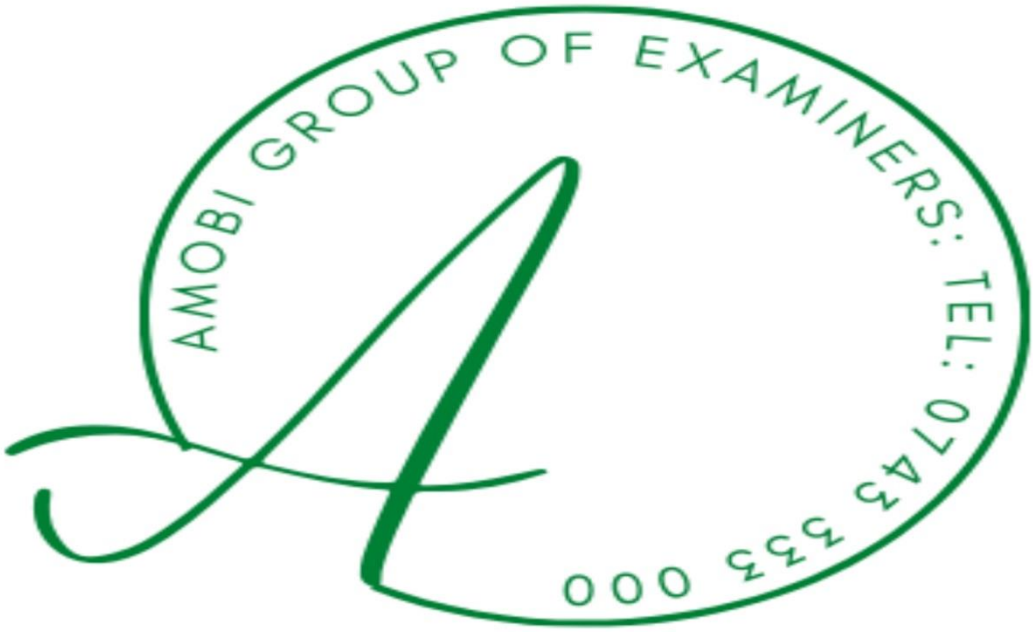
PROGRESSIVE STUDENTS F4 MOCK SERIES 1 EXAMS *(14 SUBJECTS TESTED)*



PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES 1 EXAMS

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For Marking Schemes

N/B In Response to the Huge Costs Associated in Coming Up with Such/Similar Resources Regularly, We inform us All, MARKING SCHEMES ARE NOT FREE OF CHARGE. However Similar QUESTIONS, Inform of soft Copies, are Absolutely FREE to Anybody/Everybody. Hence NOT FOR SALE by Amobi Group of Examiners.

ORDER OF THE 14 SUBJECTS TESTED

(ALPHABETICALLY ARRANGED)

1. **AGRICULTURE**
2. **BIOLOGY**
3. **BUSINESS STUDIES**
4. **CHEMISTRY**
5. **COMPUTER**
6. **C.R.E**
7. **ENGLISH**
8. **GEOGRAPHY**
9. **HISTORY**
10. **HOMESCIENCE**
11. **I.R.E**
12. **KISWAHILI**
13. **MATHS**
14. **PHYSCIS**

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- Poetry & Ushairi Qsns.... e.t.c

PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

TERM 2
AGRICULTURE
PAPER 1
FORM FOUR (4)
Time: 2 Hours

INSTRUCTIONS TO THE CANDIDATES

a) Write your **name** and **index number** in the spaces provided above.
b) This paper consists of **three** sections;-**A, B** and **C.**
c) Answer **all** questions in section **A** and **B** and any two questions in section C
d) All answer must be written in the spaces provided.
e) Candidates should check the question papers to ascertain that all the pages are printed as indicated and that no questions are missing.
f) Candidates should answer the question in English.

FOR EXAMINER'S USE ONLY

SECTION	QUESTIONS	MAX SCORE	CANDIDATE'S SCORE
A	1-15	30	
B	16-19	20	
C	20	20	
	21	20	
	22	20	
TOTAL		90	

SECTION A (30MKS)
ANSWER ALL QUESTION

1. List **four** practices carried out in ranching as an improved system of nomadic pastoralism **(2mks)**

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2. State **four** ways by which government policy influences agriculture **(2mks)**

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3. Name **four** ways by which plants harness more light intensity **(2mks)**

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4. State **four** ways through which farmers reduce the effects of water shortage during crop production **(2mks)**

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5. State **four** ways of improving a sandy soil for crop production **(2mks)**

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6. State **four** effects of soil PH in crop production **(2mks)**

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7. Give **four** reasons why it is advantageous to use farm yard manure instead of straight fertilizer. **(2mks)**

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8. State **four** methods of reclamation farmers can carry out. **(2mks)**

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9. State **four** benefits of land consolidation. **(2mks)**

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10. State **four** factors that determine the spacing of maize crops. **(2mks)**

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11. State **four** factors which may affect the quality of hay. **(2mks)**

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12. State **four** factors that affect the effectiveness of a pesticide. **(2mks)**

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13. State **four** importance of practicing agroforestry. **(2mks)**

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14. Name **four** natural factors that may influence soil erosion. **(2mks)**

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15. State **two** conditions that should be observed when harvesting to ensure that cotton picked is of high quality. **(2mks)**

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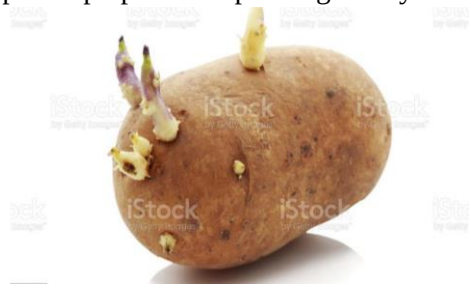
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SECTION B 20 MARKS
ANSWER ALL THE QUESTIONS

16. The photograph below illustrate a seed potato prepared for planting. Study it and answer the questions that follow.



(a) Name the practice used to prepare the seed potato above for planting **(1mk)**

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(b) Describe the procedure followed in preparing the seed potatoes for planting **(4mks)**

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17. The photograph below illustrate a type of erosion. study it and answer the questions that follow.



(a) Identify the type of erosion **(1mk)**

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(b) How does the type of erosion shown above occur **(2mks)**

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(c) How does planting of grass help to control the type of erosion shown **(2mks)**

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18. The photograph below illustrate a method of irrigation. study it and answer the questions that follow.



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(a) Identify the method of irrigation illustrated above **(1mk)**

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(b) State **two** advantages of using the above method of irrigation **(2mks)**

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(c) Give **two** maintenance practices carried out on the above method of irrigation **(2mks)**

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19. Below is a photograph showing harvesting of trees in agroforestry. Study it and answer questions that follow



(a) Identify the practice **(1mk)**

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(b) Name **two** other methods used in harvesting agroforestry trees **(2mks)**

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(c) Give **two** sites where agroforestry trees are planted **(2mks)**

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SECTION C (40 MARKS)

ANSWER ANY TWO QUESTIONS FROM THIS SECTION IN THE SPACES PROVIDED

20. a) Outline **seven** roles of a good farm manager **(7mks)**

b) Explain problems encountered in the marketing of cabbages. **(9mks)**

c) Explain **four** factors that make weeds propagate successfully. **(4mks)**

21.a) Give **four** agricultural practices that pollute water **(4mks)**

b) Explain the factors that determine a crop rotation programme in crop production **(8mks)**

c) State **four** advantages of overhead irrigation **(4mks)**

b) State **four** disadvantages of communal land tenure **(4mks)**

22.a) Describe the production of maize under the following sub heading.

i) Land preparation **(4mks)**

ii) Planting **(4mks)**

b) Describe physical methods used in pest control **(6mks)**

c) Discuss the post harvesting practices that should be carried out on cereals crop before storage **(6mks)**

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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

TERM 2
AGRICULTURE
PAPER 2
FORM FOUR (4)
Time: 2 Hours

INSTRUCTIONS TO CANDIDATES:

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

For Examiner's Use Only:

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A		30	
B		20	
C		20	
		20	
	TOTAL	90	

SECTION A (30MARKS) ***Answer all questions in this section***

1. Name **four** dairy cattle breeds reared in Kenya. **(2mks)**

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2. Give **four** reasons for castrating male goats. **(2mks)**

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3. Give **two** parasites of cattle which are also disease vectors **(1mk)**

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4. List **two** possible causes of over heating in a tractor engine **(1mk)**

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5. Mention the use of the following tools. **(2mks)**

i) Dibber…….

ii) Spokeshave ……...

iii) Tinsnips…….

iv) Burdizzo ……

6. State the importance of the following in livestock nutrition:

i) Water **(1mk)**

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ii) Vitamin A **(1mk)**

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7. State **four** management practices that should be carried on a fish pond in order to obtain maximum fish production. **(2mks)**

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8.a) State **two** reasons for washing the udder of a cow with warm water before milking. **(1mk)**

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b) Name the hormone that causes each of the following in dairy cows:.

i) milk let down. …… **(1mk)**

ii) lactogenesis …… **(1mk)**

9. Differentiate between 'breed' of animal and 'type' of animal. **(2mks)**

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10. Name **two** livestock diseases that are spread through natural mating. **(1mk)**

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11. Name the compartment of the ruminant stomach where microbial digestion takes place. **(1mk)**

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12. List **four** precautions that should be taken when using workshop tools and equipment. **(2mks)**

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13. State **four** methods of increasing the depth of penetration of a disc harrow. **(2mks)**

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14. List **four** factors considered when formulating livestock ration. **(2mks)**

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15. State **four** conditions that necessitate the handling of farm animals **(2mks)**

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16. State **four** abnormalities of eggs that can be detected during egg candling. **(2mks)**

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17. List **two** events occur during induction stroke in a four stroke engine **(1mk)**

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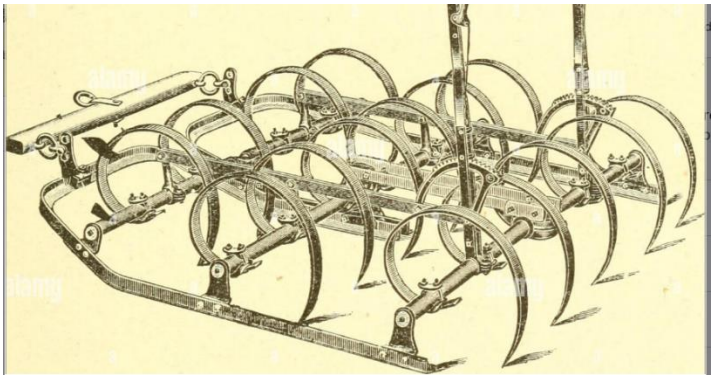
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SECTION B (20MARKS)

Answer all the questions in this section.

18.i) the diagram below shows a tractor drawn implement.



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a) Name the implement**…….** **(1mk)**

b) Give **two** uses of the implement above **(2mks**

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c) State **three** maintenance practices carried out on the above implement. **(3mks)**

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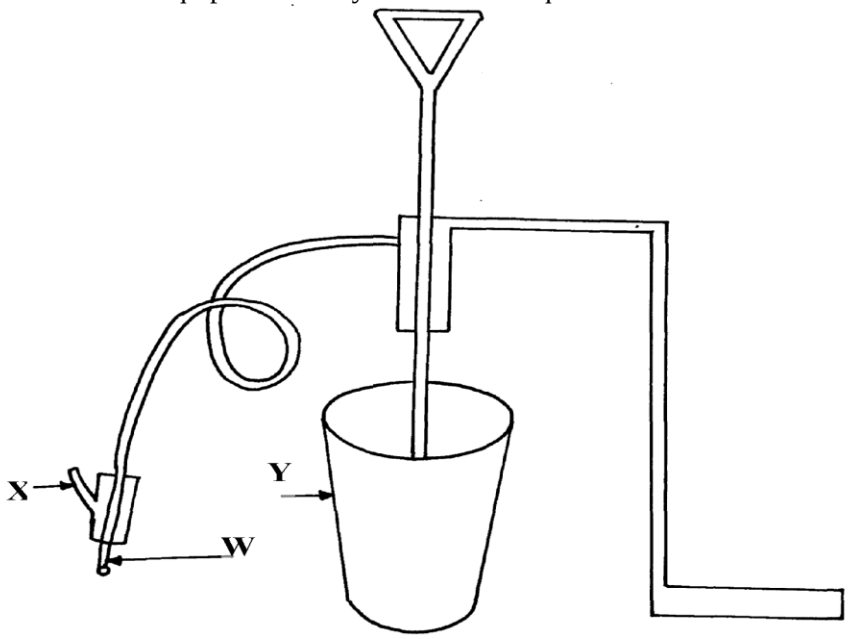
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ii) Below is an illustration of a farm equipment. Study it and answer questions that follow



a) Identify the farm equipment illustrated above **(1mk)**

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b) What is the use of the equipment **(1mk)**

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c) Name the parts labelled **W, X** and **Y** **(3mks)**

W:……...

X:……...

Y:……..

d) What is the function of **Y** on the equipment **(1mk)**

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i) Identify the above diagram **(1mk)**

……

……

ii) Name the parts labelled **A** and **B** **(2mks)**

A: ……

B: ……..……

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20. A ration containing 18% protein is to be made from maize and sunflower cake. Given that maize contains 7% protein, and sunflower seed cake 34% protein. Use Pearson square method to calculate the value of feedstuffs to be used to prepare 100kgs of the feed **(3mks)**

ii) A part from Pearson square method, name **two** other methods that can be used to formulate feed ration **(2mks)**

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222SECTION C (40MARKS)

Answer any two questions in this section in the spaces provided after question 23

21. a) Name **four** notifiable diseases in livestock **(4mks)**

b) Discuss **four** ways in which livestock disease are spread in the farm **(4mks)**

c) Describe the methods of controlling livestock disease giving an example of different disease in each case **(12mks)**

22. a) Describe the management of day old chicks in a deep litter system from preparation of brooder up to eight (8) weeks old **(10mks)**

(b) Describe Coccidiosis disease under the following sub- headings.

i.Animals attacked **(2mks)**

ii. Causal organism **(1mk)**

iii. Symptoms **(4mks)**

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

23. a) Explain the factors that influence the power output of farm animals **(8mks)**

b) State the importance of farm fences **(12mks)**

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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

TERM 2
BIOLOGY – PAPER ONE (231/1)
FORM FOUR (4)
Time - 2 Hours

INSTRUCTIONS TO CANDIDATES

1. Write your name and admission number on the space provided.
2. All questions are **compulsory**.
3. Answer all the questions in the spaces provided after the questions.
4. Wrong spelling of technical terms shall be **penalized**.
5. Candidates should check the question paper to ascertain that all pages are printed as indicated and that no question is missing.

Max Score	Student's Score
80	

1. **a)** Name the instrument used to measure the level of humidity in the environment during an ecological study. **(1mk)**

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b) Give **two** reasons why an ecosystem is said to be a self-sustaining unit. **(2mks)**

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2. Modern technology has enabled scientists to analyze genetic material of living organisms to reveal order of Nitrogenous bases in their Deoxyribonucleic Acid (DNA) through a process called Gene Sequencing. Give **two** ways in which this development has been beneficial to genetic research. **(2mks)**

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3. State the importance of the following features of a respiratory surface. **(2mks)**

a) Being moist.

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b) Having thin lining.

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4. Name the causal organisms for the following diseases. **(2mks)**

a) Amoebiasis ……

b) Cholera ……

5. The following is a reaction that takes place in the human body

Ammonia + Carbon (IV) Oxide ⟶ Compound **Q** + Water

a) Name the enzyme that catalyses this process. **(1mk)**

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b) Why should Ammonia be converted to Compound **Q** before being excreted? **(2mks)**

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6. Previously, human insulin was extracted from cows but currently, insulin is produced through use of a strain of bacteria called *Escherincia coli*.

i) Why is it advantageous to produce insulin by use of *E. coli* instead of using cows? **(1mk)**

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ii) Why is synthetic insulin administered as an injection and not orally? **(1mk)**

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7. The diagram shown below is a section of the human alimentary canal.



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a) Why is the part labelled **Y** referred to as a vestigial structure? **(2mks)**

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b) State **two** roles of part labelled **X** . **(2mks)**

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8. Name the disease conditions that result from inadequate amounts of the following in the human body: **(2mks)**

a) Vasopressin ……

b) Iodine ……

9. A picture of interaction between two animals in the same ecosystem is shown below.



a) What is the advantage of the feeding relationship illustrated above. **(1mk)**

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b) Why would animal **S** have a shorter alimentary canal than **T**? **(2mks)**

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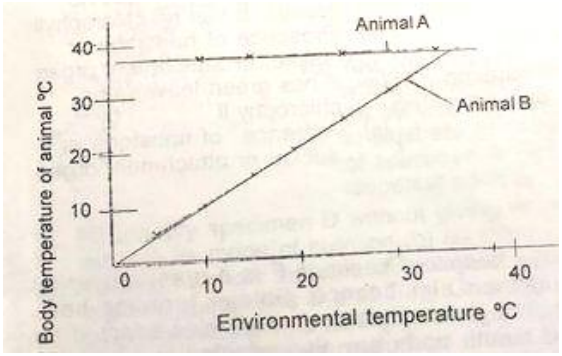
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10. The graph of body temperature changes of two animals is shown below



a) Which animal represents a poikilotherm? **……..…** **(1mk)**

b) State **two** advantages animal **A** has over animal **B.** **(2mks)**

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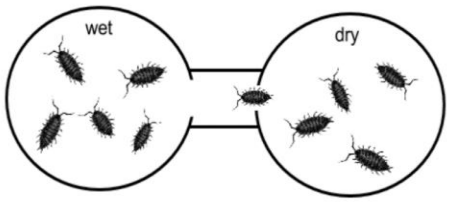
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11. Name the organelle found in animal cells but absent in members of the following Kingdoms. **(2mks)**

a) Plantae **……..…….**

b) Monera **……..……**

12. An image of behaiour of an insect is shown in the diagram below.



a) Name the response shown above **……** **(1mk)**

b) What is the survival importance of the response shown above to the insect? **(1mk)**

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13. Form 3 learners encountered the skull below during a field study.



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a) One of the learners mentioned to the class that the animal with the skull above belongs to Class Mammalia. Give a reason to support the student's suggestion. **(1mk)**

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b) Give **two** functions of the skull to the animal. **(2mks)**

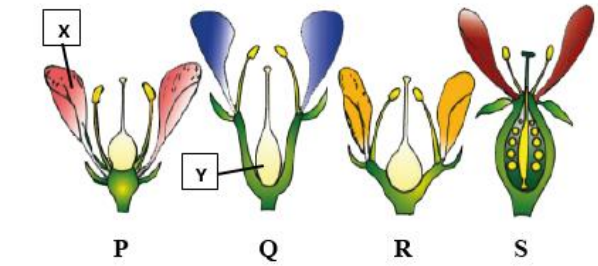
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14. Different types of flowers are shown below.



a) Which letters refer to flowers with the following descriptions: **(2mks)**

i) Perigynous ……..

ii) Hypogynous ……

b) State the function of part labelled **X.** **(1mk)**

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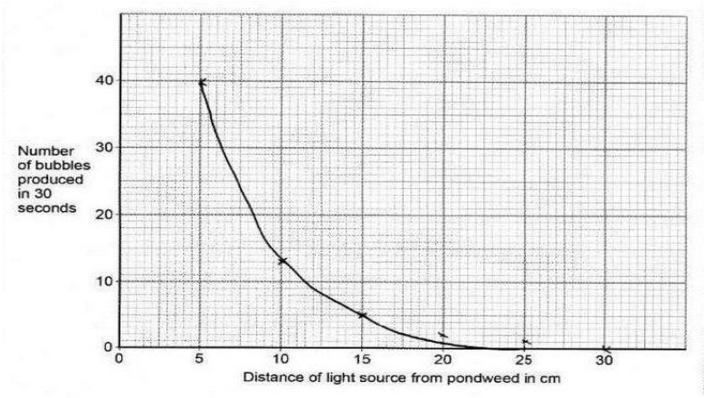
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c) Name the growth response by which pollen tube grows to reach the part labelled **Y.** **(1mk)**

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15. The following graph shows the relationship between light and amount of bubbles formed in an experiment involving pondweed.



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a) Name the process responsible for bubble formation. **(1mk)**

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b) Account for the amount of bubbles formed at 5cm. **(3mks)**

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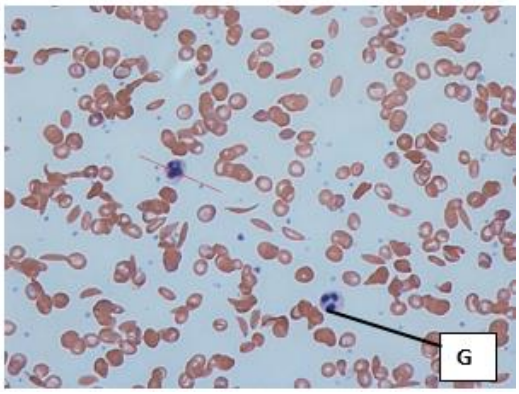
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16. The photograph shown below is of blood from a patient observed under a microscope.



a) State the function of cell **G** in the human body. **(1mk)**

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b) Identify the genetic disorder represented by the photograph shown above. **(1mk)**

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c) Using **A** to represent the normal gene and **T** to represent the defective gene:

i) Write the genotype of the person with the genetic disorder named in (b). **(1mk)**

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ii) Write the genotypes of offsprings obtained from a marriage of two persons with the genetic disorder shown above. **(2mks)**

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d) Why is there a higher prevalence of the genetic disorder above in malaria-prone areas? **(1mk)**

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17. State the advantage organisms with the following features have over the rest.

a) Inter-ventricular septum in their hearts. **(1mk)**

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b) Sexual form of reproduction. **(1mk)**

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18. Explain **two** ways in which the excretory system adapts the desert rat to water conservation. **(2mks)**

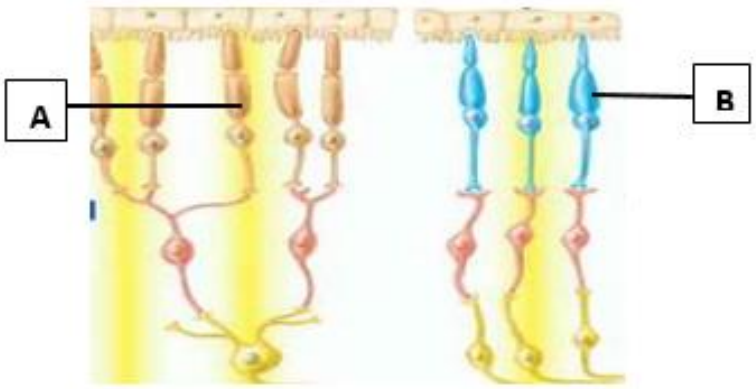
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19. Use the section of eye retina shown below to answer questions that follow.



a) What is the survival importance of having both cells **A** and **B** in the same eye of an animal? **(1mk)**

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b) i) Which letter represents the cell that gives the eye a high visual acuity? **(1mk)**

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

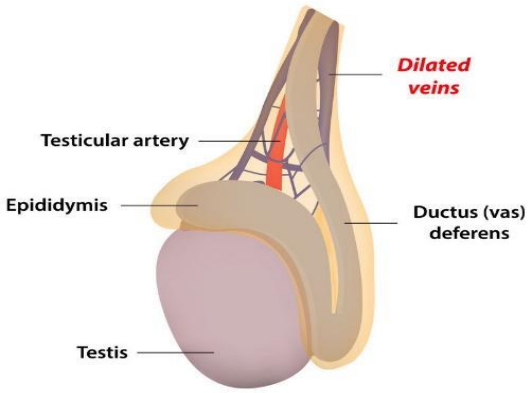
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20. A field of view of a light microscope with a radius of 2.5mm had 10 cells along its diameter. Determine the diameter of one cell in micrometers. **(3mks)**

21. An illustration of the human testis is shown below.



a) State the following functions of the human testis. **(2mks)**

i) Endocrine function ……

ii) Reproductive function ……

b) The blood vessels leaving and entering the testicles are close to each other and blood flow shows a counter current flow. Explain the significance of this to the testis. **(2mks)**

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22. An image of germinating seed is shown below.



a) Give a reason to show that the above is an illustration of epigeal germination. **(1mk)**

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b) What is the significance of the shoot emerging in a curved manner as shown. **(1mk)**

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23. Tar present in burning tobacco has been found to be carcinogenic leading to lung cancer.

a) Name a plant waste product that can be used in lung cancer therapy. **(1mk)**

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b) State **two** means of lung cancer treatment. **(2mks)**

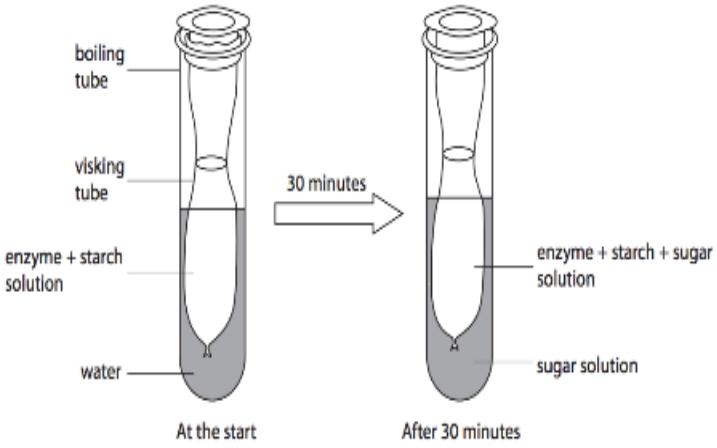
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24. The diagram shown below represents an experiment done by Form 1 students and they obtained the results after 30 minutes.



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a) Which physiological process was being investigated in this experiment? **(1mk)**

……

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b) State **two** adjustments learners could have done in the set up in order to obtain the same results within 10 minutes or less. **(2mks)**

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c) Account for the results obtained after 30 minutes. **(3mks)**

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25. Distinguish between an allograft and an autograft. **(2mks)**

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26. State **two** principles of the theory of chemical evolution on origin of life. **(2mks)**

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27. a) What is an allergen? **(1mk)**

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b) Describe how an allergic condition occurs in a human body. **(3mks)**

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PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

TERM 2
BIOLOGY – PAPER TWO (231/2)
FORM FOUR (4)
Time - 2 Hours

Instruction to Candidates:

1) Write your name and index number in spaces provided above.
2) Sign and write the date.
3) This paper consists of two sections; **A** and **B**. Answer **ALL** the questions in section A in the spaces
4) provided.
5) In section **B** answer Question **6** (**compulsory)** and either question **7 or 8** in the spaces provided.
6) Additional pages must not be inserted.

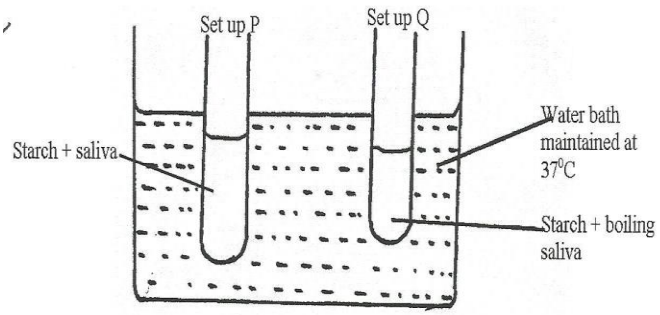
For Examiner's Use Only

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	8	
2	8	
3	8	
4	8	
5	8	
6	20	
7	20	
8	20	
TOTAL SCORE	80	

SECTION A: (40 Marks)

Answer all the questions in this section.

1.In an experiment to investigate an aspect of digestion, two test tubes **P** and **Q** were set up as shown in the diagram below.



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The test tubes were left in the bath for 30 minutes. The content of each test tube was then tested for starch using iodine solution.

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

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(b) What results were expected in test tube **P** and **Q**? **(2mks)**

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(c) Account for the results you have given in (b) in test tube **P** and **Q**. **(2mks)**

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(d) Why was the set up left at 37^0C ? **(1mk)**

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(e) Name the carbohydrate stored in: **(2mks)**

(i) Mammalian liver**……..……**

(ii) Potato tuber**……..……**

2. In a certain family where the fathers had blood group **A** and the mother had blood group **B**, one of the children had blood group **O**.

(a) Work out the possible genotype of the children obtained in the F_1 generation. **(4mks)**

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(b) What is the phenotypic ratio of F_1 generation? **(1mk)**

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(c) (i) Which child can receive blood from all other members of the family? **(1mk)**

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

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(d) What is Erythroblastosis foetalis? **(1mk)**

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3.The equation below shows a chemical reaction that takes place in green plants under certain conditions.

Carbon (IV) oxide + ▼ Water ⟶ Glucose + X

(a) What is the name of substance **X** ? **(1mk)**

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(b) Other than the reagents, state **two** conditions necessary for this reaction. **(2mks)**

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(c) Name **two** types of cells in which this process occurs. **(2mks)**

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(d) Name the process represented by the equation given above. **(1mk)**

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(e) Name products of the above process, other than glucose. **(2mks)**

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4.The table below gives information about an aquarium community which is ecologically balanced;

Type of organism	Weight in grammes
Insect larva	500gms
Fishes	1200gms
Water plants	5000gms
Bacteria	10gms

(a) What do you understand by the term ecological balance? **(1mk)**

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(b) Calculate the total biomass of the aquarium. **(2mks)**

(c) Which organism in the table is

(i) Primary producer? **(1mk)**

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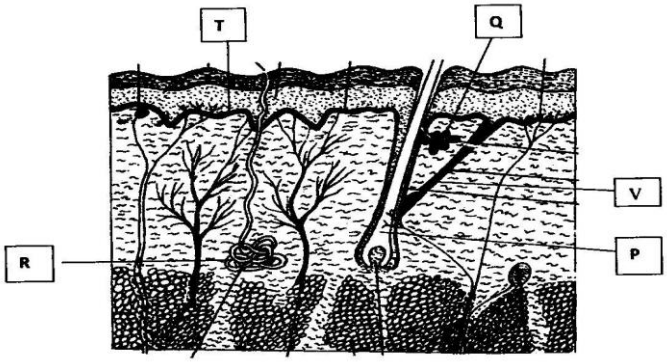
(ii) Secondary consumer? **(1mk)**

……

(d) Construct a food web of the aquarium. **(3mks)**

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5. Below is a diagram of a mammalian skin, use it to answer the questions that follow.



a) Name the parts labelled **P**, **Q**, **R.** **(3mks)**

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b) Give the function of the parts labelled **Q** and **T.** **(2mks)**

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c) Briefly explain how the part labelled **R** contribute to lowering of body temperature on a hot day.**(2mks)**

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d) Give **one** function of the mammalian skin other than thermoregulation. **(1mk)**

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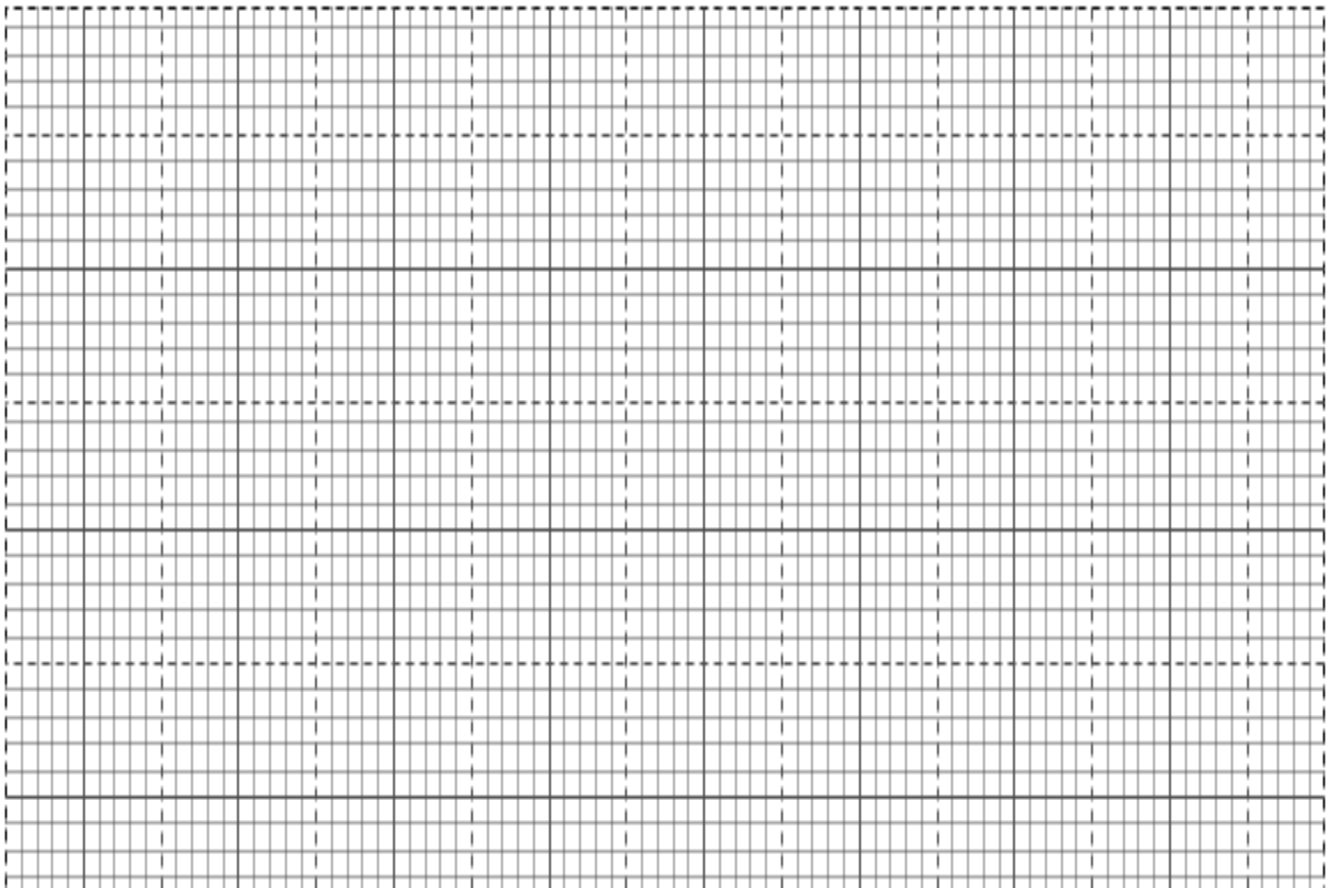
SECTION B. (40 Marks)

In Section B answer question 6(Compulsory) and either question 7 or 8 in the spaces provided after qstn 8.

