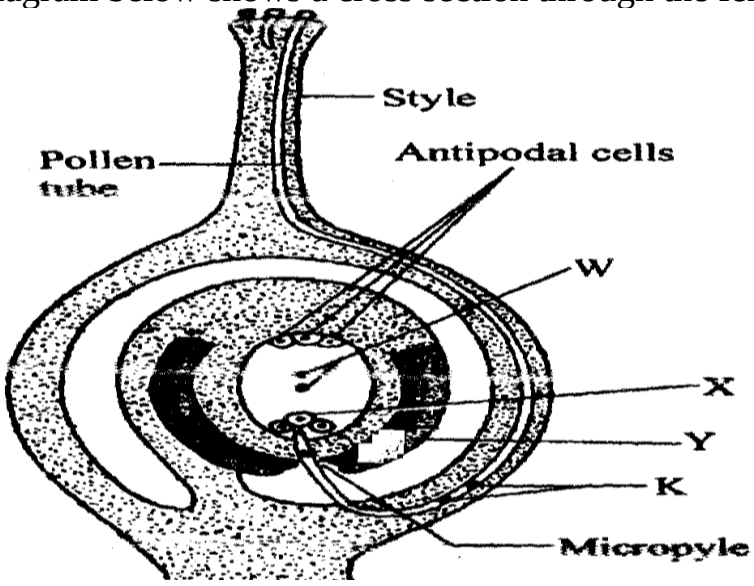
## *For Examiner's Use Only*

| *Section* | *Question* | *Maximum score* | *Candidate's score* |
|---|---|---|---|
| ***A*** | ***1*** | ***8*** | |
| | ***2*** | ***8*** | |
| | ***3*** | ***8*** | |
| | ***4*** | ***8*** | |
| | ***5*** | ***8*** | |
| ***B*** | ***6*** | ***20*** | |
| | ***7*** | ***20*** | |
| | ***8*** | ***20*** | |
| ***Total Marks*** | | ***80*** | |

## SECTION A (40 MARKS)

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

1. The diagram below shows a cross section through the female part of a flower.




**a)**Name the structures labeled **W**,**X**, and **Y**. **(3mks)**

**W**

……

……

**X**

……

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Y

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**b)**State ***two*** functions of the pollen tube. **(2mks)**

……

……

**c)**What happens to antipodal cells after fertilization. **(1mk)**

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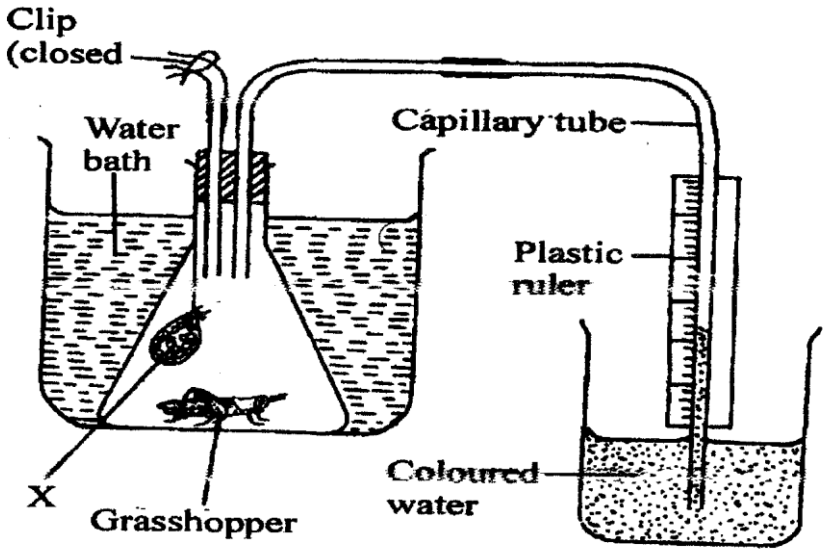
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**d)**Name the structure labeled **K** and state their role. **(2mks)**

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**2.** The diagram below illustrates and experiment to determine the rate of respiration in a small insect.




**a)**Name the chemical compound labeled **X** and state its function. **(2mks)**

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**b)**Why is it necessary to place the flask in a water bath. **(3mks)**

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**c)**What changes would you expect to observe in the level of coloured water in the capillary tube after the experiment has run for five minutes. **(1mk)**

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**d)**Explain the changes you have started in ( c) above. **(3mks)**

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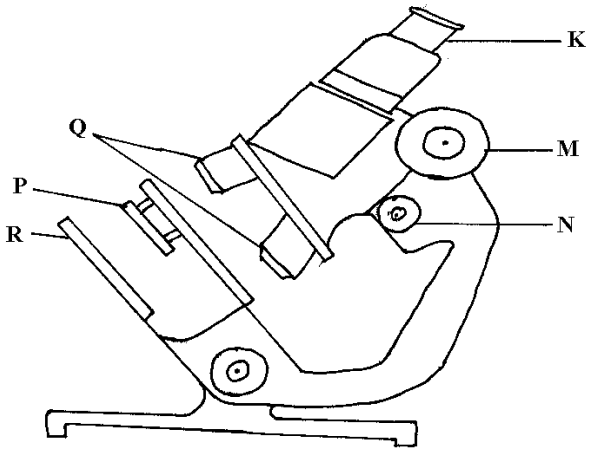
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**e)**State how you can set up a control experiment . **(1mk)**

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**3.** The diagram below shows some components of a light microscope.




**a)** Name the parts labeled **(2mrks)**

**K**

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**M**

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**b)** State the functions of **(2mrks)**

**P**

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**Q**

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**c)** A student was viewing a prepared slide of a plant cell under high power microscope. The features of the cell were blurred. Which one of the labeled parts of the microscope would the student use to obtain:-

**(i)** a sharper outline of the features. **(1mrk)**

.....

.....

**(ii)** Give the formula used to calculate magnification in a light microscope. **(1mrk)**

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**d)** A student was preparing a section of a plant cell to be viewed on a light microscope. Give a reason for each of the following steps:-

**(i)**Cutting a very thin section **(1mrk)**

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**(ii)**Staining the section **(1mrk)**

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**(iii)**Putting the section in water **(1mrk)**

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**4.** In an experiment, a black mouse was mated with a brown mouse; all the off-springs were black. The off-springs grew and were allowed to mate with one another. The total number of (F2) generation off-springs was 96.

**a)** Using the letter symbols capital letter **B** for the gene of black colour and small **b** for brown colour, Work out the genotype of the F1 generation. **(3mrks)**

**b)** From the information above, work out the following for the F2 generation.

**i)** Genotypic ratio. **(2mrks)**

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……

**ii)** Phenotypic ratio. **(1mrk)**

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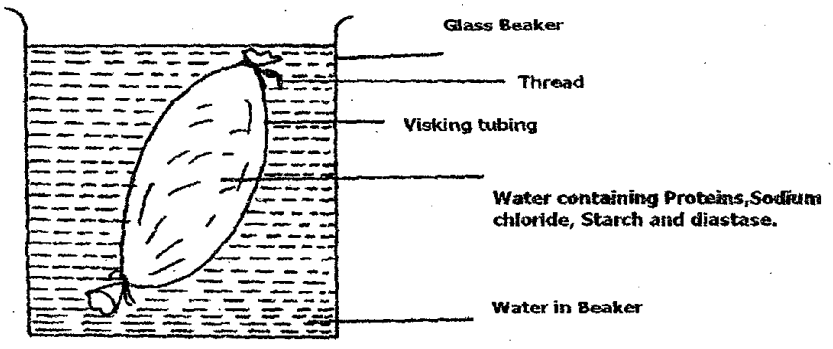
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**iiii)** The total number of brown mice **(2mrks)**

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**5.**In a physiological experiment, starch, protein, diastase and sodium chloride were added to water and put inside a visking tubing. The visking tubing was then placed in a water bath maintained at a temperature between *35* --- 40°C. The set up was as shown in the diagram below.



The following observations were made after the procedures indicated.

| Contents in | At the start of experiment | After 1 hour |
|---|---|---|
| Visking tubing | i) Solution tastes salty | Solution tastes salty |
| | ii) Visking tubing is not firm | Visking tubing is firm |
| | iii) After boiling with Benedicts solution, solution remains blue | After boiling with Benedicts solution the solution turns brown |
| | iv) On addition of solution hydroxide followed by copper sulphate solution to the solution, the colour changes to purple | On addition of sodium hydroxide followed by coppers sulphate to the solution, the colour changes to purple |
| Beaker | i) Water is tasteless | Solution tastes sweet/salty |
| | ii) After boiling solution with Benedicts solution, Blue colour remains | After boiling solution with Benedicts solution, colour turns to brown |
| | iii) On addition to sodium hydroxide followed by copper sulphate solution, colour remains blue | On addition of sodium hydroxide followed by copper sulphate solution, colour remains blue |

**a)** Name the process by which salt moved into the water in the beaker from the visking tubing. **(1mark)**

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**b) i)** Name the food substance responsible for the brown colour observed after 1 hour both inthe beaker and visking tubing when solutions are boiled with benedicts solution **(l mark)**

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**ii)** Account for the observation in (b i) above. **(3 marks)**

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**c) i)** Name the food substance tested with sodium hydroxide followed by copper sulphate solution(s) **(1 mark)**

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**ii)** Account for the absence of the food substance named in (c i) above in the beaker after 1 hour. **(l mark)**

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**d)** After one hour the visking tubing was firm. State the term used to describe this state.
**(1 mark)**

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## SECTION B( 40 MARKS)

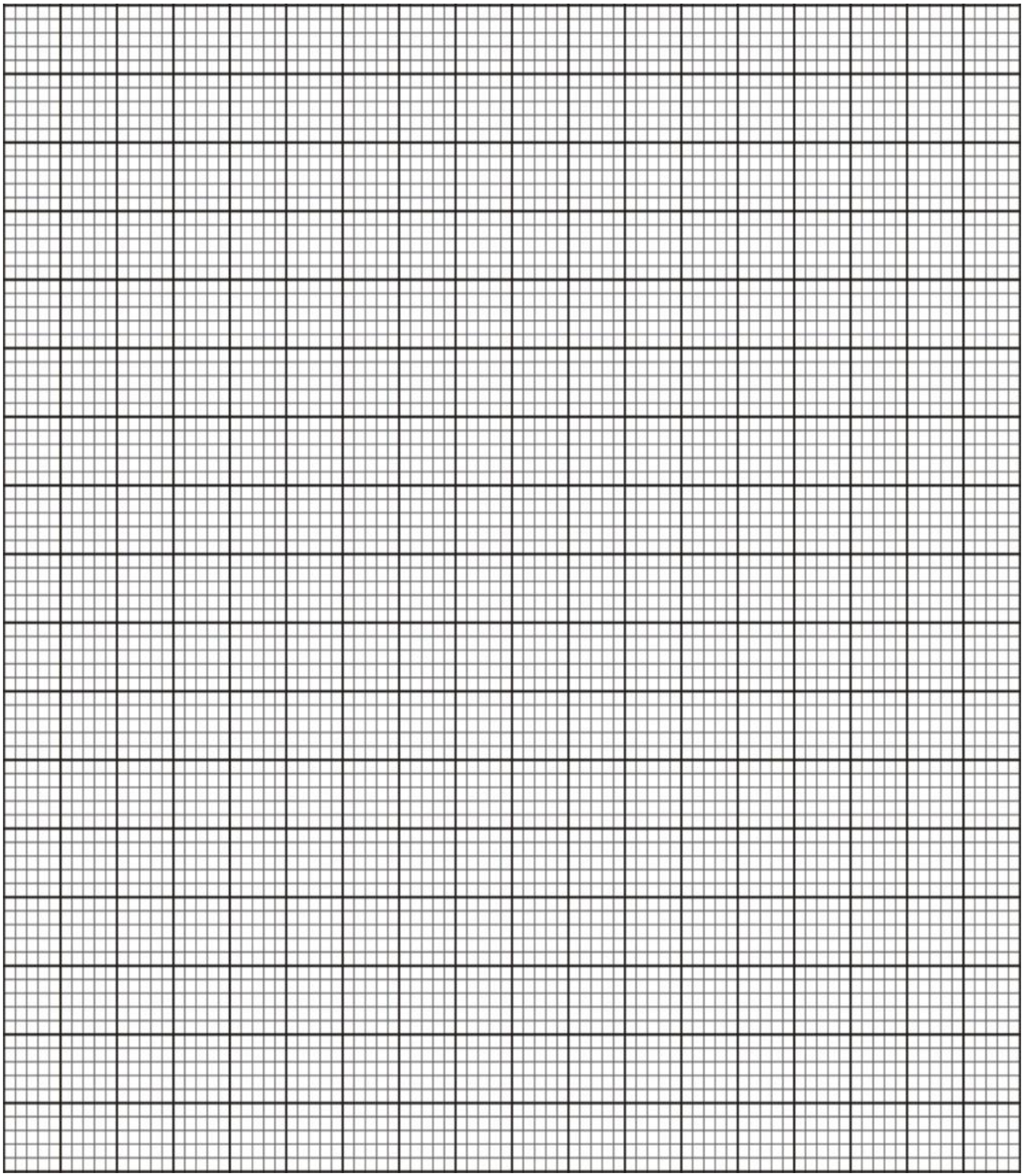
***Answer questions 6 ( compulsory)and either questions 7 or 8 in the spaces provided questions 8***

6. An experiment was carried out whereby three healthy rats were fed on equal amounts of glucose. After half an hour, the glucose concentration per ml. of blood was measured at 15 minutes intervals for three hours. The following results were obtained.

| Glucose conc. / Rats | 0 min | 15 min | 30 min | 45 min | 60 min | 75 min | 90 min |
|---|---|---|---|---|---|---|---|
| A | 0.800 | 0.774 | 0.715 | 0.680 | 0.650 | 0.595 | 0.555 |
| B | 0.745 | 0.695 | 0.695 | 0.660 | 0.635 | 0.600 | 0.545 |
| C | 0.795 | 0.695 | 0.665 | 0.635 | 0.590 | 0.550 | 0.495 |
| Mean | 0.780 | 0.720 | 0.691 | - | 0.625 | - | 0.532 |

**a) i)** Calculate the mean concentration of glucose in mg per ml of blood at 45 and 75 minutes. Record your answer on the table. **(2mks)**

**ii)** On the graph paper provided, plot a graph of the mean glucose concentration against time**.** **(6mks)**



**iv)** What was the mean glucose concentration in the blood after 37.5 minutes? **(1mk)**

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**iv)**Give a reason why it was necessary to use three rats in the experiment instead of one. **(1mk)**

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**v)** Why was the initial concentration of glucose in the rats not the same? **(2mks)**

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**vi)**Account for the difference in mean glucose concentration during the period. **(3mks)**

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**b)** Give ***two*** reasons why glucose is the main respiratory substrate. **(2mks)**

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**c)** Give three ways in which glucose is assimilated in the body. **(3mks)**

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**7.a)**What assumption are made when using the captured recapture method in estimating population of animals. **(5mks)**

**b)**Describe how you would use the capture – recapture method to estimate the population of fish in the school pond. **(15mks)**

**8**.**(a)**Define natural selection. **(2mks)**

**(b)**Natural selection brings about adaptation of a species to the environment. Discuss. **(18mks)**

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**NAME……ADM NO……**

**SCHOOL……CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## BIOLOGY PAPER 3(PRACTICAL)

***Kenya Certificate of Secondary Exams***

## TIME:1HR 45 MINS

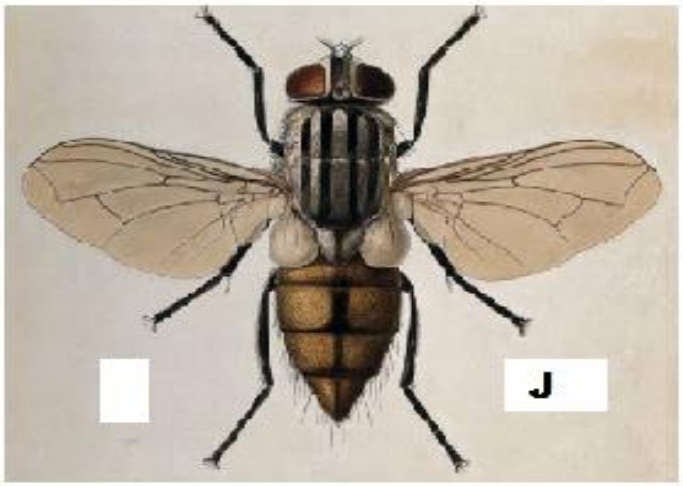
**INSTRUCTIONS TO CANDIDATES**

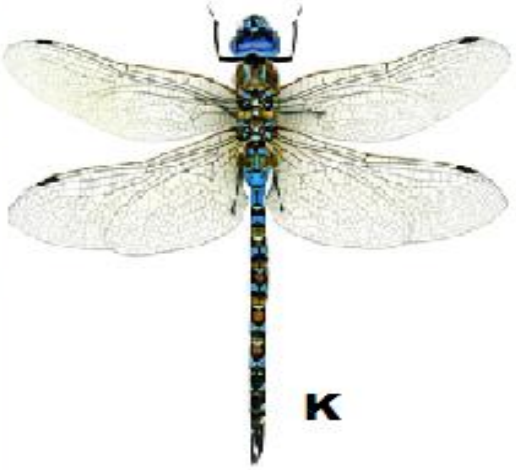
- *Write your **name** and **index number** in the spaces provided above.*
- ***Sign** and write the **date** of examination in the spaces provided above.*
- *You are required to spend the first 15 minutes of the 1 ¾ hours allowed for this paper reading the whole paper carefully before commencing your work.*
- *Answers must be written in the spaces provided in the question paper.*

**For Examiner's Use only:-**

| Question | Maximum Score | Candidate's Score |
|---|---|---|
| 1 | 14 | |
| 2 | 13 | |
| 3 | 13 | |
| TOTAL | 40 | |

1. Below are photographs of two specimens, **J** and **K.** Both of them belong to the same phylum and class. Observe them carefully before you answer the questions that follow.




**a)** Name the class to which **J** and **K** belong and support your answer with two reasons.

Class **(1mk)**

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……

Reasons **(2mks)**

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**b)** Suggest why the circulatory fluid in **J** and **K** has no haemoglobin. **(2mks)**

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**c)** Observe their wings and suggest the type of evolution that could have taken place to give rise to **J** and **K**, and then give a reason for your answer.

Type of evolution **(1mk)**

……

……

Reason **(2mks)**

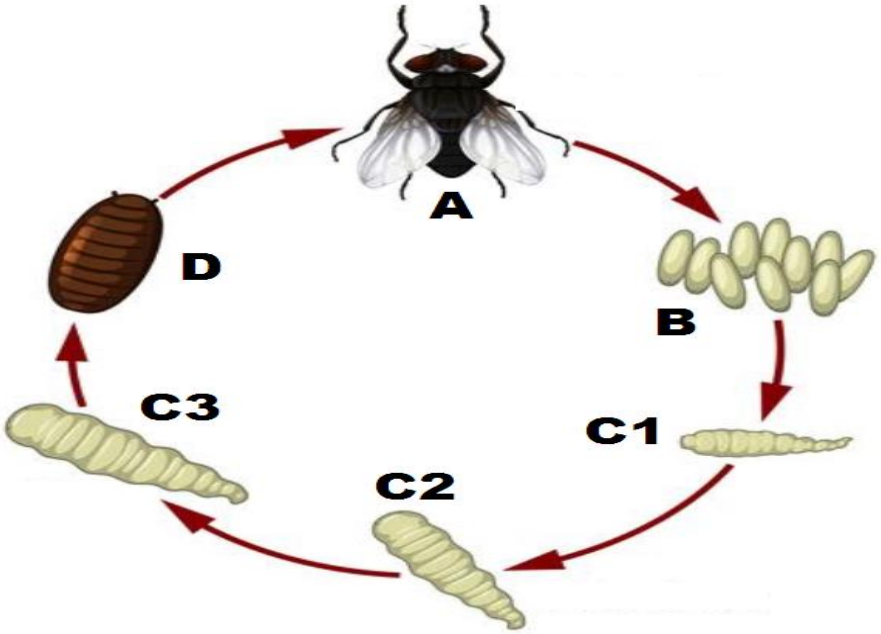
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**d)** Below is a diagram showing the life cycle of specimen J.




**i)** Identify the stage labeled **D**. **(1mk)**

……

……

**ii)** Name the hormone responsible for the change from **D** to **A**. **(1mk)**

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……

**iii)** Explain the differences in the change from **C2** to **C3** and from **C3** to **D.** **(4mks)**

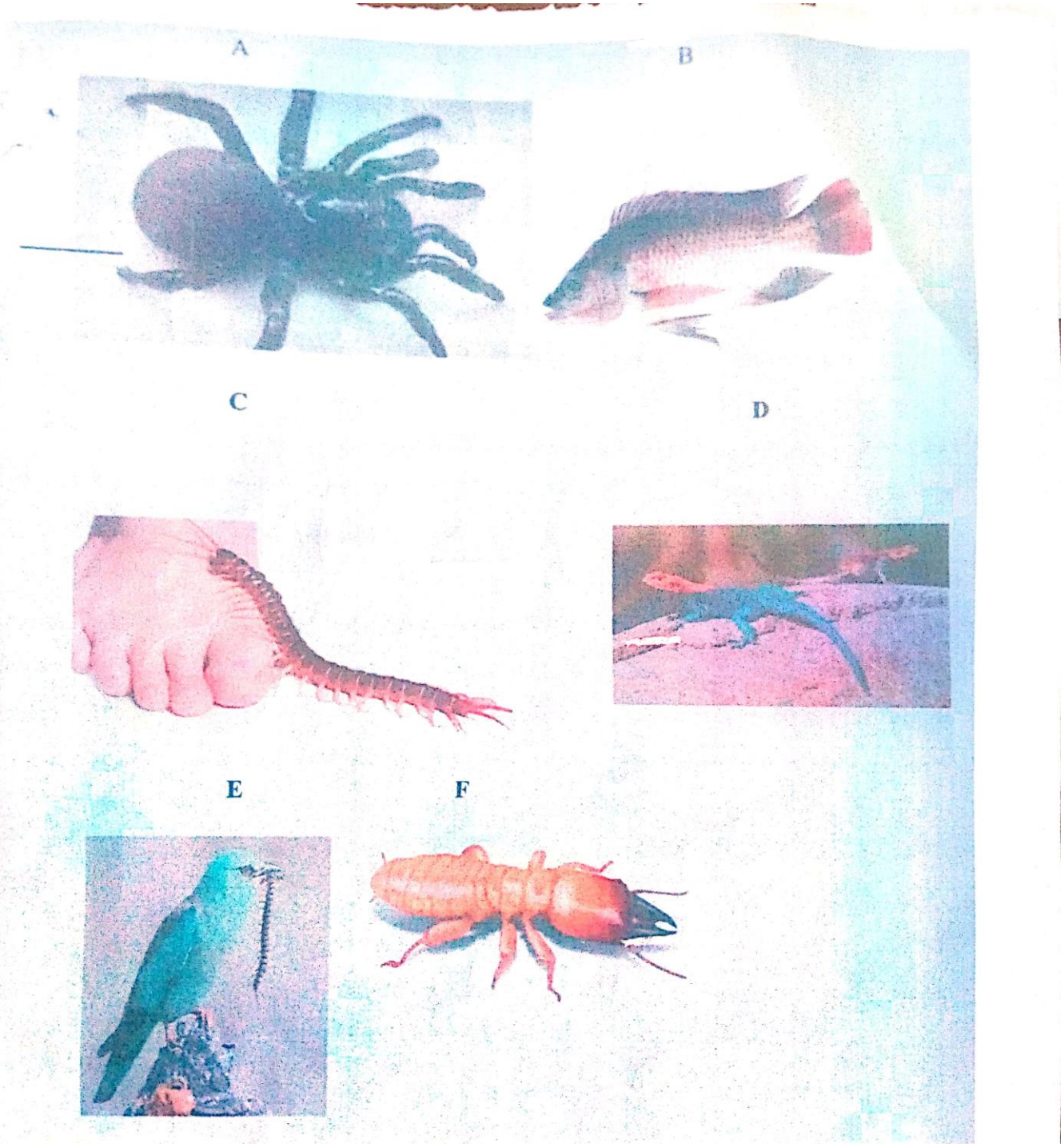
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**Q2.** Study the organisms below and answer questions in spaces provided .




**a.** Complete and use the key below to identify the organism. **(2mks)**

**1a**. Organism with endoskeleton ..... go to 2

**1b.** _____ ..... go to 3

**2a.** Has scales on the body..... go to 4

**2b.** Has no scales on the body..... mammalian.

**3a.** Has cephalothorax ..... Arachnida.

**3b.** Has no cephalothorax.....go to 5

**4a.** _____..... pisces

**4b.** Has no fins ..... Go to 7

**5a**. Has three pairs of legs ..... Insects.

**5b.** Has more than three pairs of legs ..... go to 6

**6a.** Two pairs of legs per segment .....Diplopoda

**6b.** One pair of legs per segment.....chilopoda.

**7a.** Has feathers ..... Aves

**7b.** Has no feathers .....go to 8

**8a.** Has a tail.....Reptilia

**8b.** Has no tail.....Amphibia.

**b).** Identify the organisms above using the completed key above. **6mks**

| Specimen | Steps followed | Identity |
|---|---|---|
| A | | |
| B | | |
| C | | |
| D | | |
| E | | |
| F | | |

**c).** Name the phylum in which specimens **C, E** and **F** belong to **(1mk)**

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**d).** Give ***three*** reasons for your answer in **(c).** **(3mks)**

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**e).**Name ***one*** feature that is common in organisms **B**, **D** and **E**. **(1mk)**

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**Q3.**You are provided with a specimen labeled **T** which is a fruit. Use it to answer the questions that follow.

**a)** Make a **transverse** section of the specimen **T**. Draw and label at least 3 parts. **(6mks)**

**b)** With reasons, state the identity of fruit **T.**

Type of fruit **(1mk)**

……

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Reason **(1mk)**

……

……

**c)** Suggest the possible agent of dispersal and give ***two*** reasons

Agent **(1mk)**

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Reason **(2mks)**

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**d)** What is the placentation of **T**? **(1mk)**

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**e)** Specimen **T** was green in colour before it was treated with a plant hormone.

Suggest the plant hormone. **(1mk)**

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**NAME……..……ADM NO……**

**SCHOOL……..…..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## BUSINESS PAPER 1

***Kenya Certificate of Secondary Exams***

## TIME:2 HRS

**INSTRUCTIONS TO STUDENTS**

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

***b)*** *This paper contains 25 questions. Check the question paper to ascertain all pages and questions are there. Write your answers in the spaces provided*

***c)*** *Answer all questions in English*

| **QUESTION** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MARKS** | | | | | | | | | | | | |

| 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 20 | 22 | 23 | 24 | 25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | |

1. Amina complains to her friend that these days she is finding it increasingly hard to satisfy her needs.Give ***four*** reasons why she may be facing such a situation**(4 marks)**

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2. A resource is something that is used by a business to achieve an objective. Identify ***four*** resources available in a business**.** **(4mks)**

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3. State **four** factors that an entrepreneur would consider before investing in a business opportunity **(4 marks)**

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**4.** The quantity demanded and supplied of a certain commodity can be expressed as $Q_d$=50+20p and $Q_S$= 20+16p respectively.

Find

**i)** Equilibrium price **(2marks)**

.

**ii)** Equilibrium quantity **(2 marks)**

5. The table below shows the growth rate of Gross Domestic product (GDP) of a certain Country for two years

| Year | G.D.P |
|---|---|
| 2003 | 4.0% |
| 2005 | 6.5% |

Highlight ***four*** circumstances under which the standards of living of the citizens of the country referred to above may not necessarily have been higher in 2005 than 2003.**(4mks)**

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6. Outline ***four*** sources of monopoly power. **(4 marks)**

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7. State any ***four*** money transfer facilities offered by commercial banks **(4mrks)**

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8. State ***four*** benefits of warehousing to consumers **(4mrk)**

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**9.** Indicate the source document and the book of original entry in which each of the following transaction should be recorded **(4 mrks)**

| No. | transaction | source | Book of original entry |
|---|---|---|---|
| a | Purchase of goods on credit | | |
| b | Payment of cash to a creditor | | |
| c | Sale of goods on credit | | |
| d | Sale of fixed asset on credit | | |

**10.** The cost of consumer goods and services for a representative basket of an average family is given below.

| **Year** | **2012** | **2013** |
|---|---|---|
| Prices | Kshs. 1200 | Kshs .1600 |

Determine the increase in consumer price index using 2012 as the base year

**11.** Write down ***four*** differences between ordinary shares and preferential shares **( 4mrks)**

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**12.** Mango Traders had the following ledger account balances as at 31st December 2019.

| | Ksh. |
|---|---|
| Sales | 100,000 |
| Purchases | 170,000 |
| Returns inwards | 10,000 |
| Returns outwards | 20,000 |
| Salaries | 30,000 |

| | |
|---|---|
| Capital | 40,000 |
| Bank loan | 50,000 |

Prepare the business trial balance as at 31 December 2019. **{4marks}**

**13.** Outline ***four*** positive implications of a youthful population to an economy.
**{4 marks}**

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**14.** Outline ***four*** barriers to verbal communication **(4 marks}**

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**15.** Highlight ***four*** positive impacts of physical environment on operations of a business

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**16.** Sherry traders had the following assets and liabilities as at 1st January 2004

| | shs |
|---|---|
| Furniture | 350,000 |
| Debtors | 45,000 |
| Cash | 7,000 |
| Creditors | 48,000 |

For the year ended 31stDecember 2004,

**i)** Additional capital was shs 24,000
**ii)** Drawings were shs 20,000

**iii)** Net profit was shs34,000

Determine capital at 31st December, 2004

**17.** Give ***four*** basic characteristic features of a business idea **(4 mrks)**

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**18.** State ***four*** reasons why a producer may involve wholesaler in distributing products **( 4 mrks)**

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**19.** State ***four*** factors that determine the premiums charged by insurance companies for life policies **(4 mks)**

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**20.** State ***four*** methods used in trade restrictions. **( 4 mrks)**

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**21.** Highlight ***four*** ways in which emergence of COVID- 19 infections negatively affected business operations in Kenya **(4 mrks)**

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**22.** Write the account to debit and credit in the following transactions **(4 mrks)**

| | transaction | a/c to debit | a/c to credit |
|---|---|---|---|
| a | Returned damaged goods to supplier | | |
| b | Received rent by cheque | | |
| c | Took cash for personal use | | |
| d | Customer returned ordered goods | | |

**23.** Highlight ***four*** characteristics of lab our as a factor of production **(4 mrks)**

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Mention ***four*** adverse effects of inflation **(4 mrks)**

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**24.** The following information relates to Kamautraders for the month of December 2019

Dec 1: sold goods for shs. 45,000 less 10% cash discount

Dec 5: bought goods worth shs 40,000 in cash and was allowed a discount of 5%

Dec 7: a debtor paid shs 20,000 in settlement of a debt of shs. 23,000by cheque

Dec 15: sold goods shs. 20,000 on credit to Jambo traders

Dec 26: paid rent shs. 16,000 by cheque

Post the above transactions in relevant journals

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## BUSINESS PAPER 2

## *Kenya Certificate of Secondary Exams*

## TIME:2 HRS

**INSTRUCTIONS TO STUDENTS**

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

***b)*** *This paper contains 6 questions. Check the question paper to ascertain all pages and questions are there. Write your answers in the spaces provided*

***c)*** *Answer all questions in English*

| **QUESTION** | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| **MARKS** | | | | | | |

| **TOTAL** |
|---|
| |

**Answer any Five Questions**

**1. a)** Discuss any ***five*** economic importance of the recently discovered oil to the Kenya Economy. **(10marks)**

**b)** Describe ***five*** monetary tools used by the government to control inflation. **(10marks)**

**2 a)** Explain ***four*** reasons why Boda Boda transport has become a popular means of transport in Kenya. **(8 marks)**

**b)** The following trial balance relates to HM Traders Ltd as at 31st December 2011.

HM Traders Ltd
Trial Balance
As 31st December 2011

| Particulars | Dr shs | Cr shs |
|---|---|---|
| Capital | | 283,200 |
| Drawings | 8000 | |
| Cash at Bank | 30,000 | |
| Machinery | 360,000 | |
| Debtors | 42 700 | |
| Creditors | | 20 000 |
| Stock (1.1.2011) | 40000 | |
| Sales | | 570 000 |
| Purchases | 325 000 | |
| Return inwards | 10000 | |
| Return onwards | | 15000 |
| Carriage inwards | 4000 | |
| Carriage outwards | 5000 | |
| Rent | 18000 | |
| Salaries and wages | 40000 | |
| Discounts Received | | 9000 |
| General expenses. | 14,500 | |
| | 897 200 | 897 200 |

Stock as at 31/12/2011 was valued at shs. 35,000

**Required:**

**i)** Prepare a trading, profit and loss account for the year ended 31st December, 2011 **(8 marks)**

**ii)** Draw a balance sheet as at 31st December, 2011. **(4 marks)**

**3 (a)** Explain ***five*** consideration for proper use of County Funds **(10 marks)**

**(b)** The following table represents the supply of potatoes for 3 months.

| **Year 2010** | **Price Per Kg** | **Quantity Supplied (Kgs)** |
|---|---|---|
| January | 100 | 100,000 |
| February | 100 | 90,000 |
| March | 100 | 80,000 |

Explain ***five*** reasons to account for the change in quantity supplied of potatoes in the market. **(10 marks)**

**4 a)**Mr Yego,a tea farmer in Kericho, wants to join Kiptigis farmers' co-operative society. Explain five benefits that would accrue to him as a result of being a member of the society **(10marks)**

**b)** On 1st September 2006,Mau Enterprises had the following balance.

Cash shs. 55,000

Bank shs. 250,000 (CR)

During the month, the following transaction took place

September 2nd: Cash Sales Banked shs. 535,260

3rd: Bought Ribbons in cash shs.4, 500

8th: Paid Wangila ,a creditor shs. 94,000 by cheque in full settlement of his Account after deducting 6% cash discount

12th: Received a cheque for shs.58, 800 from Wetu after allowing her cash discount of shs.1, 200

15th: Paid salaries shs.34, 000 in cash

25th: Withdrew shs. 50,000 from bank for office use

28th: Anyango a debtor, paid her account of shs.75.000 by cheque less 10% cash discount.

