EXCELLING STUDENTS FORM 4 PRE-MOCK 1 SERIES 1 EXAMS *(13 SUBJECTS TESTED)*



EXCELLING STUDENTS FORM 4 PRE-MOCK 1 SERIES 1 EXAMS

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ORDER OF THE 13 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. **KISWAHILI**
12. **MATHS**
13. **PHYSCIS**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

AGRICULTURE PAPER 1

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

- *This paper contains **three** sections A, B and C*
- *Answer **ALL** the questions in section A and B*
- *Answer any **Two** questions from section C*
- *All answers should be written in the spaces provided.*

FOR EXAMINERS USE ONLY

SECTION	QUESTIONS	MAX SCORE	CANDIDATES SCORE
A	1-14	30	
B	15-18	20	
C		20	
		20	
TOTAL		90	

SECTION A (30MKS)

Answer ALL the questions in this section in the spaces provided

1. State **two** reasons why farmers should be encouraged to practice organic farming **(1mk)**

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2. State **two** ways in which crop rotation controls weeds **(1mk)**

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3. Name two methods of sowing pasture crops **(1mk)**

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4. State **four** qualities considered when selecting seeds for planting **(2mks)**

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5. State **four** advantages of crop rotation **(2mks)**

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6. State **three** physical agents of weathering in soil formation **(1½ mks)**

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7. Give **three** properties of a foliar fertilizer which makes it possible to be used as a foliar Feed **(1½mks)**

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8. Give **three** reasons why Banana should be pruned **(1½mks)**

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9. State **four** factors considered when classifying crop pests **(2mks)**

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10. Give **four** reasons for land fragmentation **(2mks)**

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11. State **two** mechanical methods used in separating soil in soil analysis **(1mk)**

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12. State **three** ways in which inorganic fertilizers are classified **(1½mks)**

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13. State **three** effects of raindrops on bare soil **(1½mks)**

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14. Give **three** reasons why layering would be preferred to the use of cutting as a method of raising planting materials **(1½mks)**

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15. State the forms in which nitrogen is absorbed by plants **(1mk)**

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16. Outline **four** factors which effect herbraidal selectivity **(2mks)**

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17. State **four** natural factors that may influence soil erosion **(2mks)**

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18. Name four disadvantages of zero grazing **(2mks)**

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19. Outline **four** factors which encourage soil erosion **(2mks)**

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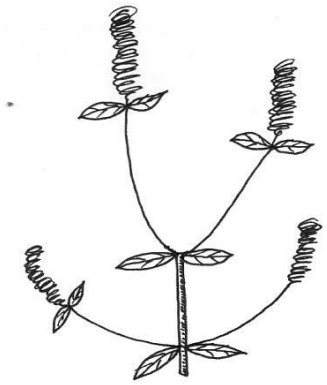
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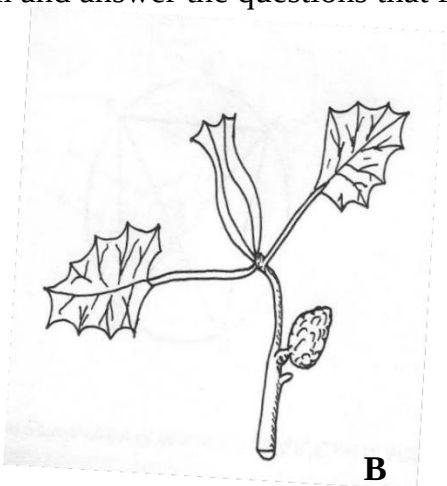
SECTION B (20 MKS)

Answer ALL Questions in this section

20. Below are illustrations of common weeds. Study them and answer the questions that follow



A



B

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(a) Identify the weeds **(2mks)**

A……

B……

(b) State the harmful effects of the weed B above **(1mk)**

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(c) Give **four** advantages of leasehold tenure systems **(2mks)**

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21. Describe the procedure which should be followed when spraying a crop of onions using a fungicide in powder form, water and a knapsack sprayer **(5mks)**