6. A research was carried out to determine the trend of growth for some boys and girls. Their average mass in kilograms was taken separately for a period of 20 years and tabulated as shown in the table below.

Age	Average Mass of boys (kg)	Average mass of girls (kg)
0	2.5	2.5
2	11.1	11.5
4	15.0	16.0
6	18.5	19.3
8	22.1	27.1
10	25.1	27.1
12	27.5	30.5
14	37.0	35.5
16	44.0	44.0
18	46.9	52.5
20	48.5	55.0

a) On the same axis draw a graph of average mass of girls and of boys against the age. **(7mks)**



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b) From the graph , determine the;

i) Mass for boys at the age of 11 years. **(1mk)**

……

……

ii) Growth rate in girls between ages 13 and 15. **(3mks)**

c) Account for the change in the mass of girls during the age stated in (ii) above. **(2mks)**

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d) Explain the trend observed in the curves for both boys and girls. **(2mks)**

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e) Why do girls above 10 years require intake of food that is richer in iron than boys of the same age. **(1mk)**

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f) Mention two other factors apart from the diet that affect the rate of growth in boys and girls. **(2mks)**

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g) Apart from using average mass to estimate growth in human beings, name two other parameters that can be used. **(2mks)**

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7. Explain the different evidences of organic evolution. **(20mks)**

8. Describe the adaptations of the ileum to its function. **(20mks)**

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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

TERM 2
BIOLOGY – PAPER THREE (231/3)
FORM FOUR (4)
Time - 2 Hours

Instructions to candidates:

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

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

c) Answer **all** the questions in this paper.

d) You are required to spend the first 15 minutes of the 1¾ hours allowed for this paper reading the whole paper carefully.

e) Candidates should check the question paper to ensure that all the papers are printed as indicated and no questions are missing.

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QUESTIONS	MAXIMUM SCORE	DIDATE'S SCORE
1	15	
2	11	
3	14	
TOTAL	**40**	

1. You are provided with a solution labeled **L** and sodium chloride in two different concentrations, **0.1%** and **1.4%.**

Place 3ml of starch solution in test tubes labeled **1, 2** and **3**. Add 3 drops of 0.1**%** sodium chloride to the tube labeled 2 and 3 drops of **1.4%** sodium chloride to the test tube labeled 3.

Add 3 ml of solution **L** to each of the test tubes labeled **2** and **3**.

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(a) Place a drop of the contents from each test tubes; 1, **2** and **3** on a white tile, to each drop add iodine solution. Record your results in the table below (In **beginning of experiment column**) **(3mks)**

Test - tube	Observation at the **beginning of experiment**	Observation at the **end of experiment**
1		
2		
3		

(b) Place the test tubes in water bath maintained at **37ºC**. Allow to stand for 30 minutes. Place a drop of contents from each test tube on a white tile. To each drop add iodine solution.
Record your observations in the table above (In **end of experiment column**) **(3mks)**

(c) Add equal amounts of Benedict's solution to test tubes labeled **2** and **3.** Boil and record your observations.
Test tube **2** **(1mk)**

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Test tube **3** **(1mk)**

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(d) Why was the test tube labeled **1** included in the experiment. **(1mk)**

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(e) Account for the results in test tube **1** and **2** at the end of the experiment. **(3mks)**

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(f) Suggest the identity of solution **L**. **(1mk)**

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(g) Why were the test tubes placed in a water bath maintained at **37ºC**. **(2mks)**

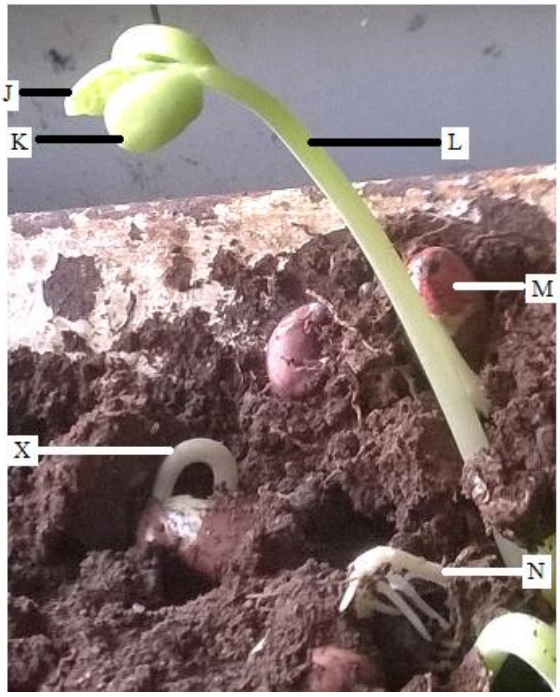
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2. The photograph below shows a germinating been seedlings in a tray. Study them to answer the questions that follow.



(a) (i) Name the type of germination shown in the photograph above. **(1mk)**

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(ii) Give a reason for your answer in 2(a) (i) above. **(1mk)**

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(b) Identify the following labeled parts in the photograph:

J…… **(1mk)**

L…… **(1mk)**

M…… **(1mk)**

N……..… **(1mk)**

(c) Explain the **two** roles of part labeled **K**. **(2mks)**

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(d) (i) Name part **X** in the photograph **(1mk)**

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(e) (i) Name the class to which the plant in the photograph belongs. **(1mk)**

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(ii) Give one observable reasons for your answer in 2(e) (i) above. **(1mk)**

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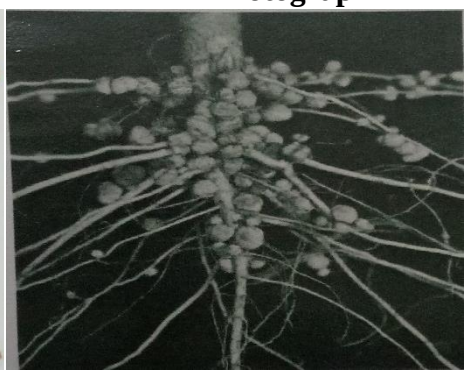
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3. The photographs X, Y and Z are of feeding relationships between organisms. Use them to answer the questions that follow.

Photograph X



Photograph Y



Photograph Z



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a) Name the feeding relationship shown in the photographs X,Y and Z **.** **(3mks)**

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b) With reasons, classify the organism in Photographs X and Z .

(i) Photograph **X** **(2mks)**

Kingdom**……**

Reason

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(ii) Photograph Z **(3mks)**

Class**……**

Reasons

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c) Explain the ecological significance of the feeding relationships exhibited by the organisms in Photographs X and Z. **(4mks)**

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d) (i) What general name is given to plants that exhibit features shown in Photograph Y ? **(1mk)**

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(ii) Explain how the plants named in d (i) above benefit in this relationship. **(1mk)**

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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

TERM TWO
565/1- BUSINESS STUDIES PAPER 1
FORM FOUR
Time: 2½ Hours

INSTRUCTIONS TO CANDIDATES

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

b) Write the date of examination in the spaces provided above.

c) Answer **ALL** the questions.

d) **ALL** answers must be written in the spaces provided in this booklet.

FOR EXAMINER'S USE ONLY

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

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

Answer all questions

1. Suggest four ways in which a good business structure can enhance performance. **(4mks)**

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2. Outline four documents required by the registrar of companies to facilitate the registration of Limited Companies.

(4mks)

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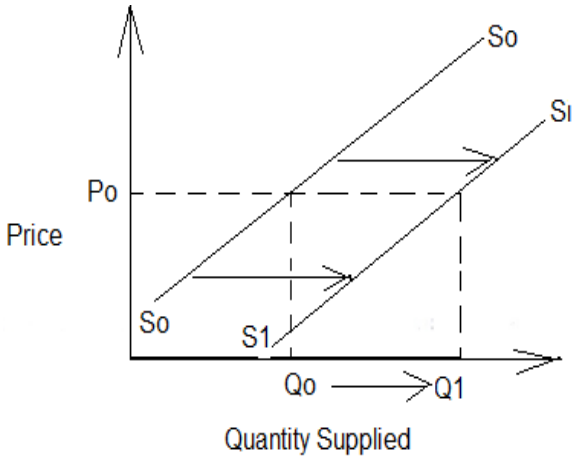
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3. The figure below shows a shift in supply for a commodity from S_OS_O to S_1S_1



State four possible factors that have led to this situation. **(4mks)**

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4. Indicate the most appropriate source document used to prepare the following books of original entry. **(4mks)**

Books of original entry	Source document
a) Sales Journal	
b) Return Outward day book	
c) Return Inward day book	
d) Purchases Journal	

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

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6. Outline four ways in which the Food and Drugs Act protects consumers. **(4mks)**

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7. Highlight four measures that may be taken by a government to attract firms to an area. **(4mks)**

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8. The balances below relate to Saboti Stores for the year ended 31/12/2014.

Capital: 300,000

2 years loan: 230,020

Creditors: 95,200

Fixed assets: 480,000

Current assets: 145,220

Determine

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

b) Capital employed **(2mks)**

9. Highlight any four barriers to effective communication which are associated with the sender. **(4mks)**

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10. Outline four features of monopolistic competition. **(4mks)**

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11. Identify four indicators of a business opportunity. **(4mks)**

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12. Highlight four disadvantages of an aging population. **(4mks)**

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13. Below are tasks performed by office machines and equipment. State the machine/equipment used to perform each task **(4mks)**

Task	Machine/equipment
a) Sending and receiving verbal messages	
b) Cutting papers into required sizes	
c) Printing stamp impressions on envelopes	
d) Sending printed diagrams, charts, maps etc.	

14. Mamati has just taken a whole life policy and is complaining that his premiums are very high. Outline four reasons why the premiums may be high.

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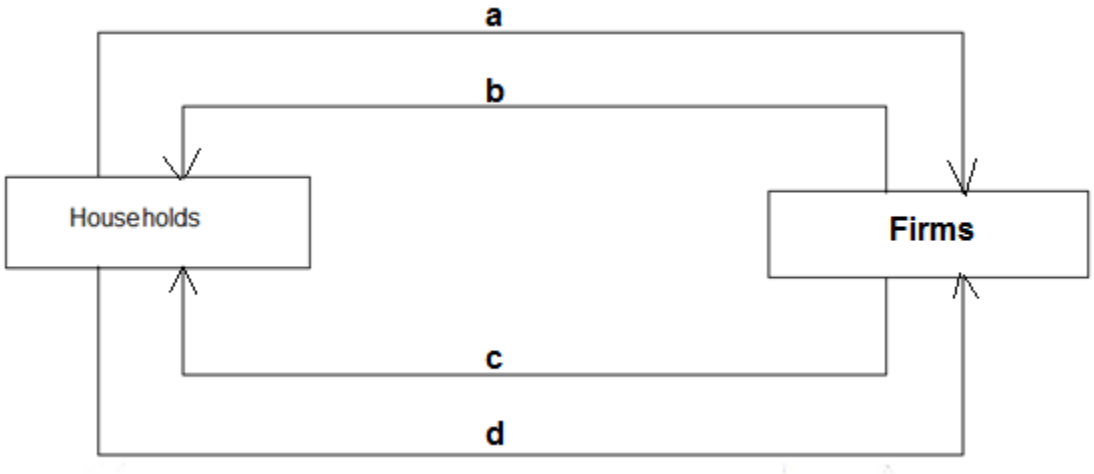
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15. Below is a diagram showing the circular flow of income in a two-sector economy



Indicate the information represented by letters a, b, c, and d **(4mks)**

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16. The following table relates to documents used in Home trade. Fill the blank spaces **(4mks)**

Name of the document	Purpose of the document
a)	To inform the buyer that goods have been dispatched
b)	To inform the buyer that the order has been received
c) delivery note	
d) credit note	

17. Identify four measures to be taken in order to enhance the effective operation of a warehouse. **(4mks)**

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18. Give four reasons why traders engage in intensive product promotion despite the high cost involved. **(4mks)**

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19. Fill in the missing figures in the table below. **(4mks)**

	Assets	**Capital**	**Liabilities**
a)	1,100,000	840,000	
b)		249,000	31,000
c)	954,000	724,000	
d)	1,200,000		240,000

20. The cost of consumer goods a representative of a household is given below:

Year Price

2010 -5000

2011- 9000

Determine the increase in the consumer price index using 2010 as the base year. **(4mks)**

21. Highlight **four** merits of direct tax as a source of revenue to the government **(4Mks)**

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

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23. Outline four services offered in agency banking as a trend in the banking sector. **(4Mks)**

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24. Outline any **four** indicators of economic development. **(4Mks)**

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25. Read the following transactions and state the accounts to be debited or credited. **(4mks)**

(i) Started business with sh. 50,000 in cash.

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(ii) Sold goods worth sh. 30,000 receiving a cheque.

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(iii)A debtor, Onyango returned goods to the business worth shs. 5,000.

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(iv) Withdrew sh. 20,000 from the bank for business use.

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PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

END-TERM TWO EXAMINATIONS
565/1- Business Studies - Paper – 2
FORM FOUR
Time – 2 ½ Hours

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

b) Write the date of examination in the spaces provided above.

c) Answer **ANY FIVE** questions from this paper.

FOR EXAMINER'S USE ONLY

Question	Marks
1	
2	
3	
4	
5	
6	
Total	

1. (a) Outline **five** benefits of transporting petroleum by pipeline transport to our country**.** **(10mks)**

(b) Describe **five** factors that lead to a higher level of national income in a country. **(10mks)**

2.(a) Recently there has been a general rise in the price of consumer goods and services in Kenya. Explain five negative effects of this trend. **(10mks)**

(b) The table below shows the terms of trade for country A from the year 2006 to 2009.

Year	Terms of trade (%)
2006	80
2007	77
2008	74
2009	68

Explain five factors that may have accounted for the trend in terms of trade of country A above. **(10mks)**

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3.(a) Explain five factors that influence the amount of money held by an individual for transactional motive.**(10mks)**

(b) On 1st June 2018 Happy Traders had cash in hand shs.5,000 and cash at Bank shs7,500.

The following transactions took place during the month.

June 2: Bought goods in cash sh750

June 4: Paid salaries by cash shs. 3,750

June 5 Received cheques from the following debtors after allowing a 2% discount in each case, Kamau sh. 490, Jane Sh. 980.

June 8: Paid the following accounts by cheque in each case deducting a 5% discount Otieno sh.1,500, Wanjiku sh.600.

June 12: Bought office machinery by cheque shs.2,500

June 20: Withdrew cash sh.500 for private use.

June 25: Cash sales sh.1000

June 26: Banked cash amounting to sh.500

June 29: Received shs.1,500 cash from Wanjohi a debtor.

Required: Prepare a three-column cash book duly balanced**.** **(10mks)**

4.a) Highlight five channels for distributing fish from Lake Victoria to the Kenyan consumer. **(10mks)**

b) Explain five benefits that will accrue to a trader who sells goods on a cash basis only **(10mks)**

5.a) Explain five reasons why mobile banking services are becoming increasingly popular in Kenya **(10mks)**

b) Highlight **five** circumstances under which an insurance contract may be terminated. **(10mks)**

6.(a) Highlight four differences between a public limited company and a public corporation. **(8mks)**

(b) The following trial balance was extracted from Milka traders on 31st Dec 2020.

	Dr	Cr
	Sh	Sh
Capital		280,000.00
Stock	25,000.00	
Machinery	250,000.00	
Motor vehicle	87,000.00	
Purchase	360,000.00	
Sales		600,000.00
Returns inwards	40,000.00	
Returns outwards		20,000.00
Discount received		5,000.00
Carriage inwards	2,000.00	
Carriage outwards	3,000.00	
Sales Commission	80,000.00	
General expenses	88,000.00	
Debtors	18,000.00	
Creditors		49,000.00
Rent	1,000.00	
	954,000.00	954,000.00

Additional information; Closing stock was sh. 22000

Prepare Milka traders Trading, profit, and loss account for the year ending 31/12/2020. **(12mks)**

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PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

CHEMISTRY – PAPER ONE (233/1)
FORM FOUR (4)
Time - 2 Hours

INSTRUCTIONS TO CANDIDATES:

1. Answer **ALL** questions in the spaces provided for each question.

2. All working must be clearly shown where necessary.

3. Mathematical tables and silent electronic calculators may be used.

4. All workings **MUST** be clearly shown where necessary.

FOR EXAMINER'S USE ONLY:

QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1 - 27	80	

1. **(a)** What is radioactivity? **(1mk)**

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(b) The half-life of a radioisotope is 2.5 hours. If the initial radioactivity of the radioisotope is 800 counts per minute, how long will it take for the count to fall to 75 counts per minute? **(2mks)**

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2. (a) Complete the table below to:

- deduce the number of protons, electrons and neutrons in the magnesium atom and copper ions shown.
- identify the atom or ion represented by the final row. (2 ½ marks)

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	number of protons	number of electrons	number of neutrons
$^{25}_{12}Mg$	12		
$^{65}_{29}Cu^{2+}$			36
	17	18	20

(b) Give the meaning of the term **cation.** **(½mk)**

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3. Calcium reacts with water to form two products. A colourless gas Q and an alkaline solution P.

(a) Name colourless gas Q. **(1mk)**

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……

(b) Give the ions responsible for making solution P alkaline. **(1mk)**

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

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4. (a) Give the meaning of the term enthalpy of formation. **(1mk)**

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(b) Determine the enthalpy of the following reaction: **(2mks)**

$$C_2H_4 + Cl_2 \rightarrow C_2H_4Cl_2$$

Bond	Bond energy (kJ/mol)
C-C	348
C = C	612
Cl – Cl	242
C – Cl	338
C – H	413

5. Draw a set-up that can be used to prepare and collect nitrogen (IV) oxide in the laboratory. **(2mks)**

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6. (a) Explain the difference in boiling points between magnesium oxide and oxygen gas. **(2mks)**

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(b) Give the meaning of the term electron affinity. **(1mk)**

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7. (a) Explain why it is not advisable to use potassium sulphate as a salt bridge in an electrochemical cell formed between the following half cells.

$Pb(s) \mid Pb^{2+}(aq)$ $E^{\theta} = -0.13$ V and $Cu(s) \mid Cu^{2+}(aq)$ $E^{\theta} = +0.34$ V **(1mk)**

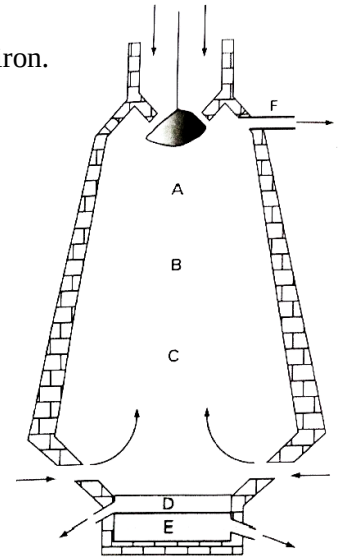
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(b) Calculate the emf of the cell formed by combining the two half cells in (a) above. **(2mks)**

8. The figure below shows the blast furnace for the extraction of iron.



(a) Give the name of the two substances coming from point F. **(1mk)**

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(b) Write the equation for the reaction taking place at point B. **(1mk)**

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(c) The iron obtained from the blast furnace is impure. State how the impurities are removed from the molten iron. **(1mk)**

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9. (a) Describe how sodium chloride can be prepared in the laboratory using direct synthesis method. **(2mks)**

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(b) Write an equation for the thermal decomposition of silver nitrate. **(1mk)**

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10. When sulphur is heated, it melts into an amber-coloured liquid. On further heating, the liquid darkens and becomes viscous. Explain these observations. **(2mks)**

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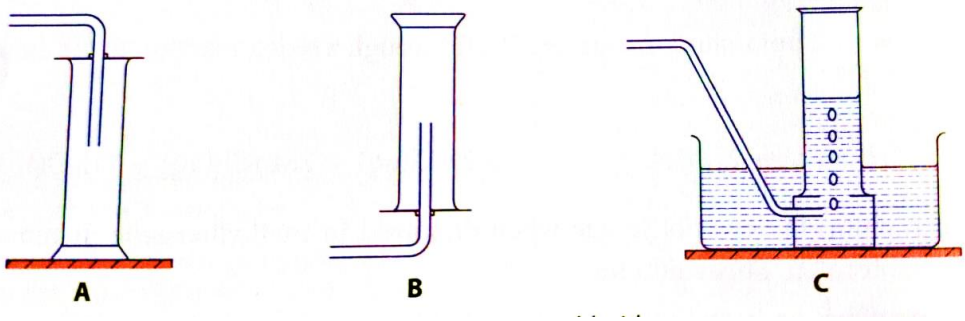
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11. (a) The diagram below shows three methods of gas collection.



Which method of gas collection is most suitable for collecting dry chlorine gas? Explain. **(1mk)**

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(b) Why was the use of DDT as a pesticide banned? **(1mk)**

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(c) List two uses of hydrochloric acid. **(1mk)**

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12. In a titration, a student added 25.0 cm^3 of 0.200 mol / dm^3 aqueous sodium hydroxide to a conical flask. The student then added a few drops of methyl orange to the solution in the
conical flask. Dilute sulphuric (VI) acid is then added from a burette to the conical flask. The volume of dilute sulphuric (VI) acid needed to neutralise the aqueous sodium hydroxide was 20.0 cm^3.

(a) What is the colour of methyl orange in aqueous sodium hydroxide? **(1mk)**

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(b) Calculate the concentration of sulphuric (VI) acid in mol/dm^3. **(2mks)**

13. Determine the time it would take 300cm^3 of oxygen to diffuse through a small aperture if it takes 500cm^3 of nitrogen (I) oxide 475 seconds to diffuse through the same aperture under the same conditions of temperature and pressure.
(N = 14, O = 16) **(3mks)**

14. (a) Explain the 'strike back' phenomenon that occurs during the lighting of the Bunsen burner. **(2mks)**

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(b) What is the use of an aspirator in the laboratory? **(1mk)**

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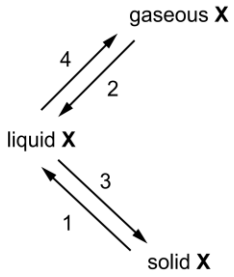
15. (a) What is the meaning of the term melting point? **(1mk)**

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(b) Element **X** undergoes the following physical changes.



(i) Name each of the numbered physical changes. **(2mks)**

1…… **2**……

3…….. **4**…….

(ii) Element **X** is a group III metal. Write an equation for the reaction of element X and oxygen gas. **(1mk)**

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16. (a) State and explain the observation made when iron nails are left outside the laboratory for two weeks during the rainy season. **(2mks)**

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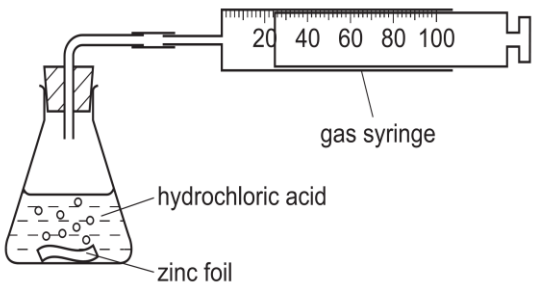
(b) Give two uses of oxygen gas. **(1mk)**

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17. The rate of reaction between a metal and an acid can be investigated using the apparatus shown in the figure below.



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A piece of zinc foil was added to 50 cm^3 of hydrochloric acid, of concentration 2.0 mol/dm^3. The acid was in excess. The hydrogen evolved was collected in the gas syringe and its volume measured every minute.

(a) Sketch a graph of volume against time for the reaction above. **Label it graph 1**. **(2mks)**

(b) On the same graph, sketch another graph that would be obtained if the experiment was repeated using the same amounts of reagents and copper (II) sulphate crystals added into the mixture. Label it **graph 2**. **(1mk)**

18. (a) Suggest the structures and bonds of the following substances. **(2mks)**

Substance	Bonds	Structure
Naphthalene		
Copper		

(b) Draw the dot (.) and cross (x) diagram to show bonding in tetrachloromethane. **(1mk)**

19. (a) Deduce the molecular formula of the alkanol whose molecular mass is 158. **(1mk)**

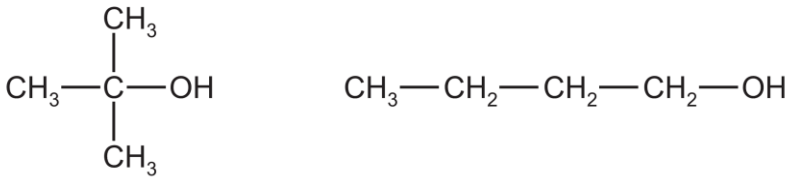
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(b) Explain why the following alcohols are isomers. **(1mk)**



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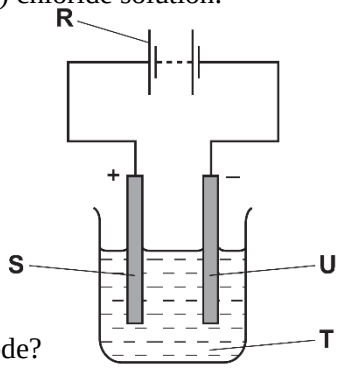
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(c) Ethanol is oxidized by acidified potassium manganate (VII). Deduce the name and write the structural formula of the organic product. **(1mk)**

Name…… Structure:

20. The diagram below shows the electrolysis of concentrated zinc (II) chloride solution.



(a) Which letter in the diagram, R, S, T, or U represents the cathode? **(1mk)**

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(b) Write the equation for the reaction that takes place at the anode. **(1mk)**

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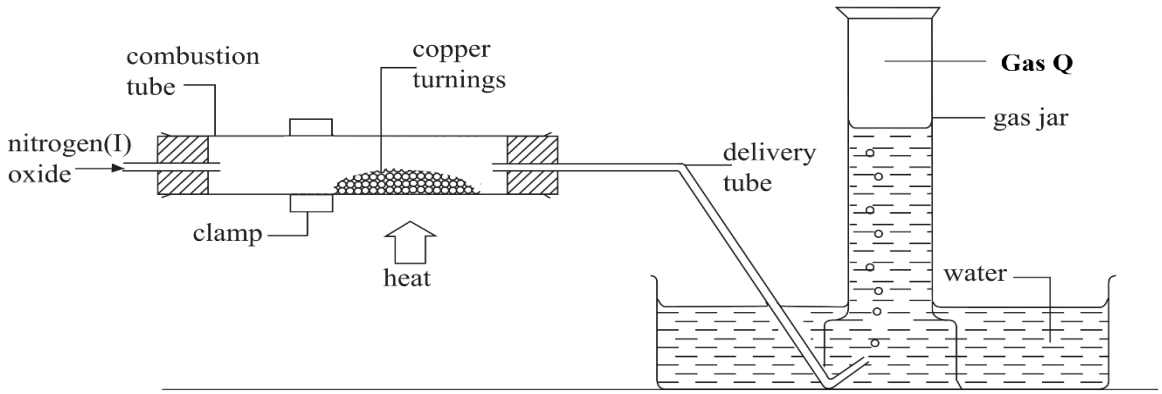
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(c) What is electrolysis? **(1mk)**

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21. Study the diagram below and answer the following questions.



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

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(b) State and explain the observation made in the combustion tube. **(1mk)**

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(c) Write the equation for the reaction that takes place in the combustion tube. **(1mk)**

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22. Water hardness is caused by dissolved minerals that contain calcium ions and magnesium ions.

(a) Give another method of removing permanent water hardness apart from distillation. **(1mk)**

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(b) 60 g of a saturated solution of salt W at 20°C was evaporated to dryness over a water bath and yielded 24g of solid. Calculate the solubility of the salt at 20°C. **(2mks)**

23. Use the enthalpy of the following reactions to answer the questions that follow.

$H_2O\ (s) \rightarrow H_2O\ (l)$ $\Delta H_1 = +6.02$ kJ/mol

$MgO\ (s) \rightarrow MgO\ (l)$ $\Delta H_2 = +77.4$ kJ/mol

(a) What is the name given to ΔH_1? **(1mk)**

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(b) Explain the difference between ΔH_1 and ΔH_2. **(2mks)**

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24. The Solvay process is used to manufacture sodium carbonate.

(a) Give two raw materials used in the Solvay process apart from brine. **(1mk)**

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(b) Explain why potassium carbonate cannot be manufactured by simply replacing the brine with potassium chloride in the Solvay process. **(1mk)**

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(c) How is carbon (IV) oxide used as a refrigerant? **(1mk)**

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25. The following table shows the **pH values** of some solutions.

Solution	pH value
A	2.1
B	4.5
C	13.5
D	7.0

(a) Name the indicator used to determine the pH values. **(1mk)**

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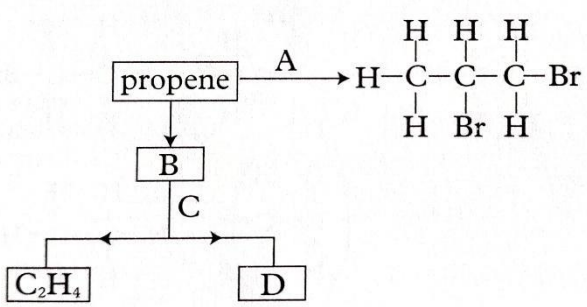
(b) Which solution is likely to react with ethanoic acid? **(1mk)**

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(c) 1 cm of magnesium ribbon was placed in separate beakers containing 2M solution **A** and 2M solution **B**. State and explain the difference in the observations made. **(1mk)**

26. Study the scheme below and answer the questions that follow.



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(a) Give the name of: **(1mk)**

(i) Reagent **A**

……

(ii) Process **C**

……

(b) Write the equation for the reaction of 1 mole of **B** and 1 mole of chlorine gas**.** **(1mk)**

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(c) Draw the structure of substance **D**. **(1mk)**

27. Describe how a mixture of silver chloride, magnesium chloride and iron (III) chloride can be separated in the laboratory. **(3mks)**

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PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

TERM 2
CHEMISTRY – PAPER TWO (233/2)
FORM FOUR (4)
Time - 2 Hours

INSTRUCTIONS TO CANDIDATES:

- Answer **all** the questions in the spaces provided.
- Write **your Name** and **Index Number** in the spaces provided above.
- Mathematical tables and electronic calculators may be used for calculations.
- All working **must** be clearly shown where necessary

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QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	12	
2	14	
3	14	
4	12	
5	11	
6	11	
7	09	
Total score	**80**	

1. (a) Study the information given below and answer the questions that follow.