30th: Deposits all the cash into Bank except shs. 13,700

***Required***: Prepare a ***three*** column cash Book as at 30th September 2006 (**10mrks)**

**5)a)**Explain ***five*** measures that Kenya can take to solve the problem of unemployment. **(10 marks)**

**b)**Kenya is looking forward to the realization of vision 2030, explain five obstacles that may hinder the successful implementation of the development plan. **(10marks)**

**6(a)**Draw ***five*** differences between perfect competition and monopolistic competition **(10marks)**

**(b)**Explain ***five*** negative implications of production activities on the environment **(10marks)**

**NAME……..……..……ADM NO……**

**SCHOOL……..…..……..CLASS……**

**DATE……..……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## CHEMISTRY PAPER 1(THEORY)

***Kenya Certificate of Secondary Exams***

## TIME:2 HRS

## INSTRUCTIONS TO CANDIDATES

- *Write your name and index number in the spaces provided.*
- *Answer **all** questions in the spaces provided*
- *KNEC mathematical tables and silent electronic calculators **may** be used for calculations.*
- *All workings **must** be clearly shown where necessary.*
- *Candidates should check the question paper to ascertain all the pages are printed as indicated and no questions are missing.*

## For Examiners Use Only

| Questions | Maximum Score | Students Score |
|---|---|---|
| 1-32 | 80 | |

1. State the observations made when a piece of sodium metal is dropped into a beaker containing water. **(2mks)**

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2. During a class experiment, students passed gas X over heated copper metal, the metal changed its colour to black.

**(a)** Identify gas **X.** **(1mk)**

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**(b)**Name the black substance formed. **(1mk)**

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3. Aluminium is extracted from its ore by electrolysis.

**(a)**Name the main ore of Aluminium . **(1mk)**

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**(b)**The Aluminium ore in (a) above has a very high melting point.($2015^0$C),though it is electrolyzed at a lower temperature of about $900^0$ C. Explain how the low temperature is achieved. **(1mk)**

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**(c)**In the above process, graphite electrodes are used. What is the disadvantage of using this kind of electrodes **(1mk)**

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4. A student added $50cm^3$ of 1.0M aqueous Sulphuric (VI) acid to $50cm^3$ of 2.0M Potassium Hydroxide and the temperature of the resulting solution rose by $4^0$ C.

**(a)**Define the term Molar heat of neutralization. **(1mk)**

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**(b)**Calculate the molar heat of neutralization

(C=4.2KJ$Kg^{-1}$ $K^{-1}$ ,Density of solution=1g/$cm^3$) **(2mks)**

**5.** Use the table below to answer the question that follow:

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

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

(**b)**Explain the trend of atomic radii between elements **A** and **D**. **(2mks)**

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**6.** In terms of structure and bonding, explain why graphite is used as a lubricant. **(2mks)**

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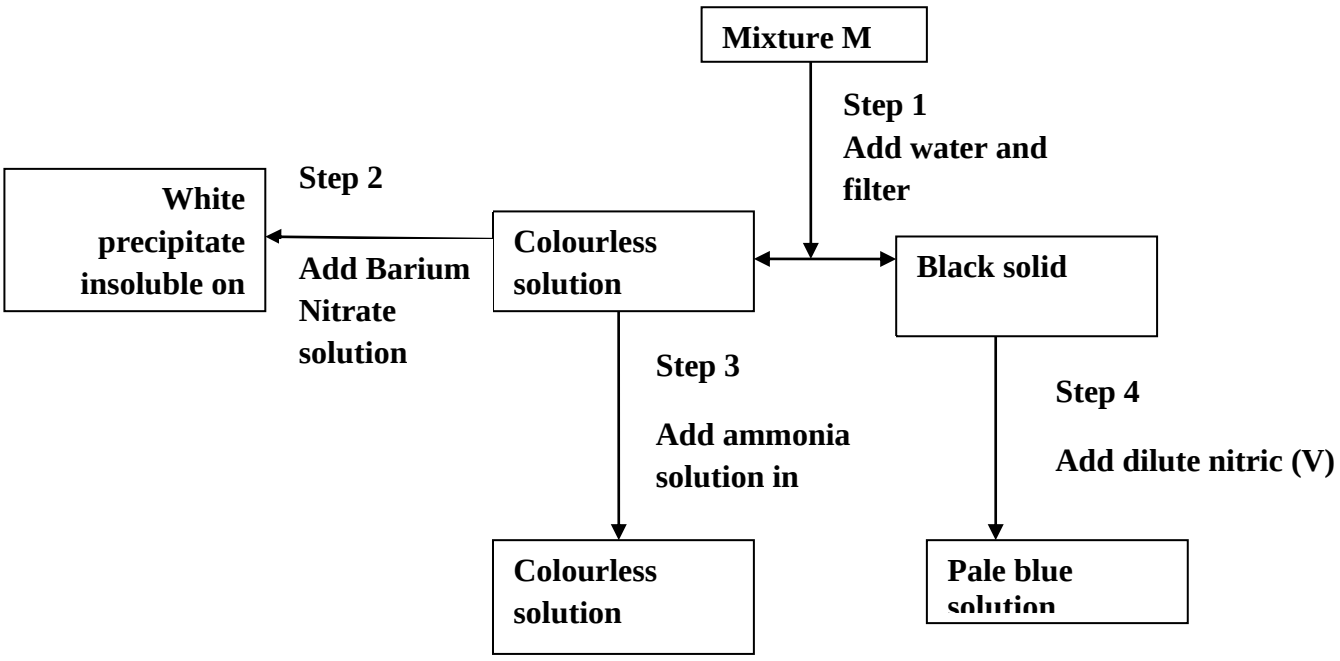
**7. (a)**State the Boyles Law. **(1mk)**

……

……

**(b)** A given mass of the gas occupies $20cm^3$ at $25^0$ C and 670mmHg pressure. Find the volume it will occupy at $10^0$ C and 335mmHg. **(2mks)**

**8**. Study the flow chart below and answer the questions that follow.




**(a)** Name

**(i)** Cations present in mixture M. **(1mk)**

.....

.....

**(ii)** Anion present in thecolourless solution. **(1mk)**

.....

.....

**(b)**Write an equation to show how the white precipitate in step 3 dissolves. **(1mk)**

.....

.....

**(c)** Name the process outlined in step 4 above. **(1mk)**

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.....

**9.**The solubility of potassium nitrate is 85g/100g of water at 50 $^0$ C and 32g/100g of water at 25 $^0$ C.

**(a)** Define the term solubility. **(1mk)**

.....

.....

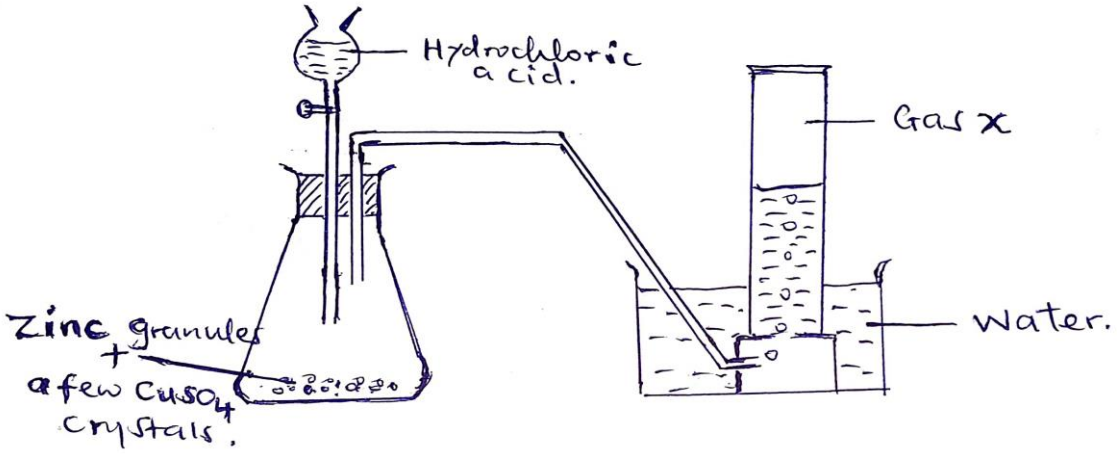
**(b)**Calculate the mass of the crystals formed if a saturated solution of potassium nitrate in 50g of water at 50 $^0$ C is cooled to 25 $^0$ C. **(2mks)**

**10**.Magnesium Chloride dissolves in water to form a neutral solution while iron (III) chloride forms an acidic solution. Explain. **(2mks)**

.....

.....

**11**.The diagram below is a set up to prepare a certain gas X. Study it and use it to answer the questions that follow.




**(a)**Identify gas X. **(1mk)**

.....

.....

**(b)**Why is the gas collected over water? **(1mk)**

.....

.....

**(c)**Why are Copper (II) Sulphate crystals added to the flask where the reaction takes place? **(2 mks)**

.....

.....

**12.(a)**Give the systematic names of the following organic compounds. **(2mks)**

**(i)** $CH_3CH_2CH_2CH_2OH$

.....

.....

**(ii)** $CH_3CH_2COOCH_2CH_3$

.....

.....

**(b)**Explain why an organic compound with the formula $C_4H_8$burns with a more sooty flame than $C_4H_{10}$. **(2mks)**

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.....

**13.**When solid Zinc Carbonate was added to a solution of Hydrogen Chloride in methylbenzene there was no observable change. On addition of some water to the mixture there was effervescence. Explain the observation. **(2mks)**

.....

.....

**14**.In titration experiment,25.0 $cm^3$ of sodium hydroxide containing 8.0 g per litre was required for complete neutralization of 0.245 g of a dibasic acid. Calculate the relative molecular mass of the acid. **(3mks)**

**15.(a)**100g of a radioactive isotope was reduced to 12.5g after 81 days. Calculate the half lifeof the radioisotope. **(2mks)**

.....

.....

**(b)** $^{212}_{80}Y$ decays by beta emission. What is the mass number and the atomic number of the product after decay? **(1 mk)**

.....

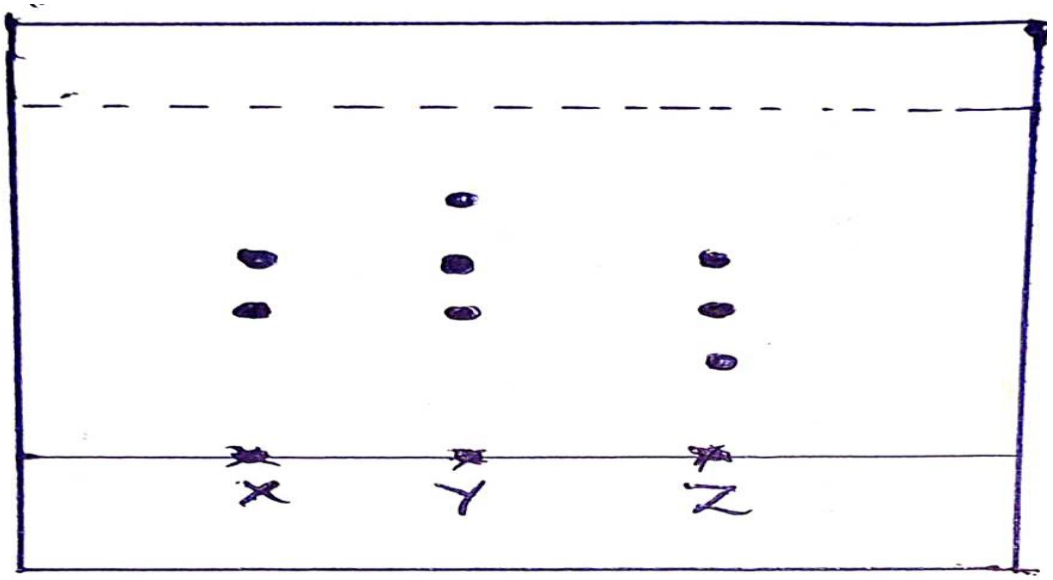
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**16.(a)** Distinguish between ionization energy and electron affinity. **(2mks)**

.....

.....

**17.**The diagram below represents a paper chromatography for three brands of juice suspected to contain unwanted food additives.




From the results, it was found that unwanted additives are present in Y and Z only.
On the chromatogram;

**(a)**Circle the spots which show unwanted food additives. **(1mk)**

**(b)**Name the solvent commonly used in paper chromatography. **(1mk)**

.....

.....

**(c)**State ***<u>two</u>*** applications of chromatography. **(2mks)**

.....

.....

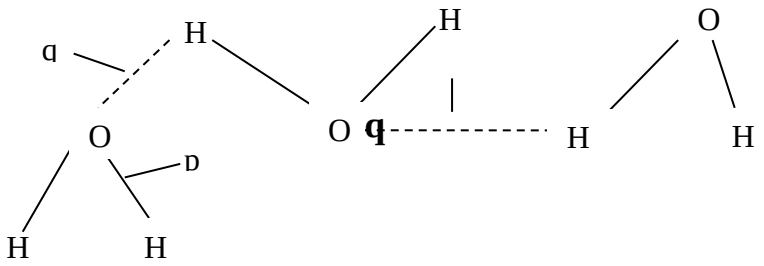
**18.(a)**Show bonding in Aluminium Oxide. **(1mk)**

.....

.....

.....

**(b)**Identify the type of bonds represented by p and q in the substances below.




**p-** **(½ mk)**

.....

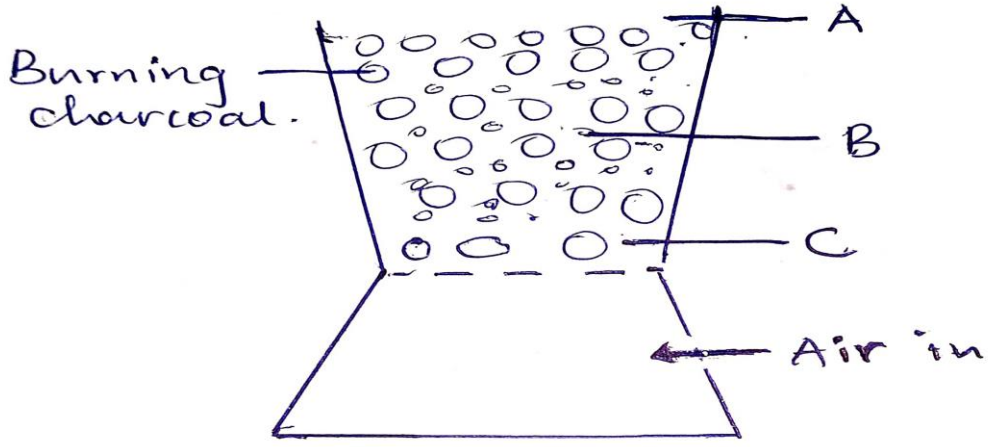
.....

**q-** **(½ mk)**

.....

.....

**19.**The following diagram represents a charcoal burner. Study it and answer the questions that follow:



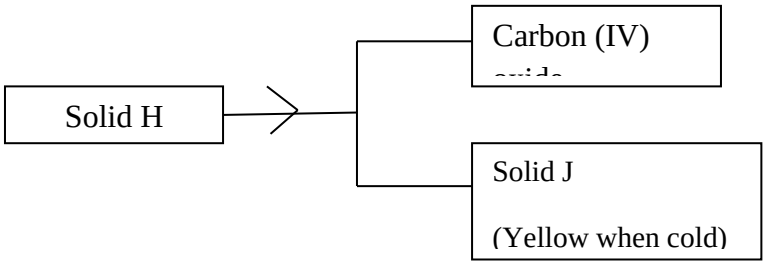

Write the equations for the reactions at **A,B** and **C** regions. **(3mks)**

**A -**

**B –**

**C -**

**20.** Use the scheme below to answer the question that follow.




**(a)**Identify process **N.** **(1mk)**

……

……

**(b)**Identify the solids

**H-** **(½ mk)**

……

……

**J-** **(½ mk)**

……

……

**21.**Ammonia gas is prepared by Harber process according to the equation below:

$$N_2(g)+3H_2(g) \longrightarrow 2NH_3(g) + Heat$$

State and explain the effect on equilibrium when the following conditions are applied.

**(a)**Pressure increased. **(1mk)**

……

……

**(b)**Temperature increased. **(1mk)**

……

……

**(c)**State Le Chatelier's principle. **(1mk)**

……

……

**22.** You are given the following half equations.

$I_2(s) + 2e^- \rightleftharpoons 2I^-(aq)$ $\quad E^\ominus = +0.54V$

$Br_2(l) + 2e^- \rightleftharpoons 2Br^-(aq)$ $\quad E^\ominus = +1.09V$

**(a)**Write an overall equation for the cell reaction. **(1mk)**

**(b)**Calculate the $E^{\Theta}$ value of the cell. **(1mk)**

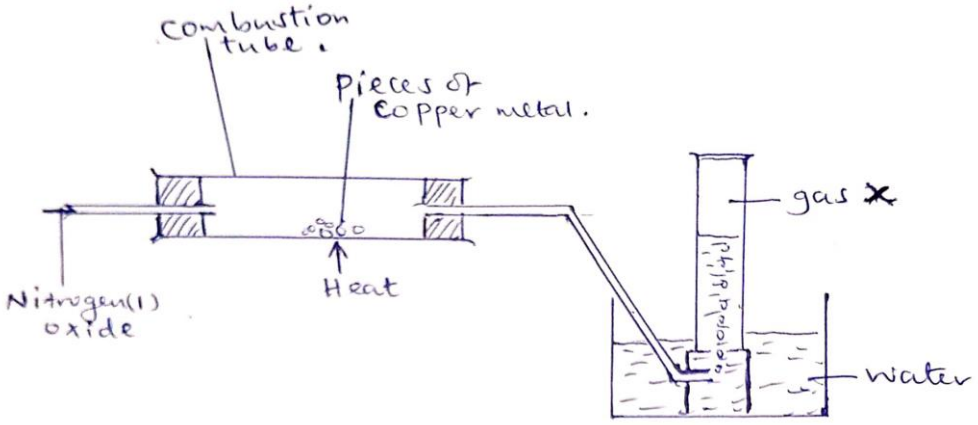
**(c)**Name the oxidizing agent. **(1mk)**

……

……

**23.**When a current of 0.8Ampheres was passed for 44 minutes and 20 seconds through fused iodide of metal Z, 0.7167g of Z was deposited. Determine the charge of the ion of metal Z.(1 Faraday=96500C,RAM of Z=65) **(2mks)**

**24**.The set up below shows how small pieces of copper are heated in nitrogen (I) Oxide.




**(a)**Write an equation for the reaction which occurs in the glass jar. **(1mk)**

……

……

**(b)**Give ***one*** use of the Nitrogen **(I)** Oxide. **(1mk)**

……

……

**25.**State what would be observed if concentrated Sulphuric (VI) Acid is added to:

**(a)**Sugar crystals. **(1mk)**

……

……

**(b)**Hydrated Copper**(II)**Sulphate crystals. **(1mk)**

……

……

**(c)**What type of reaction has taken place above. **(1mk)**

……

……

**26**.Explain why commercial indicators are preferred to flower extracts as acid base indicators. **(2mks)**

……

……

**27.(a)**Magnesium reacts with hydrochloric acid according to the following equation.

$$Mg(s) + 2HCl(aq) \longrightarrow MgCl_2(aq) + H_2(g)$$

Identify the reducing agent. Give a reason for your answer. **(2mks)**

……

……

**(b)**Iron sheets are dipped in molten Zinc to prevent rusting .Name this process. **(1mk)**

……

……

**28.**Explain why a balloon filled with helium gas deflates faster than a balloon of the same size filled with argon gas. **(2mks)**

……

……

**29.**Complete the table below. **(2mks)**

| Solution | PH | Nature of Solution |
|---|---|---|
| H | 1.0 | |
| I | | Neutral |
| J | | Weak acid |
| K | 13.0 | |

**30.**A farmer intended to plant cabbages in his farm. he first tested the PH of the soil and found it to be 3.0.If cabbages do well in alkaline soils, explain the advice that would be given to the farmer in order to realize a high yield. **(2mks)**

**31.**Name an appropriate apparatus:

**(a)**That is used to prepare standard solutions in the laboratory. **(1mk)**

……

……

**(b)** That is used in heating solid substances strongly. **(1mk)**

……

……

**(c)**That can be used to separate two immiscible liquids. **(1mk)**

……

……

**32**.Some plants have seeds that contain vegetable oil.

**(a)**State the reagent and apparatus used to extract the oil from the seeds. **(1mk)**

Reagent-

……

……

Apparatus-

……

……

**(b)**Explain how it could be confirmed that the liquid obtained from the seeds is oil? **(1mk)**

……

……

**(c)**State an application of the method of extracting oil above. **(1mk)**

……

……

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## CHEMISTRY PAPER 2(THEORY)

## *Kenya Certificate of Secondary Exams*

## TIME:2 HRS

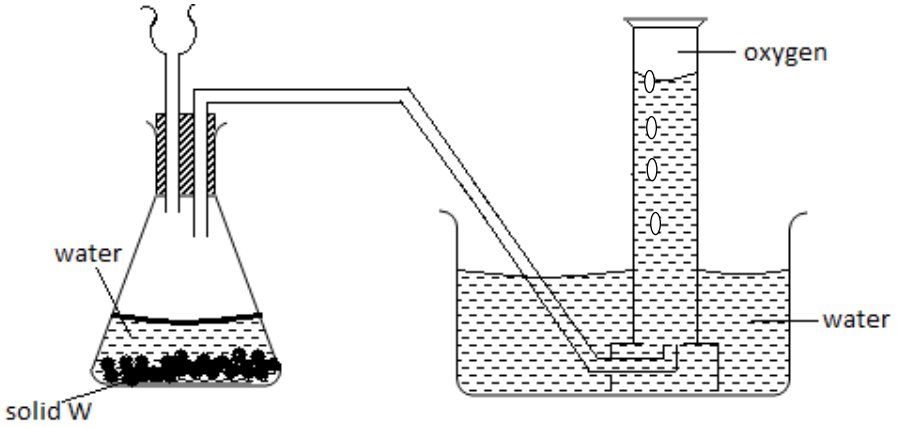
**INSTRUCTIONS TO CANDIDATES**

- *Write your name and index number in the spaces provided.*
- *Answer **all** questions in the spaces provided*
- *KNEC mathematical tables and silent electronic calculators **may** be used for calculations.*
- *All workings **must** be clearly shown where necessary.*
- *Candidates should check the question paper to ascertain all the pages are printed as indicated and no questions are missing.*
-

**For Examiners Use Only**

| Questions | Maximum Score | Score |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| **TOTAL** | **80** | |

**1.** The diagram below shows a set up used by a student in an attempt to prepare collect oxygen gas




**a) i)** Identify and correct the mistakes in the set up to enable the preparation and collection of the gas. **(2mks)**

.....

.....

.....

**ii)**Identify solid **w.** **(1mk)**

.....

.....

**b)**A piece of phosphorous was burnt in excess air. And the product dissolved in hot water to make a solution.

**i)**Write an equation for the burning of phosphorous in excess air. **(1mk)**

**ii)**The solution obtained in (b) above was found to have a pH of 2.0. Give reasons for this observation. **(1mks)**

.....

.....

**c)**Explain why cooking pots made of aluminium do not corrode easily when exposed to air. **(1mk)**

.....

.....

.....

**d)** The reaction between sulphure (IV) Oxide and oxygen to form Sulphur **(VI)** Oxide is an exothermic reaction, which can be represented by the equation below;

$2SO_{2(g)} + O_{2(g)} \leftrightarrows 2SO_{3(g)} \quad \Delta H = -ve$

A factory manufacturing sulphuric (VI) acid by contact process produces 350kg of sulphur(VI)oxide per day (conditions for the reaction; catalyst, 2 atmospheres pressure and temperatures between 400 – 500 $^{o}$C.)

**i)**What is meant by an exothermic reaction? **(1mk)**

……

……

**ii)** How would the yield per day of sulphur trioxide be affected if temperatures lower than 400°C are used? Explain. **(1mk)**

……

……

……

**iii)** All the sulphur (VI) Oxide produced was absorbed in concentrated sulphuric acid to form oleum.

$SO_{3(g)} + H_2SO_{4(l)} \rightarrow H_2S_2O_{7(l)}$

Calculate the mass of oleum that was produced per day. (S = 32.0, O= 16: H = 1.0) **(3mks)**

**2.** Study the table below and answer the questions that follow:

| Compounds | Melting point $^0C$ | Boiling points $^0C$ |
|---|---|---|
| $C_2H_4O_2$ | 16.6 | 118 |
| $C_3H_6$ | -185.0 | -47.7 |
| $C_3H_8O$ | -127 | 97.2 |
| $C_5H_{12}$ | -130 | 36.3 |
| $C_6H_{14}$ | -95.3 | 68.7 |

**(a) (i)** Which of the compounds is a solid at 10°C. Explain **(1mk)**

……

……

**(ii)** Choose two compounds which are members of the same homologous series and explain the difference in their melting points **(3mks)**

……

……

……

**(iii)** The compound $C_3H_8O$ is an alcohol. How does its solubility in water differ from the solubility of $C_5H_{12}$ in water? Explain **(2mks)**

……

……

……

**(b)** Complete combustion of one mole of a hydrocarbon produces four moles of carbon (IV) oxide and four moles of water.

**(i)** Write the formula of the hydrocarbon **(1mk)**

……

……

**(ii)** Write the equation for the complete combustion **(1mk)**

……

……

**(c) (i)** In a reaction, an alcohol "J" was converted to hex -1-ene. Give the structural formula of alcohol "J" **(1mk)**

……

……

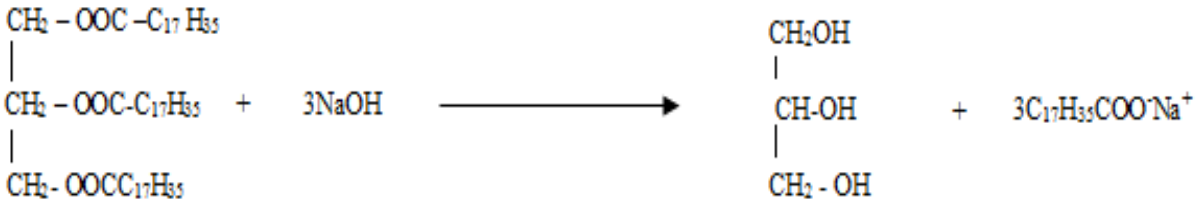
**(iii)** Name the reagent and conditions necessary for the reaction in C (ii) above

**(1mk)**

……

……

**(d)** Compound K reacts with sodium hydroxide as shown below




**(i)** What type of reaction is represented by the equation above **(1mk)**

……

……

**(ii)** To what class of compound does "K" belong? **(1mk)**

……

……

**(e)**The following equations represent two different types of reactions

(i) $nC_4H_{8(g)} \rightarrow [C_4H_8]_{n(g)}$

(ii) $C_2H_{6(g)} + Cl_{2(g)} \rightarrow C_2H_5Cl_{(g)} + HCl_{(g)}$

State the type of reaction represented by **(i)** and **(ii)** **(1mk)**

……

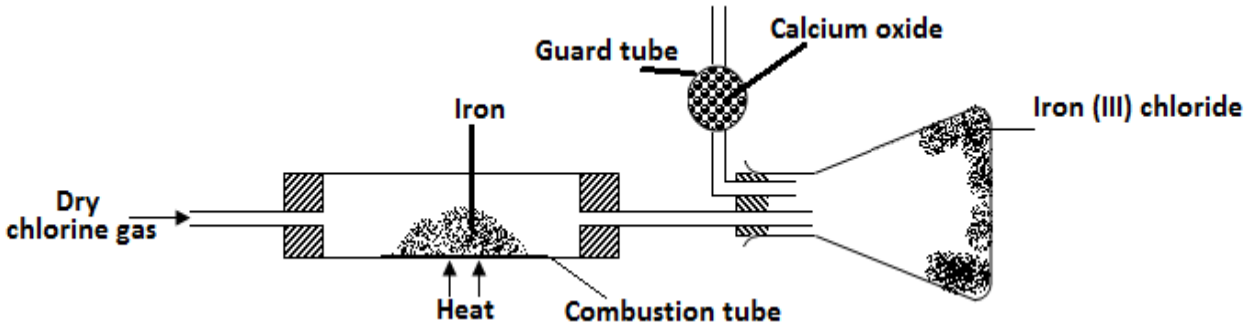
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**3.(a)** Give the name of one reagent which when reacted with concentrated hydrochloric acid produces chlorine gas **(1mk)**

.....

.....

**(b)** A student set out to prepare iron (lll) chloride using apparatus shown in the diagram below




**(i)** Explain why it is necessary to pass chlorine gas through the apparatus before heating begins? **(1mk)**

.....

.....

.....

**(ii)** What property of iron (III) chloride makes it possible to be collected as shown in the diagram **(1mk)**

.....

.....

.....

**(iii)**The total mass of iron (III) chloride formed was found to be 0.5g. Calculate the volume of chlorine gas that reacted with iron. (Fe = 56, Cl = 35.5 and molar gas volume at r.t.p is 24,000 $cm^3$) **(3mks)**

**(c)** When hydrogen sulphide gas passed through a solution of iron (III) chloride the following observation was made;The colour of the solution changed from reddish brown to green and yellow solid was deposited. Explain these observations **(2mks)**

.....

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.....

**(d)** State and explain the observations that would be made if a moist blue-litmus paper was placed in a gas jar full of chlorine gas **(2mks)**

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……

……

**(e)** Study the information to answer the questions that follow. The letters do not represent the actual symbols of the elements.

| Elements | Atomic number | Melting point ($^0$C) |
|---|---|---|
| L | 11 | 97.8 |
| M | 13 | 660 |
| N | 14 | 1410 |
| C | 17 | -101 |
| R | 19 | 63.7 |

**a)i)** Write the electron arrangement for the ions formed by elements **" M"** and "C" **(1mk)**

M

……

……

C

……

……

**ii)** State the type of the bond that will be formed when M and C react. **(1mk)**

……

……

**iii)** In which group and period of the periodic table does element "R"belongs? **(1mk)**

……

……

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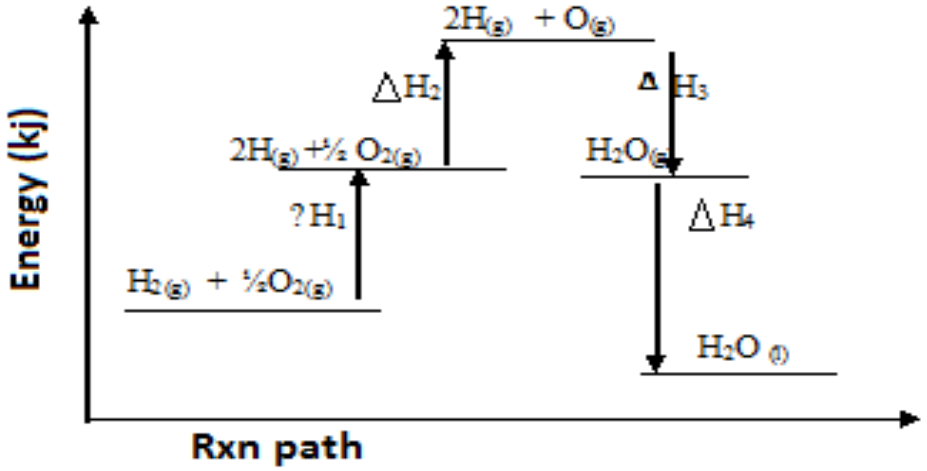
**iv)** Element R loses its outermost electrons more readily than "L". Explain **(1mk)**

……

……

**v)** Using dots and crosses to represent electrons, show bonding in the compound formed between **N** and **C.** **(2mks)**

4. Study the energy level diagram below and answer the questions that follow.




**(a) (i)** Which $\triangle H$ values have a positive sign. **(1mk)**

……

……

**(ii)** Which $\triangledown H$ values have a negative sign **(1mk)**

……

……

**(iii)** What chemical changes is being represented by **(2mks)**

$\triangle H_1$ ……

$\triangle H_4$ ……

**(b)** The hydration energy of $Al^{3+}$ and $Cl^-$ are -4690 and -364kJmol$^{-1}$ respectively. The heat of solution of alluminium chloride is -332kJ mol-$^1$.

**(i)** Calculate the lattice energy of alluminium chloride **(2mks)**

**(ii)** Draw an energy level diagram for dissolving of alluminium chloride **(2mks)**

**(c)** When one mole of butanol is burnt. 2676kJ are liberated

**(i)** Write a chemical reaction for combustion of butanol. **(1mk)**

.