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22.(a) What is soil sampling**?** **(1mk)**

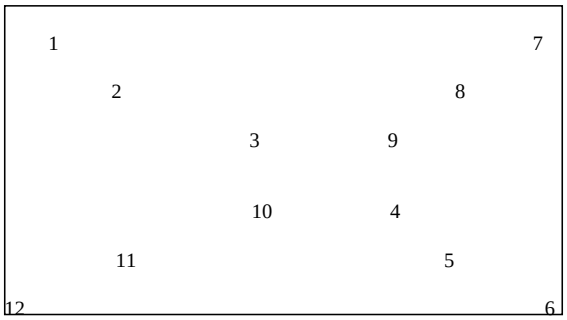
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(b) Below is a method of soil sampling. Use it to answer the question that follow.



(i) What method of soil sampling is represented above**?** **(1mk)**

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(ii) Name the other method of soil sampling **(1mk)**

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(iii) Outline **three** areas which should be avoided during soil sampling. **(3mks)**

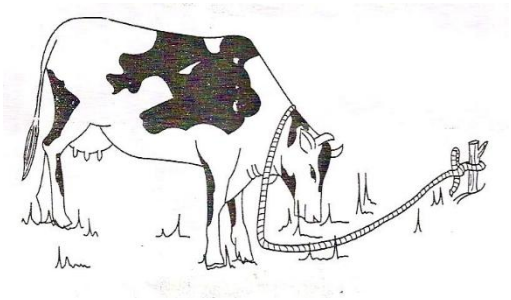
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23. Identify the rotational grazing system shown below **(1mk)**



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b) Give the **FOUR** advantages of the system named above **(4mks)**

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SECTION C (40MKS)

Answer any two Questions in this section

24.(a) Describe harvesting of pyrethrum under the following sub-headings

(i) Procedure **(4mks)**

(ii) Precautions **(6mks)**

(b) Describe the safety measures observed when handling farm herbicides(10mks)

25. Describe the production of Rhodes grass (Chloris gayana) under the following sub-headings

(a) Land preparation **(5mks)**

(b) Pasture establishment **(8mks)**

(c) Maintenance **(7mks)**

26.(a) Discuss the production of beans under the following sub headings

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

(ii) Varieties **(2mks)**

(iii) Selection and preparation of planting materials **(5mks)**

(iv) Field management practices **(9mks)**

(b) Explain the method and procedure of harvesting of sugarcane **(4mks)**

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SCHOOL: ……..

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FORM 4 AGRICULTURE

AGRICULTURE

PAPER 2

2 HOURS

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the spaces provided.
2. This paper consists of three sections. Section A, B and C.
3. Answer all questions in section A and B in the spaces provided.
4. Answer ANY TWO questions in section C in the spaces provided.

SECTION A – 30 MARKS Answer all questions in this section in the spaces provided

1. List down two reasons that make Agriculture **(2mks)**

(i) An art

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(ii) A science

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2. State one use of each of the following farm tools. **(2mks)**

(i) Mason's trowel

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(ii) A pair of tin snips

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3. Give four reasons why indigenous cattle breeds are more suited to semi-arid areas of Kenya than exotic breeds. **(2mks)**

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4. Name two functions of calcium in dairy cows. **(1mk)**

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5. Prepare 100kg pig ration of DCP of 16% using a cereal balancer of 10% DCP and cotton seed cake of 28%DCP. **(4mks)**

6. State two ways by which proper feeding contributes to disease control in poultry. **(1mk)**

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7. Outline four methods used to control Tse-tse flies. **(2mks)**

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8. (a) What is meant by the terms zero grazing in livestock production? **(1mk)**

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(b) What is the duration of oestrous cycle in a cow? **(1mk)**

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(c) If a dairy cow is noticed to be showing first sign of heat at 9.00am. What time should it be inseminated ? **(1mk)**

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9. Give two reasons why walls of dairy shed should be white washed instead of painting with water or oil paints. **(1mk)**