Element	Atomic radius (nm)	Ionic radius (nm)	Formula of oxide	Melting point of oxide (ºC)	Electrical conductivity of oxide in solid or molten state
A	0.064	0.136	OA_2	-224	Does not conduct
B	0.117	0.040	BO_2	1710	Does not conduct
C	0.125	0.054	C_2O_3	2045	Conducts in molten state
D	0.110	0.212	D_2O_5	563	Does not conduct
E	0.157	0.095	E_2O	1193	Conducts in molten state

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(i) Select **two** elements, whose oxides have giant ionic structure **(2mks)**

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(ii) Which element is likely to be silicon? Give a reason. **(2mks)**

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(iii) Explain why the melting point of the oxide of A is lower than that of the oxide of C **(2mks)**

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(iv) State the nature of the solution formed when oxide of D, $\mathbf{D_2O_5}$ dissolves in water. **(1mk)**

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(b) Study the information in the table below and answer the questions that follow (The letters do not represent the actual symbols of the elements)

Element	Electronic configuration	Electron affinity(kJ/mol)
F	2.7	-322
G	2.8.7	-349
H	2.8.18.7	-325

(i) What chemical family do the elements **F, G** and **H** belong? **(1mk)**

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(ii) What is meant by the term electron affinity? **(1mk)**

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(c) When a piece of calcium is placed in cold water, it sinks to the bottom and a colourless gas that extinguishes a burning splint with a pop sound is produced. Use a simple diagram to illustrate how this gas can be collected during this experiment. **(3mks)**

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2.(a) Draw the structures of;

(i) the second member of the alkene homologous series ; **(1mk)**

(ii) pentanoic acid; **(1mk)**

(iii) 1-hexanol. **(1mk)**

(b) State and explain how propan-1 –ol could be distinguished from propanoic acid **(2mks)**

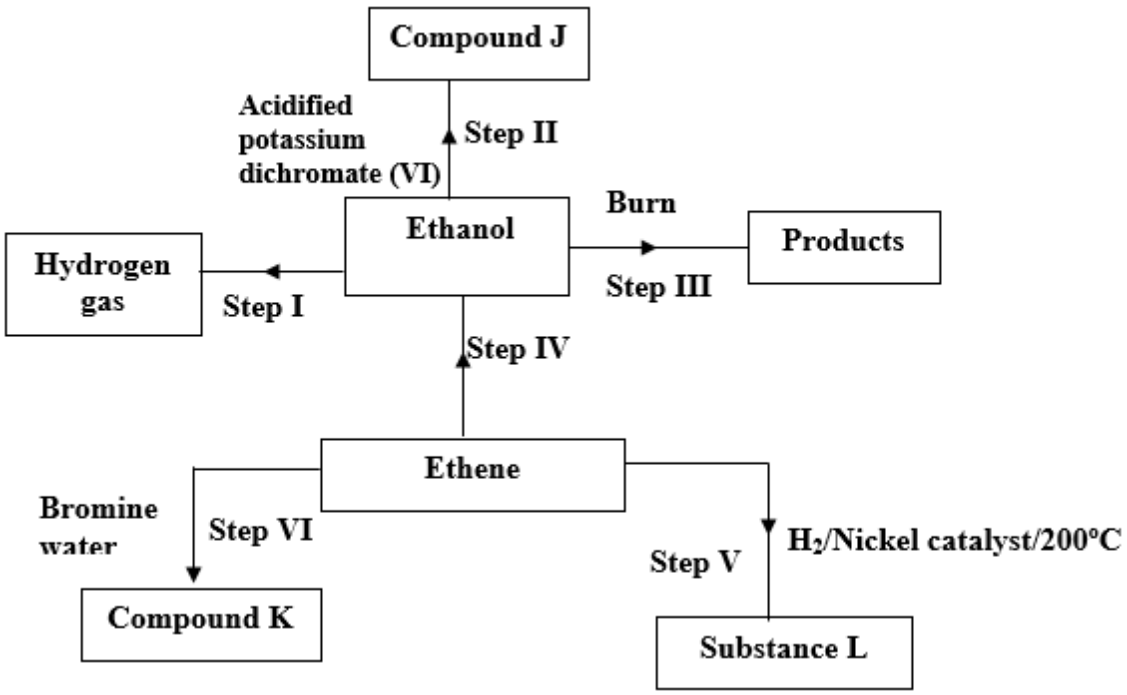
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(c) Use the information in the scheme below to answer the questions that follow.



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(i)give the name of ;

(I) compound **J** **(1mk)**

.....

(II) compound **K** **(1mk)**

.....

(ii) Give the name of the reaction which occurs in step **V** **(1mk)**

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(iii) Write the equation for the chemical reaction in step **III** **(1mk)**

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(iv) Name the reagent(s) and conditions necessary for the reaction step **IV**

Reagent(s) **(1mk)**

.....

.....

Condition (s) **(1mk)**

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(v) State the observations made in step **II** **(1mk)**

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(d) The two reactions below show how a long chained alkanoic acid can be converted into detergent **M**.

Step I

$$\begin{array}{l} CH_2 - C_{17}H_{35}COOH \\ | \\ CH - C_{17}H_{35}COOH + 3H_2O \longrightarrow 3C_{17}H_{35}COOH + C_3H_8O_3 \\ | \\ CH_2 - C_{17}H_{35}COOH \end{array}$$

Step II

$$3C_{17}H_{35}COOH + 3NaOH \longrightarrow C_{17}H_{35}COONa + 3H_2O$$

(detergent **M**)

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(i) Name the type of reaction in step **II** **(1mk)**

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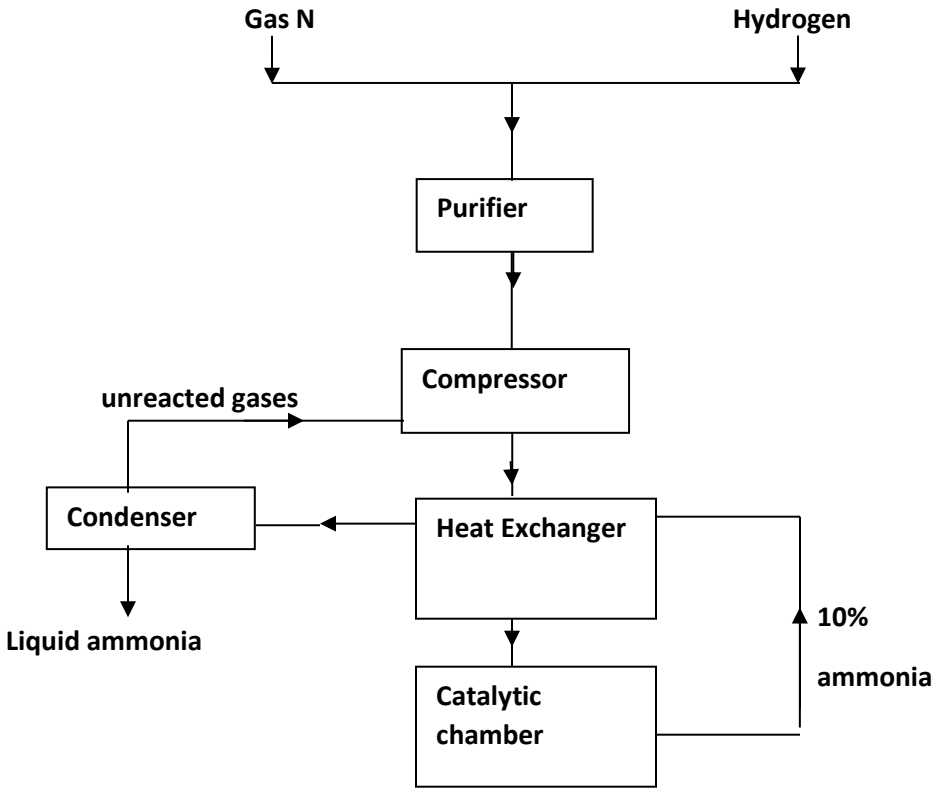
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(ii) When detergent **M** is added to a beaker containing hard water a scum is formed. Write the formula of the scum. **(1mk)**

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3 (a) The diagram below represents an industrial process for the manufacture of ammonia.
Study it and answer the questions that follow.



(i) Give the name of;

(I)the process above **(1mk)**

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(II) Gas **N** **(1mk)**

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(ii) Carbon (IV) oxide, sulphur (VI) oxide and dust are the impurities in this process. Give a reason why these impurities are removed. **(1mk)**

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(iii) Other than iron catalyst, state **two** optimum conditions for this process **(2mks)**

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(iv) Give **two** uses of ammonia **(2mks)**

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(b) Urea, $(CO(NH_2)_2)$ is prepared by reacting carbon (IV) oxide and ammonia.

(i) Write an equation for the reaction which occurs. **(1mk)**

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(ii) 20 kilograms of urea was applied to a farm and 25 kilograms of ammonium nitrate applied to another farm. Determine the farm enriched with nitrogen. (C=12, N = 14, O=16, H =1) **(4mks)**

(c) State and explain what would be observed when aqueous ammonia is added dropwise until in excess to a solution of copper (II) chloride. **(2mks)**

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4.(a)(i) State Le Chatelier's principle. **(1mk)**

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(ii) Bromine water can be prepared by dissolving 1 cm^3 of liquid bromine in 100 $cm^3$of water. After shaking, the equilibrium below is established.

$$\underset{(Yellow)}{Br_2(aq) + H_2O(l)} \rightleftharpoons \underset{(colourless)}{OBr^-(aq) + Br^-(aq) + 2H^+(aq)}$$

State and explain the effect of adding sodium hydroxide to the above equilibrium **(2mks)**

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(b) Colloidal sulphur may be formed by reacting sodium thiosulphate and dilute hydrochloric acid shown in the equation below.

$$Na_2S_2O_3(aq) + 2HCl(aq) \longrightarrow 2NaCl(aq) + S(s) + SO_2(g) + H_2O(l)$$

(i) State and explain the effect of increase in temperature on the rate of the reaction above. **(2mks)**

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(ii) Other than temperature name **one** factor that can alter the rate of the reaction in b (i) **(1mk)**

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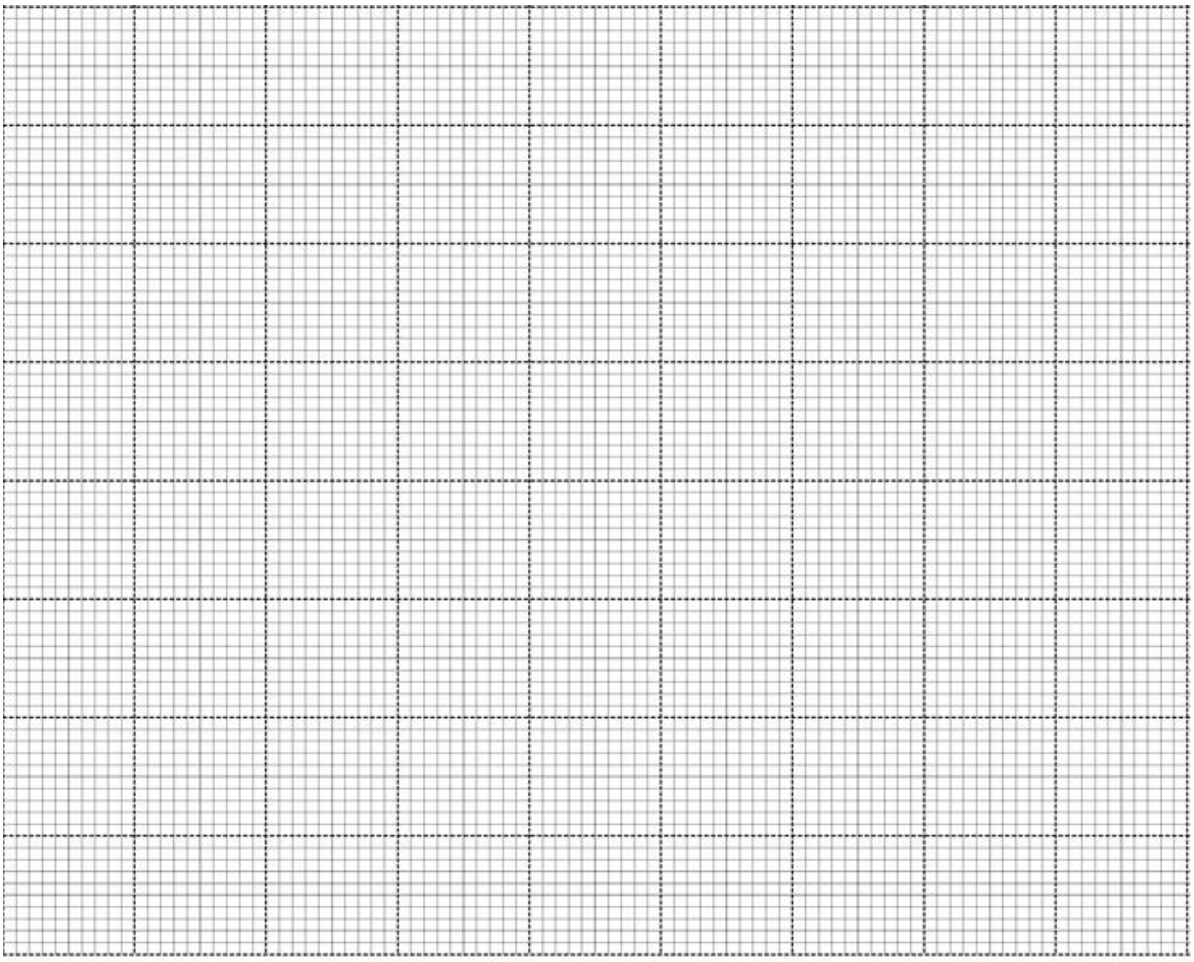
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(c) 2.50 grams of a calcium carbonate was reacted with excess 1.8 M hydrochloric acid. The volume of carbon (IV) oxide evolved measured and recorded at 10 second intervals. The results were recorded as shown in the table below.

Time (seconds)	0	10	20	30	40	50	60	70	80
volume of gas (cm^3)	0	150	295	420	525	580	600	600	600

(i) (I) On the grid provided, plot a graph of volume (vertical axis) against time. **(3mks)**

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(II) From your graph, determine the rate of reaction at 37th second. **(3mks)**

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5. (a) The table below shows the standard reduction potentials for four half cells. Study it and answer the questions that follow.

Number	**Half -reaction**	**E^0volts**
I	$Ag^{+}_{(aq)} + 2\bar{e} \rightleftharpoons Ag_{(s)}$	+ 0.80
II	$Cu^{2+}_{(aq)} + 2\bar{e} \rightleftharpoons Cu_{(s)}$	+ 0.34
III	$Pb^{2+}_{(aq)} + 2\bar{e} \rightleftharpoons Pb_{(s)}$	- 0.13
IV	$Fe^{2+}_{(aq)} + 2\bar{e} \rightleftharpoons Fe_{(s)}$	- 0.44

(i) Identify the strongest oxidizing agent **(1mk)**

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(ii) Explain why it's not advisable to store a solution of silver nitrate in a container made of lead **(2mks)**

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(iii) In the space provided, draw a labeled diagram of the electrochemical cell that would be obtained when half-cell of copper and iron are combined. **(3mks)**

(iv) Calculate the $E^{\ominus}$ of the electrochemical cell constructed in (iii) above. **(1mk)**

(b) During the electrolysis of aqueous copper (II) sulphate using copper electrodes, a current of 0.75 A was passed through the cell for 3 hours and 45 minutes.

(i) Write an ionic equation for the reaction that took place at the anode. **(1mk)**

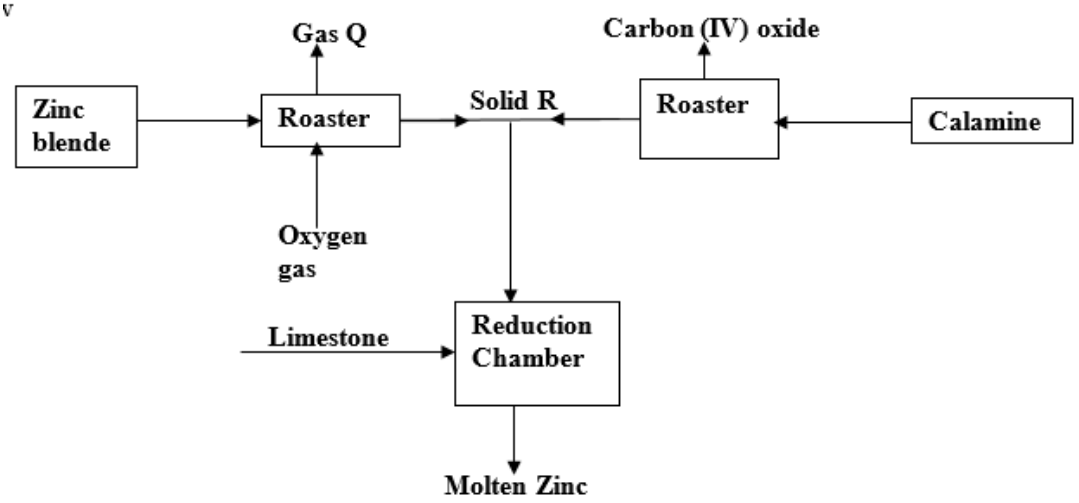
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ii) Determine the change in mass of the anode which occurred as a result of the electrolysis process.
(Cu=63.5 1 F = 96,500C) **(3mks)**

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6. The flow chart below shows the extraction of zinc from zinc ore(s). Study it and answer the questions that follow



(i) Give the formula of the ores;

I zinc blende **(1mk)**

……

……

II Calamine **(1mk)**

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(ii) Give the name of;

Solid **R**.…… **(1mk)**

Gas **Q** ……..... **(1mk)**

(iii) Write a chemical equation for the reaction that produces Zinc metal **(1mk)**

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(iv) What is the purpose of adding limestone in the reduction chamber? **(1mk)**

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(v) Give t**wo** uses of zinc metal other than galvanizing iron **(2mks)**

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(vi) Name **two** other industries that can be established alongside the zinc extraction plant **(2mks)**

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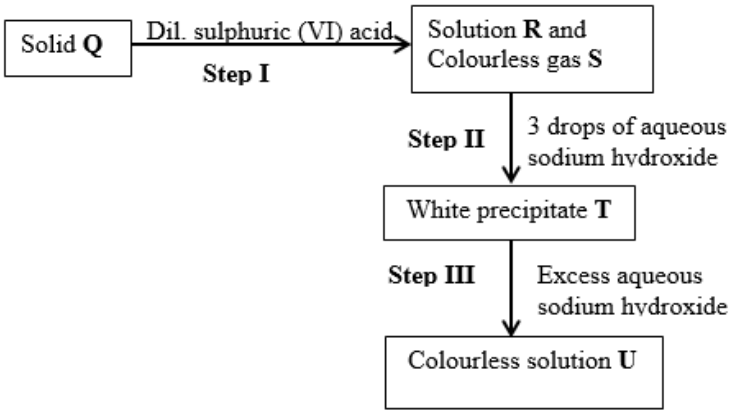
(vii) State **one** way in which the extraction of zinc causes air pollution **(1mk)**

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



(i) Identify

I Solid **Q** **(1mk)**

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II Colourless gas **S** **(1mk)**

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(ii) Give the formula of the compound in solution **U** **(1mk)**

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(iii) Write the ionic equation for the reaction in step **II** **(1mk)**

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(iv) Give two uses of white precipitate **T** **(2mks)**

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(b) Calculate the number of sulphate ions present in 24.0 cm^3 of 0.25 M aluminium sulphate solution. ($L = 6.0 \times 10^{23}$)
(3mks)

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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

TERM 2
CHEMISTRY – PAPER THREE (233/3)
FORM FOUR (4)
Time - 2¼ Hours

Instructions to candidates

(a)Write your name and index number in the spaces provided above.
(b) Sign and write the date of examination in the spaces provided above.
(c) Answer **ALL** the questions in the spaces provided in the question paper.
(d) KNEC Mathematical tables and electronic calculators may be used for calculations.
(e)All working **MUST** be clearly shown where necessary.
(f) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
(g) Candidates should answer the questions in English.

For examiners' use only.
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Question	Maximum score	Candidate's score
1	22	
2	10	
3	08	
Total	40	

1. You are provided with:

- Solution C1, an aqueous solution of potassium iodate (V) of concentration 4.06 g/dm^3.
- Solution C2, an aqueous solution of sodium thiosulphate of unknown concentration.
- Solution C3, an acidified solution of potassium iodide.
- Solution C4, starch indicator solution.

Section 1

You are required to:

a) React solution C3 with C1 to liberate a certain quantity of iodine.
b) Titrate the iodine liberated in the reaction between C3 and C1 against solution C2 to determine the molar concentration of C2.

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Procedure

(a) Fill the burette with solution C2.

(b) Pipette 25.0 cm^3 of solution C1 into a 250 ml conical flask.

(c) Using a measuring cylinder, transfer 15.0cm^3 of solution C3 into a conical the conical flask with solution C1.

(d) Titrate the solution in the conical flask against solution C2 from the burette until the brown colour just changes to pale yellow.

(e) Using a 10 ml measuring cylinder, add 5cm^3 of solution C4 into the mixture in the conical flask and then continue titrating until the blue colour just disappears.

(f) Record your titration results in table 1 below.

(g) Repeat the procedure (b) to (f) above two more times and complete table 1 below.

(4 marks)

Table 1	I	II	II
Final burette reading (cm^3)			
Initial burette reading (cm^3)			
Volume of solution C2 (cm^3) added			

(a) Determine the average volume of C2 used. **(1mk)**

(h) Potassium iodate (V) solution reacts with acidified potassium iodide solution to liberate iodine as per the following ionic equation.

$$IO_3^-(aq) + 5I^-(aq) + 6H^+(aq) \rightarrow 3I_2(aq) + 3H_2O(l)$$

(colourless) (brown)

(ii) Sodium thiosulphate reduces iodine to iodide ions as per the ionic equation below:

$$2S_2O_3^{2-}(aq) + I_2(aq) \rightarrow 2I^-(aq) + S_4O_6^{2-}(aq)$$

(Brown) (colourless)

(b) Calculate the:

(i) concentration of C1 in moles per litre. (K = 39, O = 16, I = 127) **(1mk)**

(ii) number of moles of potassium iodate (V) contained in 25cm^3 of solution C1. **(1mk)**

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(iii) number of moles of sodium thiosulphate in the average volume of solution C2 used. **(1mk)**

(iv) molarity of solution C2. **(1mk)**

Section 2

You are provided with:

- solution C4, starch indicator solution.
- Solution C5, an acidified mixture of potassium iodide and sodium thiosulphate.
- Solution C6, hydrogen peroxide solution.
- Distilled water.

You are required to find out the effect of change in concentration of hydrogen peroxide solution on the rate of its reaction with acidified potassium iodide solution.

Procedure

I. Take six test tubes and label them 1 to 6.

II. Place solution C6 into a clean burette. Measure out the volumes of solution C6 as shown in table 2 below into the six test tubes.

III. Using a 10 ml measuring cylinder, add distilled water into EACH of the six test tubes as indicated in **table 2**.

IV. Using a clean measuring cylinder, measure 10 cm^3 of solution C5 into a 100 ml beaker followed by 5.0 cm^3 of solution C4 and swirl the mixture.

V. Pour the contents to test tube 1 into the 100 ml beaker and immediately start the stop-watch.

VI. Swirl the contents of the beaker, place the beaker on a white tile and record the time taken (in seconds) for the blue colour to appear in **table 2**.

VII. Repeat procedures IV to VI above five more times using the contents of the test tubes 2 to 6, each time recording the time taken for the blue colour to appear in **table 2**.

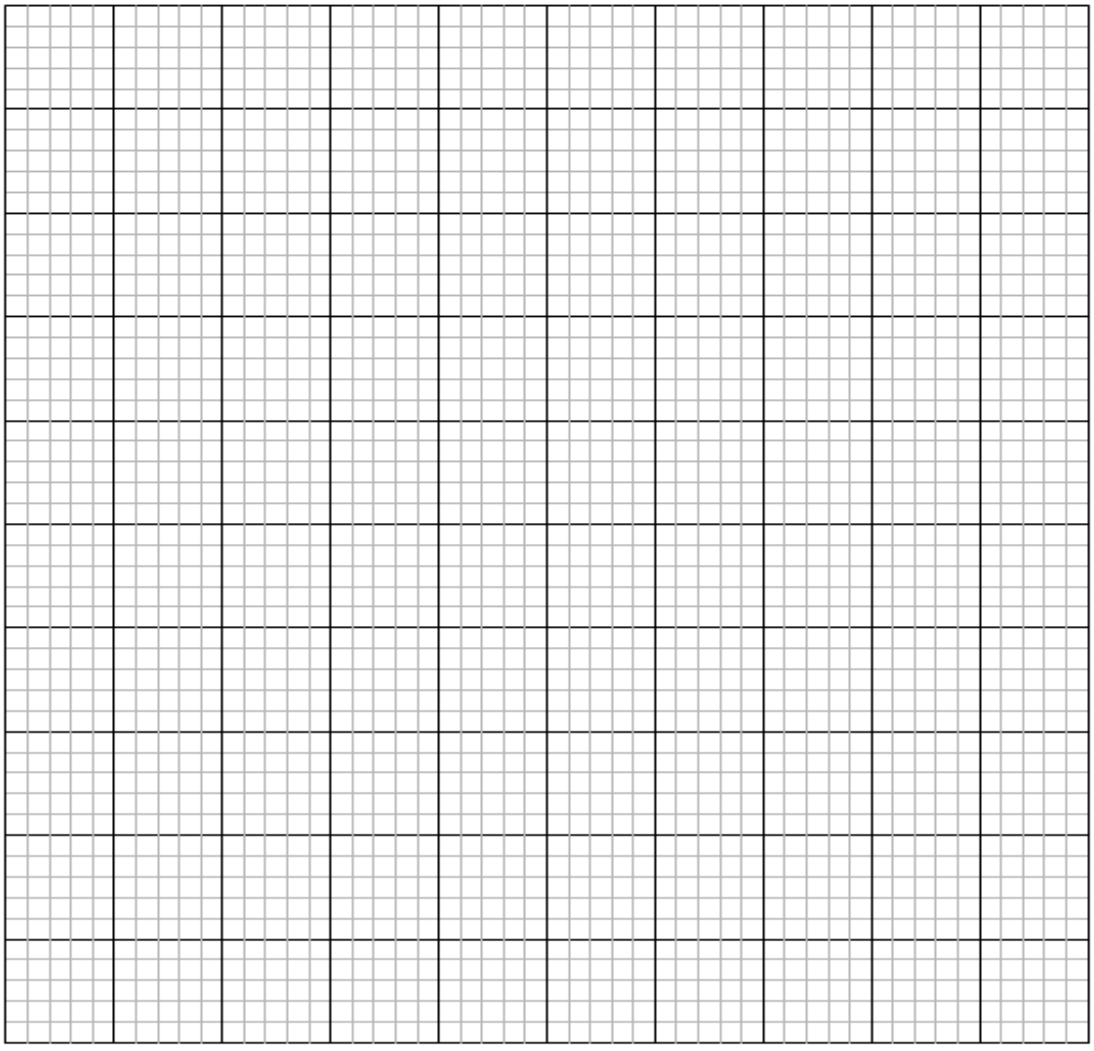
VIII. Complete the table 2 by working out the reciprocal of time ($\frac{1}{t}$) for each experiment. This represents the reaction rate for each experiment.

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Table 2 **(6mks)**

Experiment	1	2	3	4	5	6
Tes tube number	1	2	3	4	5	6
Volume of solution C6 (cm^3)	10.0	8.0	6.0	4.0	3.0	2.0
Volume of distilled water (cm^3)	0.0	2.0	4.0	6.0	7.0	8.0
Volume of solution C4 used (cm^3)	5.0	5.0	5.0	5.0	5.0	5.0
Volume of solution C5 used (cm^3)	10.0	10.0	10.0	10.0	10.0	10.0
Time taken for the blue colour to appear (seconds)						
Rate $\frac{1}{t}$ (s^{-1})						

(a) On the grid provided, plot a graph of rate of reaction (vertical axis) against the volume of solution C6 used.
(3mks)



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(b) Using the graph, determine the time taken for the blue colour to appear using a mixture of 5.0 cm^3 of solution C6 and 5.0 cm^3 of distilled water. **(2mks)**

(c) What is the effect of adding more distilled water to the hydrogen peroxide solution on the rate of this reaction with acidified potassium iodide solution? Explain. **(2mks)**

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2. You are provided with solid D1. Carry out the following tests and write your observations and inferences in the spaces provided.

(a) Place all solid D1 in a boiling tube. Add about 10cm^3 of distilled water and shake. Divide the mixture into four portions.

Observations	Inferences

(b) To the first portion, add sodium hydroxide dropwise until in excess.

Observations	Inferences

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(c) To the second portion, add aqueous ammonia dropwise until in excess.

Observations	Inferences

(d) To the third portion, add 3 drops of barium nitrate followed by 2 cm^3 of 2M nitric (V) acid.

Observations	Inferences

(e) To the fourth portion, add 1 cm^3 sodium hydroxide followed by aluminium foil and warm the mixture. Test any gases produced using red litmus paper.

Observations	Inferences

3. You are provided with solid M1.
Carry out the tests below and write your observations and inferences in the spaces provided.

a. Place about half of solid M1 in a metallic spatula and burn it in a non-luminous flame.

Observations	Inferences

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b. *Place the remaining solid M1 in a boiling tube. Add* about 6 cm^3 of distilled water and shake the boiling tube. Divide the solution into three portions. To the first portion, add 2 drops of bromine water.

Observations	Inferences
(1mk)	**(1mk)**

ii. To the second portion, add all the sodium carbonate. Test for any gases using a burning splint.

Observations	Inferences
(1mk)	**(1mk)**

iii. To the third portion, add 3 drops of acidified potassium dichromate (VI)

Observations	Inferences
(1mk)	**(1mk)**

This is the last printed page.

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PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

END TERM EXAMINATIONS – TERM TWO

451/1 COMPUTER STUDIES

Paper 1

FORM 4

2- Hours

INSTRUCTION TO CANDIDATES

- Write your name and index number in the spaces provided above
- This paper consists of **Two** sections **A** and **B**
- Answer **ALL** questions in section **A**
- Answer question16 and any other **THREE** questions from section **B**
- All answers should be written in the spaces provided on the question paper

FOR EXAMINER'S USE ONLY

SECTION	QUESTIONS	CANDIDATE'S SCORE
A	1 -15	
	16	
	17	
	18	
	19	
	20	
	TOTAL SCORE	

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SECTION A (40 MARKS)

Answer ALL the questions in SECTION

1. The principal of a school is concerned that students may be hacking into the exam score database to change their marks. Other than password state three ICT methods that could be used to prevent this from happening **(3mks)**

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2. Describe the components of a spreadsheet function **(3mks)**

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3. Explain the term prototyping as used in system development **(2mks)**

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4. The Director of a private school based in Nairobi has decided that the school magazine will now be included in the school website. Give three reasons why the Director thinks it is a good idea to replace the paper version with a website version **(3mks)**

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5. Describe three operational factors the system analyst need to consider in hardware and software requirement during requirement specification phase **(3mks)**

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6. Johnson uses a memory stick to transfer her work from school to home. Give three reasons why memory stick are often preferred to CDs for storing work **(3mks)**

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7. There are several ways to maintain computer programs during system development life cycle. Describe three ways in which a computer program can be maintained **(3marks)**

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8. State three reasons for extensive use of repeaters in Safaricom, Airtel, and Telkom's networks. **(3mks)**

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9. Name four Mechanical devices that were used for counting before the electronic computers **(4mks)**

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10. Describe two ways of creating text in Microsoft Publisher **(2mks)**

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11. Name three benefits accrued from utilizing ICT platforms in industrial systems like Process control **(3mks)**

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12. Describe three functions of the antivirus program **(3mks)**

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13. A finance company uses cloud storage to archive their accounts. Describe three advantages of using cloud storage platform. **(3mks)**

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14. Explain the line of sight principle in data communication (**2mks)**

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15. The Kenya Universities and Colleges Central Placement Service (KUCCPS) is a State Corporation that provides career guidance and selects students for admission in Universities and Technical Training institutes. Describe two types of Universities that KUCCPS can place students to pursue undergraduate courses in Kenya **(2mks)**

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SECTION B (60 MARKS)

16.

(a) Give four guidelines a programmer should follow in order to design a good pseudo code **(4mks)**

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(b) Describe the following looping structures

(i) Repeat.... Until **(2mks)**

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(ii)While.... Do **(2mks)**

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(c) Maranda High school pays casual employees based on the number of hours worked. The payment schedule is as shown below.