**(ii)** Considering the following heats of combustion

- $\Delta H^{\theta}C$ (Graphite) = -393kJ $mol^{-1}$
- $\Delta H^{\theta}C$ $(H_2)_{(g)}$ = -286kJ $mol^{-1}$
- $\Delta H^{\theta}C$ (Butanol) = -2676kJ $mol^{-1}$

Draw an energy cycle for the above energy changes **(2mks)**

**(iii)** Calculate the heat of formation of butanol **(2mks)**

**5.** **(a)** The equations below shows the standard reduction potential for four half cell. Study it and answer the questions that follow. Letters are not actual symbols of the element.

| | | | | $E^{\theta}$ Volts |
|---|---|---|---|---|
| $F_{2(g)}$ | + 2e- | → | $2F^-_{(aq)}$ | + 0.54 |
| $G^{2+}_{(aq)}$ | + 2e- | → | $G_{(s)}$ | -0.44 |
| $H^{+2}_{(aq)}$ | + 2 e- | → | $H_{(s)}$ | + 0.34 |
| $2J^{+}_{(aq)}$ | + 2e- | → | $J_{2(g)}$ | 0.00 |

**i**. Write the equation for the reaction which takes place when solid "G" is added to a solution containing $H^{2+}$ (ions) **(1mk)**

……

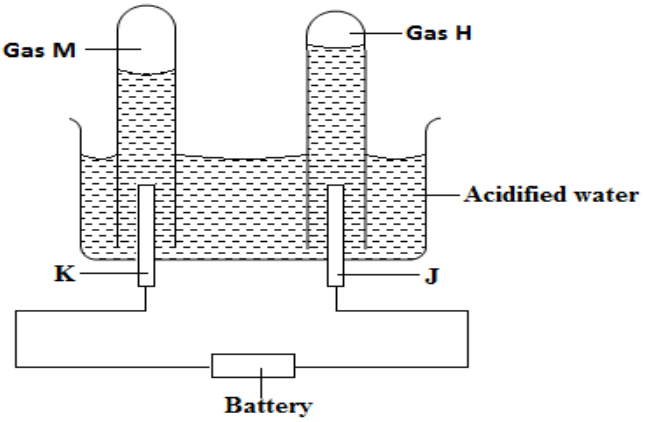
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**ii.** Calculate the $\mathbf{E^{\theta}}$ value for the reaction in (ii) above **(1mk)**

……

……

**(b)** The diagram below shows the apparatus used to electrolyze acidified water to obtain hydrogen and oxygen gases. Study it and answer the questions that follows?




**i.** Identify the electrodes marked **K** and **J** **(1mk)**

**K** .....

**J** .....

**ii.** Write the equation that led to the production of gas **(1mk)**

**M**

.....

.....

**H**

.....

.....

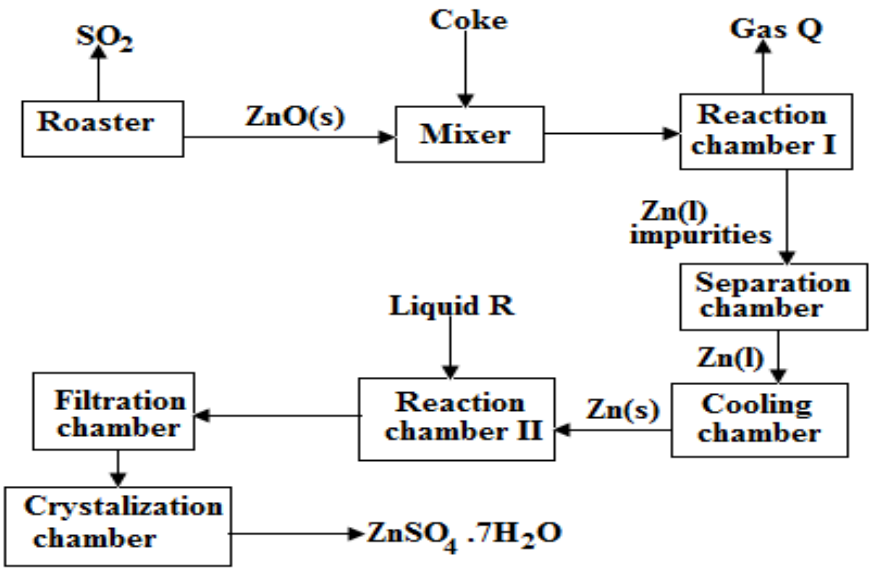
**iii.** Explain why hydrochloric acid is not used to acidify the water **(1mk)**

.....

.....

**(c)** During electrolysis of aqueous copper (II) sulphate 144750 columbus of electricity were used. Calculate the mass of copper metal that was obtained (Cu= 64, 1 Faraday = 96500 Columbus) **(2mks)**

**6.** The flow chart illustrates the extraction of zinc and preparation of Zinc**(II)**sulphate crystals. Study it and answer the questions that follow




**(a)(i)** Name

**I**. Gas **Q** **(1mk)**

……

……

**II**.Liquid **R** **(1mk)**

……

……

**(ii)** Write an equation for the reaction that takes place in

Chamber **I** **(1mk)**

……

……

The Roster **(1mk)**

……

……

Chamber **II** **(1mk)**

……

……

**(iii)** Given that the zinc sulphide ore contain 45% of Zinc sulphide by mass, calculate

**I.** The mass in grains of Zinc sulphide that would be obtained from 250 kg of the ore. **(1mk)**

**II.** The volume of sulphur (IV) oxide ($So_2$) that would be obtained from the above mass of zincsulphideat room temperature and pressure (S = 32.0, molar gas volume = 24 $dm^3$**).** **(2mks)**

**III.** The mass of zinc metalthat would be obtained in Iabove(Zn = 65.4) **(1mk)**

**(b)** In such an experiment sulphur (IV) Oxide may keep escaping to the atmosphere. Explain how this could affect the environment. **(1mk)**

……

……

**(c)** Suggest ***one*** other manufacturing plant that could be set up near Zinc extraction plant. **(1mk)**

……

……

**7. (a)** State the difference between chemical and nuclear reactions **(1mks)**

……

……

**(b)** Below is a radioactive decay series starting from

$^{214}_{83}Bi$ and ending at $^{206}_{82}Pb$. Study it and answer the questionsthat follows

$$^{214}_{83}Bi \xrightarrow{\text{Step I}} {}^{219}_{84}Ti \xrightarrow{\text{Step II}} {}^{210}_{82}Pb \xrightarrow{\text{Step III}} {}^{210}_{83}Bi \xrightarrow{\text{Step IV}} {}^{210}_{84}Po \xrightarrow{\text{Step V}} {}^{206}_{82}Pb$$

**(i)** Identify the particle emitted in step I and III. **(2mks)**

**I** ……

**II** ……..

**(ii)** Write the nuclear equation for the reaction which takes place in step V **(1mk)**

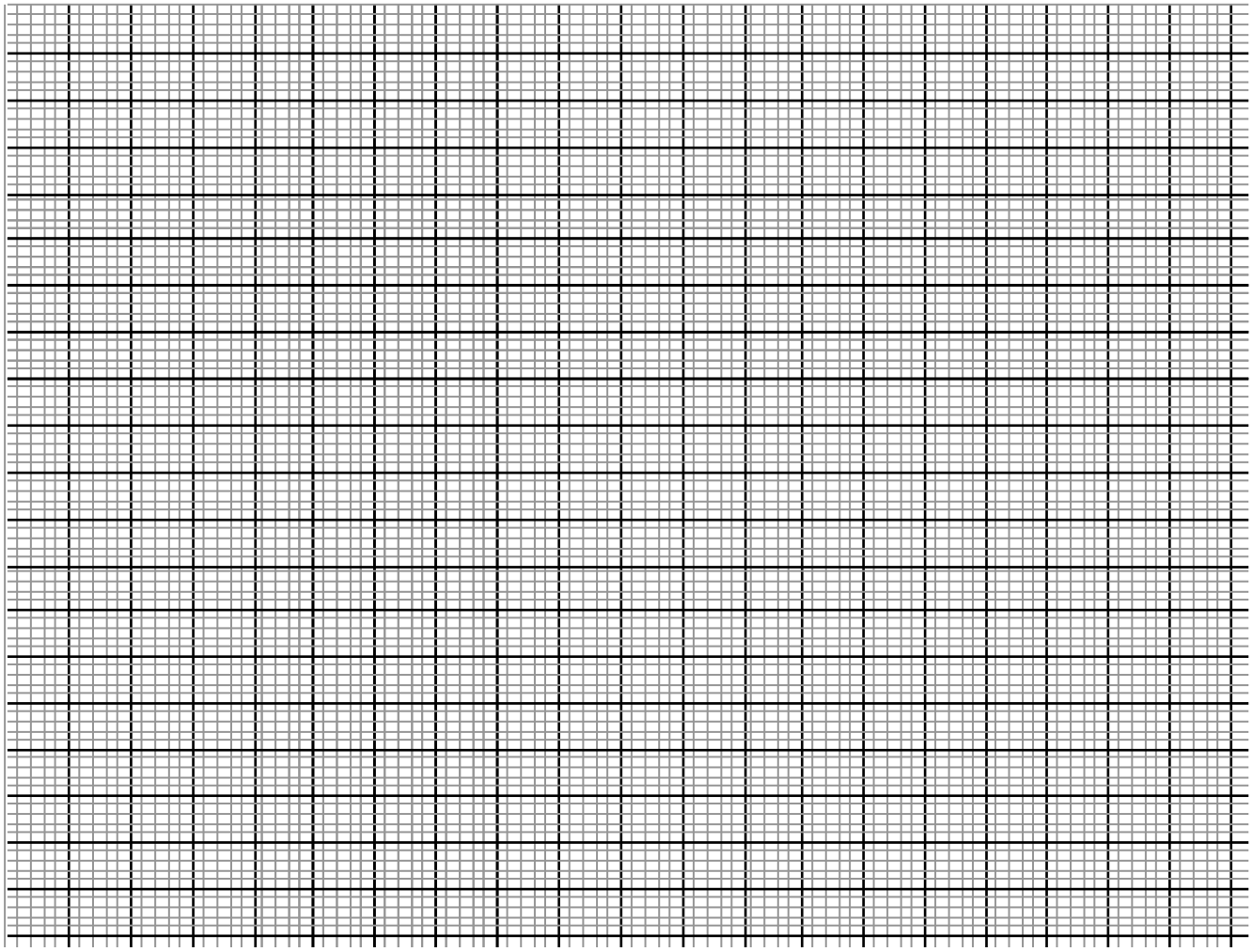
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**(c)** The table below gives the percentage of radioactive isotope of Bismuth that remains after decaying at different times.

| Time (mm) | 0 | 6 | 12 | 22 | 38 | 62 | 100 |
|---|---|---|---|---|---|---|---|
| Percentage of Bismuth | 100 | 81 | 65 | 46 | 29 | 12 | 3 |

**(i)** On the grid provided below, plot a graph of the percentage of bismuth remaining (vertical axis) against time **(3mks)**



**(ii)** Use the graph, determine the

I. Half life of the Bismuth **(1mk)**

……

……

II. Original mass of bismuth isotope given that the mass remained after 70 minutes was 0.16g **(1mks)**

……

……

**d**.Give ***one*** use of radioactive isotope in medicine **(1mk)**

……

……

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## CHEMISTRY PAPER 3(PRACTICAL)

***Kenya Certificate of Secondary Exams***

**TIME: 2¼ HRS**

**INSTRUCTIONS TO CANDIDATES**

- *Write your name and index number in the spaces provided.*
- *Sign and write the date of examination in the spaces provided on the question paper.*
- *Answer **ALL** the questions in the spaces provided in the question paper.*
- *You are **NOT** allowed to start working with the apparatus for the first 15 minutes of the 2¼ hours allowed for this paper. This time is to enable you to read the question paper and make sure you have all the chemicals and apparatus you need.*
- *Mathematical tables and silent electronic calculators' may be used.*
- *All working must be clearly shown where necessary.*

**FOR EXAMINER'S USE ONLY**

| Question | Maximum marks | Candidate's score |
|---|---|---|
| **1** | 20 | |
| **2** | 11 | |
| **3** | 9 | |
| **Total score** | 40 | |

1. You are provided with;
   - Solid A magnesium ribbon
   - Solution B 2MHCL
   - Solution C, 0.3MNaOH
   - Distilled water

   You are required to determine the:

   i. Temperature change when magnesium reacts with excess hydrochloric acid
   ii. Number of moles of hydrochloric acid that remains unreacted
   iii. Number of moles of magnesium that reacted
   iv. Molar heat of reaction between magnesium and hydrochloric acid

   **Procedure 1**

   Using a burette, measure 50cm of solution B and place it in 100ml beaker. Measure the temperature of solution B in 100ml beaker after every 10 seconds. At $30^{th}$ seconds add magnesium ribbon to solution B and continue recording the temperature. Stir the mixture continuous with a thermometer making sure that the magnesium ribbon remains in the solution as it reacts. Measure the temperature after ever 10 seconds and record values at the table below. Continue stirring and measure the temperature to complete table 1 below.

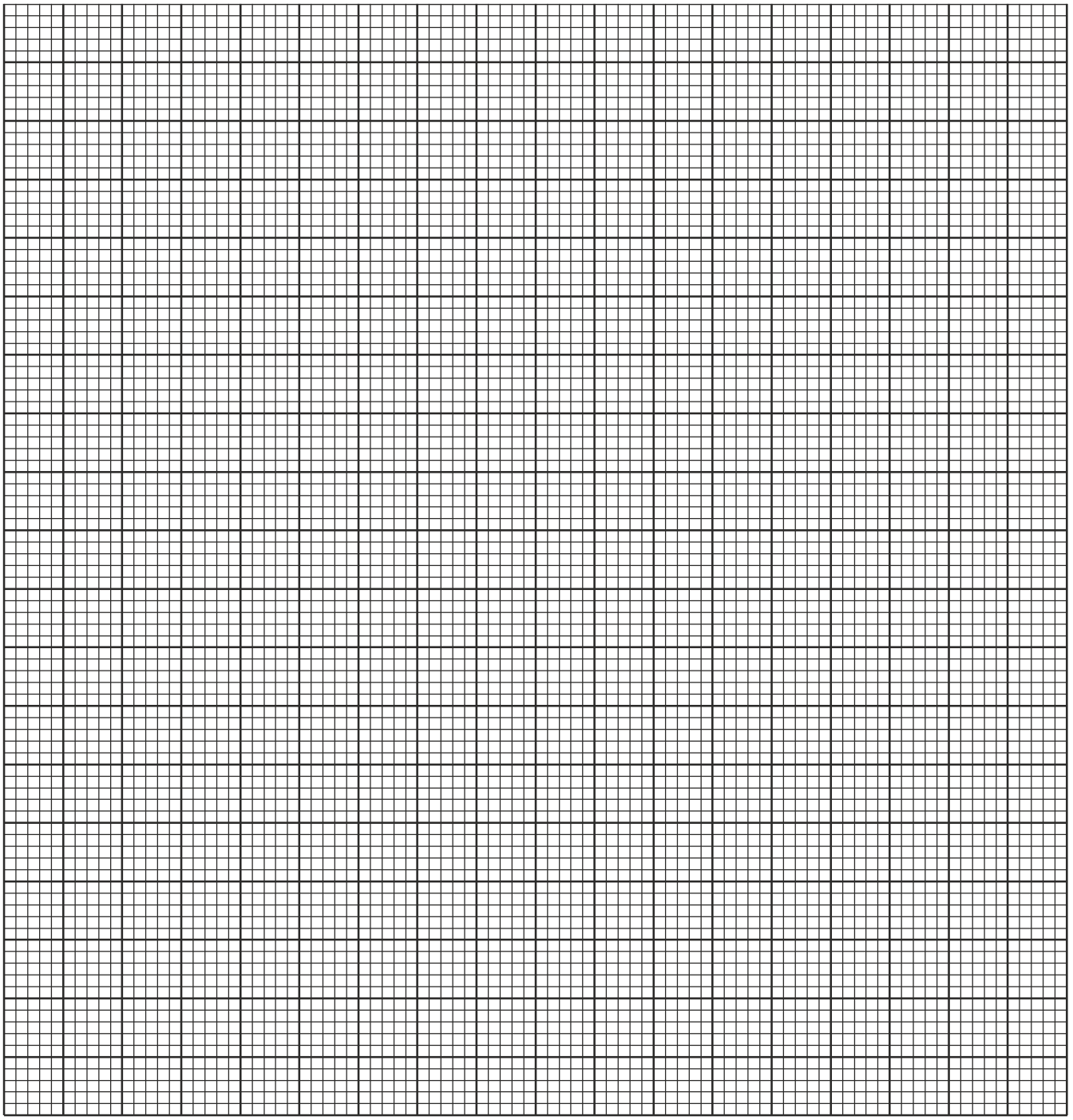
   Keep the resulting solution for use in procedure 2.

   **Table 1**

   **a)**

| **Time (sec)** | **0** | **10** | **20** | **30** | **40** | **50** | **60** | **70** | **80** | **90** | **100** | **110** | **120** | **130** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Temperature ($^0$C)** | | | | **X** | | | | | | | | | | |

**i)** Plot graph of temperature against time on the grid provided**. (3mks)**



**ii)** On the graph, show the maximum change in temperature $\Delta T$ and deter mine its value.

## Procedure 2

Transfer all the solution obtained in procedure 1 into 250ml volumetric flask. Top up with distilled water to 250ml mark. Label it with solution D. Empty the burette and fill it with solution C. Pipette 25mlof solution D and place it in 250ml conical flask. Add drops of phenolphthelene indicator and titrate solution C against solution D. Record the results in table 2. Repeat the titration of solution C against solution D and complete table 2.

**Table 2**

**b)**

| | I | II | III |
|---|---|---|---|
| Find burette reading | | | |
| Initial burette reading | | | |
| Volume of solution C ($cm^3$) | | | |

**(4mks)**

**i)** Calculate average volume of solution C used. **(1mk)**

**ii)** Calculate the number of moles of:

**I** 0.3MNaOH. **(1mk)**

**II** Hydrochloric acid in $25cm^3$ of solution D. **(1mk)**

**III** Hydrochloric acid in $250cm^3$ of solution D. **(1mk)**

**IV** .Hydrochloric acid in $50cm^3$ of solution B. **(1mk)**

**V.** Hydrochloric acid that reacted with magnesium. **(1mk)**

**VI.** Magnesium that reacted. **(1mk)**

**c).**Using your answer in iv above, determine molar heat of reaction between magnesium and hydrochloric acid. Assume the heat capacity of solution is $4.2Jg^{-1}k^{-1}$ and density of solution $1g/cm^{3.}$ **(2mks)**

**2.** You are provided with solid E. Carry out the experiments below. Write your observation and inferences in the space provided.

**a)** Place all solid E in a boiling tube. Add about $20cm^3$ distilled water and shake until all the solid dissolves label this solution E. use solution E for experiments (i) and (ii)

**i)** To $2cm^3$of solution E in a test tube in each of experiments I,II,III and IV add:

I Two drops of aqueous sodium sulphate;

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

**II** Five drops of aqueous sodium chloride;

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

**III** Two drops of barium Nitrate;

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

**IV** Two drops of lead **(ii)** Nitrate

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

**ii)** To $2cm^3$ of solution E in a test tube add 5 drops of aques sodium hydroxide. Add a piece of Aluminium foil provided to the mixture and shake. Warm the mixture and test any gas produced with the and read litmas papers.

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

| | |
|---|---|
| **(2mk)** | **(1mk)** |
| | |

**3.** You are provided with solid F. Carry out the following tests and record the observations and inference in the space provided.

**a)** Place about one third of the solid F on a clean metallic spatula and burn it in a Bunsen burner flame.

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

**b)** Place the remaining amount of solid F in a boiling tube. Add about 10cm$^3$of distilled water and shake use the mixture for tests (i) to (ii)

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

**i)** Using about 2cm$^3$ of the mixture in a test tube determine the PH Using universal indicator paper and chart.

| PH | Inferences |
|---|---|

| | |
|---|---|
| **(1mk)** | **(1mk)** |

**ii)** To about 2cm3 of the mixture in a test tube add three drops of acidified potassium manganese vii.

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

**iii)** To about $2cm^3$ of the mixture in a test tube add two or three drops of bromine water.

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

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## COMPUTER PAPER 1

***Kenya Certificate of Secondary Exams***

## TIME: 2HRS 30 MINS

**INSTRUCTIONS TO CANDIDATES**

*This paper consists of **TWO** sections **A** and **B***
*Answer **ALL** the questions in section A.*
*Answer questions **16** and any other **THREE** questions from section B*

**FOR OFFICIAL USE ONLY**

| SECTION | QUESTION | SCORE |
|---|---|---|
| A | 1- 15 | |
| | 16 | |
| | 17 | |
| | 18 | |
| | 19 | |
| | 20 | |
| | TOTAL SCORE | |

## SECTION A(40 Marks)

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

**1.** Explain disk formatting **(2mks)**

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**2.(a)** Explain why the following controls should be implemented for computer based system **(2mks)**

**(i)** Data Back- ups

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**(ii)** Password

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**(b)** List ***two*** examples of utility software in operating systems **(2mks)**

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3.Differentiate between ***source*** code and ***object*** code. **(4mks)**

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**4.**The cells P3 to P20 of a worksheet contain remarks on students ' performance such as very good, good, fair and fail depending on the average mark. Write a formula that can be used to count ALL students who have the remark "very good**".** **(3 mks)**

**5.(a)** State the purpose of registers in a computer system **(1 mk)**

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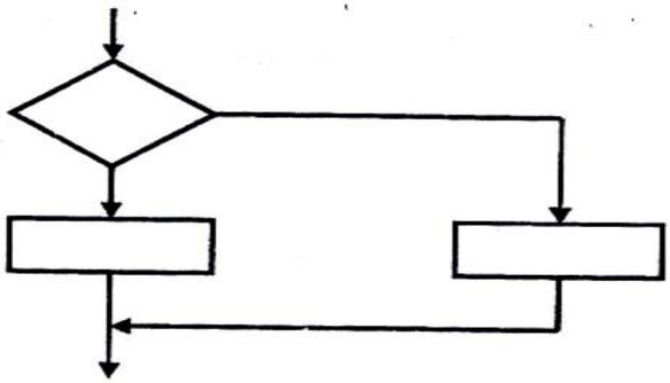
**6.** Give Three advantages of using GUI based operating system over a command line interface **(3mks)**

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**7.(a)** Name the control structure depicted by the flowchart below **( 1 mk)**



**(b)** Explain the following terms as used in system implementation **(2 mks)**

**(i) parallel running**

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**(ii) Direct change over**

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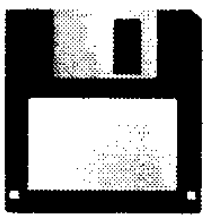
**8.(a)** Name ***two*** methods of representing **signed** numbers in computers **(2 mks)**

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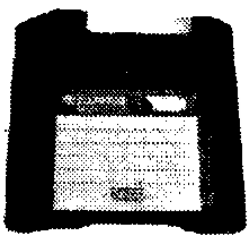
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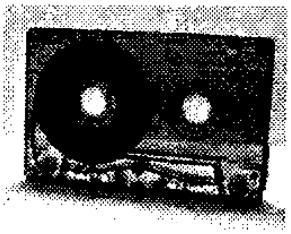
**(b)** Identify the ***four*** types of storage media shown below. **(2 marks)**



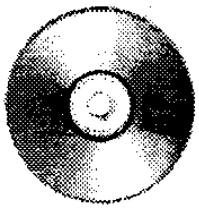
i



ii



iii



iv

**(c)** Compare the storage device **(i)** and **(iii)** above. **(1 mark)**

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**9.**Differentiate between ***Random*** and ***indexed-sequential*** file organization methods **(2mks)**

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**10.**Name ***two*** types of relationships that can be applied in database design. **(2mks)**

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11.Explain the following terms as used in word processing: **(3 mks)**

**a)Indenting**

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**b)Alignment**

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**c)Word wrap**

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**12.**Outline ***two*** ways in which computers can be applied in hotels. **(2mks)**

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**13.a)** Explain binary coded decimal code of data representation. **(1mk)**

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**b)**Define the term firewall. **(1 mark)**

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**14**.Arrange the following data units in ascending order of size.

**BYTE, FILE, BIT, NIBBLE** **(2mks)**

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**15**.State ***two*** health issues that may result from prolonged use of computers. **(2mks)**

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## SECTION B (60 MKS)

***ANSWER QUESTION 16 AND ANY OTHER THREE QUESTIONS FROM THIS SECTION***

16.**a)**State the stage of program development in which: **(4mks)**

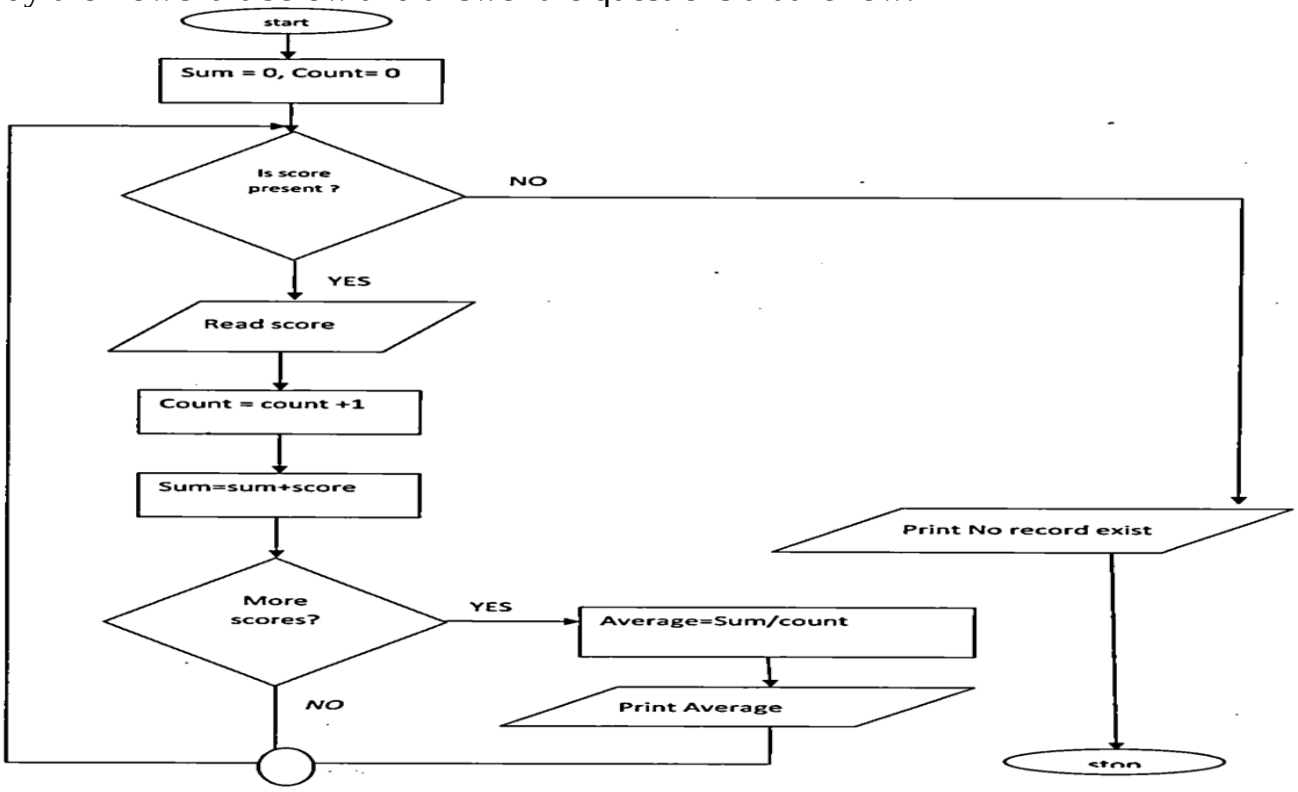
**i)**A flowchart would be drawn

**ii)**The programmer would check whether the program does as required program

**iii)**The user guide would be written

**iv)**The user guide would be written

Study the flowchart below and answer the questions that follow.




**b)** Translate the following flowchart into a pseudo code. **(8 marks)**

**c)** Assuming the following score are entered 0, 20 and 60 respectively what would be output from the flowchart. **(3 marks)**

**17.a)**Convert each of the following binary numbers to decimal equivalent given that the left most digit is a sign bit. **(4 marks)**

**i)** $00101101_2$

**ii)** $11001001_2$

**b)** Convert the decimal number 0.42 to 6 bit binary notation. **(4 marks)**

**c)**Using two's complement, subtract $11_{10}$ from $8_{10}$, leaving your answer in binary notation. **(3 marks)**

**d)** Perform the following binary operation. **(2 marks)**

$11001_2 + 1101_2 + 101_2$

**e)** Using place value method, convert $45_{10}$ to its binary equivalent. **(2 marks)**

**18.a)**What is virtual reality? **(1 mark)**

**b)** Explain the following interactive sensory equipment used in virtual reality. **(2 marks)**

**i)** Head gear

**ii)**Body suit

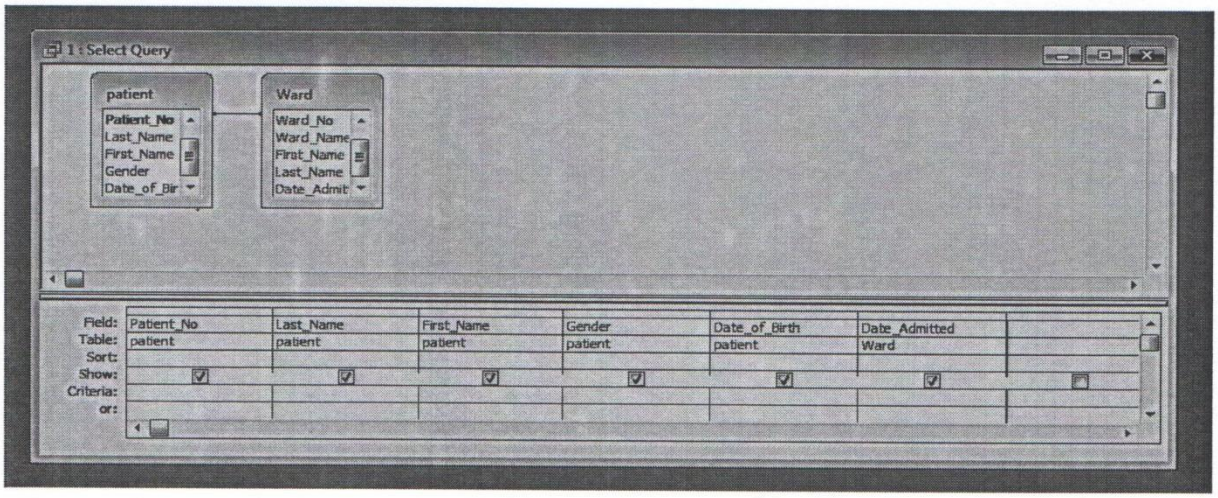
**c)**What is Artificial intelligence? **(1 mark)**

**d)**State and explain ***three*** components of an expert system. **(6 marks)**

**e)**Explain method of information gathering in system development. **(3 marks)**

**f)**List ***two*** application area of virtual reality. **(2 marks)**

**19.a)** The following is an extract of a select query (QBE) in Microsoft Access about hospital database.




**i)** Other than select queries name ***two*** other queries used in databases. **(2 marks)**

**ii)** Write an expression that will return only those patients who are 20 years' old. **(3 marks)**

b) Differentiate between bold and unbold controls as used in database forms.**(2 marks)**

c) Give **two** reasons why input screens are better data entry designs than entering data directly into a table. **(2 marks)**

d) The figure below is an extract of a worksheet containing information on household items. Use it to answer the following questions:

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | **Item description** | **No of units** | **Cost per unit** | **Total cost** | | |
| 2 | Maize flour | 20 | 210 | | | |
| 3 | Tea leaves | 64 | 185 | | | |
| 4 | Sugar | 77 | 149 | | | |
| 5 | Salt | 28 | 25 | | | |

**i)** Write a formula to calculate the total cost of sugar. **(1 mark)**

**ii)** The prices of all items increased by 10% and the value 10% is placed in cell B8. Using cell addresses with absolute referencing only, write a formula to calculate the new unit of the salt. **(2 marks)**

**iii)**Write a function to display the number of cells in which the cost per unit is equal to 25**.** **(2 marks)**

**iv)** Write a function to display the least total cost for all items. **(1 mark)**

20. A school computer laboratory is scheduled to undergo major renovations.
The lab is scheduled to receive new computer whose specifications are given below:-
Pentium IV 2.8GHz processor
40GB HDD
3½ FDD
256MB RAM
56 x CD ROM
17"SVGA TFT monitor
The computers are going to be networked and will be able to browse the internet.