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10. A part from tractor and electricity, name four other sources of power that may be used for doing work on the farm. **(2mks)**

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11. State two factors that contribute to depreciation of farm tools and equipment. **(1mk)**

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12. Name four chemical preservatives used to treat the wooden **(2mks)**

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13. Name two methods of identifying piglets in the farm. **(1mk)**

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14. Outline four management practices a farmer should undertake to ensure maximum number of fish is harvested from a fish pond. **(2mks)**

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15. Name two methods of extracting honey from the combs. **(1mk)**

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16. Name four benefits of a good farm layout. **(2mks)**

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17. State four symptoms shown by poultry when suffering from new castle disease. **(2mks)**

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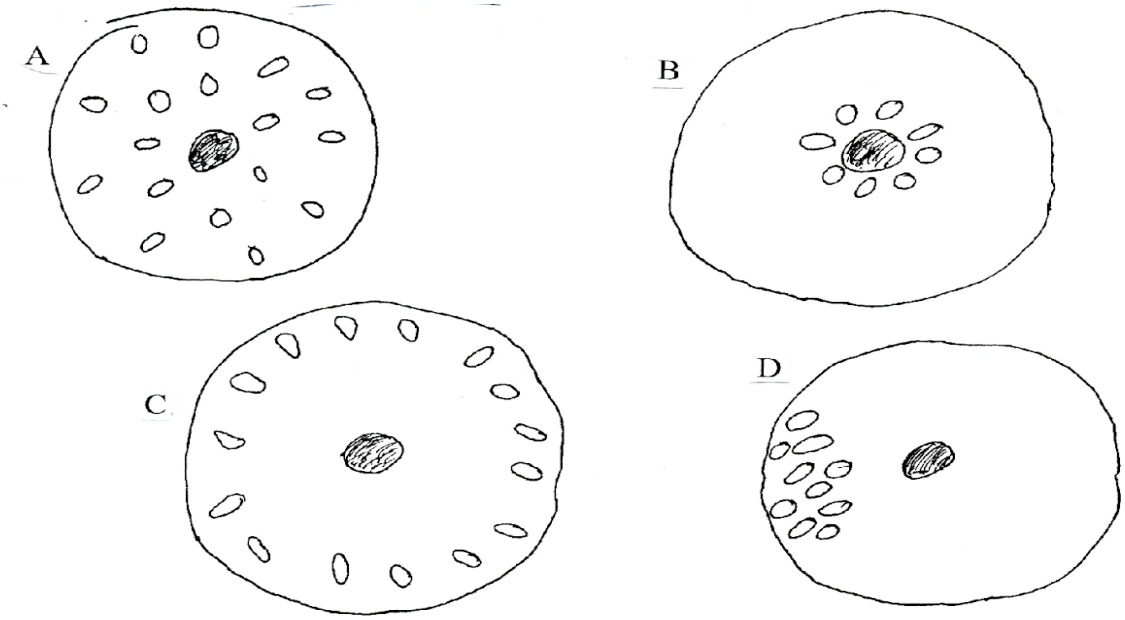
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SECTION B – 20 MARKS

18. The illustration below shows behaviour of chicks in a brooder in response to certain conditions. Study it carefully and answer the questions that follow.



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(a) Explain the reason for the behaviour of chicks in the above diagrams. **A, B, C & D** **(4mks)**

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(b) Give other two signs the chicks will show other than the one you have given in C above. **(1mk)**

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(c) Outline three necessary conditions required in a brooder. **(3mks)**