- ✓ Less than 10 hours @500 per hour
- ✓ Up to 15 hours @700 per hour
- ✓ More than 15 hours @900 per hour

Write a pseudo code that will prompt the user to key the Name, Number of hours worked and then compute the total wage for five employees (**7mks)**

17.

(a) Convert the following numbers to Decimal number system

(i) 010011.10001_2 **(3mks)**

(ii)36.5_8 **(3mks)**

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(b) Evaluate $1010_2+1010_2-1001_2+00010_2-1101_2$ **(3mks)**

(c) Using two complements, show how the arithmetic below would be carried on an 8-bit computer system by subtracting 50_{10} from 40_{10} , write your answer in decimal notation. **(4mks)**

(d) Describe two reasons for the use of Octal and Hexadecimal number system **(2mks)**

18.

(a) Apart from Keyboard and Mouse list any other three input devices found at the Point of sales Terminal **(3mks)**

(b) Describe the functions of the components of VR **(3mks)**

(i) Glove

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(ii) Body suit

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(iii) Virtual Reality software

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(c) Describe four ways in which ICT platforms have improve transport services **(4mks)**

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(d)

(i) Define the term Telecommuting **(2mks)**

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(ii) Give three problems experienced by organizations that use this innovation **(3mks)**

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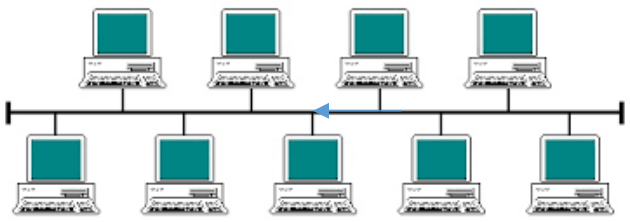
19.

(a) Name three Data Terminal Equipment used in a computer network (**3mks)**

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(b) Use the diagram to answer the questions that follow



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(i) Identify the topology represented in the above diagram **(1mk)**

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(ii) State the function of the part marked A **(2mks)**

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(iii) Name two limitation of this technology **(2mks)**

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(c) Name four roles of a Network Administrator **(4mks)**

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(d) Describe three main pathways in a computer in which components like ALU, Control unit, Register, Buffer Cache, Main memory use to .use to transfer data and instruction between them **(3mks)**

20.

(a) A Secretary of a large Non-Governmental organization based in Nairobi was keying data collected from the field. In the first case the secretary keyed in "braek" instead of break then later keyed in 4596 instead of 4569

(i) Describe two types of errors illustrated above **(2mks)**

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(ii) State three ways of preventing errors identified in (i) above **(3mks)**

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(b) State three major limitations of serial file organization **(3mks)**

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(c) What is normalization in Databases **(2mks)**

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(d) State three key functions of primary key **(3mks)**

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(e)A student created a query using fields from multiple tables, when he clicked on the run command the query did not display the dynaset but instead displayed "Type mismatch error". Describe the cause of this anomaly **(2mks)**

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PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

END TERM EXAMINATIONS – TERM TWO
451/2
COMPUTER STUDIES
PAPER 2
(PRACTICAL)
TIME: 2½ HOURS

INSTRUCTIONS TO CANDIDATES

1. Type your name and index number at the top right-hand corner of each printout
2. Write your name and index number on the diskette/CD-R provided
3. Write the name and version of software used in each question on the answer sheet
4. Answer **ALL** the questions
5. Passwords **should not be used** while saving in the diskette/CD-R
6. All answers **MUST** be saved in the diskette/CD-R
7. Make a print out of answers on the answer sheet provided

FOR EXAMINER'S USE ONLY.

Question	Candidate's score
1	
2	
Total score	

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Question One

A school keeps its students details in a computer database. The information below contains details obtained from two tables of the database. Study the tables and answer the following questions.

DETAILS

ADMNO	NAMES	KCPE MARKS	Year Of KCPE	DORMITORY
2030	Tom Jose	250	2011	Ruvuma
2031	Okoth Rao	356	2012	Zaire
2032	Ken Otieno	412	2012	Tana
2033	Dan Muoso	205	2011	Ruvuma
2034	Adan Hassan	400	2010	Zaire
2035	Ahmed Kubasu	185	2011	Tana
2036	Mutai Jemo	289	2012	Ruvuma
2037	Mutua Sarafi	300	2012	Zaire
2038	Muesh Linda	426	2011	Tana
2039	Viena Oscar	405	2010	Zaire
2040	Violet Kadija	336	2012	Tana

PERFORMANCE

ADMNO	ENGLISH	MATHS	KISWAHILI	COMPUTER
2030	59	48	56	83
2031	56	36	48	76
2032	29	25	59	80
2033	88	79	65	67
2034	70	29	62	91
2035	39	46	24	68
2036	82	78	18	84
2037	54	75	19	46
2038	69	54	46	87
2039	53	96	75	24
2040	74	20	49	50

a) Create a new database called STUDENTS. **(2mks)**

b) Design two tables: DETAILS and PERFORMANCE with the following properties in their fields:
Validate the ADMNO entry to exactly four characters, three characters for KCPE MARKS and DORMITORY look up wizard. **(3mks)**

c) Using appropriate primary and foreign keys create a relationship between the two tables and enforce referential integrity. **(3mks)**

d) Create and use forms to enter data into tables. **(12mks)**

e) Create a query that would extract students whose name starts with letter "A" and save it as "Names" **(4mks)**

f) Create a query that would display *ADMNO, NAME, ENGLISH, MATHS, KISWAHILI and COMPUTER* and calculate the totals of the four subjects, sort the totals in descending order. Save it as "MARKS" **(4mks)**

g) Create a query that would display only those students who sat their KCPE in 2012 and reside in Tana dormitory, save the query as "Tanas" **(3mks)**

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h) Create a form to display all fields of the Details table with the following specifications. Save the form as Full Report **(6mks)**

- Layout: -tabular
- Style: -opulent
- Title: -STUDENTS DETAILS
- Add two *form controls* to "print" and "close" the form.

i) Create a report with the title "Excellent" to display ADMNO, NAME, DORMITORY, TOTAL, group by dorm and show the average of every dorm, save as Excellent. **(5mks)**

j) Print:

i) Full Report form in portrait while the query "MARKS" in landscape. **(2mks)**

ii) Performance table **(1mk)**

iii) Report excellent **(1mk)**

QUESTION 2

Design a publication to appear exactly as shown in the next page using the following instructions. **(20mks)**

a)(i) Launch the DPT package and set measurements to centimeters and the margins 2cm all round

(ii) Paper size A4 portrait.

b) Save your work as "Modern computers" **(2mks)**

c) The heading "*Introduction to computers The Basics"* to have the following styles. **(5mks)**

- Centered across the page
- Font face
- Font size: 18
- Background Texture: Granite
- Format the drop cap in the first line as it appears

d) The heading "Hardware" in the publication to have the styles. **(5mks)**

- Font face: Arial Narrow
- Font size: 16
- Text weight: Bold
- Character spacing: 180%
- Alignment: Centered

e) The text under the heading "Hardware" to be in two columns and having the following styles. **(3mks)**

- ➢ Font size: 12
- ➢ Dashed outline on the first column
- ➢ First character of the first column to be dropped by 4 lines as shown.

f) Insert the banner bearing the text auxiliary as it appears. **(3mks)**

g) - Enter the text below the banner in three columns as shown **(4mks)**

- Insert lines between the three columns **(3mks)**
- Type and format the text below the three columns exactly as it appears **(3mks)**

h) Print the publication. **(2mks)**

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Introduction to Computers The Basics

Many people believe that knowing how to use a computer, is one of the basic skills needed to succeed in the workplace. In order to use the computer it is necessary to understand how the computer works.

Hardware

Computer hardware is made up of the equipment used to make up you computer unit. These parts include your monitor, central processing unit (CPU), keyboard, mouse, printer, and modem.

The computer is an electronic machine that performs the following four general operations:

- Input
- Storage
- Processing
- Output.

Input

The input hardware allows you to enter data into the computer. The primary devices used are the keyboard and mouse.

Processing

The central processing unit or (CPU) is the "brain" of your computer. It contains the electronic circuits that cause the computer to follow instructions from ROM (read only memory) or from a program in RAM (random access memory).

Output

Output devices such as a monitor or printer make information you input available for you to view or use.

Storage

Auxiliary storage devices, also called secondary storage devices, are used to store instructions and data when they are not being used in mem-

AUXILLIARY

Floppy Disks *- A floppy disk is a circular piece of oxide-coated plastic*

To read data stored one floppy disk or to store data on a floppy disk, you insert the floppy disk in a disk drive. If the disk is unused, you must format or initialize it before your computer will allow you to store data on it. Formatting organizes the tracks around the disk into pie like slices called sectors which make it possible for your computer to save and retrieve information. The density of the bits on the track and

Floppy disks are identified as being double density or high density

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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

CRE PAPER 1 313/1
FORM FOUR
Time 2 ½ Hrs
INSTRUCTIONS: ANSWER ANY FIVE QUESTIONS

Question	1	2	3	4	5	6	Total
Total	20	20	20	20	20	20	100

1a) Show how the study of CRE has promoted morality in the society **(8mks)**

b) Identify the consequences of sin according to Genesis chapter 3. **(6mks)**

c) Give Six reasons why Christians should forgive. **(6mks)**

2a) Explain why God called Abraham **(7mks)**

b) What challenges were experienced by Abraham in his life? **(7mks)**

c) From the Mt. Moriah experience, explain what Abraham learnt about Gods nature **(6mks)**

3a) List eight factors that led to the spread of idolatry during the time of Prophet Elijah **(8mks)**

b) Outline the success of Elijah as a prophet of God. **(5mks)**

c) Identify Six qualities of Prophet Elijah that a Christian leader should possess **(7mks)**

4a) Give **seven** reasons why God called prophets in Israel **(7mks)**

b) Identify **seven** reasons Prophet Amos was against the way the Israelites worshipped God in Israel. **(7mks)**

c) Give reasons why we require prophets in Kenya **(6mks)**

5a) Outline the stages followed in the renewal of the covenant during the time of Nehemiah **(8mks)**
b) Give six reasons why Nehemiah advised the separation of the Jews from foreigners. **(7mks)**
c) Give Six relevance of Nehemiah's exemplary life to Christians today. **(6mks)**

6a) Outline ways in which religious beliefs and practices contributed to harmony and mutual responsibility in the African communities. **(7mks)**
b) List **seven** moral values inculcated during marriage in African societies. **(7mks)**
c) State Six factors affecting the traditional African Heritage **(6mks)**

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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

CRE PAPER 2 313/2
FORM FOUR
Time 2 ½ Hrs

ANSWER ANY FIVE QUESTIONS

Question	1	2	3	4	5	6	Total
Total	20	20	20	20	20	20	100

1a) With reference to specific incidents in the New Testament show how Jesus fulfilled the Old Testament prophecies concerning the Messiah. **(7mks)**
b) State what Jesus taught about John the Baptist **(7mks)**
c) Identify **six** ways in which Christians safeguard the life of children. **(6mks)**

2a) Describe the call of Levi in Luke 14:15-24 **(7mks)**
b) State reasons why Jesus faced opposition from the Pharisees in Galilee **(7mks)**
c) Give reasons why some Christians do not believe in miracles today **(6mks)**`

3a) Describe the trials of Jesus before Pilate and Herod. Luke 23:1-24 **(8mks)**
b) State reasons why Jesus appeared to his disciples after his resurrection. **(6mks)**
c) Give reasons why Christians should accept suffering **(6mks)**

4a) With reference to the day of Pentecost, state **seven** teachings of Peter about Jesus (7mks)
b) Outline the characteristics of the people of God as taught by Peter in 1st Peter2:9-10 **(8mks)**
c) Give reasons why Christians should work in unity **(5mks)**

5a) What is the traditional African understanding of marriage? **(7mks)**
b) Explain problems of early marriages in modern Kenya **(7mks)**
c) Discuss ways in which children's rights have been abused in modern Kenya **(6mks)**

6a) Identify **seven** reasons why people engage in corrupt practices in Kenya today **(7mks)**
b) Outline **seven** benefits of Genetic engineering (7mks)
c) State ways in which a Christian can show respect to life and health environment today **(6mks)**

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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

Term 2
ENGLISH
PAPER 1 (101/1)
FORM FOUR (4)
Time: 2 Hours

Instructions to the candidates

i. Write your name and admission number in the spaces above.

ii. Answer all the questions in the spaces provided.

iii. Check to ascertain that the paper has all questions.

FOR EXAMINER'S USE ONLY

QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
1. Functional Writing	20	
2. Cloze Test	10	
3. Oral Skills	30	
TOTAL	60	

1. FUNCTIONAL WRITING

You are the secretary of the Wildlife Club in your school. The chairperson has requested you send out a notice of the second meeting to plan for the forthcoming World Environmental Day. During the meeting, you will need to appoint the coordinator of the event. Set the day for tree planting day, decide on the T-shirts to buy for the event, and discuss the budget for the event.

a) Write the notice of this meeting which you would send to members of the Wildlife Club. **10Mks**

b) Write the agenda that you would attach to the notice. **10Mks**

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2. CLOZE TEST **10 Marks**

Read the passage below carefully. Fill in each blank space with the most appropriate word.

Minutes are a record of the (1) _____at a meeting. Usually, Minutes

(2) _____written while the meeting is (3) _____ progress and the

secretary must make an attempt to (4) _____and write at the same time without

missing (5) _____ on any important point or jeopardizing the accuracy. Minutes are

(6) _____records for the sake of future reference (7)

_____they are written in correct grammar. Usually they are written in the (8)

_____voice so as to avoid mentioning (9)

_____ names because the decisions made at the meeting are (10)

_____ group decisions.

3. ORAL SKILLS (30 MARKS)

a) Read the following narrative and answer the questions that follow. **(7Mks)**

A long time ago, there was a child in a certain village who used to trouble his parents at night by crying. The mother tried to stop him from crying but in vain.The mother warned the child and said, "If you don't stop crying, I will throw you out to the wizard!" But the child still went on crying. When the mother could not stand it any longer,she stood up and threw the child outside. Unfortunately, there was a wizard who was listening outside, and he picked the child up and ran away with him singing.

Suddenly, the father realized that the child's cries were dying away. He stood up, took his panga and went after the wizard. When the wizard heard the footsteps following him, he quickly placed the child in the fork of a nearby tree and ran away. From that day the child never cried again.

Questions

(i) What would you do in order to capture the audience's attention before narrating this story? **(2mks)**

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(ii) If you were to perform this story, how would you say the words of the mother. **(2mks)**

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(iii) How would you sustain the attention of the audience **(3mks)**

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b) Identify and underline the silent letters in each of the following words **(4mks)**

i) comb.

ii) Parliament

iii) Leopard

iv) Gnaw

c)The words in bold indicates the stressed word in the sentences below. Briefly explain what each sentence mean . **(3mks)**

i) The **lady** in a red dress lost her purse.

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ii) The lady in a **red** dress lost her purse.

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iii) The lady in a red dress lost her **purse**.

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……

d) Using arrows indicate the type of intonation you would use in the following sentences. **(3mks)**

i)When were you born?

ii) Did you complete your work?

iii) What a beautiful car you have bought!

e) Read the genre below and answer the questions that follow**.** **(6mks)**

The great Greek grape growers grow great Greek grapes.

i) Classify the above subgenre**.** **(1mk)**

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ii) Identify two sound patterns used in the above genre**.** **(4mks)**

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iii) State one functions of the above sub-genre. **(1mk)**

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f. Read the telephone conversation below and answer the questions that follow. (6 marks)
Maina: Hello, is Eric there?
Martha: Hello too, good afternoon to you, I am Martha, Eric's cousin. May I ask who is calling please?
Maina: Oh, this is Peter James, Eric's classmate. I want to talk to him.
Martha: I am sorry; Erick just went out a few minutes ago. Would you like to leave a message or call...
Maina: (clicking) Tell him he is such a disappointment, we were supposed to go to the movies today.
Martha: Oh, I guess you will see him soon because he told me he's running to meet his friends.
Maina: Oh, okay.
Martha: Alright Peter, thank you for calling. Bye.(Maina hangs up the phone)

Questions

i. How has Martha portrayed good telephone etiquette in the above conversation? **(3mks)**

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ii. Identify three instances of Maina's lack of telephone conversation etiquette in the above conversation. **(3mks)**

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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

ENGLISH
PAPER 2 (101/2)
FORM FOUR (4)
Time: 2 ½ Hours

Instructions to the candidates

- Write your name and admission number in the spaces above.
- Questions one and two are compulsory.
- Choose any one question in question three.
- Check to ascertain that the paper has all questions.
- The paper has 2 printed pages.

Questions	Maximum score	Candidate's score
1	20	
2	25	
3	20	
4	15	
Total score	80	

1. **COMPREHENSION** **20 marks**

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

Education is perhaps one of the greatest assets children can inherit from their parents. Indeed, parents are known to incur huge debts to help their children get education. The drive to make these sacrifices and our population growth, have created a huge demand for education.

This demand is reciprocated by mismatched supply that is not focused on developing "employable" skills and the output is more jobless graduates into the already full market place. Ironically, whereas this is the scenario in emerging economies the world over, it is in the same economies that skilled workers are in high demand, according to a human capital study done by PWC. Indeed, emerging economies are no longer relying on cheap labor to fuel exports- driven economies, but rather fouls on skilled labor because their economic models have shifted to exporting value - added goods. The demand for workers capable of doing talent intensive jobs that require quality

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qualifications is growing steadily. Studies have shown that no country in the world can achieve major socio – economic transformation without the contribution of skilled manpower. Kenya seems to be cognizant of this fact going by the massive budget allocation made in education each year.

There is a strong case for standardization and regulatory framework that will ensure delivery of high quality teaching and research whose end product are work- ready students. This is therefore a call to the government and the private sector to work hard in glove to address the prevailing challenges in higher education that impact the quality of graduates produced.

Lack of adequate resources, poor training infrastructure and facilities as well as an emphasis on "cramming" – reproduction of class notes in the exam papers compromise the quality of education. The result has been a yawning gap between the quality of students released into the job market and the needs of the employers.

If we are able to turn our institutions of higher learning into factories of talent that is readily marketable locally and to other countries, human capital development would become a key economic driver in our country. The Government needs to partner with all stakeholders and come up with "out of the box", holistic policy interventions that make use of best practices in order to promote practical skills and make education more effective in the short and long term. This also calls for accrediting and streamlining the requirements of new and existing education sectors which should look beyond profits and prioritize equipping of students with knowledge, skills and competencies that enhance their employability both locally and internationally. While Kenya boasts of high literacy levels, it should now prioritize the development and implementation of a long – term growth strategy that focuses on quality, not quantity.

QUESTIONS

a) What has created a huge demand for education according to the passage**?** **(2mks)**

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b) What do the emerging economies rely on, and why? **(3mks)**

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c) Indeed, emerging economies are no longer relying on cheap labor. (Add a question tag) **(1mk)**

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d) What advice is given to those investing in education? **(3mks)**

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e)Why is there an emphasis on standardization in education? **(2mks)**

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f) In a paragraph of not more than 40 words, summarize the reason why the Government and other sectors should partner in education. **(5mks)**

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g) Explain the meaning of the following words and expressions as used in the passage **(4mks)**

i) Employable skills

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ii) Cognizant

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iii) Reciprocated

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iv) Out of the box

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2. **EXCERPT** **25 MARKS**

Read the Fathers of Nations excerpt below and answer questions that follow(25 mks)

"Excellent. Keep that mobile phone on at all times, day and night, rain or shine. From now on, I will be calling you often, even unexpectedly, but only through this number. So alwayshave the mobile phone on. Unlike your hotel phone, it is completely secure, which means Ican talk to you on it freely."

"So you will tell me your real name now? "Pastor Chiamaka asked.

"My real name, my real name-why? "shouted the caller, angry all of a sudden.

"Well, 'why' yourself, "Pastor Chiamaka shouted back, also angrily, answering fire with fire."If I don't have your real name, how can I even begin to ask for you were a need to do so to arise?"

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'Were a need to do so to arise, I would contact you," the caller told him.
"Ah, you can contact me, but I can't contact you? What is the matter? Are you afraid I mightsurprise you?"
"Shut your mouth!" snapped the caller. "What did you say?" Pastor Chiamaka asked.
"You heard me. Now get this: I want you to obey me, not to argue with me. You will not talkback to me like this
"R-r-right, "Pastor Chiamaka stammered, suddenly tamed. "Y-y-yes, I do."
"Splendid. So, Pastor Chiamaka, let me say what I was going to say if you had let me." Pleased by his quick victory the caller was inching back towards polite speech. "What I wasgoing to say is..."He stopped. Pastor Chiamaka waited.

EXCERPT QUESTIONS

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

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b) Using your knowledge of the rest of the text, explain one instance of irony evident inthis excerpt**.** **(3mks)**

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c) Apart from irony, identify and illustrate another style used in the excerpt. **(2mks)**

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d) Identify and illustrate two-character traits common to both Pastor Chiamaka and thecaller. **(4mks)**

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e) List the content of the briefcase left by the caller for Pastor Chiamaka. **(4mks)**

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f) Which name did the caller identify himself with to Pastor Chiamaka? **(1mk)**

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g) Rewrite the following sentence in reported speech. **(1mk)**

"so you will tell me your real name now?" Pastor Chiamaka asked.

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h) Who is Pastor Chiamaka? **(2mks)**

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i) Give the meaning of the following words as used in the excerpt. **(4mks)**

(i) Unexpectedly

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……

(ii) Snapped

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(iii) Tamed

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……

(iv)Inching:

……

……

3. **ORAL LITERATURE** **(20 MARKS)**

Read the oral piece below and answer the questions that follow

Blood iron and trumpets
Blood iron and trumpets
Forward we march
(Clothes fall on the way)
Blood iron and trumpets
We shall hack kill and cure
Blood iron and trumpets

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Singers of the Datsun blue
Forward we drive breaking the records
Blood iron and trumpets
Let bullets find their targets and the earth be softened
Blood iron and trumpets
Let the dogs of war rejoice
And the carrion birds feed
We are reducing population explosion
Blood iron and trumpets
The uniformed machines are around
Put on your helmet iron and rest
Blood iron and trumpets
Only through fire can be baptized to mean business
So once again,
Blood iron and trumpets
We shall always march along
Blood iron and trumpets
Blood iron and trumpets
Blood alone

(a) Classify the oral piece above (2Mks)

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(b) What are the functions of the oral piece above? **(3Mks)**

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(c) Identify two features of oral poetry evident in the oral item. **(4Mks)**

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(d) What two issues is this oral poem talking about? **(4Mks)**

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(e) Cite one social and one economic activity of the community from which this oral poem is taken **(2mks)**

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(f) "The uniformed machines are around" Explain the meaning of this statement. **(2Mks)**

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(g) Describe the mood of the poem. **(3Mks)**

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4**. GRAMMAR** **(15MARKS)**

a) *Rewrite the following sentences according to instructions. Do not change the meaning.* **(3mks)**

i. They were so exhausted that they could not complete the work. (**rewrite using "too")**

……

……

ii. Jeff would have won the fight if he had done enough training. (Begin: Had….)

……

……

iii. "Will you come with us to the hall?" she asked. **(rewrite in reported speech)**

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……

b. Complete the following sentences with a phrasal verb starting with the word in brackets. **(4mks)**

1. She looked carefully at the document but couldn't _____ what it meant (make)

2. The teacher couldn't _____ the students' bad behaviour (put)

3. Please _____ that all the chairs are in good condition. (see)

4. The boy actually _____ his father (take)

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c. Complete the following sentences using the most appropriate preposition. **(3mks)**

(i) The candidate's idea was conceived **……** haste.

(ii) The criminal was oblivious **……..** The trap.

(iii) The patient died **……..** COVID-19.

d. *Use the correct form of the words in the brackets to fill in the blanks.* *(3marks)*

(i) The couple has applied for a divorce over **……..……**differences. (Reconcile).

(ii) That matter is highly **……..…..**(contest) in a court of law.

(ii) We must provide **……**improvements in health services. (Demonstrate)

e. *Explain two possible meanings of the following sentence.* **(2mks)**

(i)Melvin loves dancing more than Otieno.

……

……

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……

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PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

ENGLISH
PAPER 3 (101/3)
FORM FOUR (4)
Time: 2 ½ Hours

Instructions to the candidates

i. Write your name and admission number in the spaces above.

ii. Questions one and two are compulsory.

iii. Choose any one question in question three.

iv. Check to ascertain that the paper has all questions.

FOR EXAMINER'S USE ONLY

QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
1. Imaginative/Creative Writing	20	
2. Compulsory Set Book Essay	20	
3. Optional Set Book Essay	20	
	60	

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1. Imaginative composition. (Compulsory) (20 Marks)

Either

a) Write a story that ends with the following statement.

…that is how I ended up in this horrible place.

Or

b) Discuss the effects of social media use by teenagers.

2. Compulsory Set Text (20Mks)

John Lara's *The Samaritan*

a. Sticking to your principles and doing the right thing pays off. Write an essay to validate this statement using **Nicole from John Lara's *The Samaritan*.**

3. The Optional Set Texts

Godwin Siundu's *A Silent Song and Other Stories*

a. War causes a lot of harm and thus should be avoided at any cost. Validate this statement basing your illustrations from Chimamanda Adichie's Ghosts. **(20Mks)**

b. Kazuo Ishuguro's *An Artist of the Floating World*.

'War is a social evil that should be avoided at all costs owing to its adverse consequences.' Validate the statement referring to Kazuo Ishuguro's novel *An Artist of the Floating World.*

c. Adipo Sidang's play ***Parliament of Owls***

Whether our deeds are good or terrible, life has a way of rewarding us for them. Provide evidence for this claim by using Adipo Sidang's play Parliament of Owls. **(20mks)**

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PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

GEOGRAPHY PAPER 1
312/1
FORM FOUR
TIME: 2 ¾ HOURS

Instructions to candidates

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

(b) This paper has **two** sections: **A** and **B**

(c) Answer **all** the questions in section **A**

(d) Answer **question 6** and any other **two** questions from section **B**

(e) All answers must be written in the spaces provided after Question 10.

(f) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

For Examiner's Use Only

Section	Questions	Candidate's Score	Maximum Score
A	1 – 5		25
	6		25
			25
			25
	Total Score		100

SECTION A

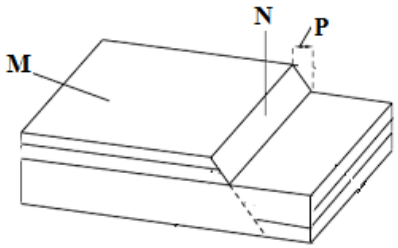
*Answer **all** the questions in this section.*

1. (a) What is an eclipse? **(2mks)**
(b) State **three** characteristics of comets. **(3mks)**

2. (a) Name **two** examples of prevailing winds found in the northern hemisphere. **(2mks)**
(b) Give **three** ways in which sea breezes influence the adjacent land. **(3mks)**

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3. The diagram below shows some features that result from faulting. Use it to answer questions (a) and (b).



(a) Identify the parts marked **M** and **P**. **(2mks)**

(b) Name **three** examples of the feature marked **N** in Kenya. **(3mks)**

4.

5. (a) Give **two** ways in which wind transports its load in arid areas. **(2mks)**

(b) State **three** factors that encourage wind erosion in desert areas. **(3mks)**

6. (a) Identify **two** types of glaciers. **(2mks)**

(b) Describe how glacial erosion occurs through plucking process. **(3mks)**

SECTION B

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

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

(a) (i) What is the four figure grid reference of Bonjoge school? **(2mks)**

(ii) Measure the length of the road B 25/3 from trigonometrical station SKP 21 eastwards. Give your answer in kilometres. **(2mks)**

(iii) Give **three** types of natural vegetation found in the area covered by the map. **(3mks)**

(b) (i) Give the altitude of the highest point within Nyando escarpment. **(1mk)**

(ii) Identify **two** human-made features in grid square 0194. **(2mks)**

(c) Using a vertical scale of 1cm to represent 100 metres;

(i) Draw a cross section from grid reference 010950 to 050990. **(4mks)**

(ii) On the cross section, mark and name the following;

- River Kibos **(1mk)**
- Sugar cane plantation **(1mk)**
- Steep slope **(1mk)**

(iii) Calculate the vertical exaggeration of the cross-section. **(2mks)**

(c) Citing evidence from the map, explain **three** factors that favour trade in area covered by the map. **(6mks)**

8. (a)(i) What is a rock? **(2mks)**

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

(b) (i) Identify **two** categories of mechanically formed sedimentary rocks. **(2mks)**

(ii) Name **two** major areas covered by metamorphic rocks in Kenya. **(2mks)**

(c) Describe the formation of rocks through the following processes;

(i) Desiccation **(4mks)**

(ii) Dynamic metamorphism **(4mks)**

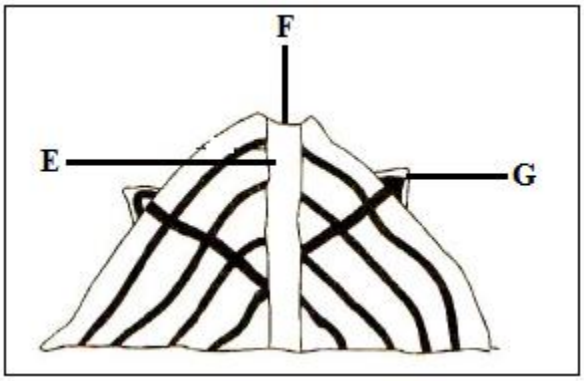
(d) Explain **four** significance of rocks to the economy of Kenya. **(8mks)**

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9. (a) (i) Define earth movements. **(2mks)**

(ii) Give **two** causes of horizontal earth movements. **(2mks)**

(b) The diagram below shows a composite cone. Use it to answer the questions that follow.



(i) Identify the parts labeled **E**, **F** and **G**. **(3mks)**

(ii) Describe how a composite cone is formed. **(8mks)**

(c) Members of your class are planning to carry out a field study on vulcinicity within the floor of the Kenyan rift valley.

(i) Name **three** places your likely to visit. **(3mks)**

(ii) State **four** reasons why it is necessary to conduct a pre-visit to the area of study. **(4mks)**

(iii) Give **three** problems your likely to experience during the study. **(3mks)**

10. (a)(i) Name **three** major oceans on the earth's surface. **(3mks)**

(ii) State **three** characteristics of ocean currents. **(3mks)**

(b) Describe the following processes of wave erosion.

(i) Hydraulic action. **(6mks)**

(ii) Solution **(2mks)**

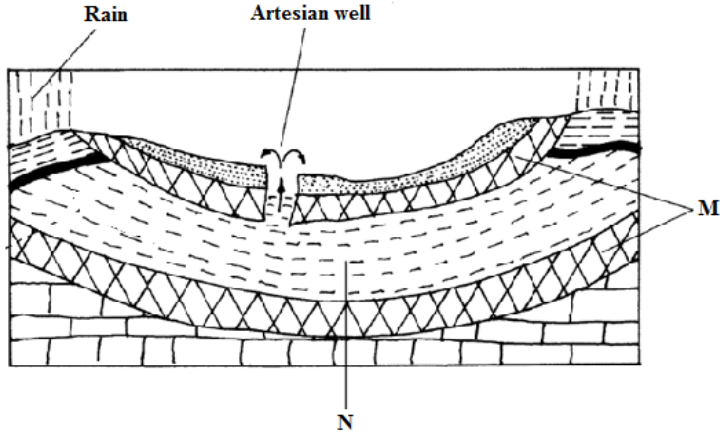
(c) Describe how a blowhole is formed. **(5mks)**

(d) Explain **three** significance of oceans to human activities. **(6mks)**

11. (a)(i) What is underground water? **(2mks)**

(ii) Give **three** ways in which springs form. **(3mks)**

(b) The diagram below shows artesian basin and related features. Use it to answer the questions that follow.



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(i) Identify the parts labeled **M** and **N**. **(2mks)**

(ii) State **two** problems associated with artesian wells. **(2mks)**

(c) Describe how the following features are formed.