**a)** Explain what is meant by the terms:- **(2 marks)**

**i)** FDD

**ii)**HDD

**iii)**SVGA

**iv)**TFT

**b)**The computer is to be networked, name ***one*** extra device that should be fitted on every computer to enable this to happen. **(1 mark)**

**c)** The computer is to receive internet facilities through the server on a dial; up system. Name and describe the function of a special device that needs to be connected to the server to complete the connection. **(1 mark)**

**d)i)**The school has to apply star topology to link up the computer. List **two** advantages of this type of topology. **(1 mark)**

**ii)**Name the central device used to connect the computers in this topology. **(1 mark)**

**e)** List ***two*** other types of topologies that the school could have opted for. **(1 mark)**

**f)** List ***four*** advantages of using a network. **(2 marks)**

**g)i)**Data transmission via the internet is done using a mode known as packet switching. Describe this data transmission mode. **(1 mark)**

**ii)**Name ***two*** other modes of transmission. **(1 mark)**

**h)i)**The school's LAN is done using UTP cable. List ***two*** advantages of using this type of cable. **(1 mark)**

**ii)**List ***two*** advantages of using fibre cable in networking. **(1 mark)**

**i)**Data flows in the school's LAN in a duplex manner. Discuss ***two*** other types of data transmission in network giving examples. **(2 marks)**

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**NAME……ADM NO……**

**SCHOOL……..……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## COMPUTER PAPER 2

## *Kenya Certificate of Secondary Exams*

## TIME: 2 ½ HOURS

**INSTRUCTIONS TO CANDIDATES**

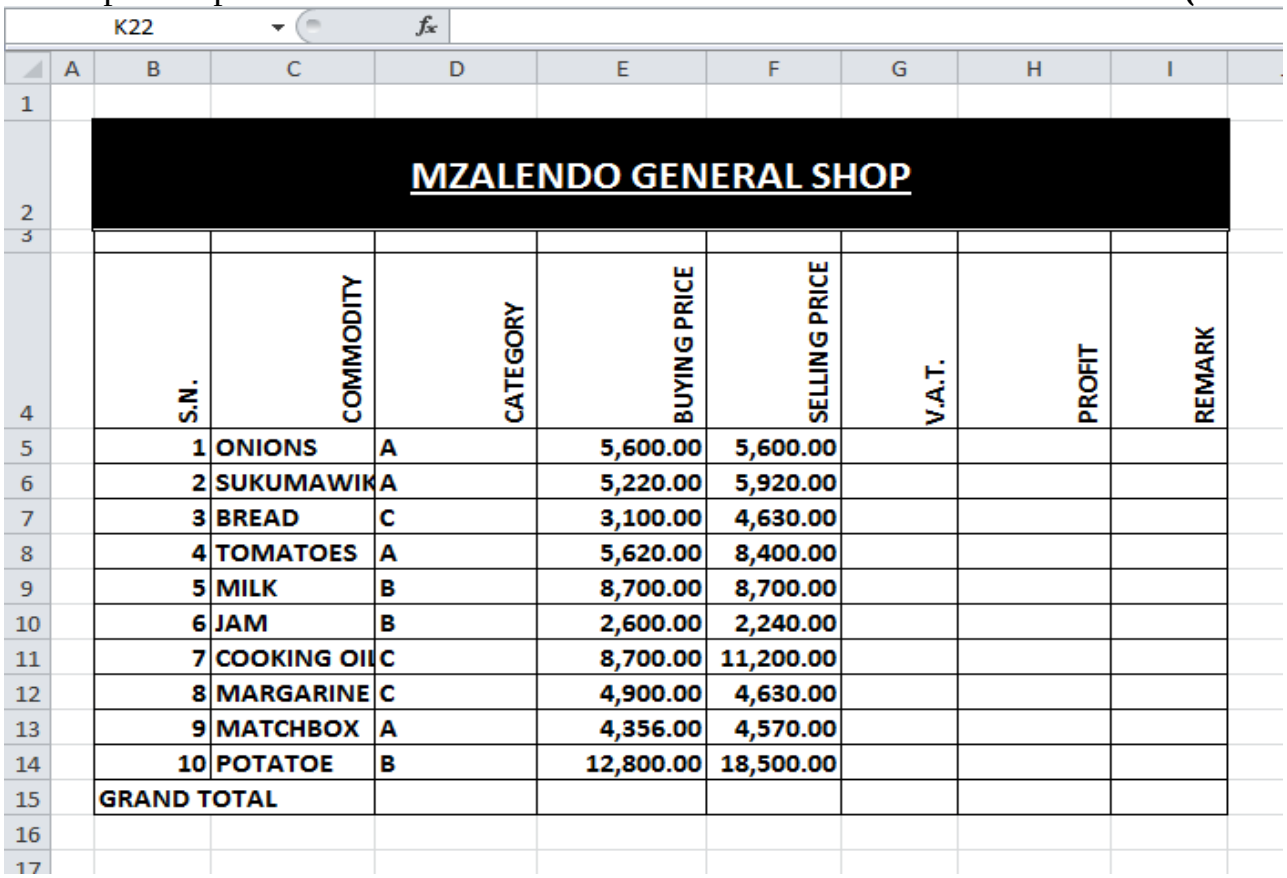
- *Type your name and index number on the top right corner*
- *Write your name and index number on the Re-Writable CD provided*
- *Passwords should not be used*
- *Answer all the questions*
- *All questions carry equal marks (50 Marks)*
- *Answers MUST be saved in the Re-Writable CD provided.*
- *Make a print out on the answer sheets given*
- *Hand in all the printouts and the Re-Writable CD*

**FOR EXAMINERS USE ONLY**

| **SECTION** | **Maximum Score** | Candidate Score |
|---|---|---|
| Question 1 | 50 Marks | |
| Question 2 | **50 Marks** | |
| **TOTAL SCORE** | **100 Marks** | |

## QUESTION 1

**a.** Open a Spreadsheet Workbook and Save it as **Mzalendo Traders**. ***(10 Mks)***



| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | |
| 2 | | MZALENDO GENERAL SHOP | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | S.N. | COMMODITY | CATEGORY | BUYING PRICE | SELLING PRICE | V.A.T. | PROFIT | REMARK |
| 5 | | 1 | ONIONS | A | 5,600.00 | 5,600.00 | | | |
| 6 | | 2 | SUKUMAWIK | A | 5,220.00 | 5,920.00 | | | |
| 7 | | 3 | BREAD | C | 3,100.00 | 4,630.00 | | | |
| 8 | | 4 | TOMATOES | A | 5,620.00 | 8,400.00 | | | |
| 9 | | 5 | MILK | B | 8,700.00 | 8,700.00 | | | |
| 10 | | 6 | JAM | B | 2,600.00 | 2,240.00 | | | |
| 11 | | 7 | COOKING OI | C | 8,700.00 | 11,200.00 | | | |
| 12 | | 8 | MARGARINE | C | 4,900.00 | 4,630.00 | | | |
| 13 | | 9 | MATCHBOX | A | 4,356.00 | 4,570.00 | | | |
| 14 | | 10 | POTATOE | B | 12,800.00 | 18,500.00 | | | |
| 15 | | GRAND TOTAL | | | | | | | |
| 16 | | | | | | | | | |
| 17 | | | | | | | | | |

**b.** Copy all the data above to sheet 2 and sheet 3 of your workbook ***(2 Mks)***

**c.** Rename sheet 1 to ***"original";*** sheet 2 to ***"filters"*** and sheet 3 to "***subtotals***" ***(3 Mks)***

**d.** Find the profit or loss given that the profit is selling price less the buying price.

**e.** Find the V.A.T given that it is 15% of the profit**.** **(3 Marks)**

**f.** Using formulas on "***original",*** calculate in the appropriate cells, the amounts spent on ***buying*** all the items and the money obtained from the ***sales*** ***(2 Mks)***

**g.** Include a column named ***comment*** and use the **IF function** to fill it with either the word "***Profit***", "***Flat"*** or ***"Loss"*** depending on whether the item fetched a profit, was sold at the same rate (as buying) or a loss was incurred. **(5 mks)**

**h.** On Original sheet, insert a header (Your name and index Number) and footer ( Page number**)** **(4 Marks)**

**i.** On the ***"Filters"*** sheet, filter the data so that only those items of **category A** that fetched profits are displayed ***(3 Mks)***

**j.** In original, format the buying price, selling price, VAT and the profit into currency KSH. **(4 Marks)**

**k.** In original sheet, insert a column chart to compare between buying price, and the selling price and give it the title "MZALENDO" at the top. **(8 Marks)**

**l.** Copy the chart into sheet 4 and rename the sheet as Chart. **(3 Marks)**

**m.** Print the Original sheet, Filter sheet and the column chart. **(3 Marks)**

## QUESTION 2

**Use** the following information to answer the questions that follows:

| Student Name | Date of Birth | Adm Date | Age | Fee Balance | Adm. No | Address |
|---|---|---|---|---|---|---|
| 1. Kibet Rop | 12/8/2001 | 12/1/2020 | | 15,000/= | 4017 | 81 Bomet |
| 2. Steve Bett | 12/5/2002/ | 12/1/2020 | | 7,000/= | 4319 | 31 Mulot |
| 3. Selly Kirui | 8/6/2005/ | 12/1/2020 | | 3,000/= | 3982 | 40 Kericho |
| 4. George Langat | 6/8/2000 | 12/1/2020 | | 11,000/= | 4009 | 38 Sotik |
| 5. Betty Tele | 5/6/2002 | 12/1/2020 | | 8,000/= | 4422 | 230 Kisii |
| 6. Wilson Siele | 7/9/2001 | 12/1/2020 | | 6,000/= | 4200 | 121 Narok |
| 7. Seila Koech | 12/6/2004 | 12/1/2020 | | 1,000/= | 4070 | 73 Nakuru |
| 8. Mary Chebet | 11/6/2003 | 12/1/2020 | | 17,000/= | 4222 | 32 Soimet |

**a)** **(i)** ***Create*** a database called ADMISSIONS and within it prepare a table called ***students*** containing the above information. **(12mks)**
**(ii)** Set an appropriate primary key and data types for the table . **(4mks)**

**b)** Get the age of each student given that Age = Adm Date – Date of Birth. **(4 Marks)**

**c)** In your table under the field of fee balance sort your data in ***ascending*** order and save as sortable. **(4mks)**

**d)** ***Create*** a query from your table and carry out the following:
**(i)** Set a criteria to show students with a fee balance ***less than 8,500/=*** **(6mks)**
**(ii)** Set a criteria to show students names starting with letter **S.** **(6mks)**

**e).** ***Create*** a form called ***records*** that shows all fields from the above table. **(6mks)**

**f).** ***Create*** a tabular report from the student's table **(8mks)**

**g).** Print the students table, fee balance less than 8500 query, and student's table report. **(4 Marks)**

**NAME……ADM NO……**

**SCHOOL……..……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## CRE PAPER 1

## *Kenya Certificate of Secondary Exams*

## TIME: 2 ½ HOURS

**INSTRUCTIONS TO CANDIDATES**

1. *Write your name and admission number in spaces provided.*
2. *Sign and write the date.*
3. *Attempt any five questions.*
4. *Each question carries 20marks.*

**FOR EXAMINERS USE ONLY**

| 1 | 2 | 3 | 4 | 5 | 6 | TOTAL |
|---|---|---|---|---|---|---|
| | | | | | | |

**1a)** Identify ***seven*** reasons why the Bible is referred to as a library. **(7mks)**
**b)** State the effects of the translation of the Bible into African languages. **(8mks)**
**c)** State ***five*** different occasions when Christians use the Bible. **(5mks)**

**2a)**Describe the covenant ceremony between God and Abraham in Genesis 15: 1 - 19. **(7mks)**
**b)** Identify ***seven*** ways in which the promises of Abraham were later fulfilled. **(7mks)**
**c)** Explain what Abraham learnt about God from his experience on mount Moriah. **(6mks)**

**3a)**Identify ***seven*** failures of King Solomon. **(7mks)**

**b)**Explain how Jeroboam contributed to the spread of idolatry in Israel. **(6mks)**
**c)** Give reasons why Christians build churches. **(7mks)**

**4a)**Outline ***seven*** similarities between the Old Testament and the Traditional African Prophets. **(7mks)**
**b)**Outline the teaching of Prophet Amos on the Day of the Lord. **(7mks)**
**c)** Mention ***six*** ways in which Christians can avoid God's punishment today. **(6mks)**

**5a)**Explain ***seven*** occasions in which Nehemiah prayed. **(7mks)**
**b)**What promises did the Israelites make during the renewal of the covenant under Nehemiah? **(7mks)**
**c)** State ***six*** importances of prayer in Christian life. **(6mks)**

**6a)**Explain the importance of children in Traditional African Society. **(7mks)**
**b)**Identify ***six*** ways of choosing a marriage partner in Traditional African Society. **(6mks)**
**c)**Outline ***seven*** reasons why the church is opposed to female genital mutilation. (F.G.M) **(7mks)**

**NAME……ADM NO……**

**SCHOOL……..……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## CRE PAPER 2

## *Kenya Certificate of Secondary Exams*

## TIME: 2 ½ HOURS

**INSTRUCTIONS TO CANDIDATES**

1. *Write your name and admission number in spaces provided.*
2. *Sign and write the date.*
3. *Attempt any five questions.*
4. *Each question carries 20marks*.

**FOR EXAMINERS USE ONLY**

| 1 | 2 | 3 | 4 | 5 | 6 | TOTAL |
|---|---|---|---|---|---|---|
| | | | | | | |

**1)(a)** Outline Nathans prophecies about the messiah (2samue 17:3-17) **(6mks)**

**b)** Explain simeon's prophetic message about Jesus during his dedication**. (7mks)**

**c)** From Mary's song, the magnificent gives seven ways in which the church can help to uplift the lives of less fortunate. **(7mks)**

**2)(a)** Describe the cure of a man who had leprosy(Luke 5:12-14) **(6mks)**

**b)** State ***seven*** lessons Christians learn from the healing of the woman with the flow of blood **(7mks)**

**c)** In what ways can Christians in Kenya assist the physically challenged members of

society **(7mks)**

**3)** **a**) Explain ***seven*** reasons why Jesus used parables in his teachings **(7mks)**
**b)** narrate the parable of the widow and the unjust judge (Luke 18:1-8) **(6mks)**
**c)** Give ***seven*** lessons learnt from the actions of the pilate during the trial of Jesus **(7mks)**

**4)(a)**Give ***seven*** instructions Paul gave to the church in Corinth on how to use the spiritual gifts **(7mks)**
**b)** Explain how the unity of believers is expressed in the image of the bride(rev 21:1-12,2cor 11:2)
**c)** Outline the importance of the holy spirit to Christians today **(7mks)**

**5)(a)** Identify ***eight*** Christians teachings on work (**8mks)**
**b)** State the role of professional ethics. **(8mks)**
**c)** Explain ***six*** ways in which the church is helping to reduce the rate of unemployment **(6 mks)**

**6)(a)**What was the impact of money economy on traditional African community **(6mks)**
**b)**Outline ***seven*** obstacles to effective maintenance of law ,order and justice in Kenya today**.** **(7mks)**
**c)** List down ***seven*** effects of scientific discoveries that remain a challenge to many governments today **(7mks)**

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## ENGLISH PAPER 1

## *Kenya Certificate of Secondary Exams*

## TIME: 2 HOURS

**INSTRUCTIONS TO CANDIDATES.**

***1)*** *Write your name and index number in the spaces provided.*
***2)*** *Answer all questions in this question paper.*
***3)*** *All your answers should be written in the spaces provided in this question paper.*
***4)*** *Contains four printed pages.*

**FOR EXAMINER'S USE ONLY.**

| Question | Maximum Score | Candidate's Score |
|---|---|---|
| 1 | 20 | |
| 2 | 10 | |
| 3 | 30 | |
| Total | 60 | |

### *1. FUNCTIONAL WRITING(20 marks)*

Imagine you are the principal at Kilimambogo Teachers Training College. Lydia Moraa, a former employee at the college, has been invited to attend an interview at Rift Valley Institute of Technology. The principal has written to you requesting that you provide information about Moraa's; professionalism, inter-personal relationship, reliability, mastery and content delivery and her general conduct. Send

this information to the principal via an email. Copy in, the chairperson of the board without the Principal knowing that the chair has the same information.

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2. ***Read the passage below and fill in the blanks with the most appropriate word. (10marks)***

The world is fast hurtling **1……………………** self-imposed isolation, with Denmark **2……………...**Italy as the other European Nation **3…………………..** quarantine.

Indications show that 4**.....** more countries will go down that 5 **.....**as the corona virus that caused Covid-19 spreads 6 **.....** the world.

The World Health Organization (WHO) declared the Corona virus a global **7.....** on Wednesday evening. WHO Director-General Tendros Adhanom Ghebreyesus said **8.....** a terse statement that this is the first time the world is battling a pandemic **9.....** as corona virus **10.....**

*(Adopted from the Daily Nation Friday, March 13, 2020 by Elizabeth Merab and Nasibo Kabale)*

## ***3.ORAL SKILLS (30marks)***

***a. Read the narrative below and answer the questions that follow.***

***THE BEAST WHO BOASTED***

Once upon a time, an elephant, a lion, a fox and a peacock met at a pond in the forest. The Elephant began flapping his huge ears, looked down at the others from his great height and blew his trumpet.

"You have agreed that I am the strongest of all the Beasts". With my tusks, I can tear through the thickest forest. Trees are like twigs to me" he trumpeted.

"You may be strong," roared the lion, "but nothing compares to my bravery. It is because I am brave that I am the king of the forest."

"Not at all. Brains are more important than bravery and more strength," said the fox. "I live extremely well just by my wits."

"To be able to crash through woods, or leap into thin air, or sneak into the chicken yard is worthless compared to beauty," said the peacock. He demonstrated this by preening his colorful feathers in a dance. All this while, an ugly toad, whom no man had ever hunted, had been listening to the beasts bragging. "Men kill the elephant to make boxes and jewellary from the ivory of his tusks," he said. "They hunt the lion and decorate their walls with his skin because his courage leads him to prey on their heard. Because he can find his way into the farmyard the fox's far is used on the collar of a robe. The peacocks' glorious blue gold feathers are used to make a fan for a lady. It is what you boast of that is indeed your downfall."

***(Adopted from Oral literature of Asians in East Africa by Mubina Hassanali. Kirmani and Sanaullah Kirmani. Nairobi, East Africa Education Publisher 2002)***

**i.** Identify any three examples of onomatopoeia in this narrative. **(3 marks)**

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**ii.** Which words would you particularly emphasize in the elephant's speech? **(2 mks)**

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**iii** How would you deliver the speech by the ugly toad? Explain. **(3 mks)**

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**b**. for each of the following words indicate the stressed syllable using a stress marker, so that it gives the meaning of the definition given after it. (4 marks)

**i.** Re.fuse -(rubbish/waste)
**ii.** Re.bel -(a person who fights against an established government)
**iii.** De.sert -(To abandon)
**iv.** Pro.gress -(To advance or develop)

**c.** Imagine you meet a stranger who is asking for direction to a neighboring school. Write the dialogue that took place between you and the stranger. You may use some or all of the following landmarks in your dialogue: a shopping center, a primary school, a church, an unfinished house, a water tank and a maize plantation. **(6 marks)**

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**d.** In the following sets of words identify the underlined speech sound that is odd.

**(4 marks)**

**i.** **G**ene, **J**udge, **J**une, **G**ore.

**ii.** **E**xhort, **E**xist, **E**xile, Exhibit.

**iii.** **J**oy, **J**ust, **G**aoler, **G**ate.

**iv.** **A**mbush, **A**mass, **A**moeba, **A**maze.

**e.** You have been appointed to a committee to interview candidates who have applied for the post of your school patron.

**(i)**What two things would you do before the date of the interview to ensure that you are well prepared? **(2mks)**

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**(ii)**Apart from the interviewee's oral presentations, what other two communicative competencies would you lookout for during the interview? **(2mks)**

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***f. Read the following telephone conversation between Mato and the secretary and then answer the questions that come after it.***

Mato: I am Mato and want to speak with the manager.
Secretary: Why? What do you want with him?
Mato : That is none of your business. I want to speak with the manager now.
Secretary: He is not in. Say what you wanted and I will tell him.
Mato: Why are you wasting my time? Tell him to call me.
Secretary: How will he reach you? What is your telephone...
(Phone is disconnected)

1. Identify any four instance of lack of telephone conversations etiquette in the above conversation. **(4marks)**

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**NAME……..……ADM NO……**

**SCHOOL……..…..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## ENGLISH PAPER 2

***Kenya Certificate of Secondary Exams***

## TIME: 2 ½ HOURS

**INSTRUCTIONS TO THE CANDIDATES**

- *Write your **name** and **index number** in the spaces provided.*
- *Sign and write the **date** of examination in the spaces provided above.*
- *Answer **all** questions in this question paper.*
- *Answers to all questions **must** be written in the spaces provided in this booklet*

**FOR EXAMINER'S USE ONLY**

| QUESTION | MAXIMUM SCORE | CANDIDATE'S SCORE |
|---|---|---|
| 1 | **20** | |
| 2 | **25** | |
| 3 | **20** | |
| 4 | **15** | |
| **Total Score** | **80** | |

## ***1.Comprehension (20marks)***

***Read the passage below and then answer the questions that follow***

People must be careful the kind of personal information they post on sites. It is difficult to imagine life in what seems like a century ago without the internet and the cell phone. Just how did we manage our lives before the age of instant communication at a fraction of the cost of the landline?

As a little child in 1960's, I could not visualize what my teenage sons do with technology today.

Could I have even dreamt of a cell phone, a device that I could have taken to school with me and been able to chat with my friends wherever I was and whenever I wanted? You know the answer. However, today's heaven of instant communication can easily turn into the hell of deadly sin. I mean quite literally.

Instant communication devices and portable entertainment products could of course be addictive to anybody, but such addiction can be particularly destructive to young people in school. They can distract students from homework and house chores. They can also damage ear drums. Think of the **ubiquitous** iPod which the youth equate to oxygen without which life is unsuitable!

I have even seen some grown men behaving like teenagers with iPods! Last year, a person was killed by a vehicle that spun out of control and hit him as he crossed the road somewhere in the United States. The footage showed clearly that the victim could have heard or seen the rogue vehicle had his ears not been plugged up to loud music.

While I do not want to sound like a Neanderthal, I nevertheless would like to reflect on the perils of this new gadgetry and technology. The first obvious point is that not all technology is good. Think of the A-Bomb for example, and you get my point.

I disagree with those who argue that it is not technology that is bad, but the users who misapply it. This is how some scientists justify their abdication of social responsibility. Thus we do not have to buy every little silly gadget that market puts out. Haven't you noticed that the companies always time the release of these gadgets to Christmas, or some other consumer holiday? They surely know how to apply peer pressure and pit children against parents as a marketing tool. Sometimes I wonder whether capitalism can be any more devious!

To be sure I cannot gainsay the benefits of new technologies. The computer and the internet are without doubt the greatest inventions of our age. Information and knowledge that was inaccessible just several decades ago is now a click away even in the remotest village in the world. And it is all quite cheap. Access to information and knowledge is being democratized

in a way that was unthinkable just a few decades ago. Think about the revolution of the cell phone for the individual communication and business transactions. Landlines are becoming virtually obsolete. It is this revolution that should lift millions out of poverty in the near future.

But these advances come with perilous clouds over them. I particularly, I want to focus on social networking sites and the dangers of the instant transmission of information and images. We have known for a long time that the internet is the new Wild West where everything goes.
Countries that are afraid of democracy and dissent, like China or Syria, limit, monitor, control, censure or deny access to the internet. They claim they must keep at bay pornography and sexual predators like pedophiles who troll the interment with demonic schemes. These are real problems, but do not think that censorship is the answer. Cyber surveillance by law enforcement and the prosecution of these malignant forces is the only effective and civilized response.

But individuals must themselves act responsibly. Ultimately, the **pivot** of any democracy responsible citizen action. This is where parents, civil society and the media come in. Take Face Book, the wildly popular social networking site, for example. Some of the things I have seen there are downright stupid, dangerous, malevolent or just plain crazy. Teenagers on these sites sometimes communicate with imposters bent on luring the naïve to a dead end. How many times have we seen reports of some 60-year-old pervert posing as a teen? Even scarier, how many times have we read about such rendezvous ending in a fatality? There are other less deadly, but very destructive dangers. Prospective employers are increasingly looking into social networking sites for personal information about applicants. Even some colleges are snooping around for information about prospective students. There are reports that some people have been rejected because of the personal information they posted to the sites. Such information has ranged from **lurid** pictures to abusive language.

This means that young folks must be very careful about posting intimate details including personal pictures and other personal data such as birth dates, personal ID numbers and home address on such sites. Such information about yourself can only hurt you if displayed for the entire world to see. Teenagers need to be particularly careful about the new fad of "**sexting**". This is an epidemic in New York among teenagers. Teens and other young people are sending nude pictures of themselves to their friends or lovers. A large number of such pictures have been shared widely beyond the intended audience. In one case, a child whose nude pictures were revealed took her own life. It can cause untold grief.

**Questions**

**1.**Why not censor modern technology? **(2mks)**

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**2.**What is the purpose of a cell-phone? **(2mks)**

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**3.**make notes on the dangers of modern technology. **(6mks)**

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**4**.What is the attitude of the author towards modern technology? **(2mks)**

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**5.**How do scientists justify their innovations**.** **(1mk)**

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**6.**What is implied by the expression "perilous clouds" **(2mks)**

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**7.**Write the following sentence in indirect speech. **(1mk)**

I wonder whether capitalism can be more devious!

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**8.**Explain the meaning of the following words; **(4mks)**

**i)** Lurid

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**ii)** Pivot

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**iii)** Sexting

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**iv)** Ubiquitous

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***Read the extract below and answer the questions that follow. (25 marks)***

"Who? Not me," Resian said vehemently "I don't want to be a parent. At least not in the foreseeable future.

I want to study. When I'll have obtained my degree, other peripheral matters such as a husband, children and such may be considered."

They were walking back to the homestead talking animatedly when they were accosted by a tall heavyset young man with a thick dark beard and moustache. He wore a pair of faded jeans and a dirty blue shirt. On his face was a wide impudent grin. Taiyo glanced at the young man and looked away. She moved closer to Resian and nudged her to change direction. But the man walked directly to Taiyo. On seeing the man approaching, a heavy knobkerry in his hand, Resian almost fainted.

"Please do not harm us," she pleaded. "We do not have any money with us."

"Who told you I want any money?" the man jeered as he strode menacingly towards them. "Are you

not the *intoiyenemengalana* from Nakuru town?" he asked laughing contemptuously. "I want to have a good look at you and know what kind of stuff you are made of!" He roughly grabbed Taiyo's arm.

"Leave my sister alone!" Resian hissed indignantly lifting her eyes and glaring into his. "Let go her arm at once!"

"Let go of my hand," Taiyo demanded, trembling with anger. "We are not the kind of women you have in mind!"

"What women!" the man retorted acidly. "Soon, you will be able to differentiate decent women from *intoiyenemengalana."*

Taiyo tried to wrestle her arm from the man's grip without success. But suddenly, he seemed to change

his mind. With a sour smile, he spat and glared at the girls. Then, releasing Taiyo's hand, he told them: "You have not seen the last of me. Soon you will come to know that there is no place in our society for women of your ilk." He turned and disappeared down the road as suddenly as he had appeared.

The two girls sighed heavily and shook their heads as they watched him walk away. Although they had put up brave faces, they were terribly shaken.

*"Thank God his intention was not to rape us," Resian said tears streaming down her face. "We* would have been helpless in the hands of such a brute."
Taiyo bit her lower lip struggling to maintain control. "His intention could have been worse than rape," she said, tears of anger and indignation welling up in her eyes.
They quickened their steps to their uncle's home. True, the incident had taken the sparkle from the day that had begun so joyfully, but they reasoned that it could have been worse. The girls debated as to whether to inform their parents of the ordeal. They knew their mother would understand and empathize with them. But judging from past experience, their father would be less supportive. He would blame them for having dared venture into an unknown territory without his approval. Finally, they decided to keep the incident to themselves.

**(a)** Briefly discuss the events leading to Resian's question "Who?" in the excerpt. **(3marks)**

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**(b)** "Thank God his intention was not to rape us," Resian said tears streaming down her face. "We would have been helpless in the hands of such a brute." *(Rewrite as a reported speech*) **(1mark)**

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**(c)** Describe ***two*** similar traits demonstrated by both Resian and Taiyo in the excerpt. **(6marks)**

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**(d)** Discuss ***two*** stylistic devices used by the author in the excerpt**.** **(4marks)**

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**(e)** Highlight and illustrate ***two*** themes presented in the excerpt. **(4marks)**

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**(f)** "But judging from past experience, their father would be less supportive." Point out two incidences in which the father shows less support to his daughters from what happens in the rest of the novel. **(2marks)**

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**(g)** What happens immediately after this excerpt? **(2marks)**

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**(h)** Give the meaning of the following words as used in the excerpt**.** **(3marks)**

**i.** vehemently……...

**ii.** accosted…….

**iii** .ilk…….

## ***3. Read the poem below and answer the questions below 20marks)***

### ***Advice to my son***

The trick is, to live your days
as if each one may be your last
(for they go fast, and young men lose their lives
in strange and unimaginable ways)
but at the same time, plan long range
(for they go slow: if you survive
the shattered windshield and burning shell
you will arrive
at our approximation here below
or heaven or hell)

To be specific, between the peony and the rose
Plant, squash and spinach, turnips and tomatoes;
beauty in nectar
and nectar, in desert saves
but the stomach craves stronger sustenance
than the homed vine.
therefore, marry a pretty girl
after seeing her mother;
speak truth to one man,
work with another;
and always, serve bread with your wine.
But son,
Always serve wine
**(Peter Meinke)**

**a)** Who is the speaker in the poem. Illustrate your answer. **(2marks)**

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**b)** In what circumstances do many young people die? Illustrate your answer from the poem. **(4marks)**

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**c)** What do heaven and hell symbolize? **(2marks)**

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**d)** Identify items in the poem that represent life's necessities on one hand and life's luxuries on the other. **(2marks)**

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**e)** Identify and illustrate the use of the paradox in the poem. **(3marks)**

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**f)** What does the persona mean by 'marry a pretty girl after seeing the mother?" **(2marks)**

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**g)** The stomach craves stronger sustenance. (Rewrite using (What") **(1mark)**

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**h)** Give two meanings of each of the following words. **(2marks)**

-Last

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-Fast

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**i)** Give the meaning of the last two lines. **(2mark)**

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## 4. GRAMMAR (15MKS)

**a) <u>Rewrite the following sentences according to the instructions given (6mks)</u>**

**i)** He will not be given a driving license. He passes the road test (Rewrite as one using'unless')

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**ii)**The woman left the child with a neighbor and went to the market. (Begin: leaving….)

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**iii)**The boys went to play in the field (underline the adverbial)

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**iv)**He said that he had not insulted me. (Use: 'denied')

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**e)** Write the following sentence in indirect speech **(1mk)**

"These are juicy mangoes," Ken said.

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**f)** You do not require to cheat to pass **(1mk)** (Supply a suitable question tag)

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**b) Supply the correct preposition to complete the sentences given. (3mks)**

**i.** Property worth millions of shillings went up …… flames.

**ii.** The three boys shared the bread ……themselves.

**iii.** We should strive to live ……our means.

**c) Use the correct form of the word in brackets to fill in the blank spaces in the sentences below.(3mks)**

**i.** The audience was offended by the …… (sense) of the speaker.

**ii.**The ……(acquire) of a university degree is a great milestone to a student.

**iii.**Everyone should obey the law …… (regard) of their position in the society.

**d)Use the correct alternative to complete the sentences below (3mks)**

**i.**Teaching ……(practice/practice) is not an easy job for teacher trainees.

**ii.**The prophet's …… (prophesy/prophecy) was misleading to his audience.

**iii.**He …… ((insured/ensured) his car with Madison.

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## ENGLISH PAPER 3

***Kenya Certificate of Secondary Exams***

## TIME: 2 ½ HOURS

**INSTRUCTIONS TO CANDIDATES**

- **a)** Answer ***three*** questions only
- **b)** Questions ***one*** and ***two*** are compulsory
- **c)** In question three choose only ***one*** of the optional texts you have prepared on.
- **d)** Where a candidate presents work on more than one optional text, only the first to appear will be marked
- **e)** Each of your essay must not exceed ***450*** words
- **f)** All answers should be written in the answer booklet provided
- **g)** This paper consists of ***2*** printed pages
- **h)** Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing
- **i)** Candidates ***must*** answer ***ALL*** questions in English

**For Examiner's use only**

| Question | *Maximum Score* | Student's Score |
|---|---|---|
| 1. | 20 | |
| 2. | 20 | |
| 3. | 20 | |
| Total | 60 | |

1. **Imaginative Composition (Compulsory)**
   **Either**

**(a)** Write a story that ends with the following sentence.
I never believed that I would see Kisali again.
**Or**

**(b)** Write a composition explaining what Kenyan youths can do to help in the fight against corruption.

2. **The Compulsory Set Text**

Henrik Ibsen, A Doll's House
"Appearances are often misleading." Validate this statement basing your illustrations from Henrik Ibsen's A Doll's House.

3. **The Optional Set Texts**

Answer any **one** of the following three questions.
Either

**(a) The Short Story**

Memories We Lost and Other Stories'
Using Leo Tolstoy's story "How Much Land Does Man Need," write an essay to prove that "He who wants all loses all."
Or

**(b) Drama**

David Mulwa, Inheritance
The peace, stability and growth of a nation is dependent on the people in leadership. Write an essay in support of this assertion using illustrations from Inheritance.
Or

**(c) The Novel**

John Steinbeck, The Pearl
Kino was never meant to be rich. Discuss using The Pearl as basis for your argument.