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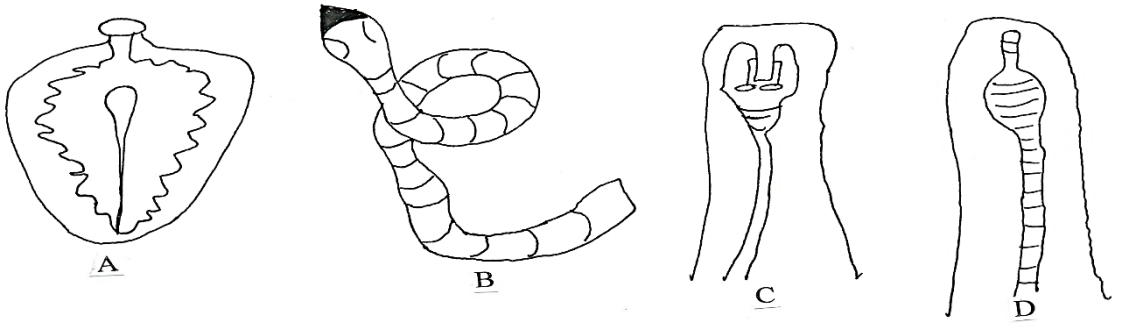
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19. Identify the livestock parasites drawn below.



Identify the following livestock parasites. **(3mks)**

A_____

B _____

C _____

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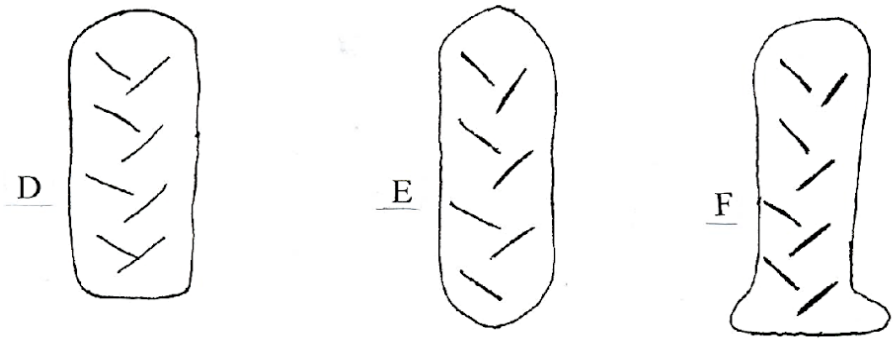
(b) In which organs of livestock are the parasites A, B and C found. **(3mks)**

A_____

B_____

C _____

20. The diagram D, E and F below represents different conditions of the tyres.



(a) Which diagram represents the correct pressure in a tractor tyre? **(1mk)**

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(b) (i) Identify the mistakes with the other tyres. **(1mk)**

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(ii) Give the correction measure for each tyre mentioned in b(i) above. **(1mk)**

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21. Give three maintenance practices that should be carried out on a grain storage structure. **(3mks)**

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SECTION C – 40 MARKS

Answer any two questions in the spaces provided after the questions

22. (a) Describe construction of a movable calf pen under the following sub-headings.

(i) Selection and construction materials

(i) Requirements of a calf pen **(12mks)**

(b) Describe the management of a dairy calf for the first week after calving. **(8mks)**

23. (a) Outline any seven factors that would determine the use of jembe instead of use of a disc plough in primary cultivation. **(6mks)**

(b) State seven structural difference between petrol and diesel engines. **(14mks)**

24. Explain **ten** management practices that a farmer could carry out to improve milk production in a low yielding dairy cow. **(20mks)**

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NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

BIOLOGY (232/1)

FORM 4

TIME: 2 HOURS

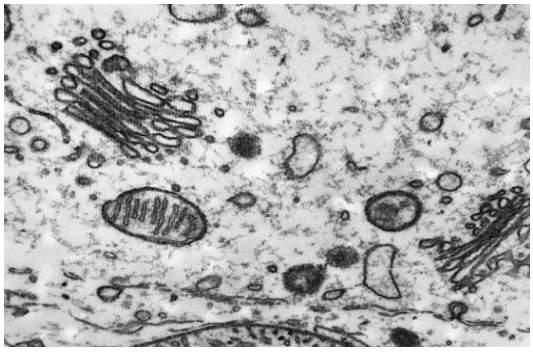
PAPER 1

INSTRUCTIONS

1. All Questions are Compulsory
2. Write your Answers in the Spaces Provided
3. Wrong Spelling of Technical Terms shall be Penalized