(i) Stalactites **(5mks)**

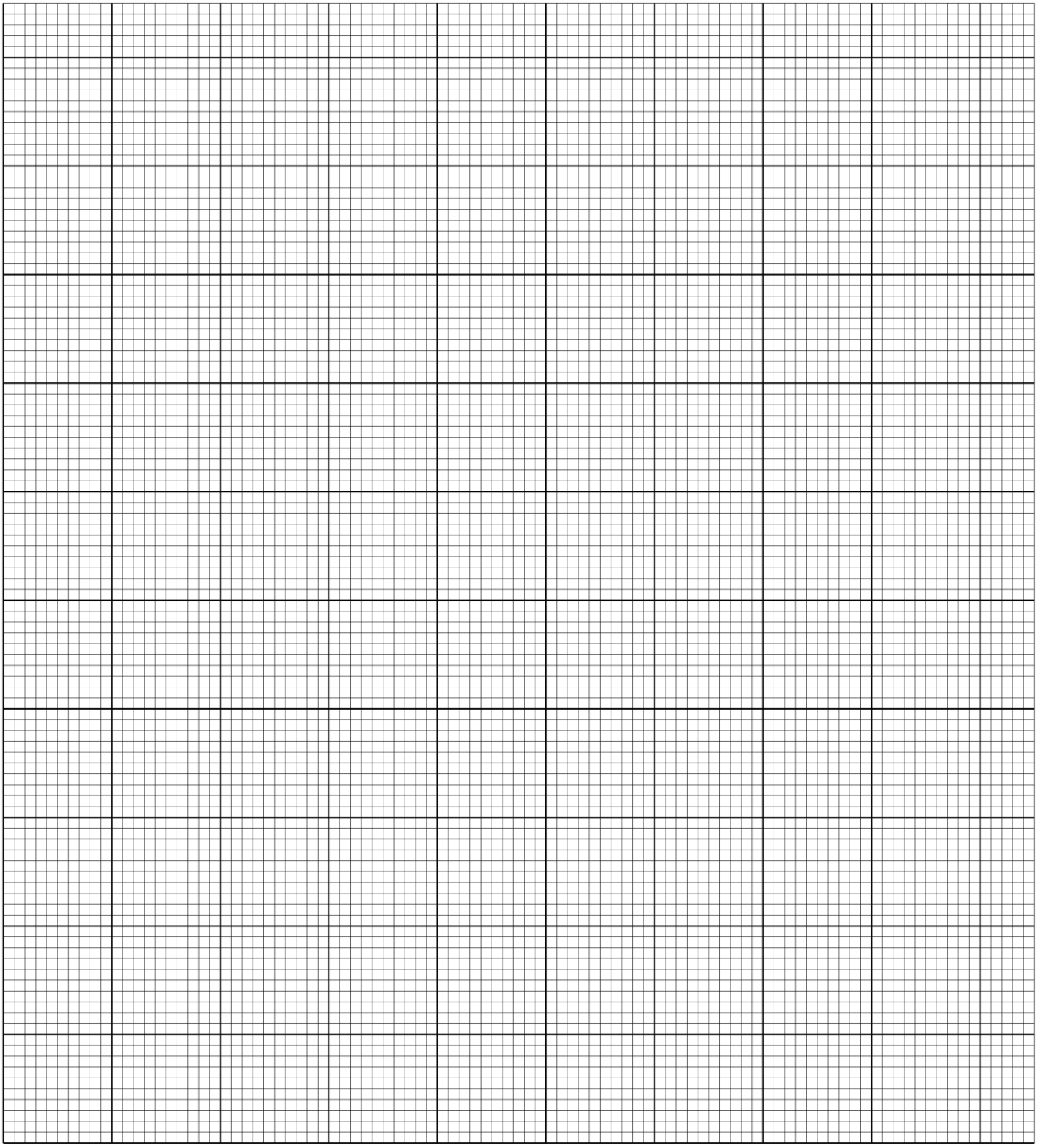
(ii) Dolines **(5mks)**

(d) You carried out a field study on a karst landscape.

(i) Give **three** reasons why there were few respondents in the area of study. **(3mks)**

(ii) State **three** follow up activities you had after the field study. **(3mks)**

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PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

GEOGRAPHY PAPER 2
312/2
FORM FOUR
TIME: 2 ¾ HOURS

INSTRUCTIONS TO CANDIDATES

- This paper contains two sections; A and B.
- Answer all questions in section A.
- Answer question 6 and any other two questions from section B.
- All answers must be written in English.

For Examiner's use only

Section	Question	Maximum Score	Candidate's Score
A	1 - 5	25	
	6	25	
		25	
		25	
	Total	100	

Section A.

(Answer all questions in this section).

1. a) What is nomadic pastoralism? **(2mks)**

(b) Name three nomadic communities in Africa. **(3mks)**

2.a) Distinguish between Land reclamation and Land rehabilitation**.** **(2mks)**

b) State three methods used in reclaiming land in Kenya. **(3mks)**

3.a) Define the term Eco-tourism. **(2mks)**

b) List three benefits that Kenya derives from Domestic tourism **(3mks)**

4.a) Define the international Trade. **(2mks)**

b) State how international trade in Kenya can be improved **(3mks)**

5.a) Apart from road transport, give two other forms of Land transport. **(2mks)**

b) State three advantages of road transport over road transport **(3mks)**

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SECTION B

6. (a) The photograph below shows some mining activities. Study and use it to answer The questions that follow.



(i) Identify the type of photograph. **(1mk)**

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

(iii) Draw a rectangle measuring 8cm by 10cm to represent the photograph. **(1mks)**

(iv) On it, mark and label four main features. **(4mks)**

(v) State three negative effects of the mining method shown in the photograph to the physical environment. **(3mks)**

(b)(i) Name two gold mining areas in South Africa. **(2mks)**

(ii) Describe the process of gold processing. **(6mks)**

(iii) Explain three economic benefits of petroleum to the oil producing countries in the Middle East region. **(6mks)**

7. (a)(i) Define pastoral farming **(2mks)**

(ii) List three counties with pastoral communities in Kenya **(3mks)**

(b)(i) Identify two exotic beef cattle breeds kept in Kenya **(2mks)**

(ii) **state** three characteristics of nomadic pastoralism **(3mks)**

(c)(i) Explain three factors favoring beef farming in Kenya. **(6mks)**

(ii) State four similarities between beef farming in Kenya and Argentina **(6mks)**

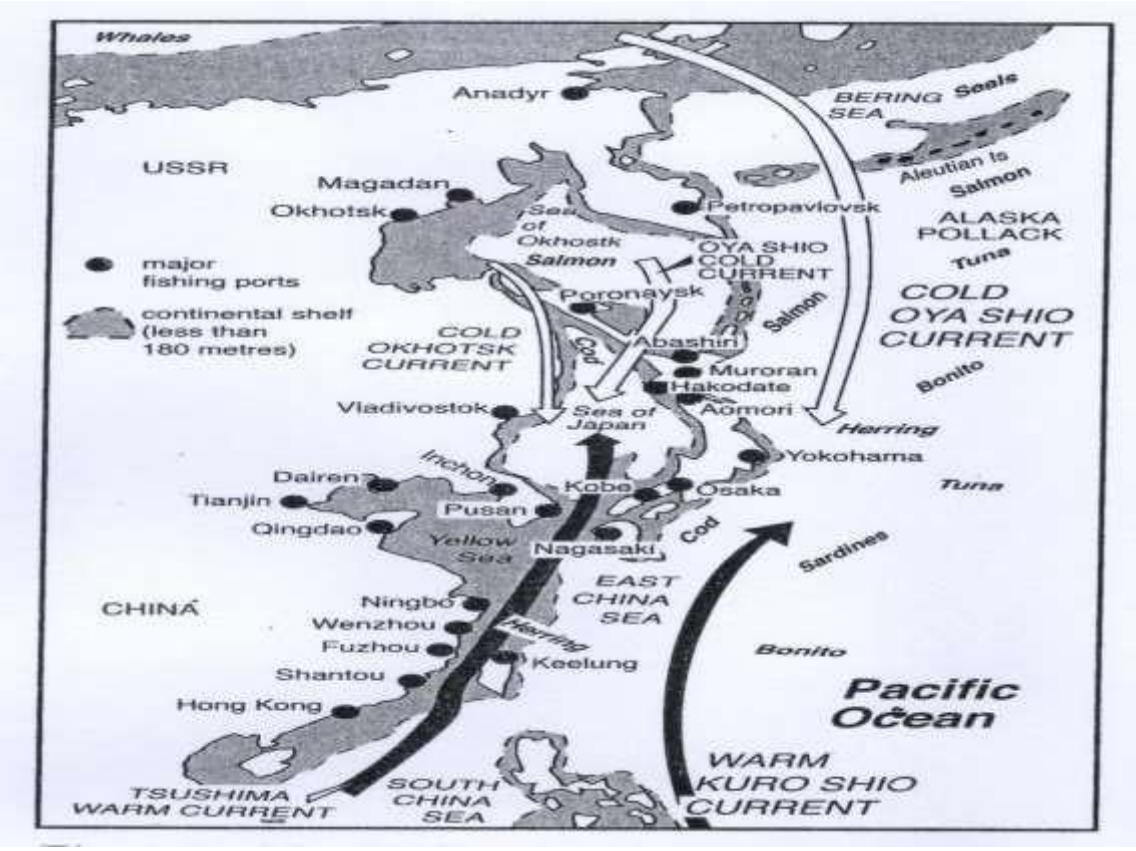
(d) Your class carried a field study on tea processing.

(i) Outline any three stages of tea processing that the class may have observed**.** **(3mks)**

(ii) State two methods that the class may have used to present data. **(6mks)**

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8.(a) The diagram below shows a fishing ground in the pacific ocean



(i) Identify the fishing ground shown above

(ii) Name two types of fish species found in the fishing ground above **(2mks)**

(b) (i) Apart from fishing , name two other economic activitiesthat arepracticed along the East African Coastal waters **(2mks)**

(ii) Name two inland types of fisheries in Kenya **(2mks)**

(c) (i) Describe the long lining fishing method **(4mks)**

(iii)Explain three physical factors that have influenced the development of fishing in Japan **(6mks)**

(d)(i) State four problems that face Marine fishing in Kenya **(4mks)**

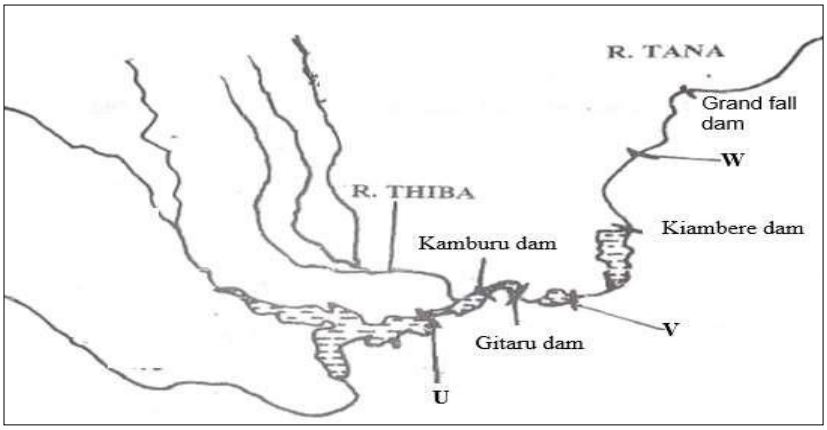
(ii) Give three ways of conserving fresh water fisheries in Kenya **(3mks)**

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9. (a)(i) Apart from sun, name three other sources of electricity **(2mks)**

(ii) Name two types of renewable energy. **(2mks)**

(b) Study the diagram of the seven forks dam power project provided below and use it to answer the questions that follow.



(i) Identify the dams labelled U and V. **(2mks)**

(ii) Explain three physical factors that favored the establishment of the seven forks power project. **(6mks)**

(iii) State three benefits of the seven forks power scheme. **(3mks)**

(c)(i) What is energy crisis? **(2mks)**

(ii) Explain four effects of the energy crisis to the economies. **(8mks)**

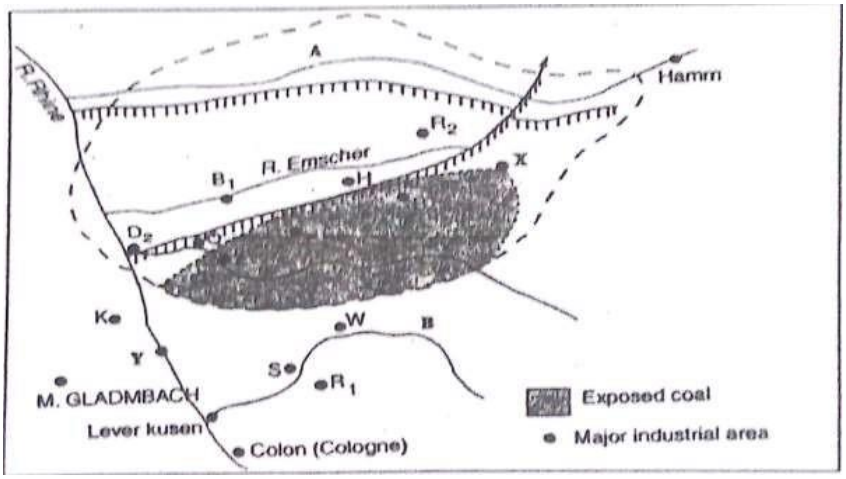
10. (a)(i) Name two agricultural nonfood manufacturing industries in Kenya **(2mks)**

(ii) State three causes of industrial inertia. **(3mks)**

(b) Name three problems facing the Jua Kali industries in Kenya. **(2mks)**

(c) Explain four measures the government of Kenya is undertaking to promote Jua kali industry in Kenya. **(8mks)**

(d). Study the map of Ruhr region below and use it to answer question



d. (i) Identify

The river marked A. **(1mk)**

The canal marked H. - **(1mk)**

The town marked Y. - **(1mk)**

(ii) Explain three human factors that led to the growth of Ruhr industrial Region. **(6mks)**

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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

HISTORY AND GOVERNMENT
PAPER 1 (311/1)
FORM FOUR
Time: 2½ Hours

Instructions to candidates:

a) This paper consists of three sections A, B and C.
b) Answer all questions in section A, Three questions from section B and Two questions from section C.
c) Answers to all Questions must be written in the Answer booklet provided.
d) Candidates should check the Question paper to ascertain that all pages are printed as indicated and no Questions are missing.
e) Answer all questions in English

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

SECTION A.
(25 marks) Answer all questions.

1. Give the main source of the history of Kenyan communities before colonization. **(1mk)**
2. Identify two functions of the Njuri Ncheke among the Ameru in the 19th century. **(2mks)**
3. Name the remnant of southern cushites in Kenya**.** **(1mk)**
4. Give two reasons why the Portuguese built Fort Jesus. **(2mks)**
5. Identify two main items of trade from the interior coast of Kenya during the long distance trade. **(2mks)**
6. State one development right of the child. **(1mk)**
7. Highlight two ways in which the constitution of Kenya promote national unity. **(2mks)**
8. State the main duty of the Governor in Kenya during the colonial period. **(1mk)**
9. Mention two roles that Jomo Kenyatta played in Kikuyu Central Association. **(2mks)**
10. State two reasons why the second Lancaster House conference was convened in 1962. **(2mks)**
11. Identify two political assassinations that took place in Kenya between 1963-1970. **(2mks)**
12. Give the main reason for the declaration of state of emergency in Kenya in 1952. **(1mk)**
13. Outline one example of special courts in Kenya . **(1mk)**
14. Who is the administrative head of national assembly in Kenya. **(1mk)**
15. Identify one source of Nyayo philosophy**.** **(1mk)**
16. State two principles of devolved government in Kenya**.** **(2mks)**
17. Give one external source of government revenue in Kenya. **(1mk)**

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SECTION B (45 MARKS) Answer only three questions

18 (a) Name three communities that belong to coastal Bantus in Kenya**.** **(3mks)**

(b) Explain six results of the migration and settlement of the highland Nilotes in Kenya**.** **(12mks)**

19 (a) Identify five factors that led to the growth of towns along the coast of Kenya before 19th century. **(5mks)**

(b) Discuss five reasons for the Portuguese success within the east African coast. **(10mks)**

20 (a) Give three methods used by the colonial government to acquire lands in Kenya. **(3mks)**

(b) Explain six ways in which the colonial promoted settler farming in Kenya. **(12mks)**

21 (a) State five problem experienced by the British colonial administration in Kenya. **(5mks)**

(b) Describe five roles played by political parties in the struggle for independence in Kenya. **(10mks)**

SECTION C (30 marks) Answer only two questions

22 (a) Identify five constitutional changes in the executive in the year 2010. **(5mks)**

(b) Explain five challenges Kenya encountered in search of a new constitution. **(10mks)**

23 (a) Identify three functions of correctional services in Kenya. **(3mks)**

(b) Discuss six reforms undertaken to improve the correctional services in Kenya **(12mks)**

24 (a) state three components of a national budget. **(3mks)**

(b) Explain six ways of managing public finance by county government. **(12mks)**

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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

311/2 - KENYA CERTIFICATE OF SECONDARY EDUCATION - Paper 2
HISTORY AND GOVERNMENT TERM 2
FORM FOUR

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

SECTION A (25 marks) Answer all questions.

1. Identify two types of monarchial government **(2mks)**

2. What was the most important development of man in the middle stone age **(1mk)**

3. State two social consequences of development of early agriculture in Egypt **(2mks)**

4. Give the main role of Berbers during the Trans-Saharan trade **(1mk)**

5. Name two metals that were used as currency in pre-colonial period **(2mks)**

6. State two limitations of using fire and smoke signal in communication **(2mks)**

7. Give two factors for the decline of Meroe as an early urban Centre **(2mks)**

8. Identify two ways in which industrial revolution in Europe contributed to colonization of Africa **(2mks)**

9. Name one treaty signed between Lobengula and the British during the process of colonization of Africa **(1mk)**

10. Mention the method of colonial administration used by French in Senegal after assimilation failed **(1mk)**

11. Who was the first president of FRELIMO movement in Mozambique **(1mk)**

12. State two ways in which Korea was affected by cold war **(2mks)**

13. Give one function of the trusteeship council of the United Nations Organizations **(1mk)**

14. State two benefits enjoyed by members of Commonwealth **(2mks)**

15. Identify two ways in which poverty has undermined economic development in Democratic Republic of Congo since independence (DRC) **(2mks)**

16. Name one member of common Market for southern and eastern Africa (COMESA) from North Africa **(1mk)**

17. Give two houses of parliament in India **(2mks)**

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SECTION B (45 MARKS) Answer only three questions

18 (a) give three characteristics of Microlithic tools that were made during the late stone age **(3mks)**

(b) Explain six challenges that marked agrarian revolution in Britain **(12mks)**

19 (a) State five factors that undermine the Trans-Saharan trade **(5mks)**

(b) Describe five economic results of Trans-Saharan trade **(10mks)**

20 (a) outline three reasons why the policy of assimilation was easily applied in the four communes of Senegal **(3mks)**

(b) Explain six effects of the British direct rule in Zimbabwe **(12mks)**

21 (a) State five methods used by the nationalists in South Africa in their struggle for majority rule **(5mks)**

(b) Discuss five ways in which Kwame Nkurumah contributed to the liberation struggle in Africa **(10mks)**

SECTION C (30 marks) Answer only two questions

22 (a) State five factors that contributed to the rise and expansion of the Asante kingdom by the 19th century **(5mks)**

(b) Describe political organization of the Buganda kingdom **(10mks)**

23 (a) Name three key personalities who met during the peace settlement of 1919 at the end of World War 1 **(3mks)**

(b) Explain six factors that enabled the allied powers to win the Second World War **(12mks**)

24 (a) state three requirements one has to fulfill in order to contest as a presidential candidate in USA **(3mks)**

(b) Describe six responsibilities of the prime minister in Britain **(12mks)**

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PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

HOME SCIENCE

PAPER 1

FORM FOUR MOCK

TIME – 2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

- Write your name and number in the spaces provided.
- Sign and date the examination in the spaces provided.
- This paper consists of three sections **A**, **B,** and **C**.
- Answer **ALL** questions in sections **A** and **B** and any **two** questions from section **C**.
- Answers must be written in the spaces provided.

For Examiners use only.

Section	Question	Maximum Score	Candidate's Score
A	1-19	40	
B	20	20	
		20	
		20	
Total		100 marks	

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SECTION A (40 Marks)

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

1. Suggest **two** reasons for using tomatoes when cooking food. **(1mk)**

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2. Identify **four** categories of people prone to scurvy. **(2mks)**

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3. Draw and label **three** pattern markings that need to be transferred to fabric**.** **(3mks)**

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4. Mention **thre**e precautions to take when preserving grains. **(3mks)**

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5. State **four** ways of helping children form good habits. **(2mks)**

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6. Give **four** accessories used in the living room. **(2mks)**

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7. Identify **two** functions of fats and oils in the body. **(2mks)**

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8. Highlight **three** qualities of a well-made patch pocket. **(3mks)**

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9. Suggest **two** ways of preventing worm infestation in children. **(2mks)**

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10. Give **two** ways a student can obtain a pattern for making a garment. **(2mks)**

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11. Mention **three** rules to observe when using left-over food. **(3mks)**

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12. State **three** ways wool differs from cotton when exposed to fire. **(3mks)**

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13. Give **two** qualities of good sewing thread. **(2mks)**

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14. Suggest **two** disadvantages of using laminated wood to make worktops in the kitchen. **(2mks)**

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15. Give **two** ways of avoiding snakes in the home. **(1mk)**

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16. Name **two** functional accessories that can be used to enhance personal appearance. **(1mk)**

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17. Mention **two** reasons why building a family home is better than buying. **(2mks)**

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18. Giving clear examples state the meaning of the following terms in reference to medication:

a) Dosage **(1mk)**

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b) Frequency **(1mk)**

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19. Give **two** qualities you would look for when choosing fabrics for making school uniforms. **(2mks)**

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SECTION B (20 Marks)

(Compulsory)

Answer question 20 in the space provided

20. You are planning to visit your grandmother over the holiday.

a) Describe how you would clean her neglected and stained melamine jug. **(6mks)**

b) Outline how you would launder her woolen shawl. **(9mks)**

c) Describe how you would clean the wooden spoon used to make ugali. **(5mks)**

SECTION C (40 Marks)

*Answer any **TWO** questions in the space provided after question 23.*

21. a) Outline **six** advantages of buying vegetables and fruits in an open-air market over a supermarket. **(6mks)**

b) Discuss **three** dangers arising from poor nutrition in children. **(6mks)**

c) Suggest **three** precautions to take when laundering a newborn baby's clothes. **(3mks)**

d) Highlight **five** ways COVID-19 may have contributed to malnutrition. **(5mks)**

22. a) Highlight **five** qualities of a well-designed kitchen. **(5mks)**

b) Discuss **three** limitations of using charcoal as a fuel. **(6mks)**

c) State **five** advantages of eating homemade food over restaurant food. **(5mks)**

d) Discuss **two** causes of food shortage at the household level. **(4mks)**

23. a) Outline **six** factors that may interfere with a family budget. **(6mks)**

b) Mention **four** ways of ensuring that a bedridden patient does not develop bed sores. **(4mks)**

c) Suggest **five** reasons why aluminium is common in making cooking utensils**.** **(5mks)**

d) Highlight **five** factors to observe when buying a sewing machine to be used by students. **(5mks)**

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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

TERM TWO EXAMINATIONS
HOME SCIENCE
PAPER 2
FORM FOUR
TIME – 2 ½ HOURS

Instructions

A pattern of a girl's skirt is provided. You are advised to study the sketches, the question paper and the layout carefully before you begin the test.

MATERIALS PROVIDED

1. Pattern pieces:
   - **A** Skirt front
   - **B** Skirt back
   - **C** Pocket
   - **D** Waistband
2. Plain lightweight cotton fabric 50cm by 90 cm wide.
3. Sewing thread to match the fabric.
4. One large envelope.

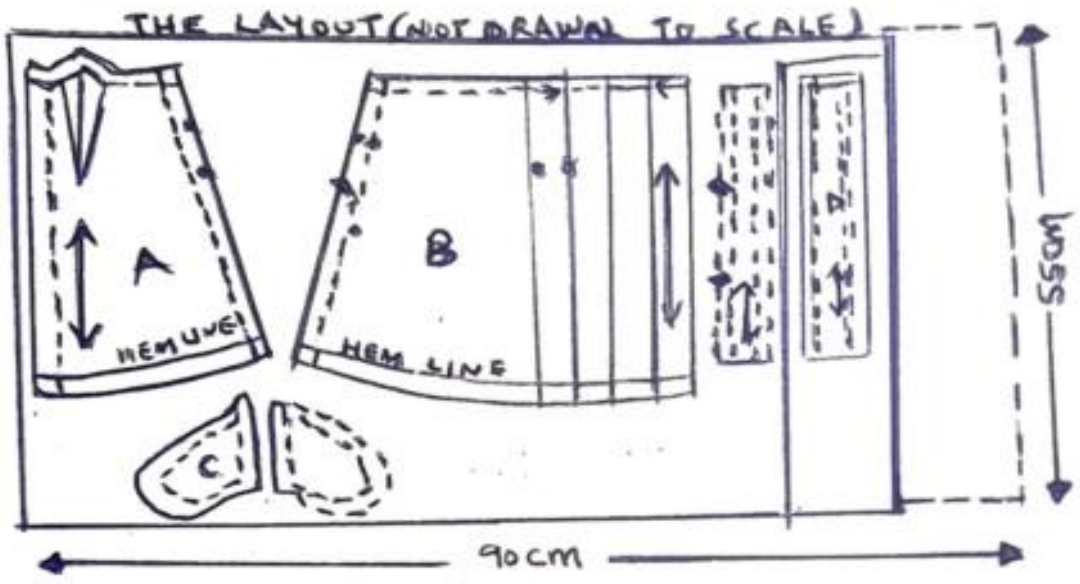
THE TEST

Using the materials provided, cut out and make up the RIGHT HALF of the skirt to show the following processes:

(a) Cutting out. **(13½mks)**
(b) Making of the back skirt dart. **(6½mks)**
(c) Preparation of inverted pleat on the skirt front piece. **(9mks)**
(d) Attachment of front pocket to the skirt and back pocket to the skirt back**. Do not trim or neaten the seam.** (11mks)
(e) Making the side seam using an open seam. Neaten below and above the pocket. **(11½mks)**
(f) Joining of the pocket seam (do not neaten). **(4mks)**
(g) Preparation of an interfaced waistband. **(4mks)**
(h) Attachment of the waistband and holding them in place using even tacking stitches. **(13mks)**
(i) Preparation of the skirt hem, hold the hem at the back using hemming stitch. **(8mks)**
(h) Making of the worked loop on the back waistband for a 1 cm button. **(3mks)**
(i) Final presentation. **(6½mks)**

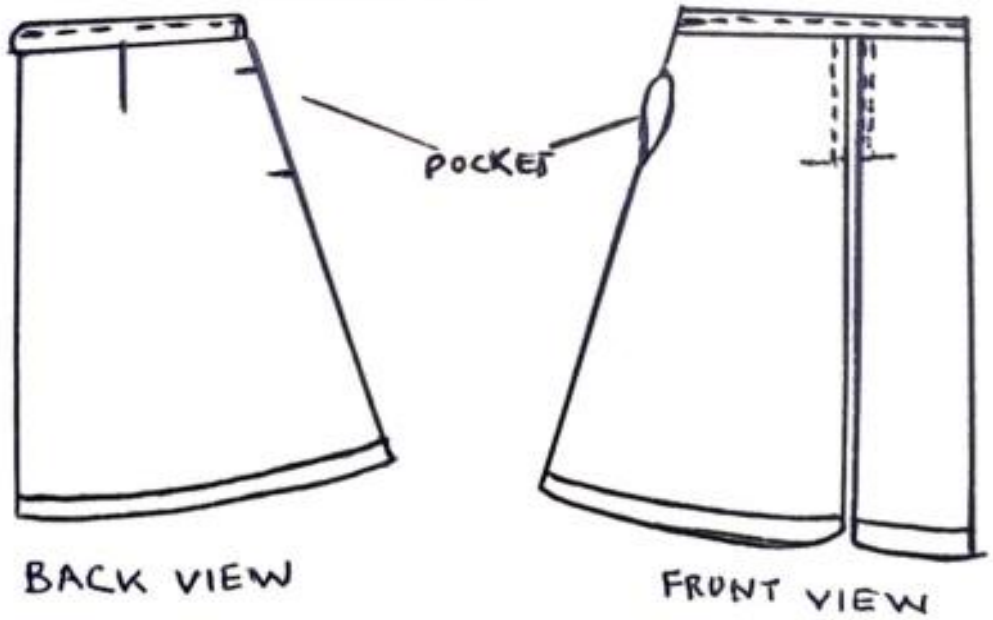
At the end of the examination, firmly sew onto your work, on a single fabric a label bearing your name and index number. Remove the needle and pins from your work, then fold your work carefully and place it in the envelope provided. Do not put scraps of fibre in the envelope.

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SKIRT

FRONT AND BACK VIEW



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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

441/3
HOMESCIENCE
FOODS AND NUTRITION
Paper 3
PRACTICAL
1 ¾ hours
PLANNING SESSION: 30 minutes
PRACTICAL TEST SESSION: 1 ¼ hours

INSTRUCTIONS TO CANDIDATES

1. Read the test carefully
2. Write your name and admission number on every sheet of paper used
3. Textbooks and recipes may be used during the planning session as reference materials
4. You will be expected to keep your order of work during the practical
5. You are allowed to take away **only** your materials at the end of the planning session
6. You are not allowed to bring additional notes to the practical sessions

THE TEST

You are visiting your grandmother overnight and helping her prepare supper.
Using the ingredients listed below, prepare, cook, and present a suitable two-dish meal and a dessert for the two of you.

Ingredients

- ✓ Irish potatoes/Green bananas/maize meal
- ✓ Onions
- ✓ Carrots
- ✓ Tomatoes
- ✓ Green leafy vegetable
- ✓ Coriander (dhania)
- ✓ Ripe bananas
- ✓ Beans/minced meat/liver
- ✓ Salt
- ✓ Oil/cooking fat
- ✓ Pawpaw
- ✓ Sugar
- ✓ Pineapple

PLANNING SESSION- 30 minutes

For each task below, use separate sheets of paper and carbon paper to make duplicate copies then proceed as follows:

1.Identify the dishes and write their recipes.
2.Write your order of work.
3.Make a list of foodstuff and equipment you will require.

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PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

TERM 2
ISLAMIC RELIGIOUS EDUCATION
PAPER 1
FORM FOUR
Time: 2½ Hours

Instructions
Answer five questions only

1. a. Give reasons why Quran was revealed in Arabic **(8mks)**

b. Mention any four scribes of the Quran **(4mks)**

c. Discuss the teachings of suratul hujurat **(8mks)**

2. a. Explain the significance of compilation of Quran **(7mks)**

b. What are the reasons for diacriticalization of the Quran **(5mks)**

c. Explain why the Quran is regarded as a miracle **(8mks)**

3. a. Differentiate between hadith Qudsi and hadith Nabawi **(8mks)**

b. Mention any five Shia collection of hadith **(5mks)**

c. Abu Huraira reported that the Prophet said '' keep away from envy for as fire burns firewood so as envy consumes good actions.'' Draw teachings from this hadith. **(7mks)**

4. a. Explain the different factors that led to the emergence of the schools of thoughts **(8mks)**

b. Explain the classification of legal acts -Ahkamul -Islam **(6mks)**

c. Give the social benefits of zakat **(6mks)**

5. a. Differentiate between Islamic law and secular law **(8mks)**

b. Outline the contributions of Imam Malik as a scholar of Sharia **(6mks)**

c. What are the circumstances that make slaughtering compulsory during Hajj **(6mks)**

6.a. Explain the significance of the belief in Qadhaa and Qadar **(7mks)**

b. List the greater signs of Qiyama **(6mks)**

c. Enumerate the duties and significances of an Imam in the Shia community **(7mks)**

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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

ISLAMIC RELIGIOUS EDUCATION PAPER TWO

PAPER TWO
FORM FOUR (4)
Time: 2½ Hours

INSTRUCTIONS:
1. This paper contains six (6) questions.
2. Answer any FIVE questions
3. Write your answers in the answer sheet provided.
4. All answers must be in English.