**NAME……ADM NO……**

**SCHOOL……..……..CLASS……**

**DATE……**

# FORM 4 KSE PREDICTION 2 EXAMS

## GEOGRAPHY PAPER 1

## *Kenya Certificate of Secondary Exams*

## TIME: 2 ½ HOURS

### INSTRUCTIONS TO STUDENTS

- *This paper has **two** sections: **A** and **B***
- *Answer **ALL** the questions in **section A.***
- *In section **B** answer **questions 6** and any other **TWO** questions.*
- *All the answers must be written on the foolscaps provided.*
- *Candidates must answer the questions in English.*

**FOR EXAMINER'S USE ONLY**

| Section | Questions | Maximum Score | Candidate's Score |
|---|---|---|---|
| A | 1 - 5 | 25 | |
| B | 6 | 25 | |
| | | 25 | |
| | | 25 | |
| | | Total Score | |

## SECTION A (Answer all questions from this section)

**1.(a)**Give the ***two*** main types of eclipses. **(2 marks)**

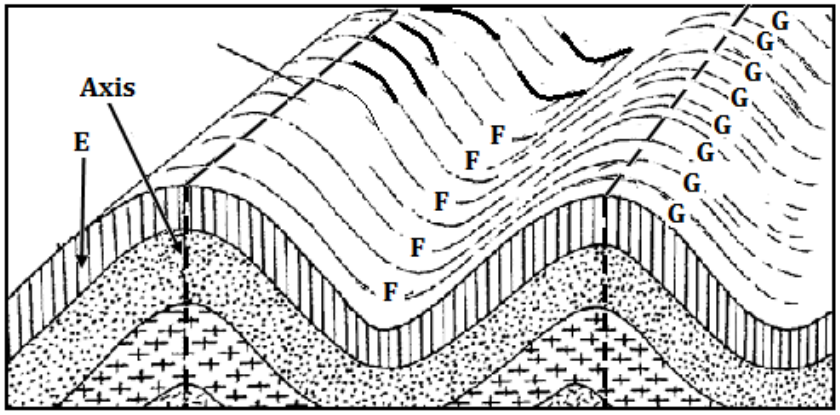
**(b)**State ***two*** characteristics of the oceanic crust. **(2 marks)**

**2.(a)**Outline ***two*** ways in which clouds are classified. **(2 marks)**

**(b)**State ***three*** ways in which wind affects the weather of a place. **(3 marks)**

**3.(a)**Define the term folding. **(2 marks)**

**(b)**The diagram below represents parts of a fold. Name the parts marked E, F and G. **(3 marks)**




**4.(a)**Give ***two*** examples of mechanically formed sedimentary rocks. **(2 marks)**

**(b)**List ***three*** types of rock metamorphism. **(3 marks)**

**5. (a)**What is mechanical weathering. **(2 marks)**

**(b)**Give ***three*** causes of chemical weathering. **(3 marks)**

## *SECTION B (Answer question 6 and any other two questions)*

**6.**Study the map of Yimbo provided and use it to answer the following questions.

**(a) (i)** Convert the map scale to a statement scale. **(2 marks)**

**(ii)**Give ***two*** evidences of water transport in the area represented. **(2 marks)**

**(iii)**In which hemisphere is the area covered by the map located? **(1 mark)**

**(b)(i)**What is the area in square kilometres of the region representing Busia district on the map? **(2 marks)**

**(ii)**Name ***two*** types of swamps in the area covered by the map. **(2 marks)**

**(c)(i)**Identify ***four*** types of natural vegetation in the area covered by the map. **(4 marks)**

**(ii)**Citing evidence from the map, give ***two*** economic activities carried out in the area covered by the map. **(4 marks)**

**(d)(i)**Using a vertical scale of 1cm to represent 20 metres, draw an accurate cross section along northing 83 from easting 26 to easting 32. On the cross section, mark and name: a hill, a river and Road C 506 **(6 marks)**

**(ii)**Calculate the vertical exaggeration of the cross section. **(2 marks)**

**7.(a)**What is faulting? **(2 marks)**

**(b)**Give ***two*** differences between normal and reversed faults. **(4 marks)**

**(c)(i)**Apart from escarpments, list ***four*** other features formed due to faulting. **(4 marks)**

**(ii)**With the aid of well labelled diagrams, describe how a horst is formed. **(7 marks)**

**(d)**Explain ***four*** ways in which features resulting from faulting influences human activities. **(8 marks)**

**8.(a**)Differentiate between natural and secondary vegetation. **(2 marks)**

**(b)(i)**List ***four*** main types of natural vegetation in Kenya. **(4 marks)**

**(ii)**Explain ***four*** factors that influence the distribution and type of natural vegetation in Kenya. **(8 marks)**

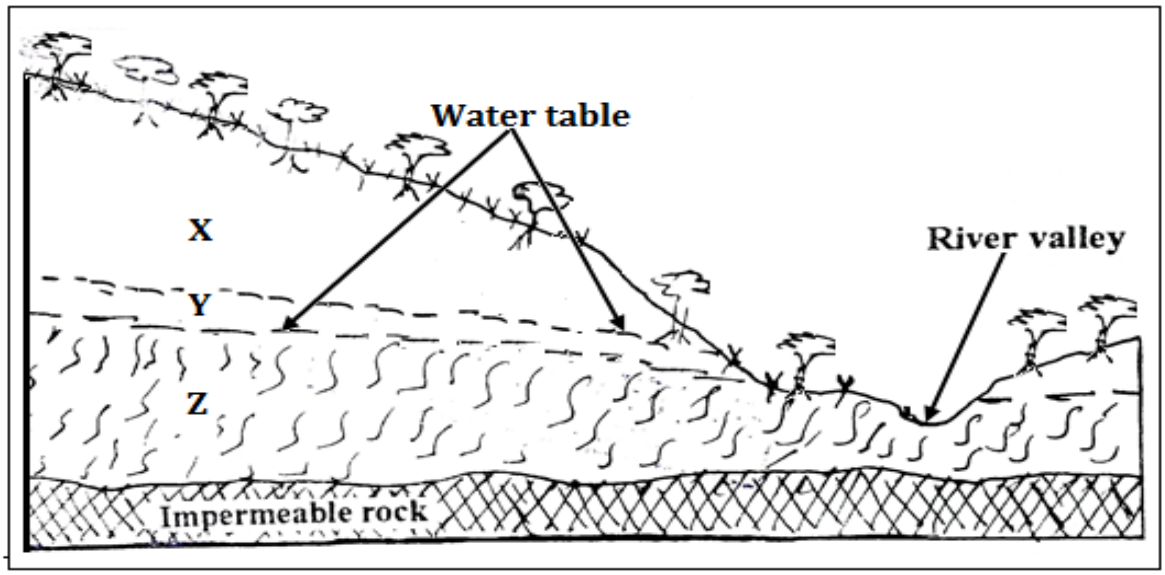
**(c)**Describe the characteristics of tropical monsoon forests. **(5 marks)**

**(d)**You intend to carry out a field study on natural vegetation in your sub county.

**(i)**State ***three*** reasons why you would prepare a route map. **(3 marks)**

**(ii)**Outline ***three*** characteristics of vegetation that you would study. **(3 marks)**

**9.** The diagram below shows a vertical section through the zones of underground water.




**(a)(i)**Name the parts zones marked **X, Y** and **Z** **(3 marks)**

**(ii)**State ***three*** major sources of ground water. **(3 marks)**

**(b)**Explain how the following factors influences the presence of underground water.

**(i)** Amount of rainfall **(2 marks)**

**(ii)** Nature of rocks in an area **(2 marks)**

**(iii)** Slope gradient **(2 marks)**

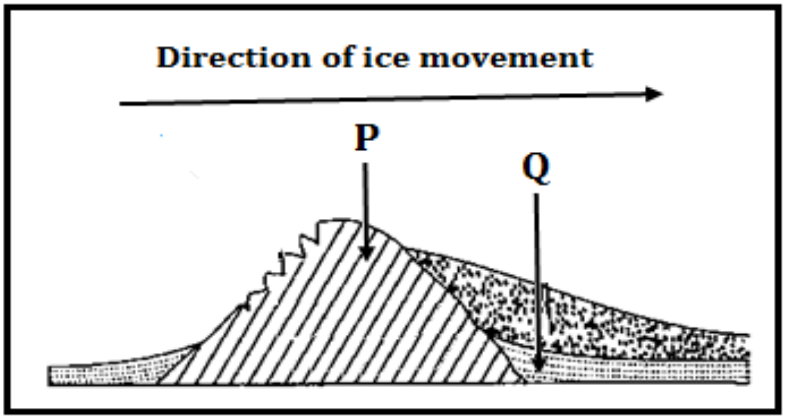
**(d)**Explain **four** conditions that lead to the formation of an artesian well. **(8 marks)**

(**a)**Your class is planning to carry out a field study in a Karst landscape.

**(i)** Give ***two*** reasons why it is important to seek permission from the school administration. **(2 marks)**

**(ii)**State ***three*** challenges that you are likely to encounter during the field study. **(3 marks)**

**10.** The diagram below shows a glacial erosional feature in lowlands.



**(a)(i)**Name the parts marked **P** and **Q**. **(2 marks)**

**(ii)**Outline **four** factors that influence glacial deposition in lowlands. **(4marks)**

**(b)**Explain how the following processes of glacial erosion occur.

**(i)**Plucking. **(4 marks)**

**(ii)**Abrasion. **(2 marks)**

**(c)**Describe how a fiord is formed. **(7 marks)**

**(d)**Explain **three** ways through which glaciation influences agriculture. **(6 marks)**

**NAME……..……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……..……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## GEOGRAPHY PAPER 2

***Kenya Certificate of Secondary Exams***

## TIME: 2 ¾ HOURS

## ***INSTRUCTIONS***

*This paper has two sections: **A &B.***

- *Answer **all** questions in section A.*
- *In section B, answer **question 6** and any other **two** questions.*
- *Candidates should answer the questions in English.*
- *All answers to be written in foolscaps provided.*
-

## ***SECTION A***

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

**1.** **(a)** Give ***two*** uses of soda ash. **(2mks)**

**(b)** State ***three*** ways in which mining derelicts can be rehabilitated. **(3mks)**

**2.** **(a)** Name ***two*** exotic breeds of dairy cattle reared in Kenya. **(2mks)**

**(b)** State ***three*** physical factors that favour dairy farming in Denmark. **(3mks)**

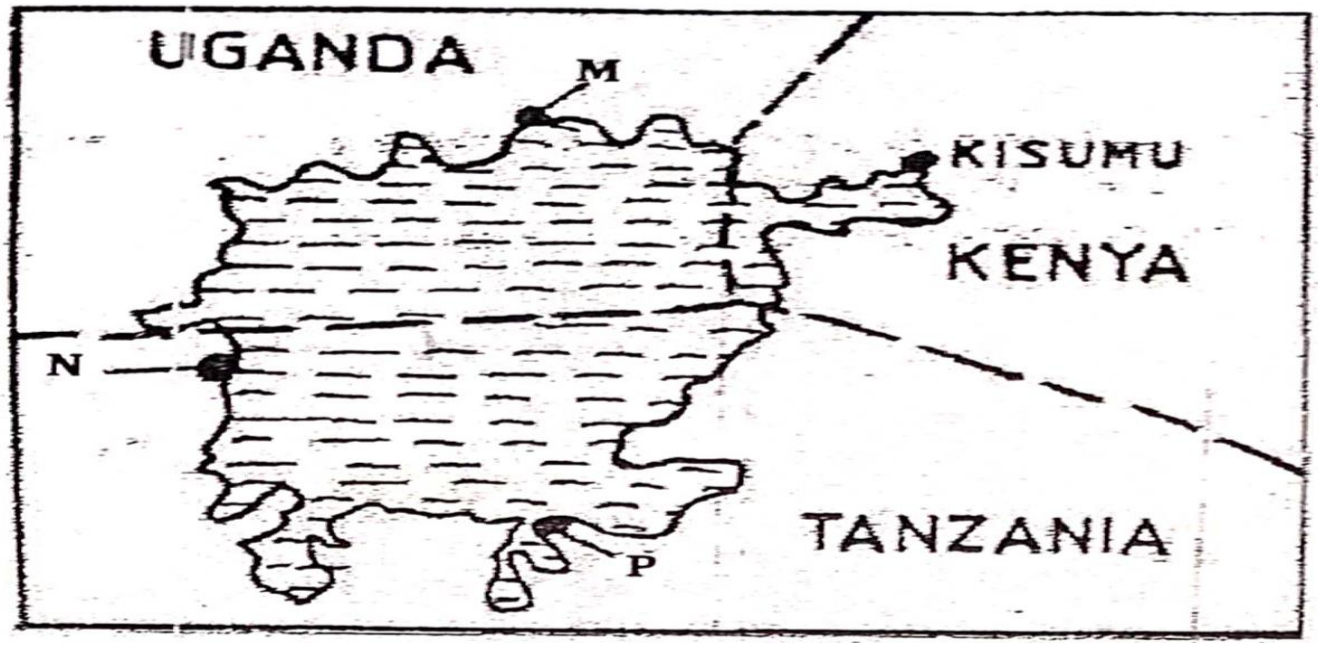
**3.** **(a)** State ***two*** forms of Domestic trade. **(2mks)**

**(b)** State reasons countries institute measures to limit imports. **(3mks)**

**4.** **(a)** What is population structure. **(2mks)**

**(b)** Give the information that can be obtained from a population pyramid. **(3mks)**

**5.** Study the sketch map of Lake Victoria and use it to answer the question.




**(a)** Name the Lake Ports **M,N** and **P.**

**(b)** State three major sea routes in Africa. **(3mks)**

## SECTION B

***Answer question 6 and any other TWO questions from this section.***

6. The table below shows Kenya's export crops in the year 1998-2002 in '000' tonnes. Study it and answer the questions that follows.

| CROP | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|
| **TEA** | 420 | 510 | 580 | 420 | 490 |
| **HORTICULTURAL CROPS** | 300 | 410 | 520 | 600 | 580 |
| **COFFEE** | 270 | 360 | 480 | 500 | 420 |
| **TOTALS** | 990 | 1280 | 1580 | 1520 | 1490 |

**(a) (i)** Use a suitable vertical and horizontal scale draw a compound bar graph to present this data. **(9mks)**

**(ii)** Give ***four*** physical conditions that favour coffee growing in Kenya. **(4mks)**

**(b)** Explain ***three*** problems facing coffee in Kenya. **(6mks)**

**(c)** Compare coffee growing in Kenya and Brazil under the following sub headings

**(i)** Coffee growing areas. **(2mks)**

**(ii)** Soils. **(2mks)**

**(iii)** Labour. **(2mks)**

7. **(a)(i)** What is agro forestry. **(2mks)**

**(ii)** Differentiate between indigenous and exotic forests **(2mks)**

**(iii)** Name ***two*** indigenous soft wood tree species. **(2mks)**

**(b)(i)** Explain ***three*** factors that favour the growth of natural forest on the slopes of Mt.Kenya. **(6mks)**

**(ii)** State four factors that have led to the reduction of the area under forest on the slope of Mt. Kenya. **(4mks)**

**(d)** Give the difference in the exploitation of softwood forest in Kenya and Canada under the following headings.

**(i)** Tree species. **(2mks)**

**(ii)** Problems facing forestry. **(2mks)**

**(e)** Form Four students in your school carried out a field study on the forestry within their county.

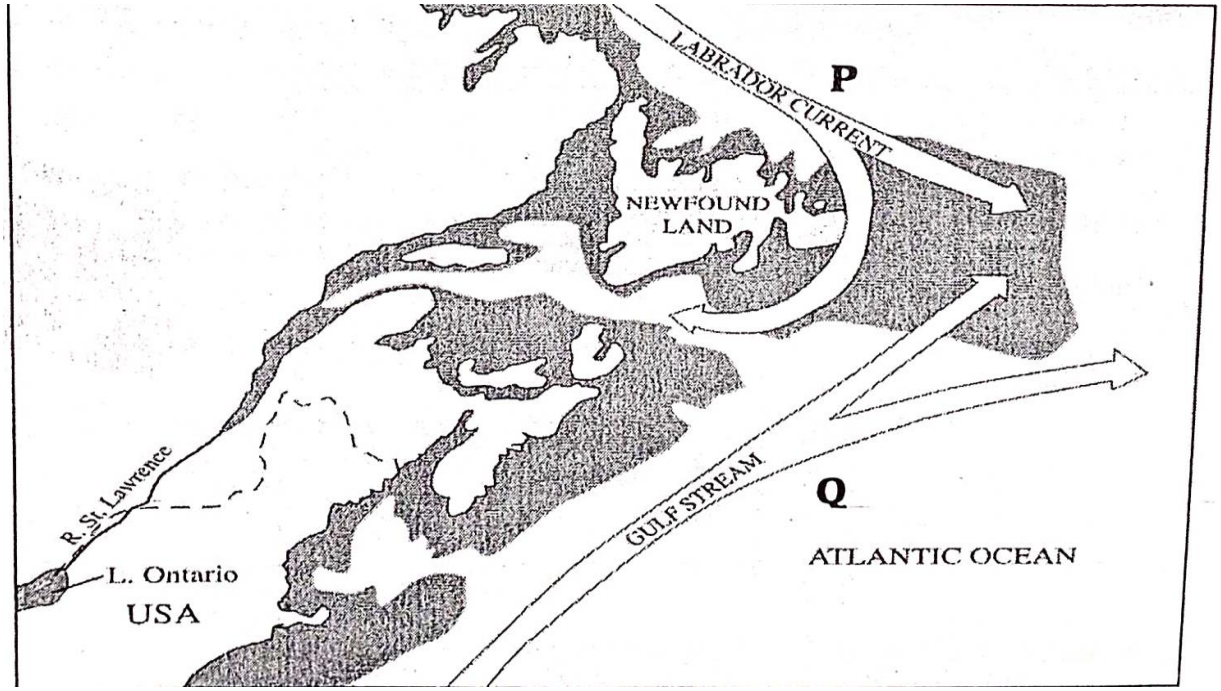
**(i)** Give ***three*** reasons why reconnaissance was necessary for a field study. **(3mks)**

**(ii)** State ***two*** advantages of content analysis in the study of a forests. **(2mks)**

8. **(a)** Differentiate between fishing and fisheries. **(2mks)**

**(b)** Name ***two*** types of marine fish caught along the east Africa coast. **(2mks)**

**(c)** Use the map of North-West Atlantic fishing ground to answer question




**(i)** Name the Ocean current marked **P** and **Q.** **(2mks)**

**(ii)** Explain ***three*** ways in which the convergence of ocean currents marked **P** and **Q** influence fishing. **(6mks)**

**(d) (i)** Describe how drifting method is used in Fishing . **(5mks)**

**(ii)** State ***three*** factors which are considered when choosing a fishing method. **(3mks)**

**(iii)** State ***three*** problems which face fishing in Lake Turkana. **(3mks)**

**(e)** State ***two*** reasons why fish farming should be encouraged in Kenya . **(2mks)**

**9. (a) (i)** Give ***two*** non-renewable source of energy. **(2mks)**

**(ii)**State ***two*** advantages of using Uranium as a source of energy. **(2mks)**

**(b) (i)**Apart from generating H.E.P, give three other benefits that have resulted from the construction of Masinga dam. **(3mks)**

**(ii)**Explain ***four*** physical factors that influence the location of a hydro-electric power station. **(8mks)**

**(c) (i)**What is Energy crisis. **(2mks)**

**(ii)**Explain ***four*** effects that the increase in oil prices has had on the economy of Kenya. **(8mks)**

**10. (a) (i)**What is Environmental Hazards. **(2mks)**

**(ii)**Identify ***three*** types of environmental hazards. **(3mks)**

**(b) (i)**State three cause of floods. **(3mks)**

**(ii)**Explain ***four*** ways of combating floods in Kenya. **(8mks)**

**(c)** Students from your school carried out a field study on a flood prone area in your country.

**(i)** State ***five*** reasons why the working schedule as very important in their study. **(5mks)**

**(ii)** What are the problems likely to be encountered during the field study. **(4mks)**

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## HISTORY AND GOVERNMENT PAPER 1

***Kenya Certificate of Secondary Exams***

## TIME: 2½ HOURS

**Instructions to Candidates**

***(a)*** *This paper consists of* ***three*** *sections;* ***A, B*** *and* ***C.***
***(b)*** *Answer* ***all*** *the questions in section* ***A, three*** *questions from section* ***B*** *and* ***two*** *questions from section C.*
***(c)*** *Answers to all the questions must be written in the answer booklet provided.*

## SECTION A:(25 MARKS)

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

1. What type of government is practiced in Kenya? Give a reason. **(2 marks)**
2. Name ***two*** communities that belong to the highland nilotes. **(2 marks)**
3. Which was the ***main*** item of trade from East Africa during the Indian Ocean Trade? **(1 mark)**
4. Give ***one*** way in which one can loose Kenyan citizenship by registration. **(1 mark)**
5. List ***two*** ways in which Kenyan communities interacted in the Pre- Colonial era. **(2 marks)**
6. Identify ***one*** symbol of national unity in Kenya. **(1 mark)**
7. Name ***two*** features of the independence constitution**.** **(2 marks)**
8. Name the body that is mandated to conduct elections in Kenya. **(1 mark)**
9. List ***two*** methods used by the British to establish their rule in Kenya. **(2 marks)**
10. Give ***one*** reason why Africans participated in the provision of education in the Colonial Kenya. **(1 mark)**
11. Why did the loyalist Kikuyu chiefs mainly form the Kikuyu Association in 1920? **(1 mark)**
12. State ***two*** contributions of Daniel ArapMoi in Kenya's history**.** **(2 marks)**
13. Name ***two*** national days in Kenya. **(2 marks)**
14. Give ***two*** pillars of African socialism**.** **(2 marks)**

**15.** Which is the ***main*** challenge facing the Industrial Sector in Kenya since Independence ? **(1 mark)**

**16.** State the ***main*** function of the County Assembly in Kenya. **(1 mark)**

**17.** What is the ***main*** source of revenue for the Kenyan Government? **(1 mark)**

## SECTION B (45 MARKS)

***Answer any three questions from this section***

**18.** a) State ***three*** functions of the Council of Elders among the Agikuyu. **(3 marks)**

**b)** Describe the Social Organization of the Ameru during the Pre- Colonial Period. **(12 marks)**

**19.** a) Name ***three*** functions of Nairobi. **( 3 marks)**

b) Discuss the solutions to the many problems affecting Nairobi**.** **(12 marks)**

20. a) List ***three*** objectives of Missionary Education during the colonial period. **(3 marks)**

b)Explain ***six*** negative effects of Urbanization during the Colonial period. **(12 marks)**

**20.** a) Identify ***three*** settlement Schemes established in Kenya after Independence. **(3 marks)**

b) Discuss the Challenges facing the Health sector in Kenya since 1963. **(12 marks)**

## SECTION C:(30 MARKS)

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

**22. a)** State ***three*** Requirements that one should meet for him or her to be registered as a Kenyan. **(3 marks)**

**b)** Explain the Powers and functions of the president of Kenya as derived from the constitution of Kenya. **(12 marks)**

**23. a)** Give ***five*** circumstances under which a judge may be dismissed from office. **(5 marks)**

**b)** Explain ***five*** ways in which parliamentary supremacy is upheld in Kenya**.(10marks)**

**24 a**) List ***five*** circumstances under which a sitting governor may be removed from office. **(5 marks)**

**b)** Discuss the functions of the Commission of Revenue Allocation**.** **(10 marks)**

**NAME……..……ADM NO……**

**SCHOOL……...……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## HISTORY AND GOVERNMENT PAPER 2

***Kenya Certificate of Secondary Exams***

## TIME: 2½ HOURS

## Instructions to Candidates

***(a)*** *This paper consists of* ***three*** *sections;* ***A, B*** *and* ***C.***

***(b)*** *Answer* ***all*** *the questions in section* ***A, three*** *questions from section* ***B*** *and* ***two*** *questions from section C.*

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

## SECTION A (25mks)

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

**1.** Mention ***one*** disadvantages of electronic records as a source of history**.** **(1mk)**

**2.** Give the ***main*** reason why early agriculture developed in Egypt. **(1mk)**

**3.** State ***two*** problems faced by traders using barter system. **(2mks)**

4. Identify the ***main*** role of the Berbers during the Trans-Saharan trade. **(1mk)**

**5** Name ***one*** metal that was used as currency in pre-colonial Africa. **(1 mark)**

6 Give ***one*** advantage of using pipeline over vehicles in transporting oil. **(1mks)**

**7.** Identify **two** negative effects of television**.** **(2mks)**

**8.** State the ***main*** contribution of Dr. Christian Bernard in the field of medicine. **(1mk)**

**9**. Identify ***two*** official appointed by the Kabaka to assist him in administration of Buganda in the 19th C**.** **(2mks)**

**10.** Give ***two*** economic reasons which made European countries to scramble for colonies in Africa**.** **(2mks)**

**11**. Identify ***two*** limitations of indirect rule in Africa**.** **(2 marks)**

**12**. State ***two*** functions of Emirs in Northern Nigeria during colonial era. **(2mks)**

**13.** Identify ***two*** weapons used during cold war. **(2mks)**

**14.** Name ***one*** leader who was the founder of the Non-Aligned movements. **(1 mark)**

**15.**Name the head of the government in Aristocratic government. **(1 mark)**
16.Which body is in charge of elections in USA? **(1 mark)**

**17.**Name ***two*** permanent members of the United Nations (UN) Security Council **(2mks)**

## SECTION B (45MKS)

***Answer any three questions from this section.***

**18.(a)** Give ***three*** ways in which Homo Erectus attempted to improve his way of life. **(3mks)**

**(b)** Discuss ***six*** benefits of discovery of fire to early man **(12mks)**

**19.(a)** State ***five*** disadvantages of using fire and smoke signals in communication. **(5mks)**

**(b)** Explain the impacts of modern means of communications. **(10mks)**

**20.(a)** State ***three*** factors influencing the growth of London. **(3mks)**

(**b)** Explain ***six*** problems facing Johannesburg as an urban center **(12mks)**

**21.(a)**List down ***three*** ways used by Nationalists in Ghana to fight for independence. **(3 marks)**

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

## SECTION C (30MKS)

***Answer any two questions in this section***

**22.(a)** Identify ***three*** roles played by United States of America in ending the Second World War**.** **( 3mks)**

**(b)** Explain ***six*** causes of the Cold War after 1945. **(12 marks)**

**23a)** Give ***three*** functions of the East African Legislative Assembly. **(3 marks)**

**(b)**Discuss ***six*** achievements of ECOWAS. **(12 marks)**

**24. (a)** State ***three*** functions of the House of Lords. **(3 marks)**

**(b)** Explain s***ix*** factors that limit parliamentary supremacy in Britain. **(12 marks)**

**JINA……NAMBARI YA USAJILI……**

**SHULE……..KIDATO……**

**TAREHE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## KISWAHILI KARATASI YA 1(INSHA)

## MUDA: 1 ¾

**MAAGIZO**

***i)*** *Jibu maswali mawili*
***ii)*** *Swali la kwanza ni la lazima*
***iii)*** *Kisha chagua insha nyingine kutoka kwa maswali maatu yaliyosalia*
***iv)*** *Kila insha isipungue maneno 400*
***v)*** *Kila insha ina alama 20*
***vi)*** *Kila insha aindikwe kwa lugha ya Kiswahili.*

**MASWALI**

**1.** Umepata tangazo la nafasi ya kazi ya uhariri katika shirika la uchapishaji vitabu vya fasihi andishi kwenye gazeti la Taifa Leo.
Andika barua ya kuomba nafasi hii na uiambatanishe na wasifu kazi wako kwa maelezo zaidi.

**2.** Jukumu la kuzuia msambao wa virusi vya korona ni la mtu binafsi. Jadili.

**3.** Andika insha itakyothibitisha ukweli wa methali
Mchelea mwana kulia, hulia mwenyewe.

**4.** Anza kwa.
Mwanangu, dunia imebadilika pakubwa lakini chunga mabadiliko hayo yasikuzuzue….

**JINA……NAMBARI YA USAJILI……**

**SHULE……..KIDATO……**

**TAREHE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## KISWAHILI KARATASI YA 2(LUGHA)

## MUDA: SAA 2 ½

## Maagizo

***-Jibu maswali yote, majibu yako yaandikwe katika nafasi zilizoachwa katika kijitabu hiki cha maswali.***

***Kwa matumizi ya mtahini pekee***

| Swali | Upeo | Alama |
|---|---|---|
| 1 | 15 | |
| 2 | 15 | |
| 3 | 40 | |
| 4 | 10 | |
| JUMLA 80 | | |

***Soma makala yafuatayo kisha ujibu maswali.***

## 1. UFAHAMU (Alama 15)

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

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

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

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

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

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

Tukirudi nyuma kidogo na kupiga darubini mataifa ya mbali, tunaweza kuwaona wanawake mashuhuri walio uongozini ambao hadi waleo unapigiwa mfano. Wanawake

mashuhuri waliotoa uongozini ambao hadi wa leo unapigiwa mfano. Wanawake hao walisimamia mojawapo ya mataifa yenye uwezo na ushawishi mkubwa Zaidi duniani. Ingawa wengi wao sasa wameng'atuka, uongozi wao bado unakumbukwa hata baada ya miaka mingi ya wao kuamua kupumzika ,mfano ni kama :Bi Bandranaike wa Sri lanka, Golda Meir wa Israel na wengine wengi katika mataifa kama Indonesia, Ufilipino, Bangladesh, Pakistani na kwingineko.

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

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

## MASWALI

**a.** Ina maana gani kusema kuwa wanaume hawana budi "kutembea na majira" **(alama 2)**

.....

.....

.....

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

.....

.....

.....

.....

.....

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

……

……

……

**d.** Je, unaamini kuwa hisi na mawaidha anayatoa mke wa mume wake ni tunu na huenda yasipatikane kwingineko? Fafanua **(alama 2**

……

……

……

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

……

……

……

**f.** Eleza maana ya maneno yafuatayo jinsi yalivyotumiwa katika hali muktadha. **(alama 3)**

Kushamiri

……

……

……

Hulka

……

……

……

Azma

……

……

……

# MUHTASARI

***<u>Soma kifungu hiki kisha ujibu maswali yafuatayo.</u>***

Idadi kubwa ya wanafunzi huingiwa na wasiwasi wakaribiapo kufanya mtihani kwa sababu mbalimbali, kubwa likiwa ni hofu kwa jinsi ambavyo watafanya katika mtihani huo. Asilani mambo hayafai kuwa hivyo. Wataalamu wa masuala ya saikolojia na wale wa

elimu wanashauri kuwa mtahiniwa anafaaa kupata muda mwingi wa mapumziko wakati anapokaribia kufanya mtihani ili aweze kuituliza akili asije akapatwa na mzongo wa akili.

Moja katika mashauri ni kuwa mtahiniwa anafaa kupata usingizi wa kutosha wakati akijiandaa na pia wakati akifanya mtihani. Hii ni kwa sababu mtihani wa mwisho si tofauti na mitihani mingine ambayo mtahiniwa amekuwa akifanya, pamoja na kuwa ni maswali ya jumla tu kutoka viwango vyote vya masomo. Hivyo basi, mtihani unapokaribia, mtahiniwa anafaa kudurusu na kufanya majaribio mbalimbali ya mtihani pamoja na kujikumbusha yale aliyofunzwa na mwalimu wake. Wale asimdunishe au kumdharau mwalimu hata kama stadi zake za kufundisha kazikumsisimua – alikupa kito cha thamani kitakachokufaa kama silaha wakati wa mtihani.

Mtihani unapokaribia, mtahiniwa anafaa kuwa amekwisha kutambua udhaifu wake na kutia bidii kuudhibiti kupitia udurusu, mijadala na mashauriano. Kumbuka kuwa bidii haiui ila hulipa. Hivyo basi, kila unaposhirikisha bidii na ujasiri wa wako na kuimarisha uelewe wako wa somo, na hatimaye ukaboresha matokeo katika somo hilo. Vilevile, kujadili au kufafanua mada unayoielewa vyema kwa m wenzio aiyeielewa kutakuwezesha kuielewa hata Zaidi na hivyo kuimarisha uwezo wako wa kuzoa alama nyingi katika mtihani endapo swali litatoka katika mada hiyo.

Pamoja na hayo, mtahiniwa anafaa kujihadhari na majuto ya kufanya kile ambacho hakupaswa kufanya. Anaweza kuhakikisha hili kwa kuyapitia maswali kwa makini Zaidi, na kuyatafakaria, kuyapangia na kuaandikia majibu sawasawa kasha kuyasoma tena majibu yake ili kuwa na uhakika kwamba hajapotoka.

Ikiwezekana (kwa sababu ya tofauti za kimapato na uwezo wa wazazi au walezi) mtahhiniwa anafaa kula visuri kabla kuenda kufanya mtihani. Vilevile, anapaswa kufika katika chumba cha mtihani kwa wakati unaofaa – mapema kabla ya muda wa kuanza kwa mtihani – na ahakikishe amebeba kila kifaa atakachokihitaji katika mtihani huo.

Ikiwa utashindwa kujibu swali Fulani, usipotezee muda mwingi. Baadala yake, enelea na swali linalofuatia kasha ulirejelee swali lile lililokutatiza baadaye ukishamaliza maswali yale mengine. Usipoteze muda kutafuta jibu ambalo huna kwa wakati huo. Juu ya  yote, usidhubutu kuifanya hila katika mtihani kwa kuwa kitendo kama hicho kitasababisha matokeo yako kufutiliwa mbali, nayo bidii yako ya miaka mine itakuwa imeishia gizani, ukasalia kujuta.

# Maswali.

**a)** Tumia maneno 60 kueleza ujumbe ulio katika aya mbili za mwanzo. **(alama 6)**

**Nakala chafu**

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**Jibu**

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**b)** Mwandishi anatoa ushauri gani kwa mtahiniwa katika aya ya tatu hadi ya mwisho? Eleza kwa maneno 100 **(alama 9)**

**Nakala chafu**

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**Jibu**

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## SEHEMU C - MATUMIZI YA LUGHA.

**a)** Eleza ufauti ya kimsingi iliyopo kati ya irabu na konsonanti. **(ala2)**

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**b)** Taja sifa tatu bainifu za irabu /O/ **(ala 3)**

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**c)** Andika maneno yenye muundo ufuatao **(ala2)**

**i)** KKKIKI

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**ii)** KKIKI

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**d)** Andika tungo ya neno moja yenye viambishi vifuatavyo. **(ala3)**

**i)** Nafsi

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**ii)** Njeo

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**iii)** Kirejeshi

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**iv)** Shamirisho

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**v)** Mzizi

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**vi)** Kauli ya kufanyiza

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**vii)** Kiishio

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**e)** Andika vitenzi vifuatavyo katika hali ya kutendeana**.** **(ala2)**

**i)** –la

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……

**ii)** -nywa

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**f)** Andika sentensi ifuayo kulingana na maagizo. **(ala2)**

**Maagizo**

Mhalifu <u>alisamehewa</u> kwa sababu <u>alinyenyekea .</u>

Geuza maneno yaliyopigiwa mstari kuwa nomino.