Max Score	Student's Score
80	

1. The photomicrograph shown below is a section of a cell



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a) Using the letters provided, label the organelle that: **(2mks**

i) Is found in high number in kidney cells (**KC**)

ii) Is abundant in secretory glands (**SG**)

b) State the importance of cytoplasmic streaming to a cell **(1mk**

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2. An athlete experienced a muscle cramp after a sprint race

a) Name the acid that accumulated in her muscles to bring about the discomfort **(1mk**

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b) Describe the fate of this acid when the athlete takes a rest **(2mks**

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3. State the functions of the following cells **(3mks**

i) Sertoli cells

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ii) Interstitial cells

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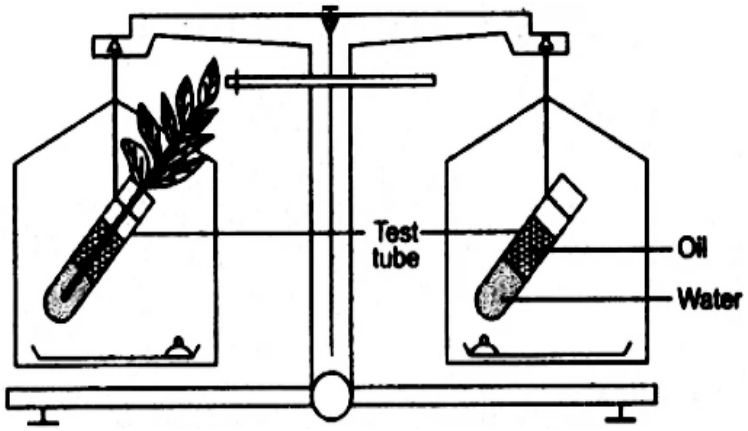
iii) Guard cells

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4. The experimental set up shown below was placed in the sunshine for 2 hours to study a particular phenomenon in plants



a) What is the expected result after the 2hours of experiment? **(1mk**

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b) Account for the answer given in a) above **(2mks**

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c) What is the expected result if the experiment was done under high humidity? **(1mk**

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5. Name **(2mks**

a) A cell in the human body that lacks mitochondria

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b) A Kingdom whose members lack mitochondria

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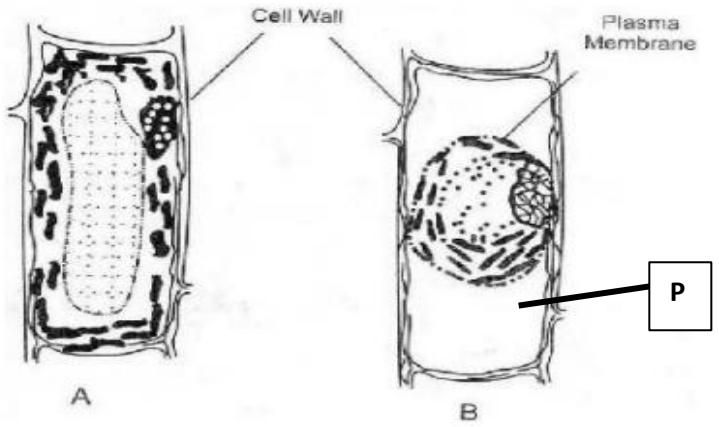
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6. Fill the table below to show differences between guttation and transpiration **(2mks**

Guttation	Transpiration

7. A plant cell was placed in solution **X** and after a while it appeared as cell **B** shown below



a) Which **TWO** features show that cell **B** is plasmolysed? **(2mks**

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b) Which process facilitated the presence of solution **X** in part **P**? **(1mk**

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c) What is the nature of solution **X**? **(1mk**

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8. Name the tissue that forms the following hormones **(2mks**

a) Glucagon ……

b) Progesterone ……

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9. Learners suspected that a liquid they found in the laboratory contained starch

a) Describe a procedure they will use to determine whether starch was present **(2mks**

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b) State the expected colour change for them to conclude that starch was present **(1mk**