1.a) Describe the manners of sleeping that Muslims can adopt from the sunnah of the prophet (pbuh**)** **(7mks)**
b) Explain the wisdom behind the prohibition of abortion in Islam **(6mks)**
c) What are the moral implications of observing swalat by muslims? **(7mks)**

2.a) Mention seven duties of a Muslim wife **(7mks)**
b) Discuss the Islamic teachings about polygamy **(6mks)**
c) Explain the significance of the law of inheritance in Islam. **(7mks)**

3.a) Identify five main categories of heirs and their respective shares in Islam **(5mks)**
b) Identify five legitimate ways of earning wealth in Islam **(5mks)**
c) Discuss five Islamic views about terrorism **(10mks)**

4 a) Describe the social conditions that prevailed in pre-Islamic Arabia **(8mks)**
b) Identify five battles that were fought by Muslims during the time of prophet Muhammad (pbuh). **(5mks)**
c) Discuss the challenges faced by Sayyidna Ali during his caliphate. **(7mks)**

5. a) Explain seven factors which were responsible for the decline of Abbasid dynasty **(7mks)**
b) Explain six factors that influenced the spread of Islam in Western Kenya **(6mks)**
c) State the challenges that are faced by Muslim students in Kenya. **(7mks)**

6. a) Describe the early life of Sheikh Al-Amin Mazrui **(8mks)**
b) Discuss six contributions of Muslim Scholars to science **(12mks)**

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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

JINA: ……

SHULE: ……

NAMBARI YA USAJILI: ……. SAHIHI:……..… TAREHE: ……..

KISWAHILI
KARATASI YA KWANZA(102/1)
KIDATO CHA NNE (4)
MUDA: SAA 2 ½

MAAGIZO KWA MTAHINIWA:

Maagizo

1. *Andika insha **mbili**. Insha ya kwanza ni ya **lazima**.*
2. *Kisha chagua insha nyingine moja kati ya hizo tatu zilizobakia.*
3. *Kila insha isipungue maneno **400.***
4. *Kila insha ina alama 20.*
5. *Kila insha **lazima** iandikwe kwa lugha ya **Kiswahili.***
6. *Insha zote **sharti** ziandikwe katika nafasi ulizoachiwa kwenye kijitabu hiki cha maswali.*
7. ***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	
Jumla	40	

SWALI LA LAZIMA

1. Umesoma nafasi ya kazi ya uhasibu iliyotangazwa katika gazeti la Tujiinue. Andika ombi la kazi hiyo na barua yako iambatane na wasifukazi.

CHAGUA MOJA

2. Jamii huchangia pakubwa katika ukosefu wa chakula nchini. Fafanua.

3. Andika insha itakayodhihirisha maana ya methali *Majembe yalimayo pamoja hayakosi kugongana*.

4. Andika insha itakayomalizikia kwa... ndipo nikagundua kuwa aliyenisaidia alikuwa fisi kalalia ngozi ya kondoo.

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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

JINA: ……

SHULE: ……

NAMBARI YA USAJILI: ……. SAHIHI:……..… TAREHE: ……

MUHULA WA PILI
KISWAHILI
KARATASI YA PILI(102/2)
KIDATO CHA NNE (4)
MUDA: SAA 2 ½

MAAGIZO: JIBU MASWALI YOTE

SEHEMU	UPEO	ALAMA
UFAHAMU	15	
MUKHTASARI	15	
MATUMIZI YA LUGHA	40	
ISIMU JAMII	10	
JUMLA	80	

1. UFAHAMU (ALAMA 15)

Soma kifungu kisha ujibu maswali yanayofuata.

Hapo zamani palikuwa na nchi iitwayo Matunda.Nchi hii ilikabiliwa na umaskini mkubwa. Hata katika mashaka hayo, viongozi wa Matunda hawakusahau kuwa akili ni mali.Wazee waliitwa ili kutumia hekima yao ili kufumbua tatizo la umaskini .Kila mzee alijikuna kichwa mpaka akaambua nywele lakini wapi.

Uliitishwa mkutano mkubwa wa mwisho na mkubwa kuliko ya awali. Hakuna mzee aliyekuwa na mchango mpya. Waliposhinikizwa , wote waliinamisha vichwa.Mng'aro wa vipara vyao uliyatia kiwi macho ya kiongozi.Halafu ghafla Mzee Mtepe akapurupuka "Nawauliza ,Wanamatunda ,mzungu wa kula hufundishwa mwana?'Sauti ya Mtepe yenye mkwaruzo ilipasua hewa. "Hapana ",wote wakajibu.Akauliza tena "Dole moja la jitu haliwezi kuvunja chawa?" Baada ya maelezo machache,Mzee Mtepe alihitimisha, "Sisi wenyewe tuna jawabu. Umoja ni nguvu , utengano ni udhaifu .Ama kwa kuti au mauti tuungane tuunde vyama vya ushirika."

Wanamatunda wakaunda vyama vya ushirika .Walivipenda vyama hivi kwa sababu nyingi.Sababu moja ni kuwa walihitajika kutoa pesa kidogo kila siku ,kila wiki au kila mwezi kutegemea utaratibu wa chama.Haba na haba waliweza kujenga hisa.Kila mwisho wa mwaka kila mwanachama alipewa mgao kulingana na kiwango cha faida za chama.

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Haya yaliamsha tamaa ya wanachama na muda si muda , vyama vikaanza kustawi huku wanachama wakifurahia huduma mbalimbali. Mojawapo ya huduma ilikuwa mikopo ya dharura kwa wenye shida ya ghafla kama vile msiba au kutindikiwa karo ya shule. Aidha, kulikuwa na mikopo ya maendeleo .Kwayo wanachama walijijengea nyumba au kuanzisha biashara.Wengine walifufua shughuli za kilimo ambazo zilikuwa zimezorota.

Wanamatunda waliweza kupambana na umaskini katika maisha yao.Pesa walizopata zilivunja nguu , milima ikalala.Biwi la mashaka kwa waja hawa liliondolewa nao wakaanza kuishi kama watu.

Wananchi wengi wakapata ari ya kujiandalia maisha bora ya baadaye lakini kumbe ngoma ya wana haikeshi! Viongozi wasio na ujuzi na waliojaa tamaa walivuruga usimamizi wa vyama. Walitumia hila kujipa mikopo mikubwa ambayo hawakuilipa. Halikadhalika waliharibu hazina ya vyama kwa ubadhirifu au matumizi yasiyo mpango. Wengine walipora mali ya wanachama .Kutokana na wizi na wanachama kuchezeshwa ngoma, vyama vilianza kulegealegea na vingine hata kuanguka .Ukweli wa wakubwa kumeza wadogo ulianza kubainika. Wanachama walijuta kwa kutomaizi kuwa paka hawekewi kitoweo kulinda.

Wanamatunda walichelea kurudia ulitima wa hapo awali. Uoga uliwafunza jambo moja muhimu kuwa zindiko la mwoga ni kemi. Wananchi walilia serikali nayo ikaingilia kati. Suala la kwanza halikuwa ngumu.Kwa kuwa ukuni mbaya haufichiki , serikali iliweza kuwatambua viongozi wabaya na kumwondoa kwenye usimamizi wa vyama. Pili, serikali iliagiza vyama vyote visajiliwe rasmi na viunde katiba. Tatu, serikali iliweka vigezo vya watu wanaopaswa kuongoza vyama. Vigezo hivyo vilikuwa elimu, tajriba , maadili na uwajibikaji.

Amri ya serikali , madaftari ya maehasabu ya vyama yalikaguliwa.Pamoja na haya Bunge la nchi ya Matunda lilipisha sharia kali zilizolenga kuwadhibiti viongozi kufuja mali ya vyama.Haya yalikuwa ni pamoja na kuwekwa jela. Mikakati ya vyama kuweka bima ili kukinga hisa za wanachama iliwekwa na punde mapato yao ya mgawo yakaongezeka.

Wahenga walisema kuwa imara ya chombo ni nanga! Uongozi mzuri uliimarisha vyama navyo vikapanuka a kuenea kote nchini. Vingine viliweza kushindana na kanzi za kimataifa. Mara nyingine Wanamatunda wakawa na matumaini ya kuyaboresha maisha yao tena. Kila mmoja alitabasamu alipoukumbuka usemi wa Mzee Mtepe kuwa;'Wawili si mmoja na gezageza ndio mji.'

Maswali

a)Kipe kisa hiki anwani mwafaka. **(alm2)**

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b) Kwa nini wazee wote walikuwa vipara? **(alm1)**

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c) Ni nini kilichowasukuma Wanamatunda kuunda vyama? **(alm2)**

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d) Je, vyama hivi vilikuwa na faida gani kwa jamii hii? **(alm5)**

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e) Eleza mambo matatu yalisababisha vyama vya Matunda kuanguka. **(alm3)**

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f)Eleza maana ya maneno haya kama yalivyotumika katika taarifa **(alm2)**

i) Ngoma ya wana haikeshi

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ii) Kwa kuti au mauti

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2.UFUPISHO (ALAMA 15)

Soma taarifa ifuatayo kisha ujibu maswali

Suala la ukosefu wa kazi miongoni mwa wananchi limekuwa donda sugu linalotishia kukiangamiza kizazi cha leo kwa ulitima usio kifani. Hata hivyo, kila mwananchi ana jukumu la kufanya ili kuhakikisha kuwa nafasi nyingi za kazi zimebuniwa .

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Wananchi ambao hawajafanikiwa kupata ajira katika mashirika mbalimbali wanafaa kupewa mkopo na serikali utakaokuwa mtaji wa kuanzisha biashara. Bila shaka wapo wananchi walio na ujuzi wa kuendeleza biashara ila wanachokosa ni mtaji wa kuianzishia biashara yenyewe.Mikopo hii ikitolewa pamoja na riba ya chini, walio na uwezo wa kujiajiri kwa kufanya biashara ndogo ndogo kama vile uchuuzi, ususi na hata useremala wataweza kujivumbulia riziki na kuwaajiri wananchi wengine wasiojua lolote kwenye masuala ya biashara.

Aidha, serikali pamoja na wawekezaji wa humu nchini pasipo na kujenga viwanda vitakavyozalisha mali , tutazidi kununua bidhaa kutoka mataifa yalioendelea.Iwapo serikali na wawekezaji watawekeza kwa viwanda humu nchini basi wananchi watapata ajira aina ainati kama vile za uhandisi , usafirishaji wa mali ghafi yanayotumiwa viwandani, upakiaji wa bidhaa na kazi nyinginezo nyingi.Bidhaa kutoka viwanda hivi pia zinaweza kuuzwa katika nchi jirani na serikali kutumia fedha hii kuendeleza sekta kama vile za uchukuzi zitakazowaajiri wananchi zaidi.

Mtalaa wa Elimu wa Nane-nne-nne nao ulichangia kwa kiasi kikubwa ukosefu wa ajira nchini.Mfumo huu haukuangazia kuwapa wanagenzi mbinu za kutumia rasilimali katika mazingira yao ili kujiendeleza na kujitafutia ajira ila kukariri tu nadharia . Mfumo huo pia haukuwazia kuwapa wanagenzi umilisi wa ujasiriamali na stadi za kuwawezesha kujitegemea na kuyadhibiti maisha yao ya baadaye. Hivyo basi hata wale waliohitimu katika viwango vya juu kielmu ,walikimbilia kuandikwa kazi za ofisi ambazo zilikuwa haba na kuselea bila ajira.

Miundo misingi nayo inafaa kuimarishwa nchini. Sekta ya uchukuzi na mawasiliano inafaa kuimarisha kwa kuboresha barabara na hata reli zilizo nchini ili kufikia viwango vya kisasa kwa ubora.Hili itaweza kuhakikisha kuwa wananchi wanaondeleza shughuli za biashara popote pale nchini watasafirisha bidhaa zao kwa urahisi na kuwafikia wateja wao kwa wakati unaofaa na hivyo kuongeza natija yao.

Ni bayana kuwa kwa muda mrefu sasa maendeleo yanayowapa wananchi ajira huwa mijini tu.Maeneo ya mashinani nayo yanafaa kuendelezwa kwa kuanzisha viwanda na hata kujenga barabara bora .Hatua hii itapunguza msukumo wa vijana kukimbilia mijini kwa lengo la kutafuta kazi kwani wataweza kuajiriwa kwa viwanda hivi na hivyo kupunguza tatizo la ukosefu wa kazi mijini. Aidha sehemu zote za nchi zitakuwa sawa kimaendeleo na hivyo basi kutumia rasilimali ya nchi kwa njia endelevu zaidi.

Hata hivyo ,nafasi nyingi za kazi zinaweza kubuniwa kwa kuboresha usalama nchini.Usalama nchini unaweza kuwa njia mojawapo ya kuwavutia watalii na wawekezaji wa kigeni na hivyo basi wenyeji kupata kazi kwenye viwanda vya wawekezaji hawa.Miongoni mwa hatua nyingi ninginezo ,mambo haya yanafaa kutekelezwa kikamilifu na washikadau wote kwenye sekta mbalimbali ili kuliangamiza donda sugu hili la ukosefu wa ajira nchini!

Maswali

a) Kwa maneno kati ya 60-70 fupisha aya tatu za kwanza. (alm 7,1 utiririko)

Matayarisho

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b) Onyesha sababu zinazochangia ukosefu wa kazi nchini na suluhu za tatizo hili kwa maneno kati ya 90-100.

(alm8,1 ya utiririko)

Matayarisho

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3.SARUFI NA MATUMIZI YA LUGHA (ALAMA 40)

a) Tofautisha kati ya sauti hizi: **(alm1)**

i)/p/

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ii)/b/

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b) Weka shadda kwa maneno yafuatayo muundo mmoja ili kutofautisha maana za maneno haya: **(alm3)**

i) Barabara

ii) Ala

iii) Walakini

c) Kwa kutolea mfano katika sentensi onyesha dhana zinazobainishwa na kiimbo. **(alm5)**

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d) Ainisha vitenzi katika sentensi hizi. **(alm2)**

i) Kiti ki uwanjani.

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ii) Mwalimu anafunza.

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e) Ainisha nomino katika sentensi hii. **(alm2)**

Kutomakinika kwa Makali kulimfanya aangushe sarafu aliyopewa na mpitanjia.

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f) Ondoa kirejeshi ‘amba-‘ katika sentensi hizi kisha utumie kirejeshi ‘-o-‘ kulingana na maelekezo katika mabano. **(alm2)**

i) Watu ambao walizawidiwa wamefika.(kirejeshi-o- tamati)

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ii) Ukulima ambao unasifika ni huu .(kirejeshi –o- awali)

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g) Kwa kutolea mifano tambua miundo mine ya Ngeli ya A-WA. **(alm4)**

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h) Andika sentensi hii kwa wingi. **(alm1)**

Ufagio uliotumiwa umeharibika .

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i) Tambua jukumu la sentensi hii. **(alm1)**

Nalichukia janadume hili sana.

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j) Ainisha mofimu katika neno hili **(alm3)**

mlivyowasomesha.

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k) Bainisha vishazi katika sentensi zifuatazo. **(alm4)**

i)Kabla ya kung’oa nanga tuliwaombea dua.

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ii) Licha ya uhaba wa maji ,alioga kila siku.

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l) Tambua virai katika sentensi hii. **(alm4)**

Mwajuma wa mwalimu amelazwa hospitali jana jioni.

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m) Bainisha kiima na kiarifa katika sentensi zifuatazo; **(alm4)**

i) Mahindi na maharagwe yanapandwa na mkulima.

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ii) Maagizo ya daktari yatawafaa wagonjwa wote.

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n) Changanua sentensi hii kwa njia ya mshale. **(alm4)**

Maembe yaliookotwa ni ya mkurugenzi.

4.ISIMUJAMII

”Mheshimiwa Spika naomba nipewe fursa kutoa maoni yangu kuhusu hoja iliyowasilishwa bungeni na mbunge wa Malishoni Mheshimiwa Patakazi…”

i) Weka makala haya muktadha wake. **(alm2)**

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ii) Eleza sifa za mazungumzo yanayofanywa katika muktadha huo uliotaja. **(alm8)**

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PROGRESSIVE STUDENTS FORM FOUR
MOCK SERIES ONE EXAMS

JINA: ……

SHULE: ……

NAMBARI YA USAJILI: ……. SAHIHI:……..… TAREHE: ……..

MUHULA WA PILI
KISWAHILI
KARATASI YA TATU (102/3)
KIDATO CHA NNE (4)
MUDA: SAA 2 ½

MAAGIZO

a)Jibu maswali manne pekee.
b)Swali la kwanza ni la lazima
c)Maswali hayo matatu mengine yachaguliwe kutoka sehemu nne zilizobaki yaani; riwaya,tamthilia ,hadihi fupi na ushairi.
d)Usijibu maswali mawili kutoka sehemu moja.
e)Majibu yote yaandikwe kwa lugha ya Kiswahili
f)Majibu yote sharti yaandikwe kwa kijitabu cha majibu ulichopewa
g)Andika nambari ya maswali uliyoyajibu

KWA MATUMIZI YA MTAHINI PEKEE

SWALI	UPEO	ALAMA
	20	
	20	
	20	
	20	
JUMLA	80	

SWALI LA LAZIMA

1) SEHEMU YA A: FASIHI SIMULIZI

a)Tofautisha kati ya hadhira ya Fasihi simulizi na Fasihi andishi. **(alm5)**

b)Fafanua mambo ambayo yanaweza kuchangia kubadilika kwa Fasihi Simulizi**.** **(alm5)**

c)Tambua wahusika katika Fashi simulizi na umuhimu wao. **(alm10)**

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SEHEMU YA B:Riwaya ya Nguu za Jadi

2. Soma dondoo lifuatalo kisha ujibu maswali yanayofuata.

"Kuna waliookota chupa za plastiki kwenda kuchuuza. Kuna waliobobea katika kuchakura taka ili kupata mikebe iliyotupwa. Kisha waliichuuza mjini. Ukifika Majaani,kitu cha kwanza kinachokukaribisha ni harufu kali ya uvundo uliosambaa kila mahali. Kila dakika magari yaliyosaki taka kutoka katika mitaa ya mji yalifika hapa kutupa taka.Mafalahi waliofika waliochoka na maisha waliishi hapa. Walisitiriwa na makombo ya vyakula kutoka katika jaa hili kuu. Walinyang'anyana makombo na kunguru waliojaa mahali hapo."

a) Changanua mtindo katika dondoo hili. **(alm8)**

b) Bainisha toni ya dondoo hili. **(alm2)**

c) Kwakurejelea dondoo hilo, jadili umuhimu wa mandhari. **(alm10)**

AU

3) Mwandishi wa riwaya ya Nguu za Jadi anadhamiria kujenga jamii mpya. Thibitisha. **(al.20)**

SEHEMU YA C: Tamthilia ya Bembea ya maisha na Timothy Arege

4)Kila binadamu hukabiliana na mabadiliko katika maisha yake.Thibitisha kauli hii ukirejelea Tamthilia ya Bembea ya maisha**.** **(alm20)**

AU

5)"Mwanangu binadamu mchoyo kwa lake lakini mkarimu ajabu kwa la mwenziwe."

a) Eleza muktadha wa dondoo hili**.** **(alm4)**

b) Jadili namna msemaji na wenzake wa jinsia ya kike walivyosawiriwa kwa njia chanya katika tamhilia hii. **(alm6)**

c) Fafanua umuhimu wa mazungumzo kati ya msemaji na msemewa katika tamthilia ya Bembea ya maisha **(alm10)**

SEHEMU YA D.MAPAMBAZUKO YA MACHWEO NA HADITHI ZINGINE

6) Jinsia ya kike imesawiriwa kuwa dhaifu na inazidi kudhulumiwa kila uchao.Thibitisha kauli kuyoka hadithi zifuatazo:

a)Nipe nafasi

b)Sabina

c)Fadhila za punda

d)Kifo cha suluhu

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AU

7) PAULINE KEA:Kila mchezea wembe

a)Eleza nafasi ya mbinu zifuatazo za lugha katika kuendeleza hadithi:

I.Barua **(alm4)**

II. Majazi **(alm3)**

III. Usimulizi **(alm3)**

b)Katika hadithi ya **Msiba wa kujitakia na D.W.Lutomia** athari za uteuzi mbaya wa viongozi zinaoenkana wazi.Zitambue **(alm10)**

SEHEMU YA E: SHAIRI (alama 20)

Soma shairi lifuatalo kisha ujibu maswali yafuatayo:

Nimeona ,milima na mabonde,misitu na nyika
Nimeona, majani na umande, uliotandazika
Nimeona ,mkulima yuenda , shambani

Nimeona , uwanda na magugu, yalomkabili
Nimeona, wajibu na vurugu, ‘wiano mkali
Nimeona mkulima akiwa tayari

Nimeona , kwa ari na juhudi, anatupa jembe
Nimeona , kakaza ukaidi, kwa nguvu achimbe
Nimeona, mkulima akiwa kazini

Nimeona ,kijua kinawaka,kama jahanamu!
Nimeona ,jembe lainuka, linapojuhumu
Niemona ,mkulima akiwa mbioni

Nimeona, mvua yamiminika, naye hatohisi
Nimeona ,kwa kani anatimka, bila wasiwasi
Nimeona mkulima akiwa kazini

Na sioni ,jasho linapomwaika ,yendapo mazao
Na sioni ,hadhiye kutukuka ,ila kilio
Kwa nini?Nauliza mkulima: kwani?

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Maswali

a) Eleza ujumbe wa shairi hili**.** **(alm4)**

b) Kwa kutolea mifano tambua mifano miwili ya uhuru wa mshairi. **(alm4)**

c) Onyesha umuhimu wa matumizi ya ;

i)Kihisishi **(alm 2)**

ii) Kiulizi **(alm2)**

d) Eleza mtindo wa lugha katika shairi hili**.** **(alm4)**

e) Andika ubeti wa mwisho kwa lugha tutumbi. **(alm4)**

MWISHO

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PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

121/1-MATHEMATICS ALT. A
Paper 1
FORM 4
2½ Hours

INSTRUCTIONS TO CANDIDATES

(a) Write your name, admission number, school, and class in the spaces provided at the top of this page.

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

(c) This paper consists of **two** sections: **Section I** and **Section II.**

(d) Answer **ALL** questions in **Section I** and **all** the questions from **Section II.**

(e) **Show all the steps in your calculations, giving your answers at each stage in the spaces provided 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.

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

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	

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SECTION I – 50 Marks

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

1. A transport company operates three types of trucks whose load capacities are 3.2 tonnes, 8tonnes and 10 tonnes. Calculate the least possible mass in tonnes that the company can transport with the three trucks. **(3mks)**

2. Use tables of square roots and reciprocals only to evaluate **(3mks)**

$$\frac{3}{0.5217} - \sqrt{0.4036}$$

3. A line that passes through the point $(-3, 5)$ makes an angle of 53.13010235^0 with the x-axis. Find the equation of the line in the form $y = mx + c$, where m and c are constants. **(3mks)**

4. A bag of rice costs Ksh 12,500, a bag of beans costs Ksh 15,200 and a bag of maize costs Ksh 8,750. A school buys 20 bags of rice, 30 bags of beans and 45 bags of maize in a term.

(a) Represent

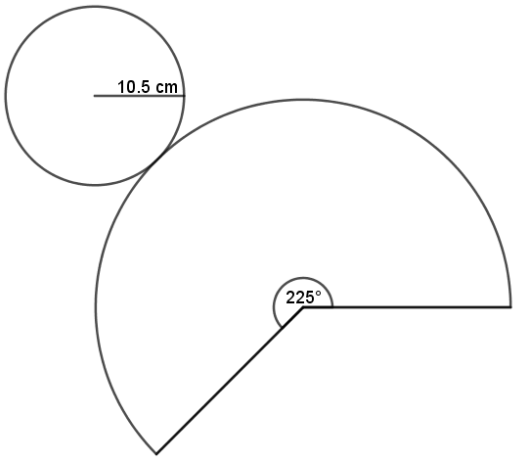
(i) The cost of each bought as a 3×1 matrix **(1mk)**

(ii) The number of bags of each as a 1×3 matrix **(1mk)**

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(b) Hence calculate the total cost that the school spent in buying the items. **(2mks)**

5. The figure below shows the net of a right cone. The radius of the circular bas is 10.5 cm.



Calculate the slant height of the cone. **(2mks)**

6. The points M and N have coordinates $(2, -1)$ and $(-4, 3)$ respectively. A point R divides line MN externally in the ratio $3:2$. Find the of modulus of **OR**, correct to four significant figures. (4 marks)

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7. Fifteen men working for eight hours a day can complete a certain job in exactly 24 days. For how many hours a day must sixteen men work in order to complete the same job in exactly 20 days? **(3mks)**

8. A measuring cylinder of base diameter of 10 cm contains water whose level reads 5 cm high. A spherical solid marble is immersed in the water and the new level reads 9 cm. Calculate the radius of the marble **(3mks)**

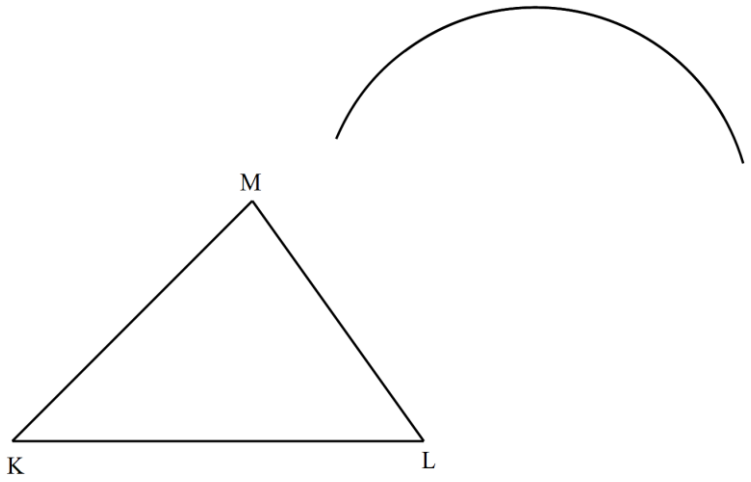
9. An irregular polygon has n sides. Its interior angles are such that two of them are right angles while the exterior of each of the remaining angles is 30^0. Find the value of n and hence the sum of the interior angles of the polygon. **(3mks)**

10. A train moving at 120 km/h approaches a bridge 50 m long which is 120 m away. If the train takes 9 seconds to completely cross the bridge, determine the length of the train in metres. **(3mks)**

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11. Sarah, a saleslady earns a basic salary of Ksh. 25,000 and a commission of 7.5% for the sales in excess of Ksh. 100,000. In May 2023 she earned a total of Ksh. 48,700 in salaries and commissions. Determine the amount of sales that she made in that month. **(3mks)**

12. The figure below shows part of a circle that touches the side LM externally and tangentially at a point T.



(a) Using a ruler and a pair of compasses only, locate the point T on LM. **(2mks)**

(b) Measure the radius of the circle. **(1mk)**

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13. Simplify the expression **(3mks)**

$$\frac{a^2 - b^2}{a^2 + ab - a - b}$$

14. Ruth paid rent which was $\frac{1}{10}$ of her net salary. She used $\frac{1}{3}$ of the remaining amount to make a down payment for a plot. She gave mother Ksh. 2,500 and did shopping worth Ksh. 7,500 herself. She saved the remainder which was Ksh. 12,500. How much was the down payment that she made? **(3mks)**

15. A photograph print measures 24 cm by 15 cm is enclosed in a frame. A uniform space of width x cm is left between the edges of the photograph and the frame. If the area of the space is 270 cm^2, find the value of x. **(4mks)**

16. Solve for x in the equation **(3mks)**

$$\mathbf{49^{(x-3)} \times 2401^{(1-x)} = \frac{1}{343^x}}$$

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SECTION II – 50 Marks

*Answer **any five** questions in this section.*

17. A school plans to construct a basketball court. The court has an area of 225 m^2 and a thickness of 40 cm. The court is to be made of a concrete mixture of ballast, sand and cement in the ratio of 4: 5:1 respectively. The density of the concrete is 2.4 g/cm^3.

(a) Calculate the mass, in tonnes of cement used to make the court. **(4mks)**

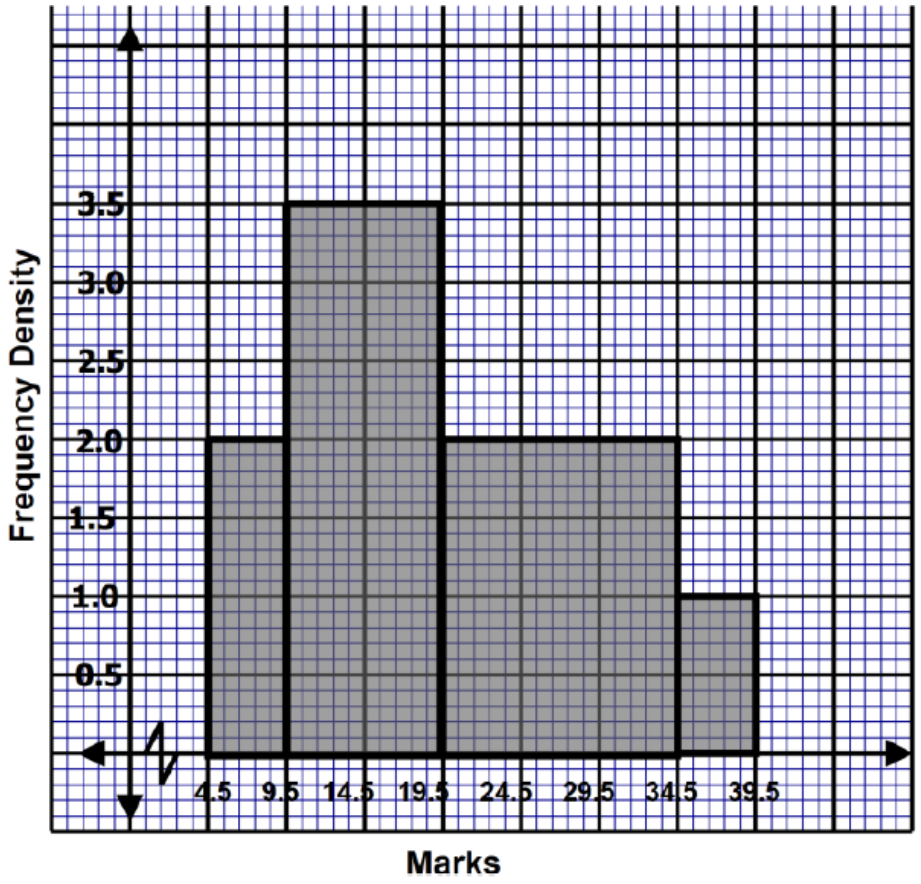
(b) If the cement is supplied in bags of 50 kg, how many bags of cement are used to make the court? **(1mk)**

(c)(i) Calculate the mass of ballast used to construct the court. **(2mks)**

(ii) If the ballast is charged at Ksh. 43,500 per trip of a truck that carries 25 tonnes, find the cost of ballast incurred. **(3mks)**

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18. The histogram below represents the marks scored by learners at Zeraki School in a Mathematics contest.