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**g)** Andika kwa wingi

Kelele ya amchaye Mungu ni baraka. **(ala1)**

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**h)** Tambua aina ya vishazi katika sentensi hii

Utazawadiwa ukicheza vizuri. **(ala2)**

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**i)** Tofautisha matumizi yapo katika sentensi hizi. **(ala2)**

**1.** Alipomwona alimhoji.

**2.** Amwonapo humhoji

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**j)** Bainisha aina za virai vilivyopigiwa mistari**.** **(ala2)**

Ubaguzi <u>wa kijinsia</u> umekashifiwa mno na <u>viongozi wenye msimamo thabiti mno</u>.

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**k)** Unda nomino kutokana na vitenzi. **(ala2)**

**1.** Jaribu

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**2.** Chuma

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**l)** Eleza matumizi ya ‘na’ katika sentensi

Wageni <u>na</u> wenyeji walikimbili<u>ana</u> **(ala 2)**

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**m)** Andika katika msemo wa taarifa. **(ala3)**

“Nitakuarifu nikimwona” Maria alisema

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**n)** Eleza maana mbili za sentensi. **(ala2)**
Tuliitwa na Juma

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**o)** Tumia "0" rejeshi katika sentensi ifuatayo
Mtu ambaye hutupa tope hujichafua mwenyewe. **(ala 2)**

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**p)** Tumia visawe vya maneno yaliyopigiwa mstari kuandika tena sentensi ifuatayo.
<u>Ukuta</u> umemwuumiza <u>mvulana</u> alipokuwa <u>akiuparaga.</u> **(ala3)**

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**q)** Changanua sentensi kwa njia ya jedwali.
Ouma alianguka mtihani ila Kamau alifuzu vizuri. **(ala4)**

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## ISIMUJAMII

Mtu 1: Wewe njoo hapa (kwa sauti kubwa) fanya upesi.
Mtu II : (anakimbia mbio) Naja Sir
Mtu I : (anamtazama) unajifanya mwelevu?
Mu II : Hapana Sir……eh…..afande
Mtu I : Jina
Mtu II : Samwel Kioko

Mtu I : (Huku akiandika) Lete kitambulisho
Mtu II : Sina hapa sir
Mtu I : Huna kitambulisho? Utafanyiwa booking vipi?
Mtu II : Naomba
Mtu I : Naomba ! naomba! Unaomba nini? Wazururaji kama nyinyi tunawajua. Mnajifanya hamjui kuna curfew. Mnajiponza, “zerikali saidia”. Usiniharibie muda wangu (akiashiria) ingia ndani! Utakuwa mgeni wetu leo. Tutakukarimu chakula cha chumba.(anamsukuma ndani)

**a)** Bainisha sajili ya makala haya. **(ala2)**

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**b)** Eleza sifa nne za sajili kwa kurejelea makala haya. **(ala 8)**

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**JINA……NAMBARI YA USAJILI……**

**SHULE……..KIDATO……**

**TAREHE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## KISWAHILI KARATASI YA 3(FASIHI)

## 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 yachaguliwe kutoka sehemu nne zilizobaki: yaani; Riwaya, Ushairi na Fasihi Simulizi.*

***(f)*** *Majibu yote lazima yaandikwe kwa lugha ya Kiswahili.*

***(g)*** *Majibu yote sharti yaandikwe kwenye nafasi ulizoachiwa katika kijitabu hiki cha maswali.*

***(h)*** *Karatasi hii ina kurasa 5 zilizopigwa chapa.*

***(i)*** *Watahiniwa ni lazima wahakikishe kwamba kurasa zote za karatasi hii zimepigwa chapa sawasawa na kuwa maswali yote yamo.*

***Kwa matumizi ya mtahini pekee***

| Swali | Upeo | Alama |
|---|---|---|
| 1 | 20 | |
| 2 | 20 | |
| 3 | 20 | |
| 4 | 20 | |
| 5 | 20 | |
| 6 | 20 | |
| 7 | 20 | |
| 8 | 20 | |
| **JUMLA** | **80** | |

## SEHEMU YA A - FASIHI SIMULIZI

**1.** Niaje wazungu wanaweza kutunza vitu vikajaa kwenye friji. Yani nimeweka soda mbili tu kwenye friji lakini haitulii hadi nizinywe. Niko sebuleni nazunguka tu. Najaribu kuwaza vitu vingine lakini wapi akili inaniambia *"My friend kunywa soda"*.

**(a)** Taja na ueleze maana ya kipera hiki **(alama 2)**

**(b)** Utanzu wa kipera hiki huweza kuchukua nafasi muhimu katika fasihi simulizi. Thibitisha kwa hoja zozote sita. **(alama 6)**

**(c)** Ufanisi wa uwasilishaji wa utanzu huu unategemea fanani. Tetea kauli hii. **(alama 4)**

**(d)** Ni changamoto gani zinaweza kumkabili mwanafasihi nyanjani? **(alama 4)**

**(e)** Dokeza umuhimu wa kukusanya data nyanjani. **(alama 4)**

## SEHEMU YA B - TAMTHILIA: KIGOGO na *Pauline Kea*

**2.** "Udongo tungeliuwahi uli mbichi. Limekuwa donda ndugu sasa. Waliota ikakita na wakamea hata pembe."

**(a)** Eleza muktadha wa dondoo hili. **(alama 4)**

**(b)** Taja na kueleza tamathali moja ya usemi inayojitokeza kwenye dondoo hili. **(alama 2)**

**(c)** Eleza sifa zozote nne za msemaji wa kauli hii. **(alama 4)**

**(d)** Dondoo hili linadhihirisha jinsi baadhi ya Wanasagamoyo walivyoshiriki kuivunja jumuiya yao. Fafanua. **(alama 10)**

**3.** "Wananchi katika mataifa ya Afrika wanakumbwa na tatizo la uongozi mbaya." Thibitisha ukweli wa kaui hii kwa mujibu wa Tamthilia . **(alama 20)**

## USHAIRI

***4.Soma shairi lifuatalo kisha ujibu maswali***

**1.** Sikilizeni wimbo huu:
Niliokuwa mtoto nilitwa chacha
Kwa matamshi yangu ya sasa
Nilipokuwa mtu mzima niliitwa Manywele
Nilipokuwa mwalimu nikaitwa Bure.

**2.** 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.

**3.** 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.

**4.** 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.

**5.** 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.

**6.** 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?

**7.** 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

**8.** 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.

**9.** 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)** Thibitisha kwamba hili ni shairi huru. **(alama 5)**

**(b)** Eleza jinsi maudhui ya utamaushi yanavyojitokeza ukimrejelea nafsi-nenwa. **(alama 4)**

**(c)** Nafsi-nenwa anapaswa kujilaumu kwa masaibu yake. Thibitisha. **(alama 2)**

**(d)** **(i)** Bainisha nafsi-neni katika shairi hili. **(alama 1)**
**(ii)** Jadili toni ya shairi hili. **(alama 2)**

**(e)** Eleza matumizi mawili mawili ya usambamb na jazanda katika shiri hili. **(alama 4)**

**(f)** Eleza maana ya kufungu kifuatacho:
Mjinga mmoja kujumlisha na wezi ishirini ni sawa na sufuri. **(alama 2)**

## 5.USHAIRI

Leo ‘mekuita, Nikupe ya moyo
Kwa upole nitanena, “Kayatiye masikiyo
Tabiya hii yako mwana Si yetu tujuwapo

Uli wa kulaza damu, Na uzembe uzidiyo
Pahala nawe hudumu, Uchaoni mbiyombiyo
Hutufai nawe humu, Na hiyo shambiroyo

Wapendani naumi, Uniizia gange
Hulimi na walimi wataka ukajitenge

Haya sijaona mimi, Nakuasa ujichunge

Mwiza kazi yu wa chira Ni andewaye tenge
Asiyeta ajira Wala hashiki shilange
Ndiye muja wa hasara, Hubomoa asijenge

Unavitaka vya bure Hulitoa jasho lako
Lako ndizo hamurere Umebaki mitiko
Uchao ‘wa ‘tuza bure. Sizo zetu nyendo zako

La mno lako ni ung’are Uzirembe nyele zako
Uturi ujirashire Ukatembee kwa deko
Hukosi kuzua ghere Na marashi ya mnuko

Unazani utaoa? Utamwoa wa nani?
Jasho nalo hujatoa, Utachokishika nini?
Utaithibiti ndoa? Wa kukubali nani?

Unafaa kujitoa, Fanye kazi kwa manani
Na mali ukayazoa, Hamadi i kibindoni
Ndipo utapopoa Ukamtafute mwendani

Si mambo ya kutanga, Fi na huhu fi na yule
Chunga utajikaanga Umetujile uwele
Mchumba chumbiya mwenga Na yule ukamuole

Utafanyani kiwatunga Himila wakahimile
Na hilo likawe janga, Na lije likulemele
Mwanangu hutochenga Na wote wakikujile

Kisomo ndiyo unayo, Shahada umejitwaliya
Ujuzi unao kocho, hutaki kuutumiya
Upate ukitakacho Kile cha kukufaiya

Mwana wa ‘ntiya kichocho Kwona umejiachiya
Umekuwa kitumiwacho Kidhani wawatumiya
Unawapa wapendacho Na wanachokutakiya

Komu mwanangu ukome Usinifishe mveyeleo
Usombombi uukome, Ukome kwanzia leo
Sitakwita te’niseme Ishapita hii leo

Ukware si kuwa dume
Wa itaha ndiye dume
Muungwana ja kimeme

Mradi unayo masikizi
Kazituwe nyendo hizi,
Ukasuhubiye kazi,

Nakoma zaidi s'ezi
Nimekuweko na juzi,
Nimejizolea ujuzi,

Dume ni ajira
Anakheshimu nafseo
Fikira nokwelezeo

Haya umenisikiya
Ukawe wa kutuliya
Halafu itakufaiya

Yametosha mekwambiya
Miyaka menipitiya
Na ndiyo ha 'nakupa haya

## Maswali

**1.** Fafanua sifa za shairi hili. **(alama 3)**

**2.** Kando na kigezo cha idadi ya mishororo, chambua bahari nyingine tatu za shairi hili. **(alama 3)**

**3.** Huku ukitolea mifano mwafaka, fafanua mambo mawili aliyofanya mshairi ili kukidhi mahitaji ya kiarudhi. **(alama 2)**

**4.** Andika ubeti wa nane kwa mtindo tutumbi. **(alama 3)**

**5**. Tambua mbinu zozote mbili za lugha zilizotumiwa na mshairi. **(alama 2)**

**6.** Eleza dhamira ya shairi hili. **(alama 1)**

**7.** Tambua nafsi-nenewa katika shairi hili. **(alama 1)**

**8.** Ni nini toni ya shairi hili? Eleza. **(alama 2)**

**9.** Eleza maana ya misamiati ifuatayo kama iliyotumika katika shairi hili. **(alama 2)**

**(i)** ghere
**(ii)** sitaha

## SEHEMU YA D - RIWAYA YA CHOZI LA HERI

**6.** "Msamehe ….., hakuna mja aliyekamilika."

**(a)** Eleza muktadha wa dondoo hili. **(alama 4)**

**(b)** Eleza umuhimu mnenewa katika dondoo hili. **(alama 4)**

**(c)** Kwa kurejelea wahusika mbalimbali riwayani, thibitisha kuwa hakuna mja aliyekamilika. **(alama 12)**

**7.** Jadili jinsi mwandishi wa riwaya hii alivyofaulu kutumia mbinu ya kinaya na sadfa. **(alama 20)**

# SEHEMU YA E - TUMBO LISILOSHIBA NA HADITHI NYINGINE

**8.** Safari ya elimu ni kama ua la waridi ambalo licha ya upendezaji wake, huzingirwa na miiba. Jadili adha za safari hii kwa hoja tano tano kutoka kwa kila mojawapo wa hadithi fupi zifuatazo: Mapenzi ya Kifaurongo, Mame Bakari, Mwalimu Mstaafu na Mtihani wa Maisha.

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## MATHEMATICS PAPER 1

***Kenya Certificate of Secondary Exams***

## TIME: 2½ HOURS

## INSTRUCTION

***a)*** *Write your name and index number in the spaces provided above.*
***b)*** *Sign and write the date of the examination in the spaces provided above.*
***c)*** *This paper consist of **TWO** sections: **section I** and **Section II.***
***d)*** *Answer **ALL t**he questions in **Section I** and only **five** questions from **section II.***
***e)*** ***Show all the steps in your calculations, giving your answers at each stage in the stage in the spaces below each question.***
***f)*** *Marks may be given for correct working even if the answer is wrong.*
**g)** ***Non-programmable** silent electronic calculators **and** KNEC mathematical tables may be used, except where stated otherwise.*

Section I

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |

Section II

| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Total |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

Grand Total

| |
|---|
| |

# SECTION 1: 50 MARKS.

## *Answer all questions*

**1.** Evaluate: **(3marks)**

$$\frac{3/5 - 1\ 2/5 \div 1¾ \text{ of } 2\ 1/3}{12/17 \text{ of } (1\ 3/7 - 5/8 \times 2/3)}$$

**2.** A Kenyan businessman bought goods from Japan worthy 2,950,000 Japanese yen. On arrival in Kenya, custom duty of 20% was charged on the value of the goods. If the exchange rate were as follows:-

1 US dollar = 118 Japanese Yen

1US dollar = 76 Kenyan shillings Calculate the duty paid in Kenyan shillings. **(3Mks)**

**3.** A rally car travelled for 2 hours 40 minutes at an average speed of 120km/h. the car consumes an average of 1 litre of fuel for every 4 kilometers. A litre of fuel costs Ksh.59. Calculate the amount of money spent on fuel. **(3mks)**

**4.** The curved surface area of a cylindrical container is 1980cm$^2$. If the radius of the container is 21cm, calculate to one decimal place the capacity of the container in litres (Take $\pi = \frac{22}{7}$). **(4 mks)**

**5.** Given that $\sin\theta = \frac{5}{13}$, find $\tan(90-\theta)$ in its simplest form. **(2mks)**

**6.** The equation of line $L_1$ is $2x - 5y - 10 = 0$. Find the equation of line $L_2$ perpendicular to $L_1$ and passing through (5, -2) express your equation in the form $y=mx + c$ **(3mks)**

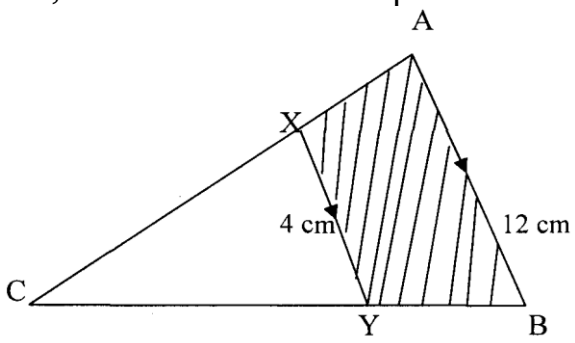
**7.** One interior angle of a polygon is equal to $80^0$ and each of the other interior angles are 128°. Find the number of sides of the polygon. **(3 mks)**

**8 .** The length of a rectangle is (3x + 1) cm, its width is 3 cm shorter than its length. Given that the area of the rectangle is 28cm$^2$, find its length, **(3 marks)**

**9.** Simplify the expression. **(3mks)**

$$\frac{4x^2 - y^2}{3y^2 - 7xy + 2x^2}$$

**10.** In the figure below, lines AB and XY are parallel.




If the area of the shaded region is 36 $cm^2$, find the area of triangle CXY. **(3 marks)**

**11.** Using a pair of compasses and a ruler only construct a triangle ABC and such that AB= 4cm, BC =6cm and angle ABC=135$^{o}$. **(2mks)**

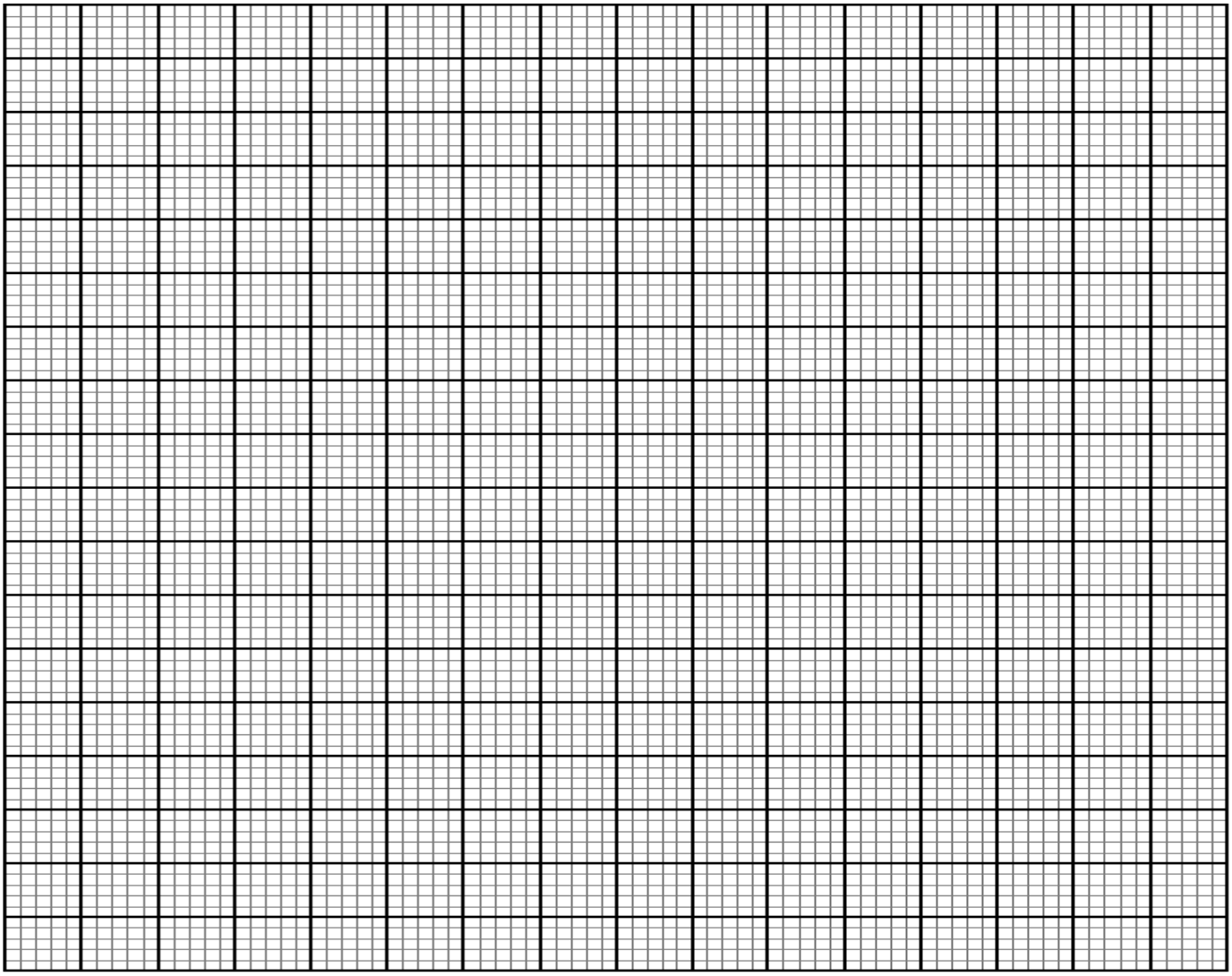
**(b)** Construct the height of triangle ABC in (a) above taking AB as the base, hence Calculate the area of triangle ABC. **(2 mks)**

**12.** The external length width and height of an open rectangular container are 41cm, 21cm and 15.5cm respectively. The thickness of the materials making the container is 5mm. If the container has 8 litres of water. Calculate the internal height above the water level.

**(3mks)**

**13.** A triangle P with vertices x(2,4), Y(6,2) and z(4,8) is mapped onto triangle $P^1$ with vertices $X^1$ (10,0), $Y^1$(8, -4) and $Z^1$(14, -2) by a rotation.

**a)** On the grid provided, draw triangle P and its image **(2mks)**

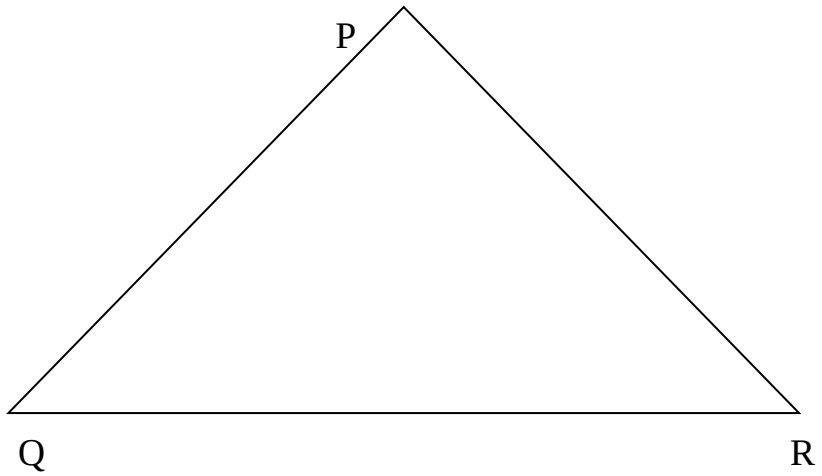


**b)** Determine the centre and angle of rotation that maps P onto $P^1$ **(2mks)**

**14.** Solve the following inequalities and state the integral values **(3mks)**

$2x - 2 \leq 3x + 1 < x + 11$

**15.** In the triangle PQR below, PQ =12cm, <PQR = $80^0$ and <PRQ= $30^0$




Calculate, to 4 s.f, the area of the triangle **PQR** **(3mks)**

**16.** A two digit number is such that the sum of digits in 13. When the digits are interchanged, the original number is increased by 9. Find the original number. **(3mks)**

## SECTION II (50 MARKS)

***Answer only five questions in this section***

**17.** A straight line $L_1$ has a gradient $^{-}½$ and passes through point P (-1, 3). Another line $L_2$ passes through the points Q (1, -3) and R (3, 5). Find.

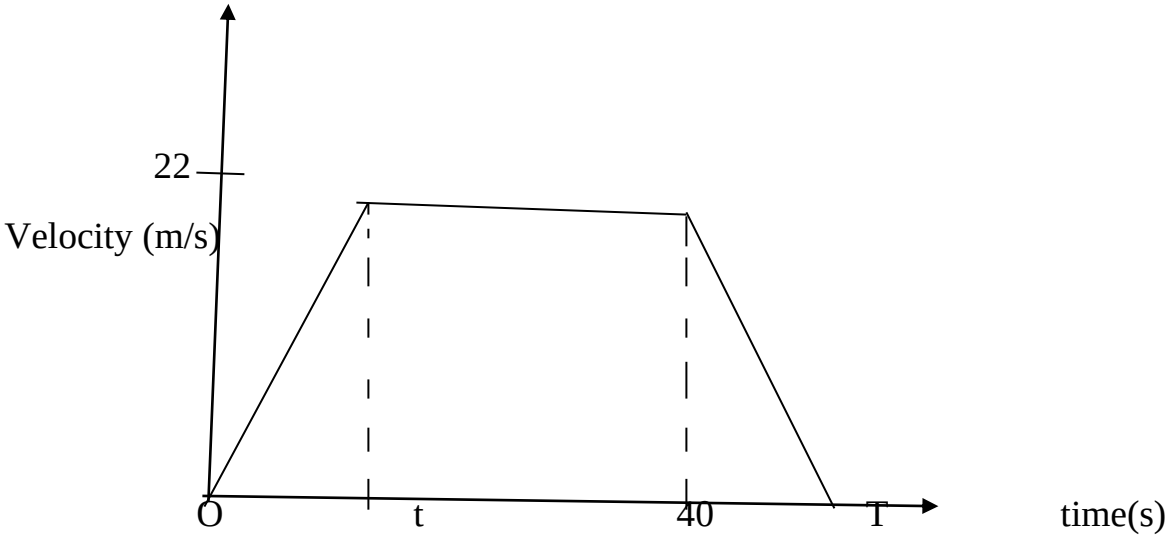
**(a)** The equation of $L_1$. **(2mks)**

**(b)** The equation of $L_2$ in the from ax+by+c=0 **(2mks)**

**(c)** The equation of a line passing through a point S (0, 1.5) and is perpendicular to $L_2$. **(3mks)**

**d)** The point of intersection of a line passing through S and $L_2$ **(3mks)**

**18.** The figure below shows a velocity – time graph of a car journey.




The car starts from rest and accelerates at $2.75m/s^2$ for t seconds until its speed is 22m/s. It then travels at this velocity until 40 seconds after starting. Its breaks bring it uniformly to rest. The total journey is 847m long and takes T seconds.
Calculate the

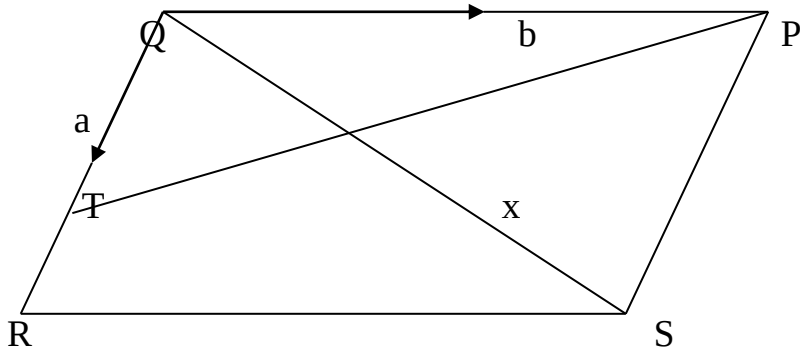
**(i)** Value of t **(3mks)**

**(ii)** Distance travelled during the first t seconds **(2mks)**

**(iii)** Value of T **(3mks)**

**(iv)** Final deceleration **(2mks)**

**19.** In the figure below, QT = a and QP = b.




**(a)** Express the vector PT in terms of a and b. **(1mk)**

**(b)** If PX = kPT, express QX in terms of a, b and k, where k is a scala**.** **(3mks)**

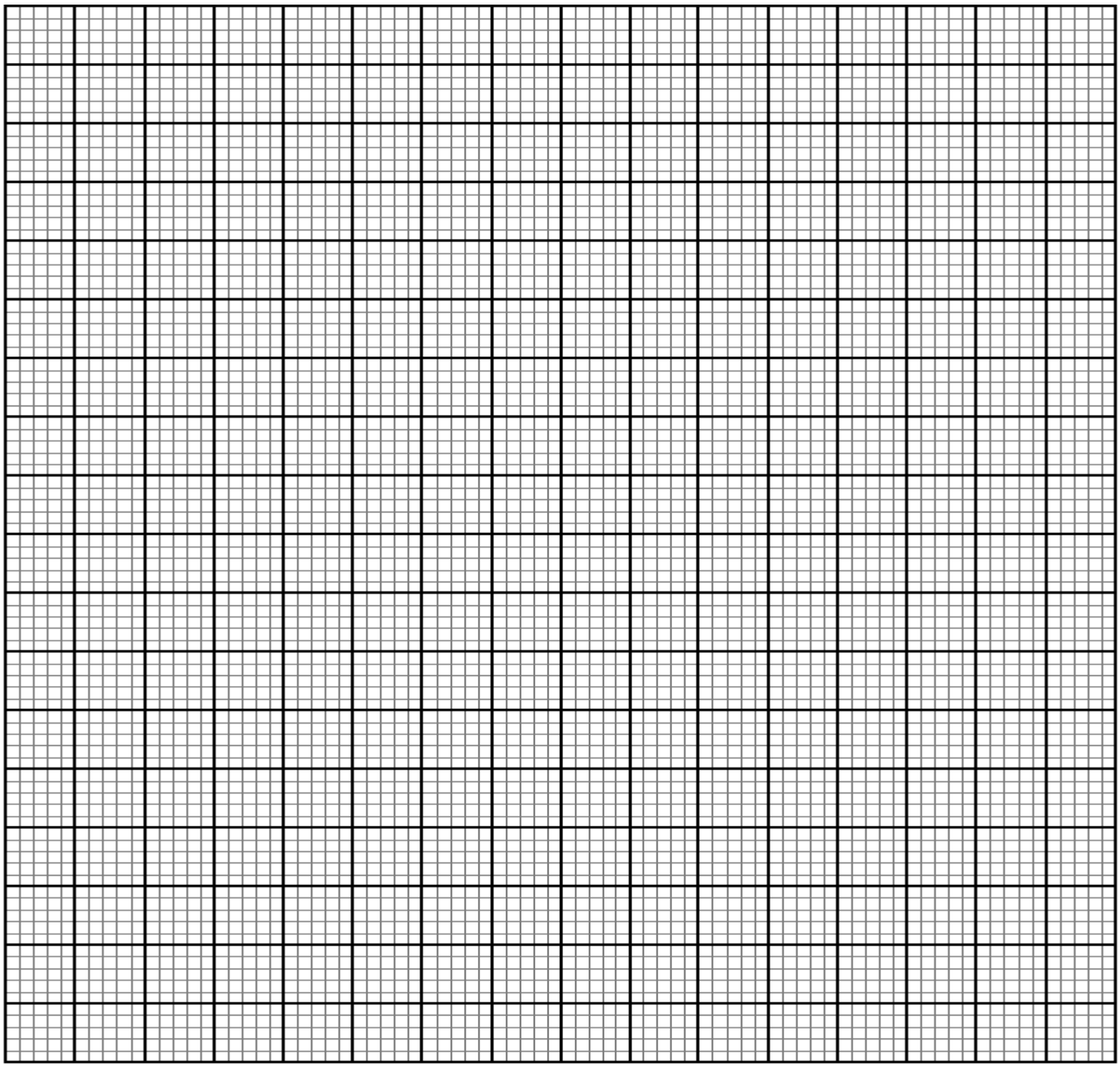
**(c)** If QR = 3a and RS = 2b, write down an expression for QS in terms of a and b. **(1mk)**

**(d)** If QX = tQS, use your result in (b) and (c) to find the value of k and t**.** **(4mks)**

**(e)** Find the ratio PX : XT. **(1mk)**

**20.** A triangle with A(-4, 2), B(-6, 6) and C(-6, 2) is enlarged by a scale factor -1 and centre (-2, 6) to produce triangle $A^1B^1C^1$.

**a)** Draw triangle ABC and $A^1B^1C^1$.and state its coordinates **(4mks)**



**b)** Triangle $A^1B^1C^1$ is then reflected in the line $y = \chi$ to give triangle $A^{11}B^{11}C^{11}$.draw $A^{11}B^{11}C^{11}$.and state its coordinates **(3mks)**

**v)** If triangle $A^{11}B^{11}C^{11}$ is mapped onto $A^{111}B^{111}C^{111}$ whose co-ordinates are $A^{111}(0, -2)$, $B^{111}(4, -4)$ and $C^{111}(0, -4)$ by a rotation. Find the centre and angle of rotation. **(3mks)**

**21.** Four towns P, R, T and S are such that R is 80km directly to the north of P and T is on a bearing of 290° from P at a distance of 65km. S is on a bearing of 330° from T and a distance of 30 km. Using a scale of 1cm to represent 10km, make an accurate scale drawing to show the relative position of the towns. **(4mks)**

Find:

**(a)**The distance and the bearing of R from T **(3mks)**

**(b)** The distance and the bearing of S from R **(2mks)**

**(c)**The bearing of P from S **(lmk)**

**22.** Four towns A, B, C and D are such that B is 80km directly North of A and C is on a bearing of $300^0$ from A at a distance of 50km. D is on a bearing of $345^0$ from C at a distance of 30km.

**a)** Using a scale of 1cm rep 10km, draw the relative positions of the towns **(4mks)**

**b)** Find:

**(i)** The distance and bearing of B from C **(2mks)**

**(ii)** The distance and bearing of B from D **(2mks)**

**(iii)** Calculate the distance of ABCD **(2mks)**

**23.** A school in Meru Central decided to buy x calculators for its students for a total cost of ksh. 16,200. The supplier agreed to offer a discount of ksh. 60 per calculator. The school was then able to get three extra calculators for the same amount of money.

(**a)** Write an expression in terms of x , for the

**(i)** Original price of each calculator **(1mk)**

**(ii)** Price of each calculator after the discount **(1mk)**

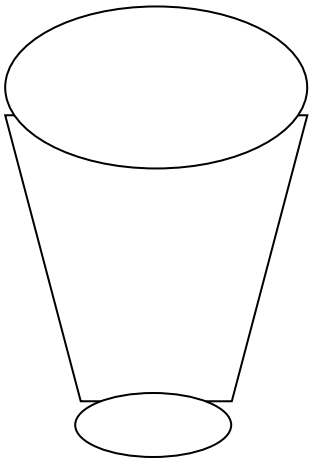
**b)** Form an equation in x and hence determine the number of calculators the school bought **(5mks)**

**c)** Calculate the discount offered to the school as a percentage **(3mks)**

**24.** A solid is made up of a conical frustum and a hemispherical top. The slant height of the frustum is 8cm and its base radius is 3.5cm. If the radius of the hemispherical top is 4.2cm.