(a) If the frequency of the first class is 10, develop a frequency distribution table from the histogram above. **(3mks)**

Marks	Frequency
5 – 9	10

(b) Find the total number of students who sat for the contest. **(1mk)**

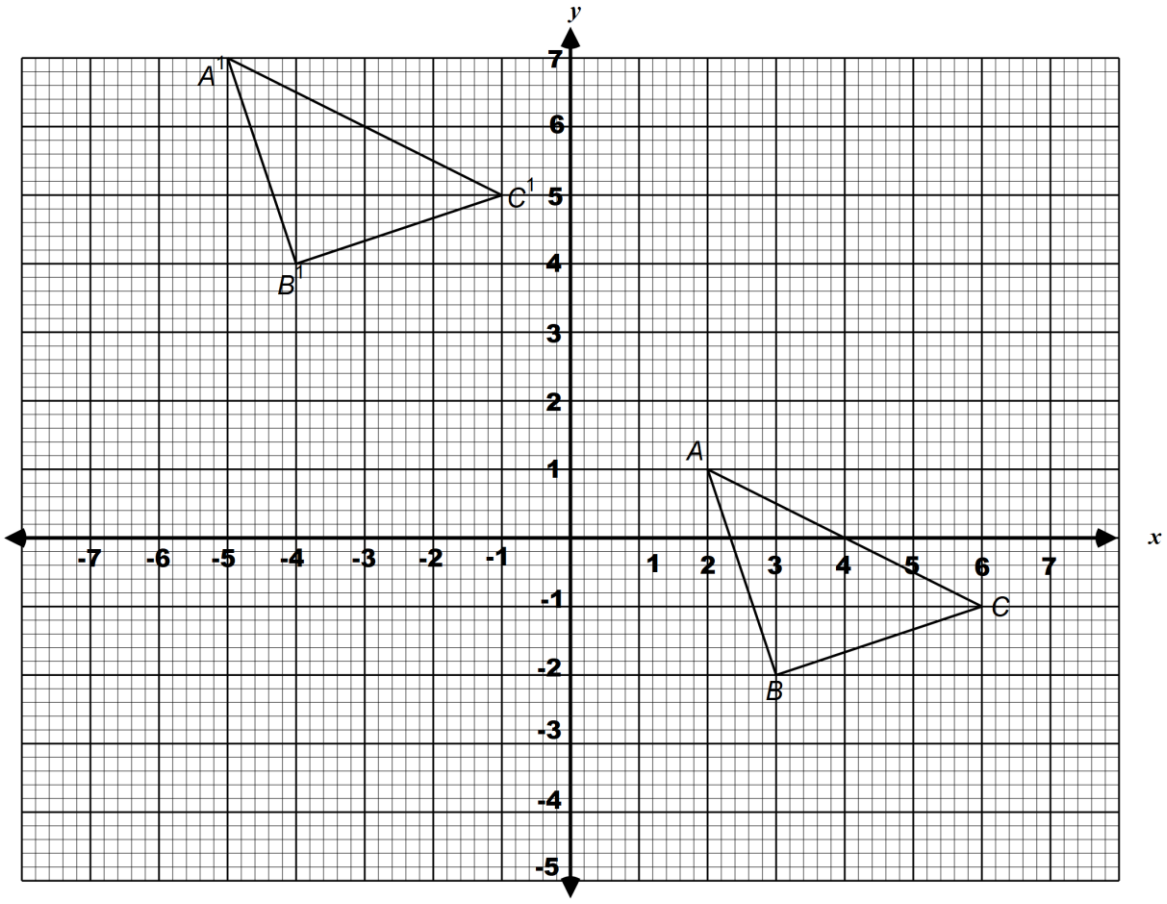
(c) From the histogram, determine:

(i) The mean mark; **(3mks)**

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(ii) The median mark. **(3mks)**

19. The figure below shows a triangle ABC and its image triangle A′B′C′ after a transformation **M**.



(a) Describe **M** fully. **(3mks)**

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(b) $\Delta A''B''C''$ is the image of $\Delta A'B'C'$ after a rotation of $+90^0$ about (0, 0). On the same axes, draw $\Delta A''B''C''$ **(2mks)**

(c) $\Delta A'''B'''C'''$ undergoes an enlargement, centre (0, 1) and scale factor -1. Draw $\Delta A'''B'''C'''$ on the same pair of axes and state its coordinates. **(3mks)**

(d) Name the type of congruency between the following triangles **(2mks)**

(i) ABC and $A'B'C'$

(ii) $A''B''C''$ and $A'''B'''C'''$

20. Five towns A, B, C, D and E are such that B is on a bearing of 046^0 and a distance of 8 km form A. The bearing and distance of C from B are $S40^0E$ and 101 km respectively. Towns D and E is 5.8 km from C and on a bearing of 125^0 from A such that E is closer to A than D.

(a) Using the scale of 1: 100 000, show the relative positions of the towns A, B, C, D and E. **(4mks)**

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(b) Use the scale drawing to determine:

(i) The distance between A and D **(2mks)**

(ii) The compass bearing of B from E **(1mk)**

(c) Two police patrol vehicles leave B and C simultaneously. The one from B travels due south while the one from C travels on a bearing of 270^0. The two vehicles meet at T.

(i) On the scale drawing, locate the position of T. **(2mks)**

(ii) How far is D from T? **(1mks)**

21. An open box is to be made out of a piece of a square cardboard of sides 18 cm by cutting off equal squares of side x cm from the corners and turning up the sides.

(a) Sketch the box formed, showing its dimensions in terms of x **(2mks)**

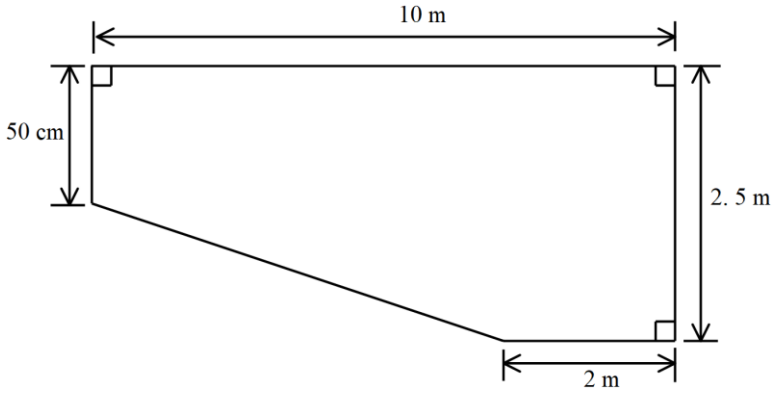
(b) (i)Calculate the height of the box for which the volume of the box will be maximum **(4mks)**

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(ii) Hence calculate the maximum volume. **(2mks)**

(c) The box is to be filled with cubes of uniform dimension. Calculate the least number of cubes that can fill the box completely. **(2mks)**

22. The figure below shows the cross-section of the swimming pool at Kisumu Boys High School with the given measurements. The swimming pool is 20 m long



(a) Calculate the capacity of the swimming pool. **(4mks)**

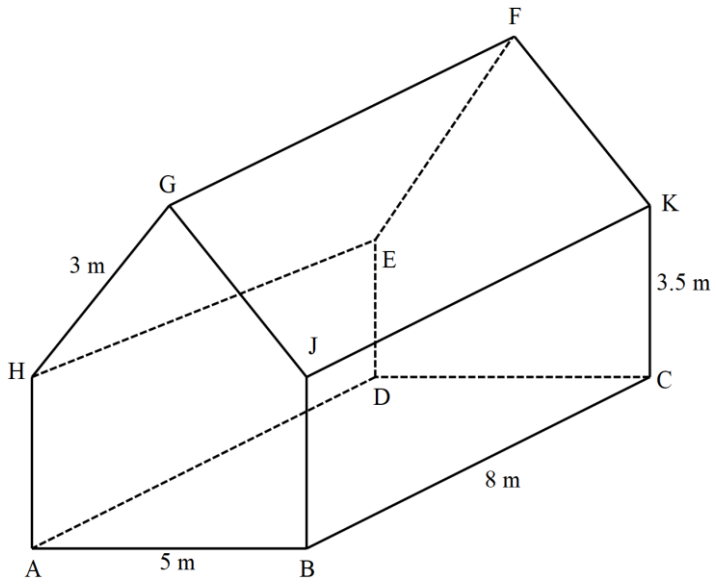
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(b) The adult side of the pool is to be drained of the water in for maintenance. The water is pumped out through two cylindrical pipes: A and B with diameters 40 cm and 50 cm respectively. The pumps drain the water at the rates of 35 cm/minute and 42 cm/minute respectively.

(i) Calculate the volume of water drained by the two pipes in one minute. Use $\pi = \frac{22}{7}$. **(3mks)**

(ii) Find the time, to the nearest hour that its take to completely drain the pool. **(3mks)**

23. The figure below shows the model of a tent ABCDEFGHJK for use in a scouting camp. AB =5 m, BC = 8 m and CK = 3.5 m. GHJ and FEK are equal triangular faces such that GH = GJ = FE = FK = 3 m.



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(a) Calculate the vertical height of the tent, correct to 2 decimal places. **(3mks)**

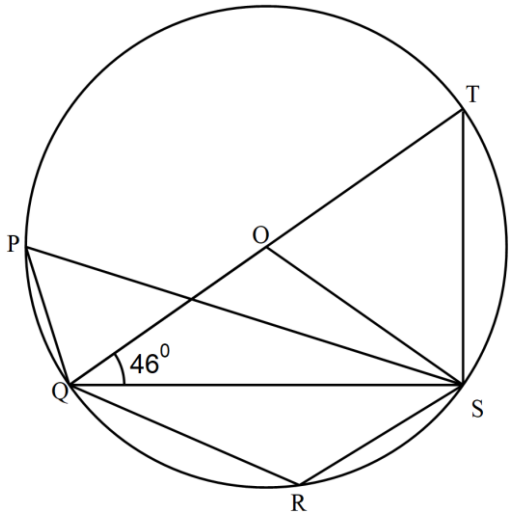
(b) A lamp L is installed at the midpoint of GF. Calculate the angle of elevation of the lamp from C **(3mks)**

(c) Calculate the obtuse angle between the line GF and BD. **(2mks)**

(d) Calculate the volume of the tent. **(2mks)**

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24. In the figure below, O is the centre of the circle. Angle OQS = 46^0 and TOQ is a straight line.



(a) Calculate the sizes of the following angles, give reasons in each case:

(i) ∠QOS **(2mks)**

(ii) ∠STQ **(2mks)**

(iii)∠QRS **(2mks)**

(b) If the radius of the circle is 4.5 cm, calculate the area of ΔQTS, correct to 4 significant figures. **(3mks)**

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PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

121/2 -MATHEMATICS
Paper 2
FORM 4
2½ Hours

INSTRUCTIONS TO CANDIDATES

(a) Write your name, admission number, school, and class in the spaces provided at the top of this page.

(b) Sig and write the date of the examination in the spaces provided above.

(c) This paper consists of **two** sections: **Section I** and **Section II.**

(d) Answer **ALL** questions in **Section I** and **all** the questions from **Section II.**

(e) Show all the steps in your calculations, giving your answers at each stage in the spaces provided 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.

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

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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	

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SECTION I (50 Marks)

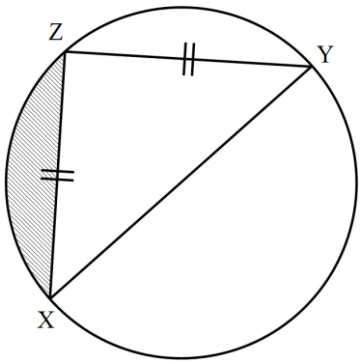
*Answer **all** the questions in this section*

1. The position vectors of three points P, Q, and R are such that $\boldsymbol{p} = 2\boldsymbol{i} + 3\boldsymbol{j} + 4\boldsymbol{k}$, $\boldsymbol{q} = -\boldsymbol{i} - 2\boldsymbol{j} + \boldsymbol{k}$ and $\boldsymbol{r} = 5\boldsymbol{i} + 8\boldsymbol{j} + 7\boldsymbol{k}$. Show that the points P, ,Q and R lie on a straight line. **(3mks)**

2. Find the constant term in the expansion of the binomial **(2mks)**

$$\left(x^2 - \frac{1}{x}\right)^6$$

3. The figure below shows a circle with segments cut off by a triangle whose longest side XY is the largest possible chord of the circle. XY=14 cm and XZ=YZ



Calculate the area of the shaded part, correct to 2 decimal places. Use $\pi = \frac{22}{7}$ **(3mks)**

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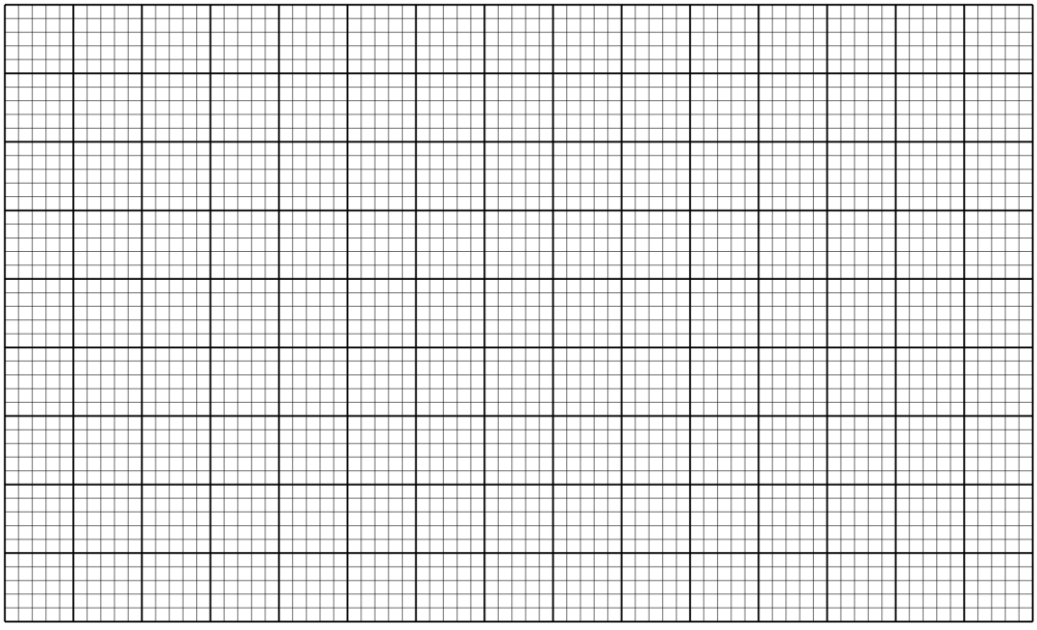
4. Make t the subject of the formula **(3mks)**

$$m = \sqrt{\frac{ht^2}{t^2 + 2w}}$$

5. The table below represents a relationship between two variables Q and R, connected by the equation $Q = kR + c$ where k and c are constants.

R	0.1	0.2	0.3	0.4	0.5	0.6
Q	6.2	5.6	4.8	4.0	3.4	2.7

(a) On the grid provided, draw the line of best fit for the data. **(3mks)**



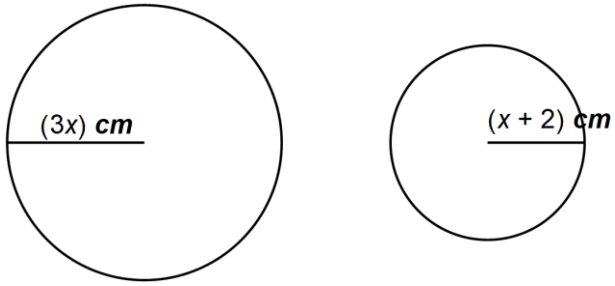
(b) Use the graph in (a) above to find the value of c **(1mk)**

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6. The mass (M) of a cylinder varies jointly as the square of the radius (r) and inversely as the square root of the height (h). If the radius is reduced by 25% and the height increased by 21%, calculate the percentage change in the mass of the cylinder. **(3mks)**

7. A school buys a lawn mower at Kshs. 48,000. The lawn mower depreciates in value at a rate of 15% per annum for the first year. Thereafter, the rate of depreciation annually is 10% for the subsequent years. Find the time it will take its value to be half the buying price. **(3mks)**

8. The figure below shows two circles.



Find the value of x if the difference of their areas is given by 20π cm^2 **(3mks)**

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9. Use trigonometric identities to show that **(2mks)**

$$\tan\theta + \frac{1}{\tan\theta} = \frac{1}{\sin\theta\cos\theta}$$

10. Find the values of a and b in the expression below. Do not use a calculator or mathematical tables. **(3mks)**

$$\frac{\sqrt{48}}{2} + \frac{6}{\sqrt{5}-\sqrt{3}} = a\sqrt{5} + b\sqrt{3}$$

11. An auditorium is designed so that the next row of seats has d less seats than the row behind it. The first row has a seats while the tenth row has 435 seats. There are 25 rows of seats in all. The entire auditorium contains 9000 seats. Find the values of a and d. **(3mks)**

12. The period of the function below is 540^0

$$y = \frac{4}{3}\sin(k\theta - 40)^0$$

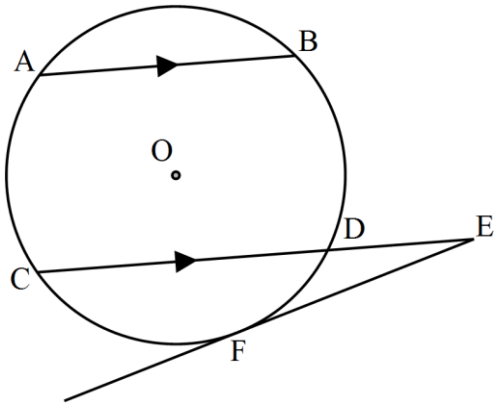
(a) Find the value of k **(1mk)**

(b) Determine the maximum displacement of the curve over the x-axis. **(1mk)**

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13. Ujenzi Quarries Limited is contracted to supply ballast for the construction of a health centre. The construction is estimated to use 144 tonnes of ballast. The firm intends to use two trucks; Fuso and Faw to transport this ballast. A Fuso truck can carry 8000 kg of ballast while the Faw truck can carry 12,000 kg of ballast per trip. The Fuso truck should make less than 9 trips and the Faw truck should make at most twice the number of trips made by the Fuso truck. The total number of trips should be at least 10 trips. By letting x and y to represent the Fuso and Faw trucks respectively, write down all the inequalities to represent the above information. **(4mks)**

14. The figure below shows a circle centre O, with two parallel chords AB and CD. Chord CD is produced to E and EF is a tangent to the curve at F. The radius of the circle is 5 cm, $AB = 8$ cm and chords AB and CD are 5 cm apart.



Calculate correct to 1 decimal place:

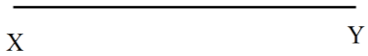
(a) The length of the chord CD. **(2mks)**

(b) The length FE if DE $= \frac{3}{2}$CD. **(2mks)**

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15. The ratio of Ali's wages to Ben's earnings is 5:3. If Ali's earnings increase by 12%, his new earning becomes Ksh. 5,040. Find the corresponding percentage change in Ben's earnings if the sum of their new earnings is Ksh. 8,145. **(4mks)**

16. Below is a line segment XY. Using a ruler and a pair of compasses only construct the locus of a variable point P above XY such that angle XPY $\geq 60^0$ and the area of $\Delta XPY > 8.75$ cm^2. **(4mks)**



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SECTION II (50 Marks)

*Answer any **five** questions in this section*

17. A triangle **T** with vertices $A(2, 3)$, $B(5, 3)$ and $C(4, 1)$ is mapped onto triangle $\mathbf{T}'$ whose vertices are $A'(-4, 3)$, $B'(-1, 3)$ and $C'(x, y)$ by a transformation **M**.

(a) Find:

(i) The transformation matrix represented by **M**. **(3mks)**

(ii) The coordinates of C' **(2mks)**

(b) Triangle $\mathbf{T}''$ is the image of $\mathbf{T}'$ under a reflection in the line $y - x = 0$. Find the coordinates of $\mathbf{T}''$. **(3mks)**

(c) Determine a single matrix of transformation that maps triangle **T** onto $\mathbf{T}''$. **(2mks)**

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18. A cargo plane leaves an airport P(60^0N, 20^0E) and flies due west to airport Q(60^0N, 25^0W). 100 minutes later, it then flies due South for 5400 nautical miles to airport R.

(a) Find the position of airport R. **(2mks)**

(b) Calculate the total distance that the plane travelled between airports P and Q via R in kilometres. Use the radius of the earth R=6370 km and $\pi = \frac{22}{7}$. **(3mks)**

(c) If the average speed of the plane was 600 knots, calculate the total time that the plane was airborne. **(3mks)**

(d) If the plane arrived at Q on Sunday 0215 hours. At what time and day did it leave airport P? **(2mks)**

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19. Aggie's earnings were as follows:

- Basic salary – Ksh. 38,000 per month
- House allowance – Ksh. 14,000 per month
- Transport allowance – Ksh. 8,500 per month
- Medical allowance – Ksh. 3,300 per month

In that year, income tax was charged as shown in the table below

Taxable Income Kenya Pound (K£) per annum	Tax Rate (Ksh per K£)
1 – 6,000	2
6,001 – 12,000	3
12,001 – 18,000	4
18,001 – 24,000	5
24,001 – 30,000	6
30,001 – 36,000	7
Excess of 36,000	8

Aggie was entitled for a tax relief of Ksh. 18,000 for that year.

(a) Calculate

(i) Aggie's taxable income in K£ per annum. **(2mks)**

(ii) Aggie's pay as you earn. **(5mks)**

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(b) Aggie is deducted the following monthly:

- Provident fund – Ksh. 1,000
- Loan Repayment – Ksh. 6,250
- Union dues – Ksh. 500
- NHIF – Ksh. 1,000
- Cooperative shares – Ksh. 3,000

Calculate her net monthly salary in Ksh. **(4mks)**

20. (a) Kisumu Boys High School relies entirely on three sources of power: Kenya Power, a school generator, and a solar system. The probabilities that the three sources are working at any given time are $\frac{4}{5}$, $\frac{3}{4}$ and $\frac{2}{3}$ respectively.

Calculate the chance that:

(i) There is power in the school. **(2mks**)

(ii) Only two sources are providing power to the school at a given time. **(3mks)**

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(b) The table below shows the number of Form 1 students per stream and the percentage that do a foreign language as an optional subject

Stream	Number of students	Percentage that do Foreign Languages
Blue	40	15
Green	56	25
Pink	45	20
Yellow	60	40

A form 1 student is selected at random. Determine the probability that she:

(i) Is from stream Blue or Yellow **(2mks)**

(ii) Is from Green or Pink and does not take any foreign language as an optional subject **(3mks)**

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21. Three ships X, Y, and Z are approaching a harbour H. X is 16 km from the harbour and due East. Y is 14 km from the harbour on a bearing of 130^0, and Z is 26 km to the West of Y and on a bearing of 240^0 from the harbour.

(a) Sketch the relative positions of X, Y, Z, and H. **(2mks)**

(b) Calculate the distance of Y from Z correct to 2 decimal places. **(3mks)**

(c) The bearing of X from Y to the nearest one degree. **(3mks)**

(d) A patrol ship P is sighted such that it is equidistant from ships X, Y and Z. Calculate the distance of P from H. **(2mks)**

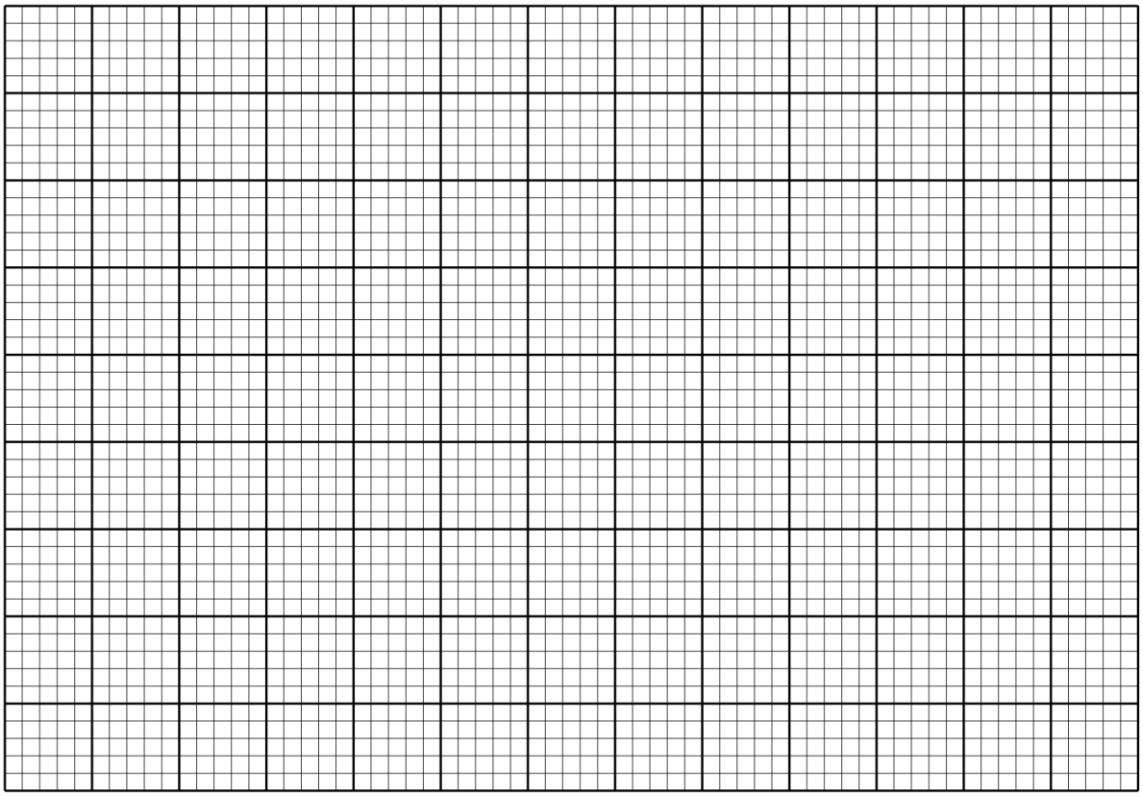
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22. The table below shows the distribution of marks scored by 80 students in a Maths Olympiad contest.

Marks	1 – 10	11 – 20	21 – 30	31 – 40	41 – 50	51 – 60	61 – 70	71 – 80	81 – 90
Number of Students	3	5	7	9	11	15	14	10	6

(a) Using an assumed mean of 55.5, calculate the mean mark. **(4mks)**

(b) On the grid provided, draw an ogive to represent the information above. **(2mks)**



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(c) Use the ogive in (b) above to:

(i) Determine the number of students who scored 60% and above. **(2mks)**

(ii) Find the interquartile range. **(2mks)**

23. Kajiado county government has two water supply points with pipes A and B. Pipe A pumps at the rate of 2.1 m/s and has a radius of 10 cm while pipe B pumps water at a rate of 1.4 m/s and has a radius of 12 cm. The water is pumped into a reservoir tank with a circular base of diameter 28 m and a height of 15 m. Use $\pi = \frac{22}{7}$.

(a) Calculate the capacity of water in litres that is supplied in one hour by both pipes A and B. **(3mks)**

(b) The time in hours that it takes the reservoir tank to be three-quarters full. **(3mks)**

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(c) Find the time it takes the full tank to reduce to 25% in height if a discharge pipe C of radius 15 cm drains the tank at the rate of 1.05 m/s. **(4mks)**

24. Use the trapezium rule with seven ordinates to estimate the area bounded by the curve $y = \frac{1}{3}x^2 - 3$ and the lines $x = -1$, $x = 5$ and the x-axis **(4mks)**

(b) Calculate the exact area in (a) above by integration. **(4mks)**

(**c**) Hence calculate the percentage error in using the trapezium rule **(2mks)**

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PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

TERM 2
PHYSICS – PAPER ONE (232/1)
FORM FOUR (4)
Time - 2 Hours

Instructions to candidates

- This paper consists of two sections ***A*** and ***B***.
- Answer **all** the questions in the two sections in the spaces provided after each question
- All working **must** be clearly shown.
- Electronic calculators, mathematical tables may be used.
- All numerical answers **should be expressed** in the **decimal** notations.
- You may use:

➢ 'Gravitational acceleration, g, as $10m/s^2$
➢ Density of water = $1000kg/m^3$
➢ Density of air = $1.25kg/m^3$

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SECTION	QUESTION	MAX MARKS	CANDIDATE'S SCO
A	1 – 13	25	
	14	12	
	15	11	
	16	12	
	17	10	
	18	10	
	TOTAL	80	

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SECTION A (25 MARKS)

1. Explain the meaning of 'geometrical optics' as a branch of physics **(1mk)**

……

……

……

2. The figure below shows a section of a micrometer screw gauge with a thimble scale of 50 divisions. When the spindle is in contact with the anvil, the device reads 0.25mm. The screw gauge is used to measure the diameter of a spherical ball and the scale reading is as shown below.
State the actual diameter of the ball. **(2mks)**

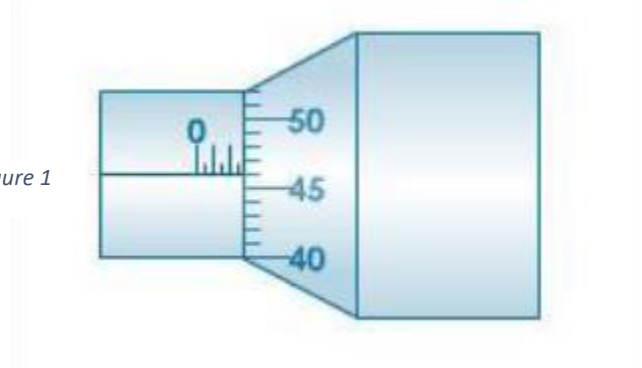


Figure 1

3. Alcohol in glass thermometer cannot be used when boiling water is used in an experiment. Explain. **(1mk)**

……

……

……

4. Explain briefly how the temperature in a green house is kept higher than outside. **(2mks)**

……

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……

……

5. A wooden bench feels neither warm nor cold when touched by bare hands. Explain this observation. **(2mks)**

……

……

……

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6. The reading on a mercury barometer at Mombasa is 760mm. Calculate the pressure at Mombasa in N/m^2 (density of mercury = 1.36×10^4 Kg/m^3) **(2mks)**

7. The diagram shown in figure 2 below is an arrangement of three pulley wheels used to help in lifting loads. The system has a velocity ratio of 3. Complete the diagram to show the threading of the rope and the position of effort, load **(3mks)**



Figure 2

8. State the meaning of the term 'radian' as a unit of measurement **(1mk)**

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9. A stone of volume 800 cm^3 experiences an upthrust force of 6.5 N when fully immersed in a liquid. Determine the density of the liquid. **(2mks)**

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10. Figure 3 shows air flowing through a pipe of different cross-sectional areas. Two pipes A and B are dipped into water.

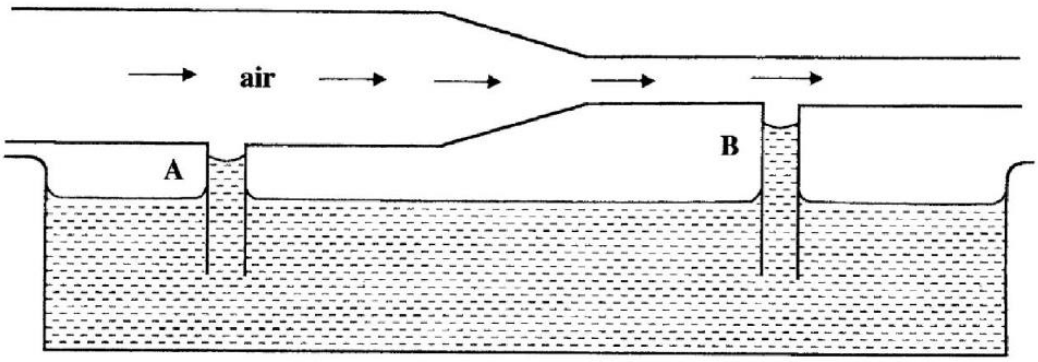


Figure 3

Explain the cause of the difference in the levels of water in the pipes A and B. (**2mks)**

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11. A balloon is filled with hydrogen gas and then released into the air. The balloon is observed to expand as the balloon rises. Explain why it expands. **(2mks)**

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12. The figure 4 below shows a ball being whirled in a vertical plane. Mark on the same figure, as A, the position where the string is likely to snap if the angular velocity of the ball is increased. Explain your answer. **(2mks)**

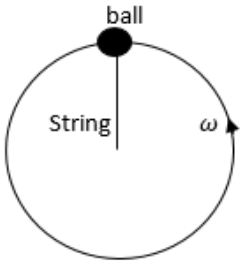


Figure 4

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13. A uniform metre-rule balances at the 30cm mark when a mass of 500g is placed at the 25cm mark as shown in the figure 5 below. (Not drawn to scale).

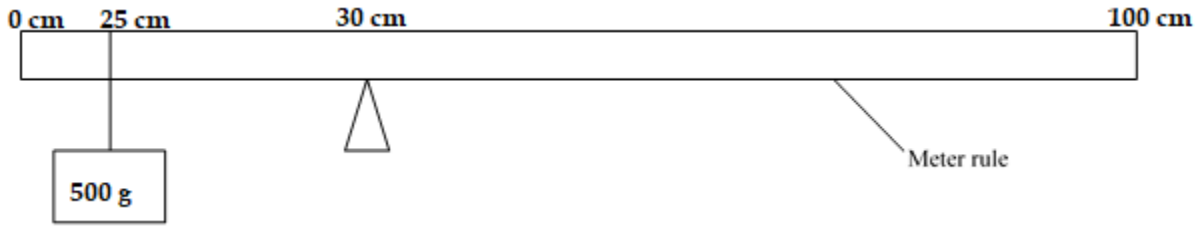


Figure 5

Determine the mass of the meter-rule **(3mks)**

SECTION B (55 MARKS)

14. The diagram below shows a spring balance tied to an object of mass 500g and rotated in a circular path of radius 50 cm.

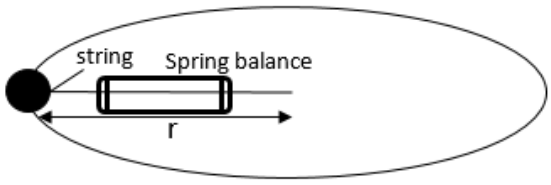


Figure 6

a) State the source of force that keeps the object moving in a circular path. **(1mk)**

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b) The speed of the object is constant but the body is accelerating on the circular path. Explain **(1mk)**

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c)

i. If the object is whirled faster, what would happen to the spring balance reading? (1 mark)

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ii. Give a reason for your answer in, c (i) above **(2mks)**

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d) If the spring balance reads 81N. Determine:

i.the linear velocity, v of the body **(3mks)**

ii.centripetal acceleration of the body **(3mks)**

e) State the purpose of banking roads at bends **(1mk)**

15.

a) State the law of flotation **(1mk)**

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b) Figure 7 below shows a test-tube whose cross-sectional area is $2cm^2$ partially filled with lead shot floating vertically in water.

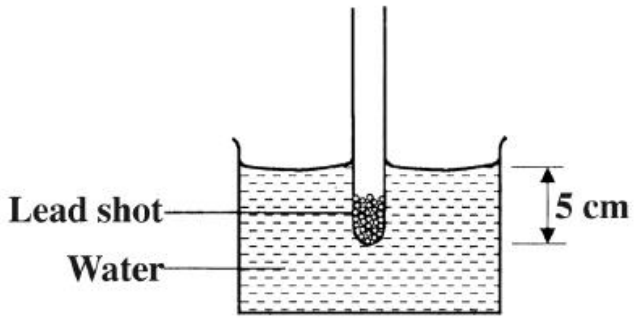


Figure 7

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Determine the:

i. Volume of water displaced **(2mks)**

ii. Weight of displaced water **(3mks)**

c) State the combined weight of the test-tube and the lead-shot **(1mk)**

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d) Determine the length of the test-tube that would be submerged if a liquid of density $0.8g/cm^3$ is used. **(3mks)**

e) The set-up in figure 7 may be used as a hydrometer. Suggest any one change that can be made so that it measures small differences in densities of liquids **(1mk)**

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16.

a) Define the following terms as used in machines:

i.Efficiency **(1mk)**

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ii. Velocity ratio **(1mk)**

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b) The figure below shows a 200g mass placed on a frictionless surface and attached to a spring.

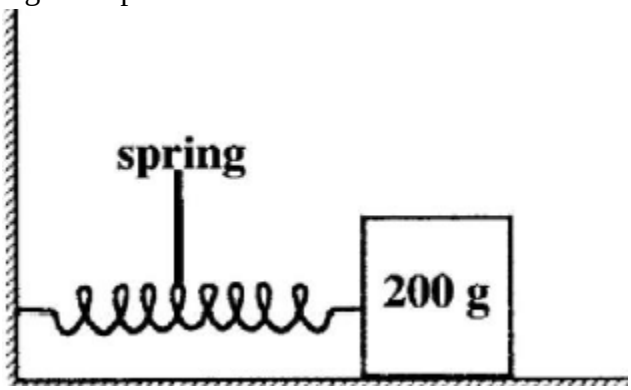


Figure 8

The spring is compressed then released. If the elastic potential energy of the compressed spring is 2.7×10^{-2}J, determine the maximum speed with which the block moves after it is released. **(3mks)**

c) A spherical ball is released vertically from a height, h. Sketch on a diagram to show the forces acting on the ball just after it is released. **(3mks)**

d) Sketch a graph of potential energy against kinetic energy as the ball falls to the ground **(2mks)**

e) State two ways in which an inclined plane can be made to reduce the applied effort when pulling a load along the plane **(2mks)**

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17.

a) State what is meant by an ideal gas **(1mk)**

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b) The pressure acting in a gas in a container was changed steadily while the temperature of the gas was maintained constant. The value of volume V of the gas measured various values of pressure. The graph in the figure 9 shows the relation between the pressure P and the reciprocal of volume, V^{-1}.

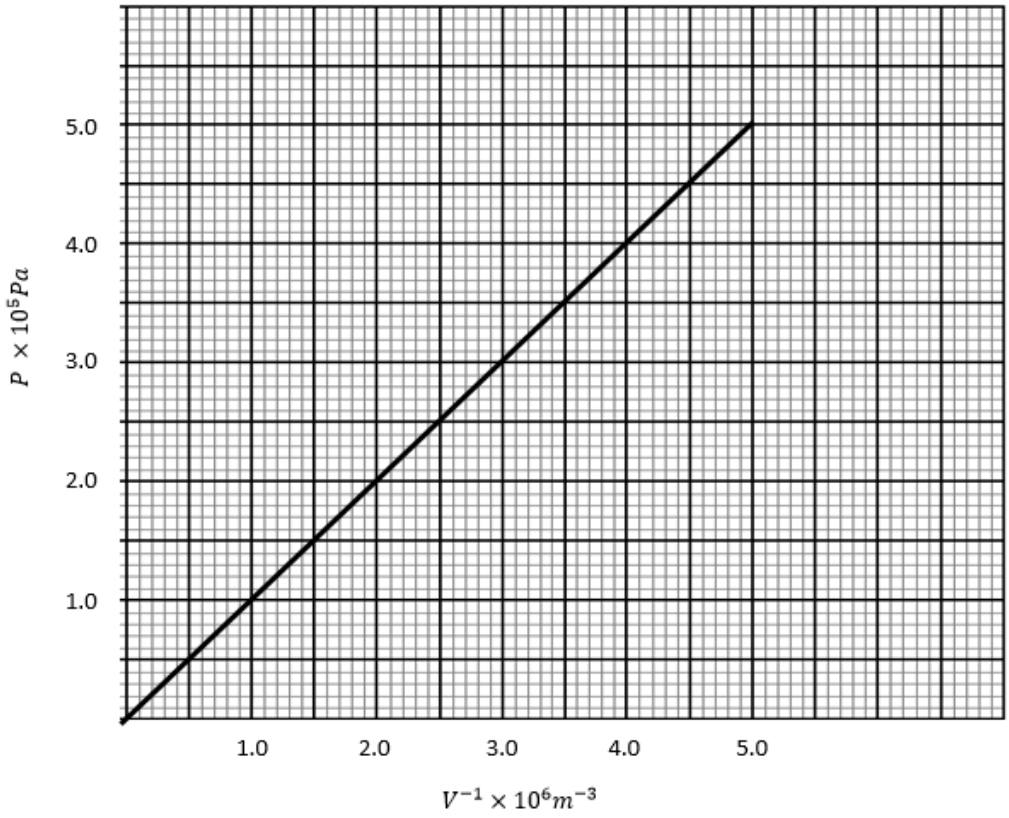


Figure 9

i. Identify the gas law being verified by the above graph **(1mk)**

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ii. Given that the relation between the pressure P and the value, V of the gas is given by the equation: PV = k, where k is a constant, use the graph to determine the value of k **(3mks)**

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c) A gas occupies a volume of 4000 litres at a temperature of 37°C and normal atmosphere pressure. Determine the new volume of the gas if it is heated at constant pressure to a temperature of 67°C (normal atmosphere pressure P = 1.01 x 105pa) **(3mks)**

d) State two limitations of gas laws **(2mks)**

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18.

a) State the principle of transmission of pressure **(1mk)**

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b) The diagram below shows a U-tube filled with two liquids X and Y.

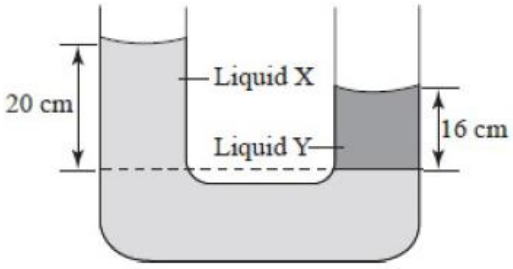


Figure 10

If the density of liquid Y is 1.26 g cm^{-3}, determine the density of liquid X. **(3mks)**

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c) The figure 11 below shows water getting in and out of a pipe.

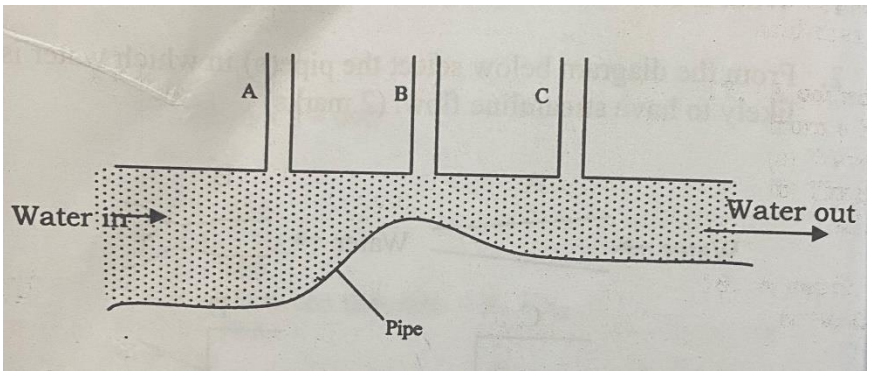


Figure 11

If the water in the pipe is flowing continuously and has a streamline flow:

i.Show on the diagram the relative level of water in tubes A, B and C **(1mk)**

ii. Explain your answer above **(1mk)**

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d) A strong wind lifted off the roof of a classroom. Explain how this could happen **(2mks)**

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e) The speed of air at the upper part of an airplane wing is 120m/s and the lower side is 100m/s. The area of the airplane wing is $12m^2$. Calculate the pressure difference on the wings **(2mks)**

This is the last printed page

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PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

TERM 2
PHYSICS – PAPER 2 (232/2)
FORM FOUR (4)

Instructions to Candidates

- Write your name, admission number, class and signature in the spaces provided at the top of the page. This paper consists of two sections; **A** and **B.**
- Answer **ALL** the questions in the spaces provided.
- Mathematical tables and electronic calculator may be used.
- All working MUST be clearly shown.
- Candidates should answer the questions in English and check to ensure that no question(s) is missing.

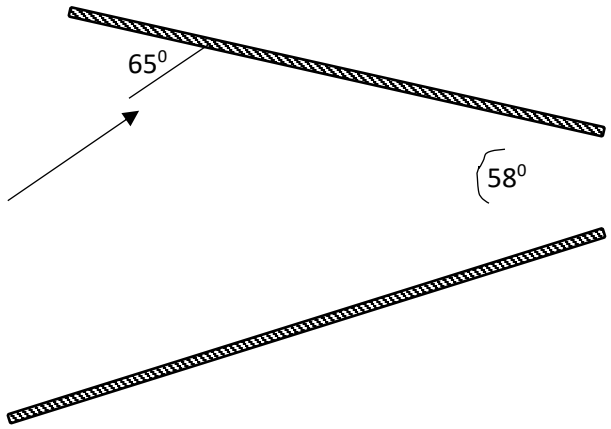
FOR EXAMINER'S USE ONLY

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1 – 12	25	
	13	11	
	14	10	
	15	10	
	16	14	
	17	10	
TOTAL SCORE		80	

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SECTION A: 25 MARKS

1.The figure below shows a ray of light incident on a plane mirror at an angle of 65^o to the surface of the first mirror as shown below.



Sketch the path of the ray until it emerges and state the angles. **(3mks)**

2. State the reason why an increase in leaf divergence is the only sure way of determining whether an object is negatively charged using a negatively charged electroscope**.** **(1mk)**

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3. State two measurements that should be taken for one to decide whether a lead acid accumulator is due for charging. **(2mks)**

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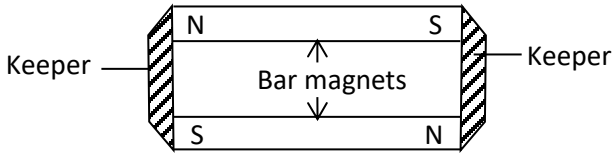
4. (a) State the basic law of magnetism. **(1mk)**

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(b) The figure **below** shows how magnets are stored in pairs with keepers at the ends.



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Explain how this method of storing helps in retaining magnetism longer. **(2mks)**

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5. Why is a convex mirror better than plane mirror when used as a driving mirror? **(1mk)**

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6. You are provided with the following apparatus: connecting wires, a soft iron rod, a battery of 3 cells, a switch, a long-insulated copper wire and a rheostat.

(a) Using a suitable diagram, show how an electromagnet can be made with the given apparatus. **(1mk)**

(b) State two ways by which the strength of an electromagnet can be increased**.** **(2mks)**

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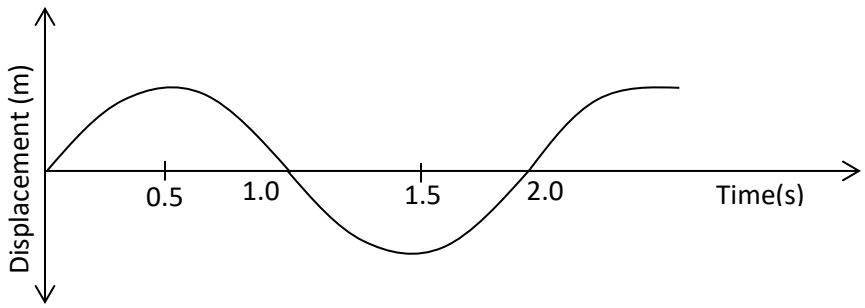
7. (a) Distinguish between a transverse and a longitudinal wave. **(1mk)**

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(b) Determine the frequency of the wave shown below. **(2mks)**



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8. When a germanium crystal is doped with arsenic it becomes an N-type semi-conductor. Explain how this change occurs.

(Number of electrons in the outermost shell for germanium=4, arsenic=5**)** **(2mks)**

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9. A nuclide X with mass number 234 and atomic number 92 decays to nuclide Y with mass number 218 and atomic number 84. Determine the number of alpha particles emitted**.** **(2mks)**

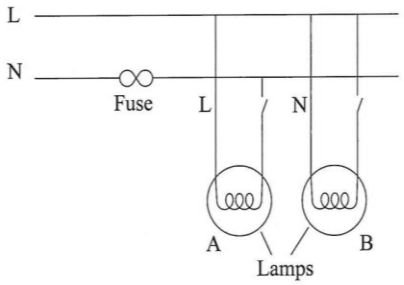
10. State how the intensity of x-rays in an x-ray tube can be increased**.** **(1mk)**

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11. The figure below shows part of the lighting circuit in a house.



State two errors in the wiring circuit**.** **(2mks)**

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12. Calculate the energy of photons associated with radiation of frequency 4.8×10^{14}Hz, stating your answer in eV . **(3mks)**

SECTION B. (55 MARKS)

Answer all questions in this section

13. a) State Lenz's law**.** **(1mk)**

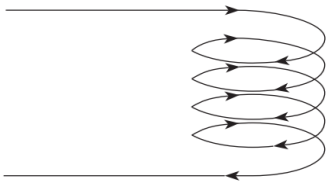
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b) A magnet is driven into a coil such that the direction of flow of current in the coil.

Is as shown in the diagram below. Indicate on the diagram the polarity of the magnet, and the direction in which it is driven into the coil**.** **(2mks)**



c) Electrical energy is transmitted at very high voltages and low current.

I. Describe how the high voltages are attained. **(1mk)**

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II. State two reasons why thick aluminium wires are preferred to copper wires for transmission over long distances. **(2mks)**

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d) A student has some colored bulbs rated 60W, 240V to be connected for decorations.

I. State the number of such bulbs that can be connected normally to a 240V supply through a 5A fuse. **(2mks)**

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II. If the cost of electric energy is ksh.3.00 per kWh, determine the cost of running the bulb in (d) I above for 5hours daily for 20days. **(3mks)**

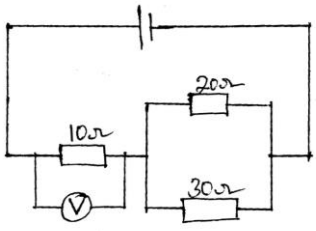
14.(a) State Ohms law. **(1mk)**

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b) The cell in the figure below has an e.m.f of 2.5V and negligible internal resistance.



Determine the

(i) Total resistance in the circuit. **(2mks)**

(ii) Current in the circuit. **(2mks)**

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(iii) Reading on the voltmeter. **(2mks)**

c) Three resistors of resistance 2.0Ω, 4.0Ω and 6.0Ω are connected together in a circuit.

Show the combination which gives;

(i) Effective resistance of 3.0Ω. **(1mk)**

(ii) Minimum resistance. **(1mk)**

d) Define electrical resistance and name the S.I. unit. **(2mks)**

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15.(a) State any two uses of echoes **.** **(2mks)**

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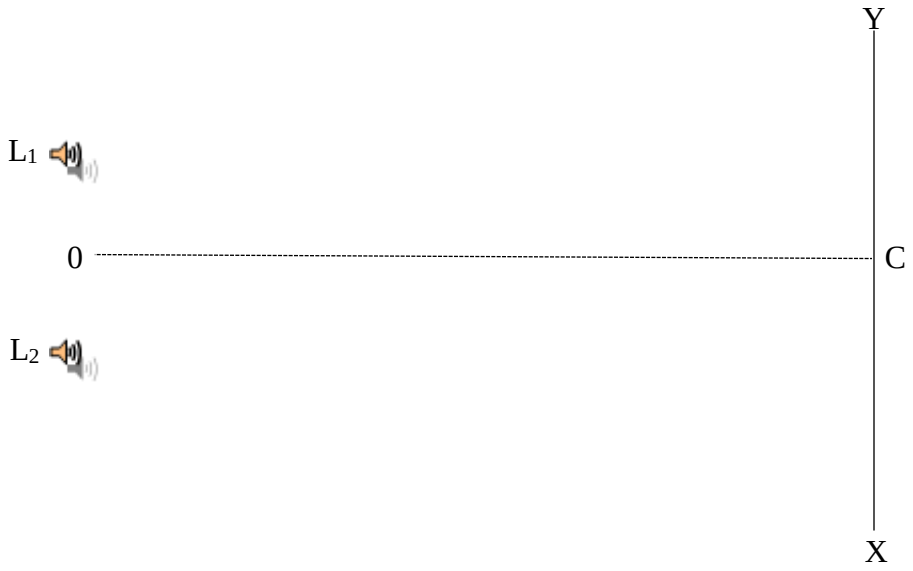
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(b) Water waves are observed as they pass a fixed point at a rate of 30crests per minute. A particular wave crest takes 2s to travel between two fixed points 6m apart. Determine for the wave:

(i) The frequency**.** **(3mks)**

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(ii) The wavelength. **(2mks)**



(c) The figure below shows two loud speakers **L_1** and **L_2** connected to a signal generator.

(i) Why are the speakers connected to the signal generator? **(1mk)**

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(ii) An observer walks along **XY**. State what is observed and give reason for the observation. **(2mks)**

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(iii) Another observer walks along OC. State what he observed**.** **(1mk)**

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(iv) What is the effect on the observation if the frequency of the signal is increased? **(1mk)**

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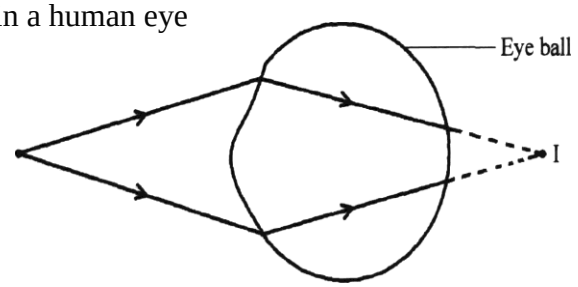
16 (a) State the use of the eye piece lens in a compound microscope. **(1mk)**

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b) Figure shows a defect of vision in a human eye



(i) State the type of defect shown. **(1mk)**

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(ii) Identify one cause of this defect. **(1mk)**

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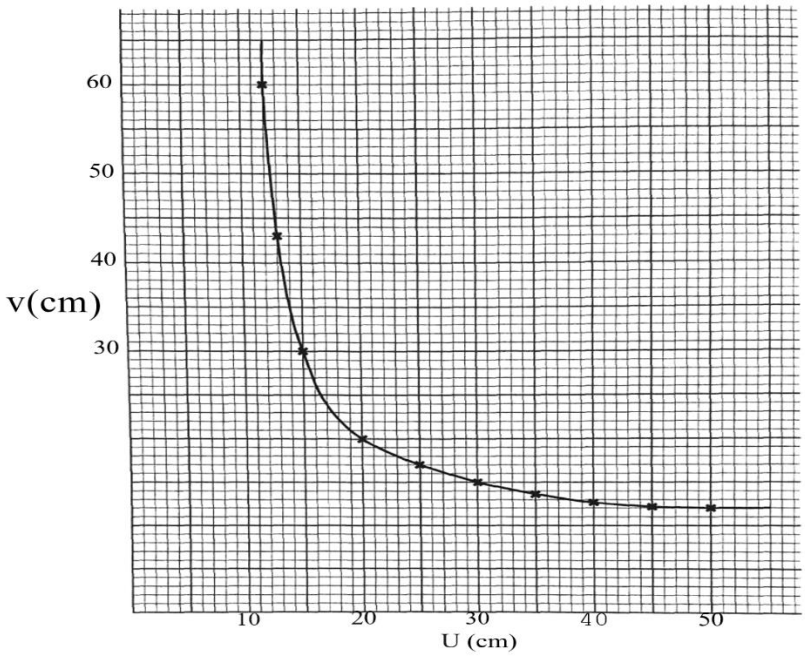
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(iii) State the type of lens that can be used to correct this defect. **(1mk)**

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c) Figure 11 shows a graph of image distance (V) against the object distance (U) obtained in an experiment to determine the focal length of a concave mirror



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(i) Identify and mark a point X on the graph where V = U.

(ii) Use the point X to determine:

i.The radius of curvature r**.** **(1mk)**

ii. The focal length of the lens f. **(2mks)**

d) On the space provided, draw a ray diagram to show how a convex lens forms a magnified real image. **(3mks)**

17. (a) It is observed that alpha (α) particles have a lower penetrating power than beta (β) particles. Explain this observation**.** **(2mks)**

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(b) A radioactive substance has a half-life of 12 years. Determine the time it would take to decay to 12.5% of its original value. **(2mks)**

(c)A Geiger Müller (GM) tube is used for detecting radiations from a radioactive source

State the function of

I. The mica window. **(1mk)**

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II. Bromine gas in the tube**.** **(1mk)**

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(d)In a diffusion chamber, explain why some of the tracks formed are observed to

I. Short**.** **(2mks)**

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II. Straight**.** **(2mks)**

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(e) State two advantages of using a GM tube instead of a diffusion cloud chamber to detect radiations from radioactive substances **(2mks)**

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#END#

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PROGRESSIVE STUDENTS FORM FOUR MOCK SERIES ONE EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN:……..… DATE: ……..

TERM 2
PHYSICS – PRACTICAL (232/3)
FORM FOUR (4)
Time - $2\frac{1}{2}$ Hours

INSTRUCTIONS

- Answer all the questions in this paper
- You are supposed to spend the first 15 minutes of the $2\frac{1}{2}$ hours allowed for this paper reading the whole paper carefully before starting your work.
- Marks are given for clear record of the observations made, their suitability and accuracy and the use made of them.
- Candidates are advised to record observations as soon as they are made
- Mathematical table and electronic calculators may be used.

For Examiner's use only:

QUESTION	TOTAL MARKS	CANDIDATE'S SCORE
1	20	
2	20	
GRAND TOTAL	40	

This paper consists of 8 printed pages

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QUESTION ONE

You are provided with the following apparatus:

- An ammeter (0-1 A)
- Voltmeter (0-3 V)
- Two dry cells
- Cell-holder
- Variable resistor (0-100 Ω)
- Connecting wires
- Switch

Proceed as follows:

a) Connect the apparatus as shown in figure 1 below:

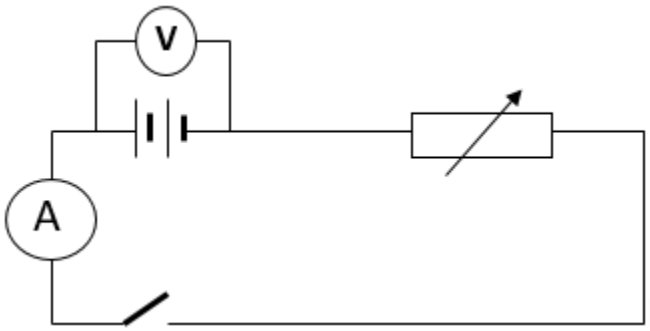


Figure 12

b) With the switch open, measure and record the voltmeter reading, V_0

V_0 = ... **(1mk)**

c) Now, remove the voltmeter and connect it across the variable resistor (as shown in figure 2).

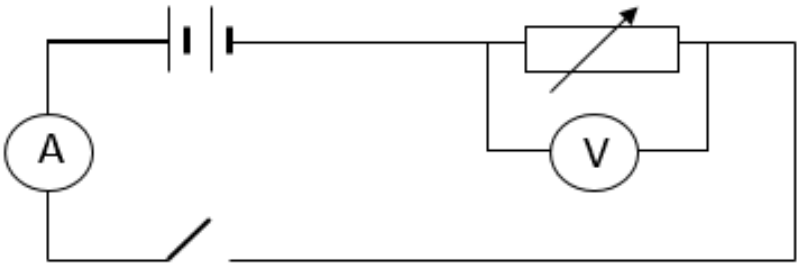


Figure 13

d) Adjust the variable resistor until you obtain a reading of 1.0 V on the voltmeter. Record the corresponding ammeter reading. Continue to adjust the variable resistor to obtain the voltmeter readings shown in table 1, each time recording the corresponding current value.

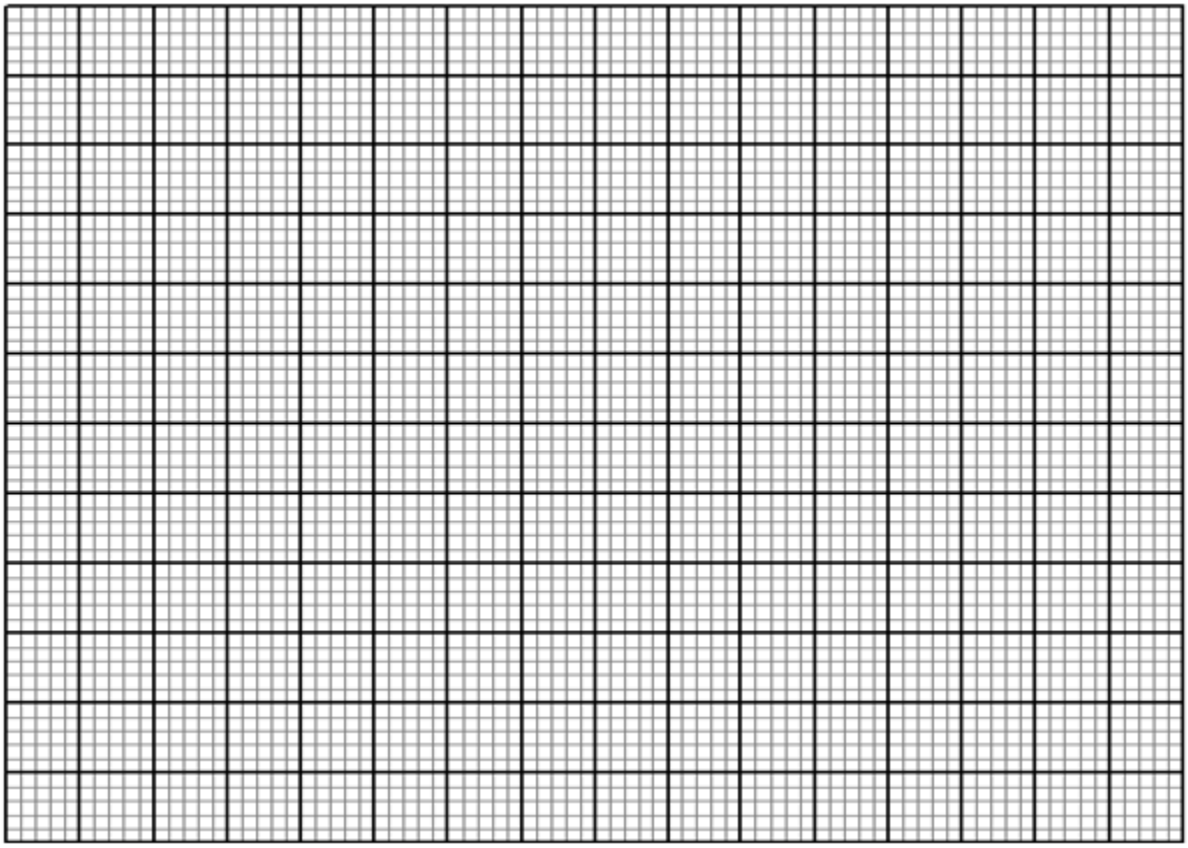
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Table 1:

Voltage, V	1.0	1.5	2.0	2.5
Current, A				
$R = \frac{V}{I}\ (\Omega)$				
$\frac{1}{I}\ (A^{-1})$				

e) Complete the table 1 above: **(6mks)**

f) Plot a graph of resistance, R against $\frac{1}{I}$ **(5mks)**



g) Determine the slope of your graph **(3mks)**

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h) Given that: $\frac{V}{I} = \frac{P}{I} - K$, where P and K are constants. From the graph determine the values of P and K.

i. P **(2mks)**

ii. K **(2mks)**

i) State the significance of K **(1mk)**

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QUESTION TWO
PART A

You are provided with the following apparatus:

- Complete retort stand
- Cork
- Optical pin (for suspending the cardboard)
- Stop-watch
- Half-metre rule
- Knife-edge
- Rectangular Cardboard (40cm by 5 cm by 0.5cm)

PROCEED AS FOLLOWS:

a) Using the knife-edge, determine the centre of gravity of the cardboard. Mark it as G.

b) From G, cut holes 1, 2, 3, 4, 5 and 6 at intervals of 3 cm. measure and record the distance, L of each of the holes from G.

c) Now set-up the apparatus as shown in figure 3, below:

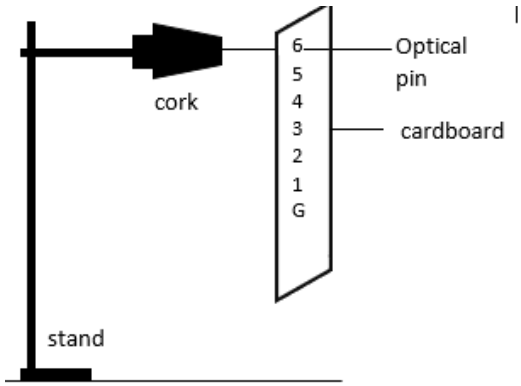


Figure 14

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d) Displace the strip through a small angle, θ and release it to oscillate. Determine time, t for 10 oscillations and fill in your results in table 2 below: **(8mks)**

Table 2

hole	1	2	3	4	5	6
Distance, L (cm)						
Time, t for 10 oscillations (s)						
Periodic time, T (s)						
T^2 (s^2)						
T^2L (ms^2)						
L^2(m^2)						

e) Determine Z, given that: $Z = \frac{A}{B}$, where A, is the average value of T^2L and B is the average value of T^2 **(2mks)**

PART B

You are provided with the following apparatus:

- A thermometer (range: -10^0c- 110^0c)
- A 250 ml beaker
- Measuring cylinder
- Retort stand, clamp and boss
- Stop watch
- Source of boiling water or Bunsen burner
- Some tissue paper

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Proceed as follows:

f) Record the temperature reading, T_0 of the thermometer provided

T_0 = ... **(1mk)**

g) State the significance of the temperature, T_0 above. **(1mk)**

h) Now pour 200ml of hot (boiling) water from the source into the beaker and immediately insert the thermometer as shown in figure 1 below. Ensure it is at a temperature above 85^0C.

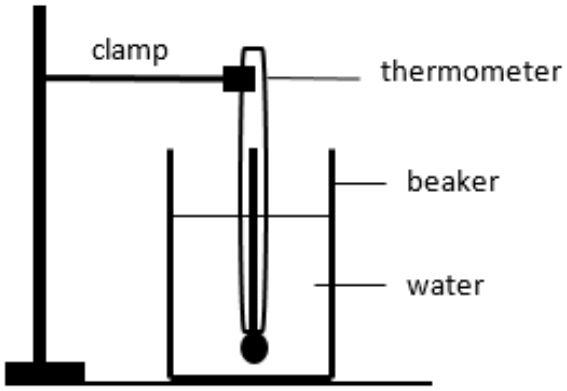


Figure 15

i) Start the stop watch when the temperature falls to 80^0c. Record the temperature of the water as it cools down after every two minutes for about ten minutes. Record your results in the table below: **(5mks)**

Table 3:

Time, t (minutes)	0	2	4	6	8	10
Temperature, T (^{0}C)						

j) Given that the specific heat capacity of water is 4J/g^{0}C. determine the heat lost when the water cools from 80^0c to the temperature in (a) above. (assume: 1ml = 1g) **(3mks)**

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