- Find the area of:

**(i)** The circular base. **(2 Marks)**



**(ii)** The curved surface of the frustum **(3 Marks)**

**(iii)** The hemispherical surface **(3 Marks)**

- A similar solid has a total surface area of $81.51cm^2$. Determine the radius of its base. **(2 Marks)**

**NAME……..…ADM NO……**

**SCHOOL……..……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## MATHEMATICS PAPER 2

## *Kenya Certificate of Secondary Exams*

## TIME: 2½ HOURS

**INSTRUCTIONS TO CANDIDATES**

- *Write your name and Admission number in the spaces provided at the top of this page.*
- *This paper consists of two sections: Section I and Section **II.***
- *Answer **ALL** questions in section 1 and **ONLY FIVE** questions from section **II***
- *All answers and workings must be written on the question paper in the spaces provided below each question.*
- *Show all the steps in your calculation, giving your answer at each stage in the spaces below each question.*
- *Non – Programmable silent electronic calculators and KNEC mathematical tables may be used, except where stated otherwise.*

**FOR EXAMINERS USE ONLY**

**SECTION I**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | |

**SECTION II**

| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

**GRAND TOTAL**

# SECTION A: (50MARKS)

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

**1.** Use logarithms tables to evaluate. **(4mks)**

$$\sqrt[3]{\frac{36.72\times(0.46)^2}{185.4}}$$

**2.** If A = 2.3, B = 8.7 and C = 2.0. Find the percentage error in calculating $\frac{A+B}{C}$ **(3mks)**

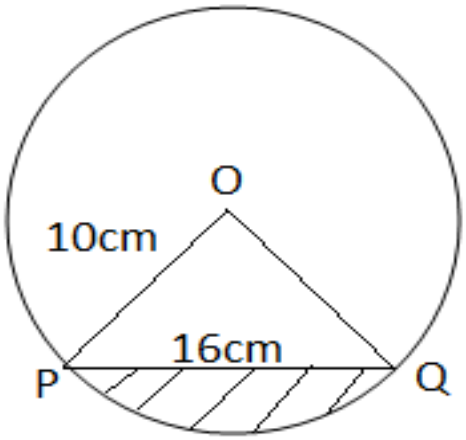
**3.** Given that $M=i-3j+4k$, $W=6i+3j-5k$ and $Q$ = 2M + 5N, find the magnitude of Q to 3 significant figures. **(3mks)**

**4.** Solve the following equation $2^{2x+3} - 2^{x+4} = 17(2^x) - 4$ **(4mks)**

**5.** If $\frac{1}{3-\sqrt{5}} - \frac{2+2\sqrt{5}}{3+\sqrt{5}} = a + b\sqrt{c}$ , find the value of a, b and c **(3mks)**

**6.** Pipe A can fill an empty water tank in 3hrs while Pipe B can fill the same tank in 6hrs. When the tank is full it can be emptied by Pipe C in 8hrs. Pipe A and B are opened at the same time when the tank is empty. If one hour later Pipe C is also opened, find the total time taken to fill the tank. **(3mks)**

**7.** The figure below shows a circle center O, radius 10 cm. The chord PQ = 16cm. Calculate the area of the unshaded region. **(4mks)**




**8.** The mean weight of 36 students is 45kg; two of the students leave and the mean weight increases by 0.5kg. If one of the students who left weighed 43kg, find the weight of the other one. **(3mks)**

**9.** Use the trapezium rule to estimate the area bounded by the curve $y + x^2 = 4$ and the lines $y = 0$, $x = -2$ and $x = 2$ using four strips. **(3mks)**

**10.** $4x^2 - 10x + 4y^2 + 12y - 1 = 0$ represents a circle centre C (a, b) and of radius K. Find the values of a, b and K. **(3mks)**

**11.** Make *x* the subject of the equation **(3mks)**

$$\frac{t}{s} = \frac{b}{\sqrt{x-4}}$$

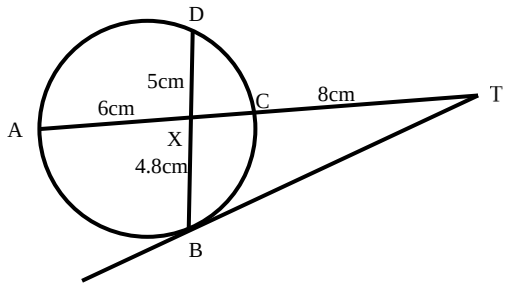
**12.** Use reciprocal, square and cube root tables to evaluate to 4 significant figures, the expression. **(3mks)**

$$\sqrt[3]{\frac{9}{0.03746} + 0.6042^2}$$

**13.(a)** Expand the expression $(1 + \frac{1}{2}x)^5$ in ascending powers of x, leaving the coefficients as fractions in their simplest form. **(2mks)**

**(b)** Use the first three terms of the expansion in (a) above to estimate the value of $(1\frac{1}{20})^5$. **(2mks)**

**14.** In the diagram below, BT is a tangent to the circle at B. AXCT and BXD are straight lines. AX = 6cm, CT = 8cm, BX = 4.8cm and XD = 5cm.




Find the length of BT. **(2mks)**

**15.** Find x if Cos x = $\frac{\sqrt{3}}{2}$ for $-180^0 \leq x \leq 180^0$. **(2mks)**

**16.** The following were recorded on a field note book by a surveyor. Taking the base line as 550m. Find the area in m².

**(3mks)**

| | | | | | |
|---|---|---|---|---|---|
| | | B | | | |
| | | 550 | 120 | TO | A |
| C | 150 | 450 | | | |
| | | 250 | 90 | T O | D |
| E | 60 | 40 | | | |
| | | F | | | |

## SECTION II (50mrks)

## Attempt any FIVE questions from this section

**17.** Mr. Kobe is a civil servant who earns a monthly salary of Ksh. 21200. He has a house allowance of Ksh. 12000 per month, other taxable allowances are commuter Ksh. 1100, medical allowance Ksh. 2000. He is entitled to a personal relief of Ksh. 1240 per month.

Using the income rates below, solve the questions that follow.

| Income in Ksh. per month | Rates in Ksh per sh 20 |
|---|---|

| | |
|---|---|
| 1 – 8,400 | 2 |
| 8401 – 18,000 | 3 |
| 18001 – 30,000 | 4 |
| 30001 – 36,000 | 5 |
| 36001 – 48,000 | 6 |
| Above 48,000 | 7 |

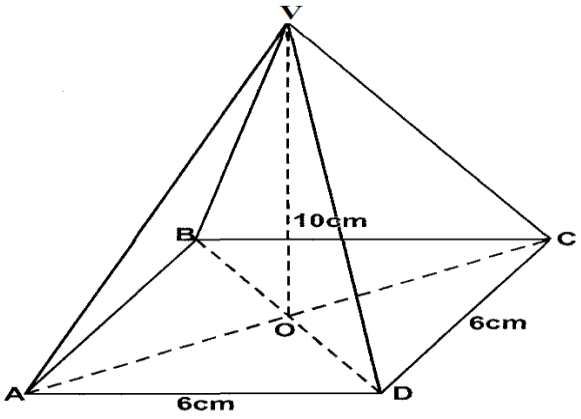
Determine;

**a) i)** His monthly taxable income. **(2mks)**

**ii)** Net tax (PAYE) **(5mks)**

**b)** In addition to the PAYE, the following deductions were made. Ksh. 250 for NHIF, Ksh. 120 service charges, he repays a loan at sh. 4500 and contributes towards savings at sh. 1800 every month. Calculate his net salary per month. **(3mks)**

**18.** The figure below is a square based pyramid ABCDV with AD=DC = 6cm and height V = 10cm




**a)** State the projection of VA on the base ABCD. **(1mk)**

**b)** Find:

**i)** The length of VA **(3mks)**

**ii)** The angle between VA and ABCD **(2mks)**

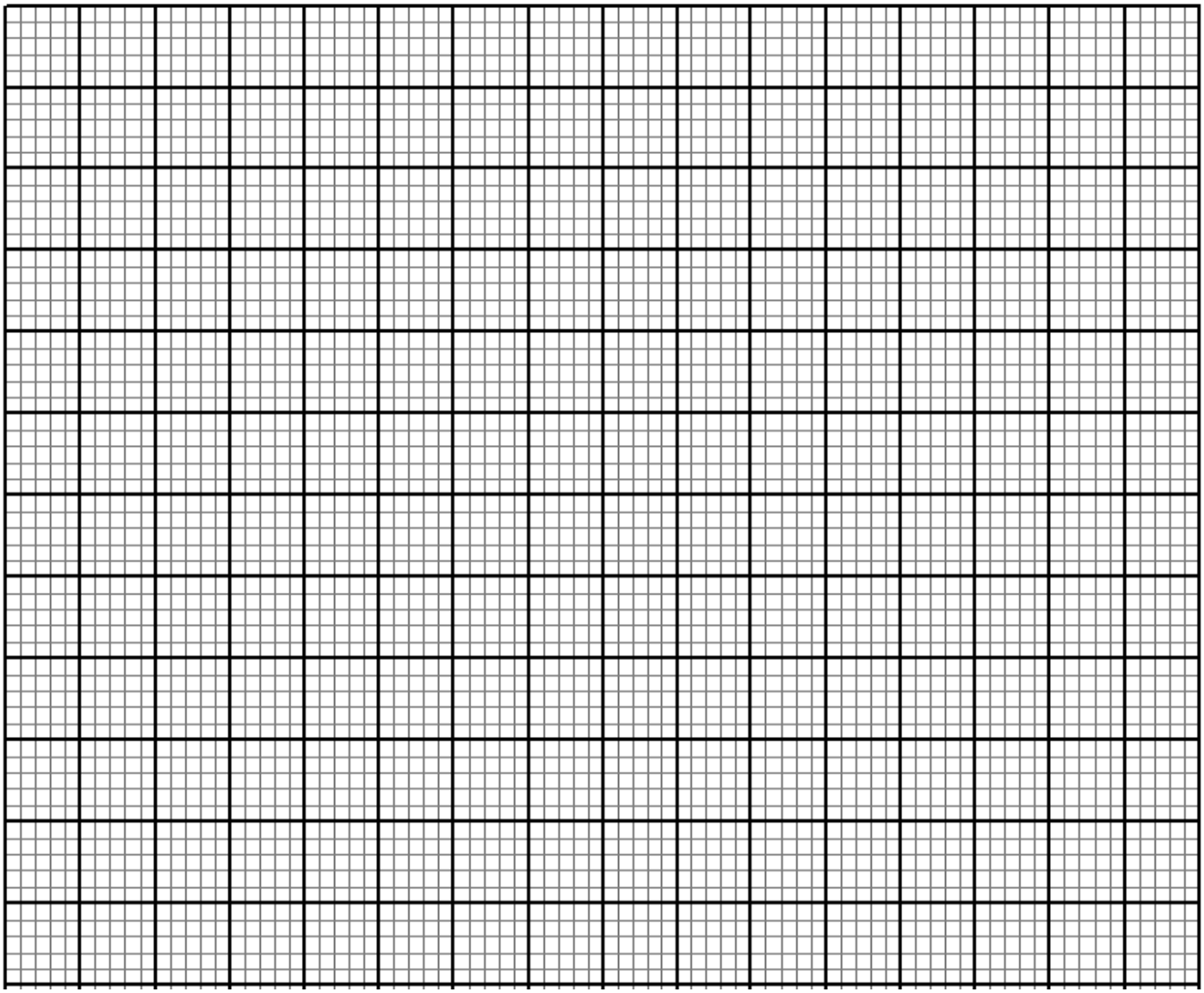
**iii)** The angle between the planes VDC and ABCD **(2mks)**

**iv)** Volume of the pyramid **(2mks)**

**19.a)** Complete the table below for y=sin 2x and y=sin ( 2x + 30) giving values to 2d.p. **(2mks)**

| X | 0 | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 | 165 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sin 2x | 0 | | | | 0.87 | | | | -0.87 | | | | 0 |
| Sin ( 2x +30) | 0.5 | | | | 0.5 | | | | -1 | | | | 0.5 |

**b)** Draw the graphs of y=sin 2x and y = sin (2x + 30) on the axis. **(4mks)**

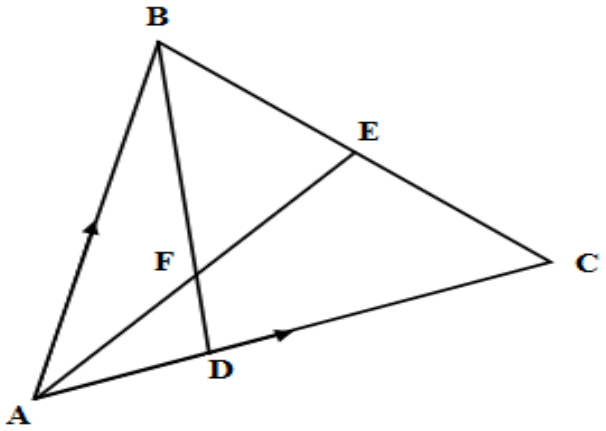


**c)** Use the graph to solve $sin\ (\ 2x\ +\ 30) - sin\ 2x\ =\ 0$ **(1mk)**

**d)** Determine the transformation which maps $sin\ 2x\ onto\ sin\ (2x\ +\ 30)$ **(1mk)**

**e)** State the period and amplitude of $y = sin(2x + 30)$ **(2mks)**

**20.** In the figure below E is the midpoint of BC. AD: DC 3:2 and F is the meeting point of BD and AE.




**a)** If AB = **b** and AC = **c,** find:

**i)** BD **(2mks)**

**ii)** AE **(2mks)**

**b)** If BF = *t* BD and AF = *n* AE. Find the value of t and n. **(5mks)**

**c)** State the ratio of BD to BF. **(1mk)**

**21.** The position of two towns **X** and **Y** are given to the nearest degree as **X** ($45^0$ N, $110^0$ W) and **Y** ($45^0$ N, $70^0$ E)**.** Take $\pi = 3.142$, **R** = 6370km.Find:

**(a)** The distance between the two towns along the parallel of latitude in km. **(3mks)**

**(b)** The distance between the towns along a parallel of latitude in nautical miles. **(3mks)**

**(c)** A plane flew from **X** to **Y** taking the shortest distance possible. It took the plane 15hrs to move from **X** and **Y**. Calculate its speed in Knots. **(4mks)**

**d)** If the plane left town **X** on Monday 12:45PM. Find the local time it arrived at town **Y**. **(3mks)**

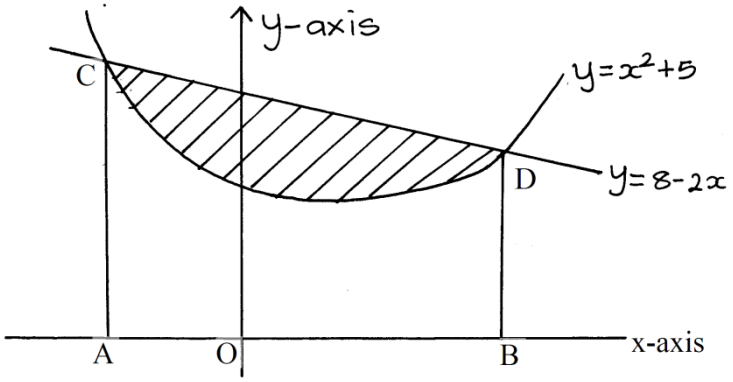
**22.** The $2^{nd}$ and $5^{th}$ terms of an arithmetic progression are 8 and 17 respectively. The $2^{nd}$, $10^{th}$ and $42^{nd}$ terms of the A.P. form the first three terms of a geometric progression. Find

**(a)**The $1^{st}$ term and the common difference. **(3mks)**

**(b)**The first three terms of the G.P and the $10^{th}$ term of the G.P. **(4mks)**

**(c)**The sum of the first 10 terms of the G.P. **(3mks)**

**23.**The diagram below, not drawn to scale shows part of the curve $y = x^2 + 5$ and the line y = 8-2x. The line intersects the curve at points C and D. Lines AC and BD are parallel to the y-axis.




**(a)**Determine the coordinates of C and D. **(4mks)**

**(b)**Use integration to calculate the area bounded by the curve and the x-axis between the points C and D. **(3mks)**

**(c)**Calculate the area enclosed by the lines CD, CA, BD and the x-axis. **(3mks)**

**(d)**Hence determine the area of the shaded region. **(1mk)**

**24.** Using a ruler and pair of compasses only.

**a)** Construct triangle ABC in which AB = 9cm, AC = 8cm and angle BAC = $60^0$. Measure BC **(2mks)**

**b)** On the same side of AB as C, draw the locus of a point such that angle APB = $60^0$ **(3mks)**

**c)** A region T is within the triangle ABC such that AT > 4cm and angle ACT ≥ angle BCT. Show the region T by shading it. **(5mks)**

**NAME……..…..……ADM NO……**

**SCHOOL……..……..CLASS……**

**DATE…….……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## PHYSICS PAPER 1

***Kenya Certificate of Secondary Exams***

## TIME: 2 HOURS

**INSTRUCTIONS TO CANDIDATES**

- *Write your name and your index number in the spaces provided above.*
- *This paper consists of **two** sections **A** and **B***
- *Answer **all** questions in section **A** and **B** in the space provided*
- *All working **must** be shown in the spaces provided in this booklet.*
- *Mathematical tables and silent electronic calculators may be used*
- *This paper consists of 10 printed pages. Candidates should check to ensure that all pages are printed as indicated and no questions are missing*

**FOR OFFICIAL USE**

| SECTION | QUESTION | MAX. SCORE | CANDIDATE'S SCORE |
|---|---|---|---|
| A | 1-12 | 25 | |
| B | 13 | 09 | |
| | 14 | 15 | |
| | 15 | 10 | |
| | 16 | 11 | |
| | 17 | 10 | |
| **TOTAL SCORE** | | **80** | |

# SECTION A 25 MARKS

***Answer all questions in this sections***

**1.** A micrometer screw gauge is used to measure the thickness of a stuck of 10 microscope slide cover slips. The reading with the cover slips in position is as shown in figure 1.

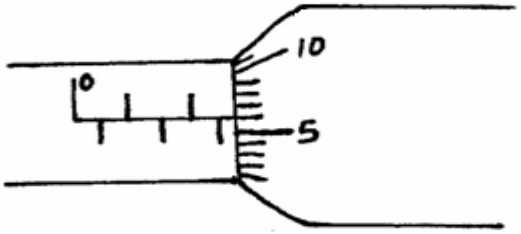



Figure 1

If the micrometer screw gauge has a negative zero error of 0.01mm, determine the thickness of each cover slip. **(2mks)**

**2.** Explain why ammonia gas released at the back of a laboratory spreads faster on a hot day than on a cold day. **(1mk)**

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**3.** 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. **(1mk)**

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**4.** **(a)** 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 radius 32 cm on a water surface. **(2mks)**

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

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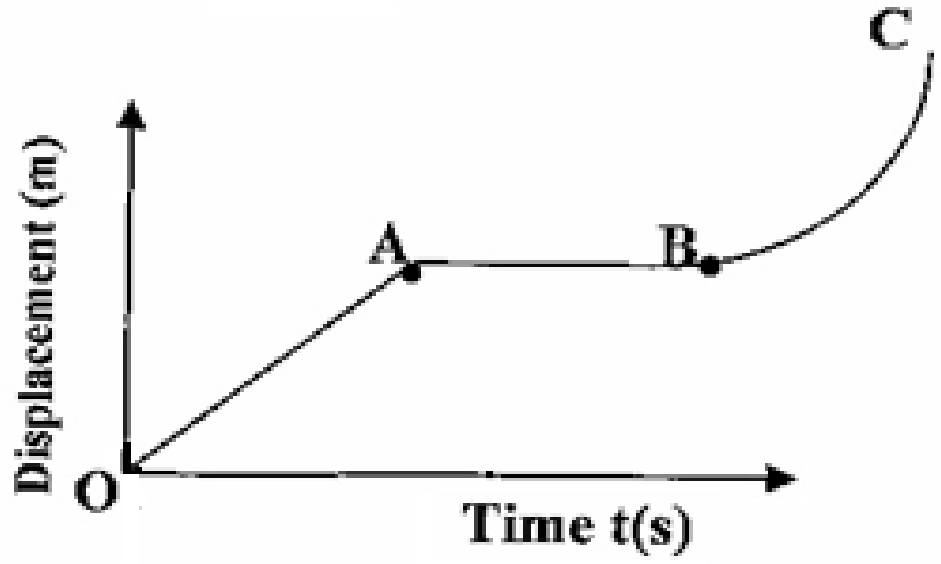
**5.** In the study of free fall, it is assumed that the force F acting on a given body of mass, m, is gravitational, given by F = mg. State two other forces that act on the same body. **(2mks)**

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**6.** The figure below shows a displacement-time graph of the motion of a particle.




Describe the motion of the particle in the region. **(3mks)**

**i.** OA

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……

**ii.** AB

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**iii.** BC

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.....

**7.** A 60 litre giant density bottle weighs 100N when empty. What will be its mass when filled with liquid W whose density is 0.72g/cm$^3$? *(g=10N/kg)* **(3mks)**

**8.** Figure 3 shows a uniform wooden plank which weighs 10N. The plank is balanced at 0.8m from one end by a mass of 2.5Kg.

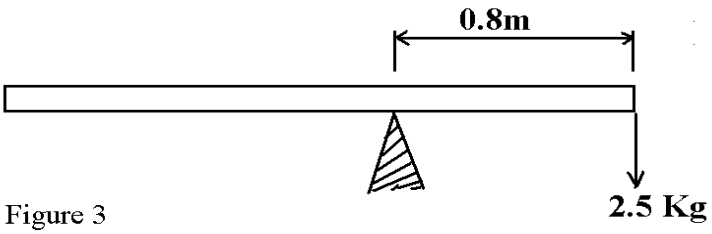
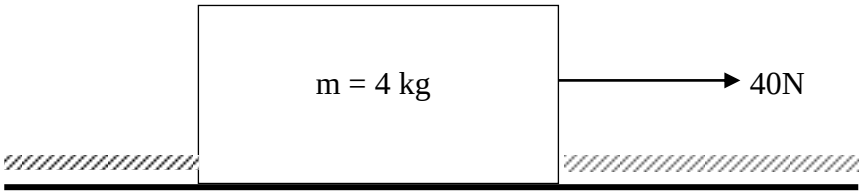



Figure 3

What is the length of the wooden plank in metres. **(2mks)**

**9.** The figure below shows a force of 40N acting on a body of mass 4kg. The coefficient of friction between the surfaces is 0.05.




Determine the acceleration of the body. **(3mks)**

**10.** State ***one*** factor that affect the spring constant of a spring. **(1mk)**

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**11.** 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? **(3mks)**

**12.** A form one girl observed that when mercury is put into a glass it does not wet the glass. Explain the observations made by the girl. **(1mk)**

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## SECTION B (55MARKS)

***Answer all questions in the section***

**13.(i)** Define Archimedes' Principle. **(1mk)**

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**(ii)** An object 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:

**a.** The density of the liquid. **(2mks)**

**b.** Calculate the density of the metal block. **(2mks)**

**(iii)** Calculate the upthrust on the metal and the apparent weight of the metal when completely submerged in salt solution of density $1.2g/cm^3$. **(3mks)**

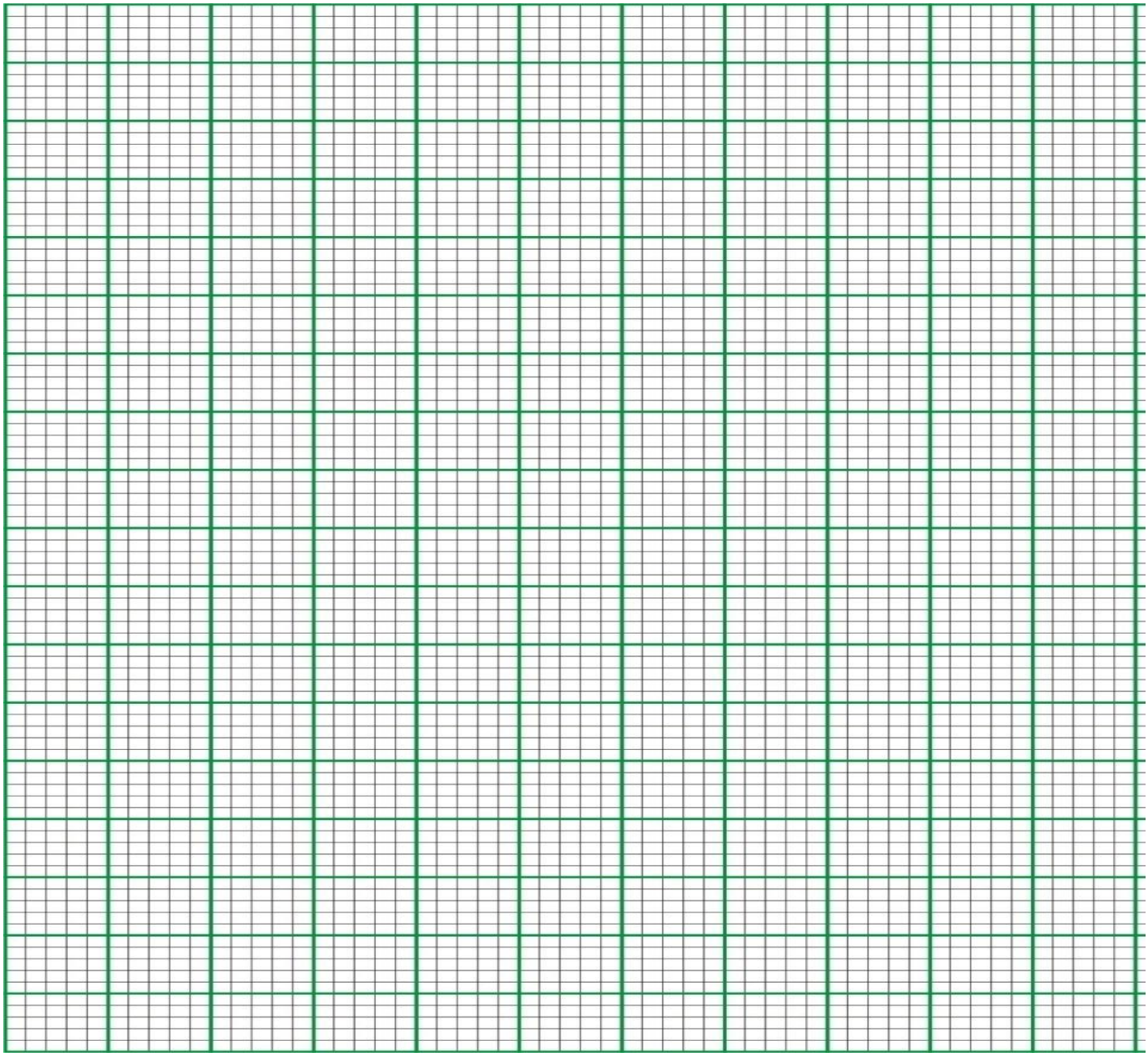
**(iv)** A blockof metal of volume $80cm^3$ weighs 3.80N in air. Determine its weight when fully sub merged in a liquid of density $1200kgm^{-3}$. **(3mks)**

**14.** The following readings were obtained in an experiment to verify Hooke's law using a spring.

| **Mass (g)** | 0 | 25 | 50 | 75 | 100 | 125 |
|---|---|---|---|---|---|---|
| **Reading (cm)** | 10.5 | 11.5 | 12.5 | 13.5 | 14.4 | 16.0 |
| **Force (N)** | | | | | | |
| **Extension (mm)** | | | | | | |

**a)** Complete the table **(2mks)**

**b)** Plot the graph of extension against force. **(5mks)**



**c)** From the graph determine the:

**(i)** Elastic limit **(1mk)**

**(ii)** Spring constant. **(2mks)**

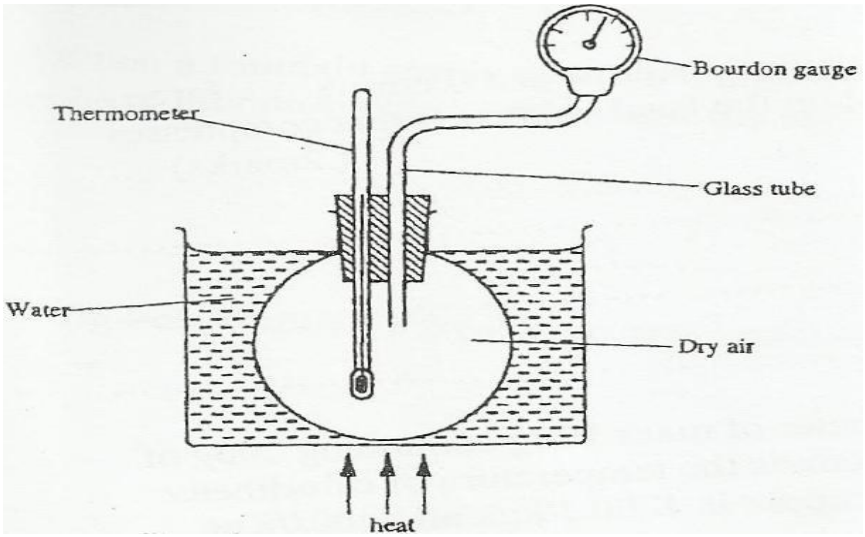
**15. (a)** State the pressure law for an ideal gas **(1mk)**

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




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

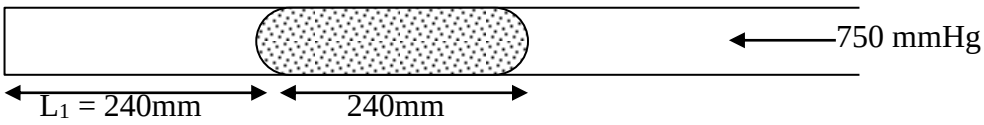
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**(c)**A bicycle tyre is pumped to a pressure of $2.2 \times 10^5$pa at$23^0$C. After a race the pressure is found to be $2.6 \times 10^0$ pa. Assuming the volume of the tyre did not change, what is the temperature of the air in the tyre. **(3mks)**

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



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

**16.a)** A body of mass 20Kg hangs 4m and swings through a vertical height of 0.9m as shown inthe figure 11.

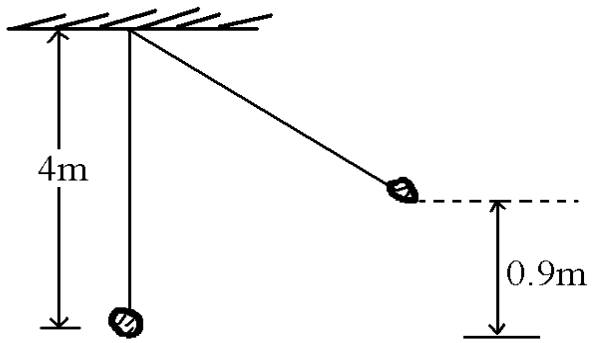



Figure 11

Determine;

**i)**The potential energy at its position. **(2mks)**

**ii)**The speed of the body when passing through the lowest point. **(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)**

**17. a)** Define the term 'heat capacity'. **(1mk)**

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……

……

**b)** A block of metal of mass 150g at a $100^0$C is dropped into a well lagged calorimeter of mass 215g and specific heat capacity 400JKg$^{-1}$K$^{-1}$ containing 100g of water at $25^0$C. The temperature of the resulting mixture is $34^0$C. (Specific heat capacity of water = 4200JKg$^{-1}$ K$^{-1}$). Determine;

**i)** Heat gained by calorimeter. **(2mks)**

**ii)** Heat gained by water. **(2mks)**

**iv)**Specific heat capacity of the metal block. **(3mks)**

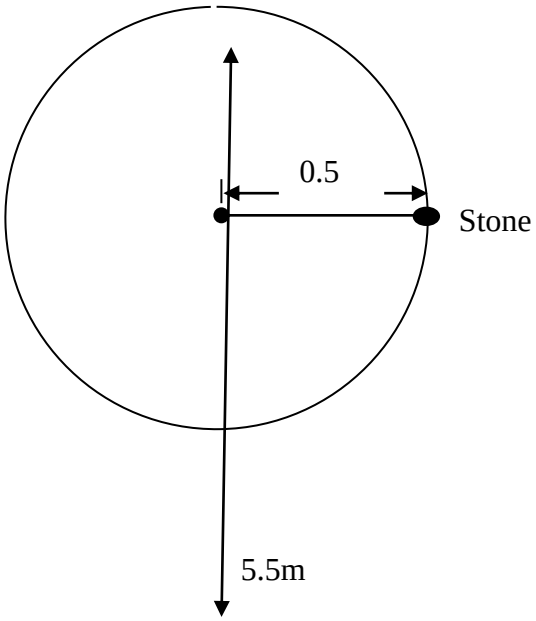
**18. (a)** State ***two*** factors affecting centripetal force **(2mks)**

……

……

……

**(b)** A stone of mass 0.5kg is attached to a string of length 0.5m which will break if the tension exceeds 20N. The stone is whirled in a vertical plane, the axis of rotation being above the ground, as shown in the Figure 10 below.




The angular velocity is gradually increased until the string breaks. At what angular velocity, ***w***, will the string break? **(3mks)**

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## PHYSICS PAPER 2

***Kenya Certificate of Secondary Exams***

## TIME: 2 HOURS

## INSTRUCTIONS TO CANDIDATES:

*This paper consists of **TWO** sections. Sections A and B*
*Answer **ALL** the questions in section A and B*
*All working **MUST** be clearly shown.*
*Mathematical tables and Electronic calculators may be used.*
*Take acceleration due to gravity, g = 10ms$^{-2}$*

### FOR EXAMINER'S USE ONLY

| SECTION | QUESTIONS | MAX SCORE | CANDIDATES SCORE |
|---|---|---|---|
| A | 1-13 | 25 | |
| B | 14 | 12 | |
| | 15 | 10 | |
| | 16 | 12 | |
| | 17 | 12 | |
| | 18 | 09 | |
| TOTAL SCORE | | 80 | |

# SECTION A ( 25 MARKS)

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

1.State ***one*** reason why in the construction of car head lamps parabolic reflectors are preferred to spherical reflectors. **(1mk)**

……

……

……

**2.** It is common practice that once an accumulator is recharged the terminals are connected using a wire to assess its state of charge. How is this dangerous to the life of the accumulator? **(1mk)**

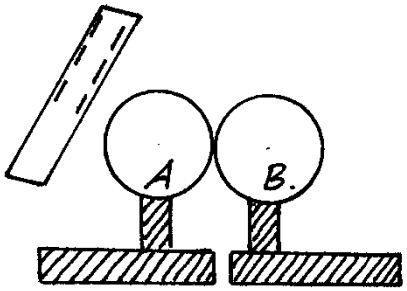
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**3.**Two identical spheres A and B each standing on an insulating base are in contact. A negatively charged rod is brought near sphere A as shown in figure 1

Fig. 1




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

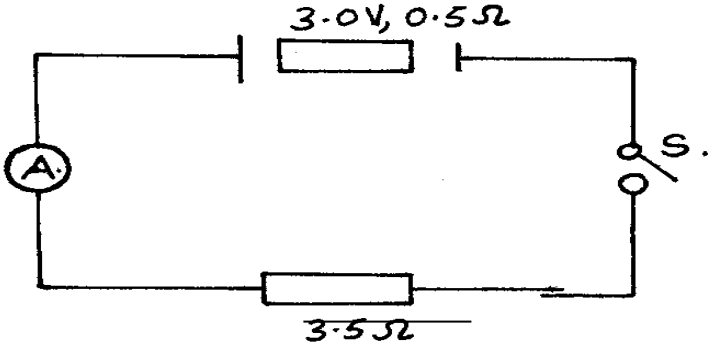
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**4.**The ammeter in the circuit in figure 2 has negligible internal resistance. The cell has an internal resistance of 0.5Ω and an electromotive force of 3.0v.

**Fig. 2**



Determine the value of current the ammeter registers when switch S is closed**.** **(2mks)**

**5.Figure 3**. represents a step down transformer of ratio 10:1. The turns are wound uniformly on the core and the primary coil is connected to a 250va.c supply. The lengths KL and MN are as indicated.

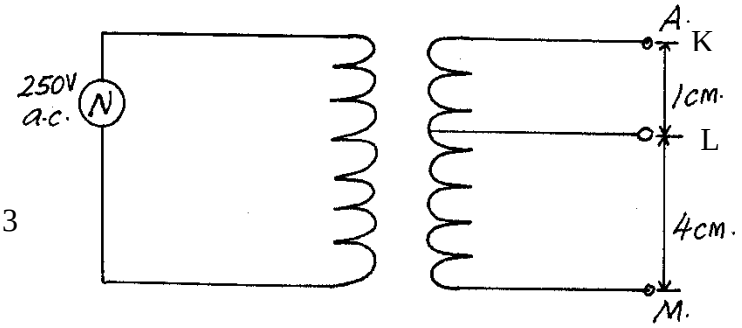



Fig. 3

Determine the p.d across LM. **(4mks)**

**6.**The diagram in figure 4 below shows a wire placed between the poles of two bar magnets.

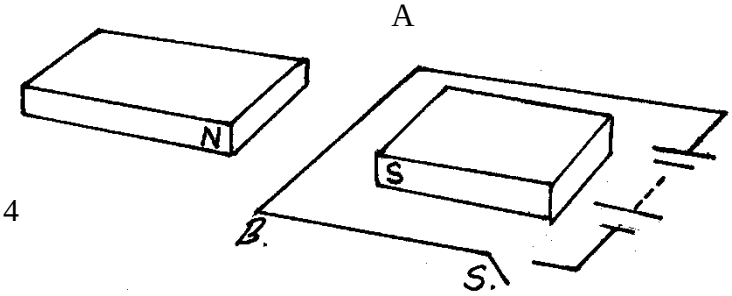



Fig. 4

Indicate with an arrow the force that acts on the section **AB** of the wire. **(1mk)**

**7.**An electric heater 480Ω is connected to a 240v main supply. Determine the energy dissipated in 4 minutes. **(3mks)**

**8.** A pin at the bottom of a beaker containing glycerine appears to be 6.8cm below the surface of glycerine. Determine the height of the column of glycerine in the beaker. (*take the refractive index of glycerine as 1.47*) **(3mks)**

**9.**A girl shouts and ears an echo after 0.6 seconds later from a cliff. If velocity of sound is 330m/s, calculate the distance between her and the cliff. **(3mks)**

**10.**What do you understand by 'doping' as applied with semiconductors? **(1mk)**

……

……

……

**11.**Arrange the following in order of decreasing wavelength Gamma radiation, Radio waves, Infrared and x-rays. **(1mk)**

……

……

……

**12.** Explain why soft iron keepers are suitable for storing magnets **(2mks)**

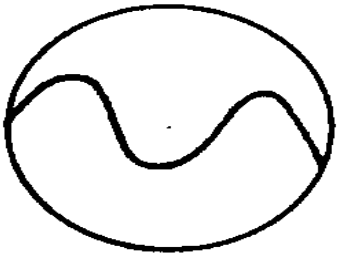
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**13.**Figure 7shows a trace obtained on a cathode ray oscilloscope screen when an a.c is applied to the Y-plates and time base switched on.

Fig. 7



On the same figure draw a waveform showing what would be observed if the time base is doubled. **(1mk)**

## SECTION B ( 55 MARKS)

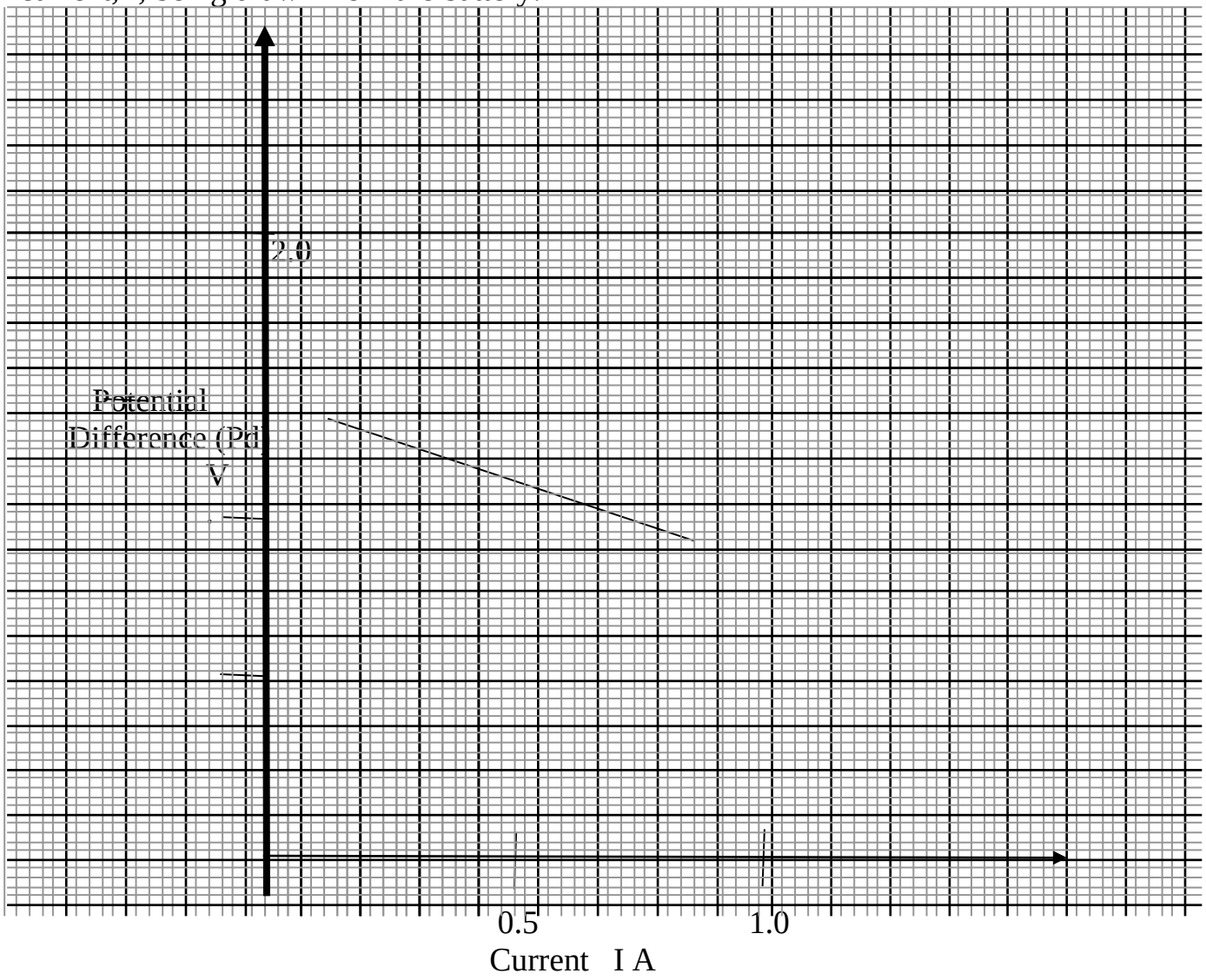
***Answer ALL the questions in this section in the spaces provided***

**14.(a)** What is meant by an open circuit? **(1mk)**

……

……

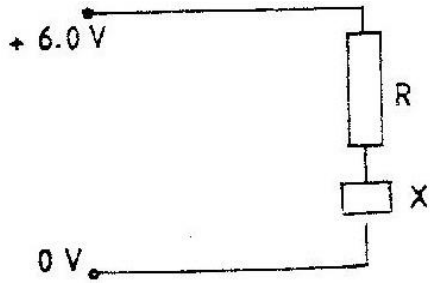
**(b)**The graph in figure 5 shows the terminal voltage, V, of a certain battery varies with the current, I, being drawn from the battery.



**(i)** Write an expression relating the e.m.f. E, terminal voltage, V, current, I and the internal resistance, r, of the battery for the circuit drawn in (i) above. **(1mk)**

**(ii)**From the graph determine the; I internal resistance, r, of the battery. **(2mks)**

**(b)**When the device, X is connected in the circuit below, the voltage across it is 0.70 V.




Calculate the value of the resistance R. **(3mks)**

**(c)**The cell in figure 10 has an e.m.f of 2.1 V and negligible internal resistance.

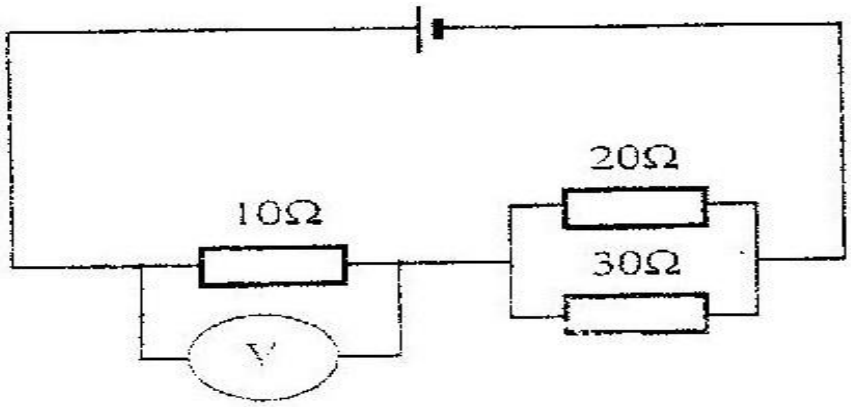



Figure 10

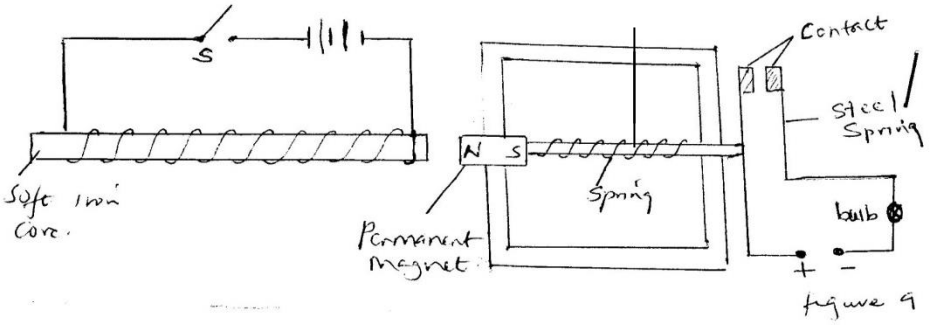
Determine the

**(i)** Total resistance in the circuit **(2 marks)**

**(ii)** Current in the circuit **(1 mark)**

**(iii)** Reading of the voltmeter **(2 marks)**

**15. a)** The figure 9 below shows magnetic relay circuit



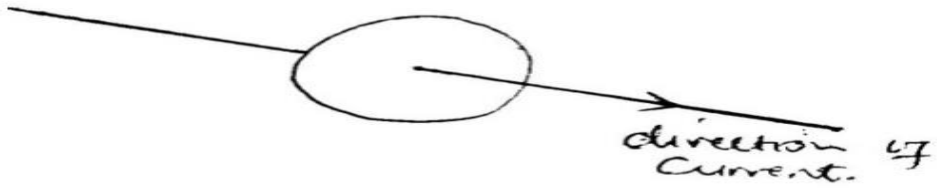
Explain what will be observed when the switch is closed **(4mks)**

……

……

……

**(b)** The ***figure 10*** below shows a current carrying conductor




On the same diagram draw, the magnetic field pattern produced. **(2mks)**

**(c)** State ***two*** possible rules that can be used to predict the field direction produced in the above diagram. **(2mks)**

……

……

……

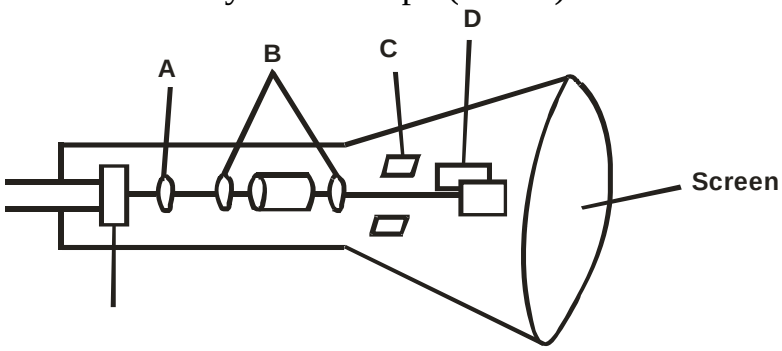
**(d)** List ***two*** applications of magnetic effect of electric current. **(2mks)**

……

……

……

**16. a)** The figure below represents a cathode ray oscilloscope (C.R.O)




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

**A**

……

……

**B**

……

……

**c)** What are the functions of parts labelled C and D? **(2mks)**

**C**

……

……

**D**

……

……

**d)** Explain how electrons are produced . **(1mk)**

……

……

……

**e)** Give a reason why the tube is evacuated. **(1mk)**

……

……

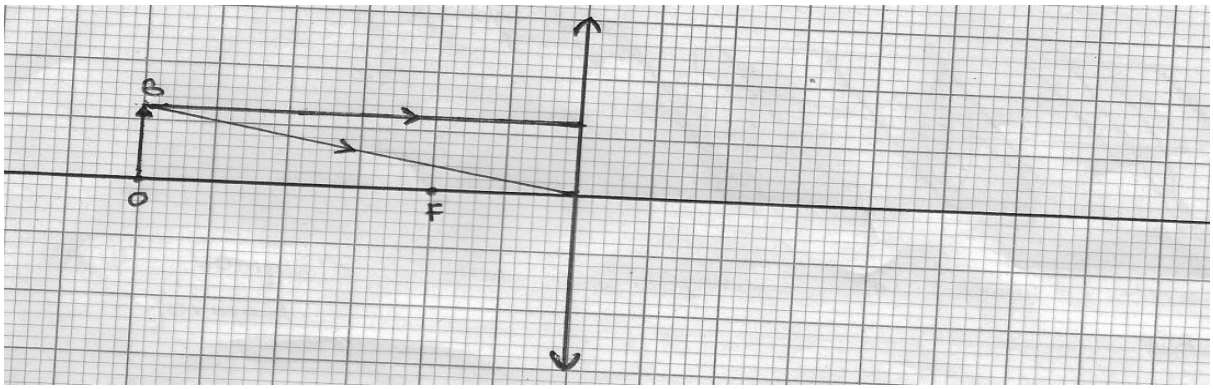
……

**f)** The potential between the anode and the cathode of an X-ray tube is 80kv. Calculate;

**i.** The energy of an electron accelerated in the tube. (Electronic charge e = $1.6 \times 10^{-19}$ C) **(3mks)**

**ii.** The velocity of electrons in the tube. (Mass of an electron = $9.11 \times 10^{-31}$kg ) **(3mks)**

**17 (a)** The **figure 12** below shows two rays starting from the top of an object OB incident on a converging lens of focal length 2cm.

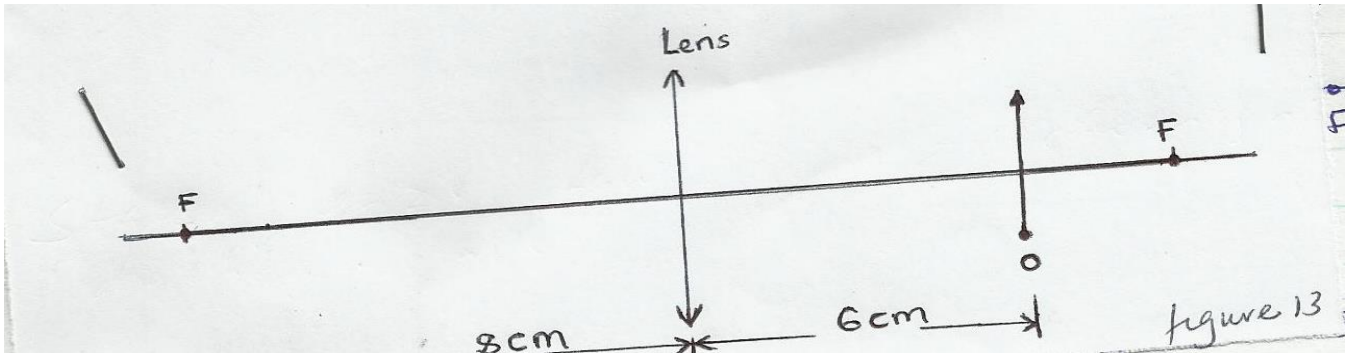



Complete the diagram to show the image formed **(3mks)**

**(b)** Add one or more incident ray from B and draw the corresponding refracted ray **(1mk)**

**(c)** Calculate the magnification produced by the lens **(2mks)**

**(d)** The **figure 13** below shows an object placed at right angles to the principal axis of a thin converging lens.




**i.** Calculate the position of image formed **(3mks)**

**ii.** Give an application for this arrangement of a lens. **(1mk)**

……

……

……

**iii.** Describe the nature of the image formed **(2mks)**

……

……

……

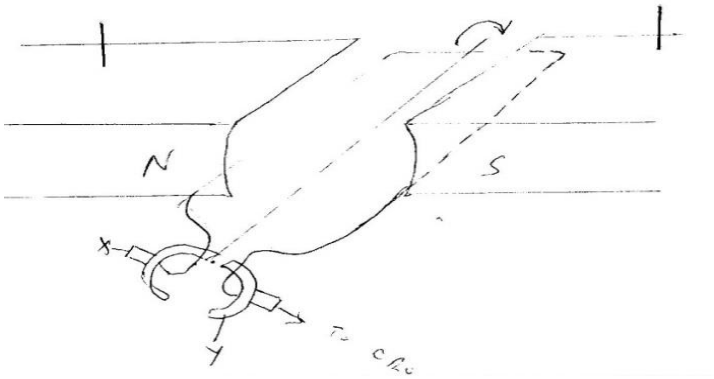
**18 (a)** State Lenz's law of electromagnetic induction **(1mk)**

……

……

……

**(b)** The figure 14 below shows a diagram of a simple electric generator




State three factors that would affect the value of the voltage output **(3mks).**

……

……

……

**(c)** A transformer supplies a current of 13.5A at a voltage of 48v to a device from an AC main supply 240V. Given that the transformer is 80% efficient, calculate;

**i.** Power supplied to the transformer **(3mks)**

**ii.** Current in the primary coil **(2mks)**

**NAME……ADM NO……**

**SCHOOL……..CLASS……**

**DATE……**

# FORM 4 KCSE PREDICTION 2 EXAMS

## PHYSICS PAPER 3

## *Kenya Certificate of Secondary Exams*

## TIME: 2 ½ HOURS

**INSTRUCTIONS TO CANDIDATES:**

- *Write your **name** and **index number** in the spaces provided above.*
- *Sign and write the **date** of the examination in the spaces provided above.*
- *You are supposed to spend the first **15** minutes of the **2** ½ hours allowed for this paper reading the whole paper carefully before commencing your work.*
- *Marks are given for a clear record of the observation actually made, their suitability, accuracy and the use made of them.*
- *Candidates are advised to record their observations as soon as they are made*
- *Non-programmable silent electronic calculators **may be** used.*
- *Candidates should check the question paper to ascertain that all the pages are printed andthat no questions are missing.*

**FOR EXAMINER'S USE ONLY.**

| Question | Maximum score | Candidate's score |
|---|---|---|
| 1 | 20 | |
| 2 | 20 | |
| **TOTAL** | 40 | |

# QUESTION 1 (PART A)

You are provided with the following:

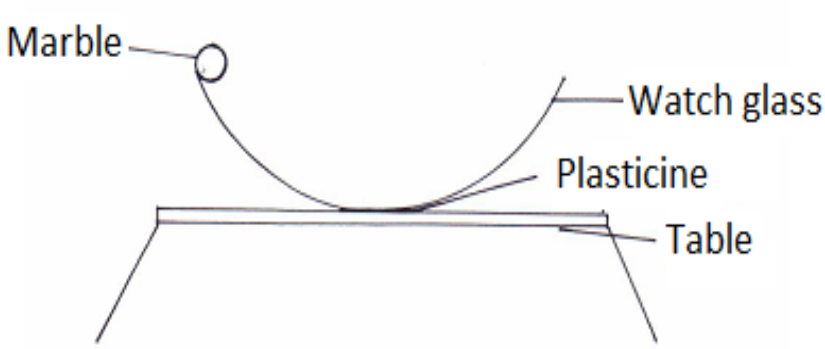
- A watch glass.
- A small piece of plasticine.
- A marble.
- A stopwatch.
- Vernier calipers.
- An electronic balance (to be shared).

**(a)** Measure the mass M of the marble.

**M = …….g** **(½mk)**

**(b)** Place the watch glass flat on the table with a small piece of plasticine to fix it firmly to the table at the place it touches.

**(c)** Release the marble from one end of the watch glass and time 10 complete oscillations with a stop watch. Repeat this three times.




**(d)** Record your values in table 1 below **(2mks)**

Table 1

| | **Time for 10 oscillations** | **Periodic time T(s)** | |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |

Find the average periodic time T.

**T = …….. s.** **(½mk)**

**(e)** Measure the diameter of the marble with the verniercallipers and hence find its radius.

Diameter **d = …….. m** **(½mk)**

Radius **r =……..…… m** **(½mk)**

**(f)** Determine the volume (V) of the marble given that:

$V = \frac{4}{3}\pi r^3$ **(1mk)**

**(g)** Calculate the radius of curvature of the watch glass R from the formula.

$R - r = \frac{5gT^2}{7(2\pi)^2}$ **(2mks)**

Where g = 9.8m/s² and π = 3.142.

# PART B

You are provided with the following

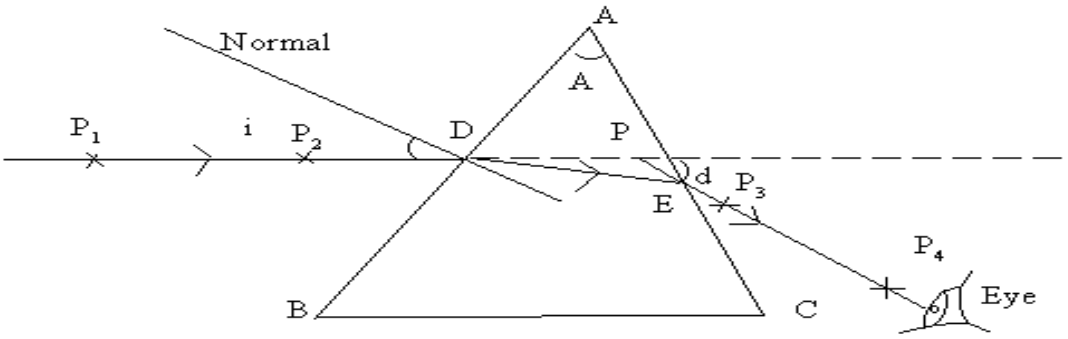
- ✓ A triangular prism of $60^0$.
- ✓ Four optical pins
- ✓ A soft board
- ✓ A plain piece of paper

**Proceed as follows**

**(a)** Place the plain sheet of paper on the soft board

**(b)** Place the prism with one face on the plain paper and trace its outline.

**(c)** Remove the prism from the plain sheet of paper.



**(d)** Mark angle A and record its value. **(1mk)**

**A =** .....

**(e)** Draw a normal as shown and draw a ray of incident on the normal at an angle of incidence of $30^0$.

**(f)** Replace the prism on the outline on the sheet.

**(g)** Stick two pins $P_1$ and $P_2$ along the path of the incident ray as shown in the diagram.

**(h)** View the images of $P_1$ and $P_2$ through the glass prism through face AC as shown on the diagram.

**(i)** Stick two pins $P_3$ and $P_4$ so that they appear to be in line with $P_1$ and $P_2$ as seen through the glass prism.

**(j)** Remove the pins and prism from the sheet. Trace the path of the ray until it emerges from the glasses shown in the diagram.

**(k)** Extend the incident ray and the emergent ray until they meet at P. Measure and record the angle of deviation d.

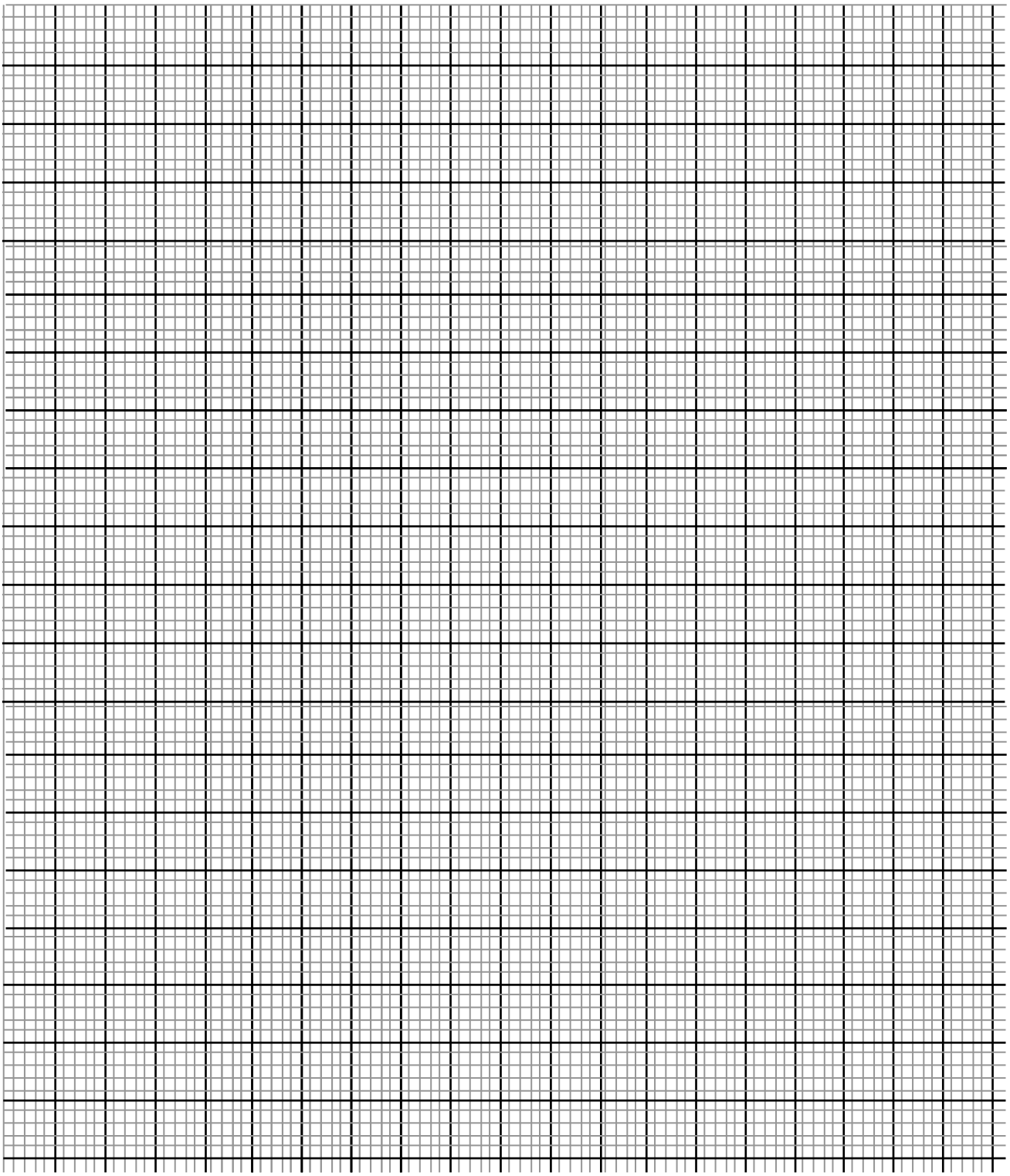
**(l)** Repeat the experiment for other angles of incidence shown in the table. **(3 marks)**

| Angle of incidence $(i)^0$ | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
|---|---|---|---|---|---|---|---|
| Angle of deviation $(d)^0$ | | | | | | | |

(m)

Plot a graph of angle of deviation $(d)^0$ against angle of incidence $(i)^0$. **(5 marks)**

**(l)** Present your working.



**(n)** From the graph determine the minimum angle of deviation D. **(1 marks)**

**(p)**Find the refractive index of the prism material using **(3 marks)**

$$n = \frac{\text{Sin}\,\frac{(A+D)}{2}}{\text{Sin}\left(\frac{A}{2}\right)}$$

## QUESTION 2

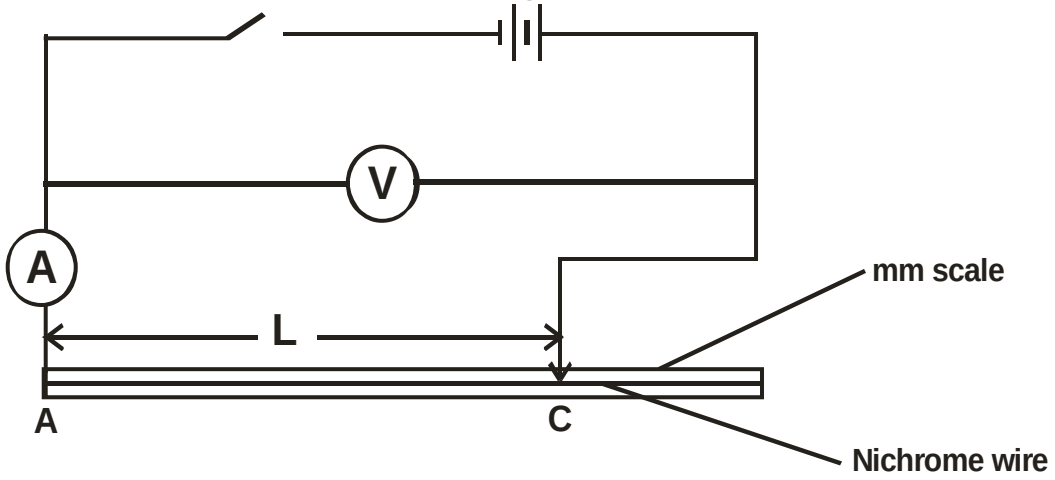
### PART A

**1.** You are provided with the following apparatus.

- Two dry cells.
- Nichrome wire 100cm on a mm scale.
- An ammeter.
- Cell holder.
- Voltmeter.
- Connecting wires with crocodile clips.
- Switch.

**Proceed as follows;**

**a)** Connect the circuit as shown in the diagram.



**b)** Connect the ends A and C where AC is the length L of the Nichrome wire across the terminals as shown. Close the switch and measure both current I and potential difference (P.d) across the wire AC when L = 100cm.

Current I = **…… (1 mark)**

P.d, V = **……..……(1 mark)**

**c)** Measure the E.m.f of the cells, E.
**E = ……(1 mark)**

**d)** Reduce the length L (AC) to the lengths shown in the table below. In each case record the current, I, and the corresponding P.d. **(6 marks)**

| Length L (cm) | 100 | 70 | 60 | 50 | 40 | 20 |
|---|---|---|---|---|---|---|
| I (A) | | | | | | |
| P.d (V) | | | | | | |
| E – V (v) | | | | | | |

**e)** Plot a graph of E – V against I(A) on x-axis in the grid provided. **(5 marks)**
**(Provide a graph paper)**

**f)** Given that E = V + Ir, determine the internal resistance, r, of each cell. **(3 marks)**

'an investment of knowledge pays

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