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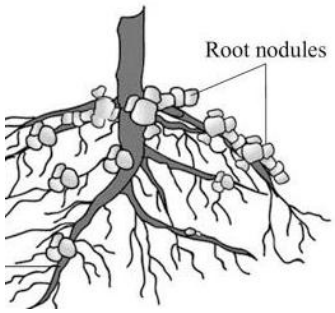
c) What is the advantage of plants storing carbohydrates as starch? **(1mk**

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10. The diagram below shows the root of a leguminous plant



a) Name the bacterium found in the root nodules **(1mk**

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b) How are the bacteria named in a) important to the legume? **(1mk**

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11. The following data was collected from study of same crop grown in different temperature

Plot ID	Temperature(°C)	Yield (kg)
A	19	115
B	22	146
C	27	132
D	30	94

a) Which is the ideal temperature for the growth of this crop? **(1mk**

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b) Account for the yield obtained in plot **D** **(2mks**

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12. Explain the ways by which movement of the ovum is achieved along the oviduct. **(2mks**

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13. a) Name the salivary gland found beneath the tongue **(1mk**

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b) Outline **TWO** ways in which saliva is suited to its function **(2mks**

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14. The picture below shows a disorder that affects blood vessels in humans



a) Name the disorder shown above **(1mk**

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b) Which blood vessel is affected by this disorder? **(1mk**

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15. A tall garden pea plant was crossed with a dwarf garden pea plant.

a) Given that the allele '**d**' for dwarfness is recessive, write the genotype of the offspring if the tall garden pea used was: **(2mks**

i) Pure breed ……

ii) Heterozygous ……...

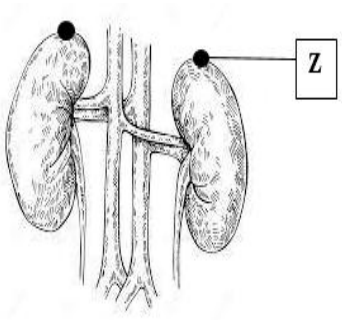
b) Write the base sequence of the DNA from which the messenger-RNA shown below was derived.

ACUGAACCGUAU **(1mk**

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16. Use the illustration shown below to answer the questions that follow



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a) Why is the right kidney slightly pushed higher up compared to the left kidney? **(1mk**

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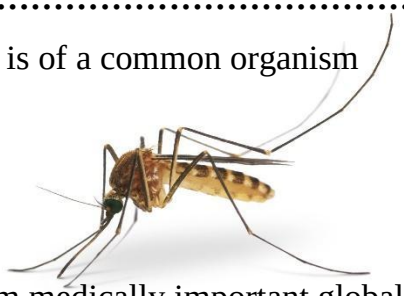
b) Explain how gland labelled **Z** help raise amount of Sodium ions (Na+) in the blood **(2mks**

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17. The illustration shown below is of a common organism



a) Why is the above organism medically important globally? **(2mks**

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b) Name the class to which the organism belongs. **(1mk**

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c) Give **TWO** reasons for your answer in b) above **(2mks**

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18. How are the following significant to the development of seeds

a) Seed dormancy (2mks

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b) Seed dispersal **(2mks**

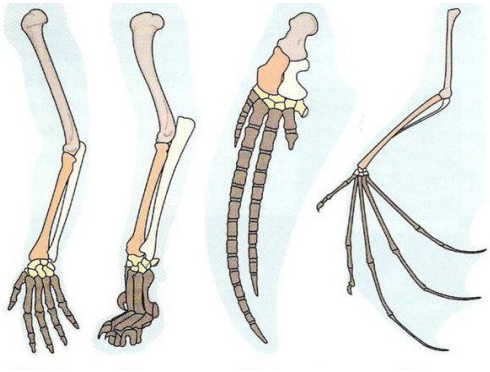
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19. Use the images shown below to answer questions that follow



a) Why are the structures above said to be homologous structures? **(1mk**

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b) Which type of evolution is represented above? **(1mk**

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c) What is the significance of the type of evolution named in b) to animals? **(1mk**

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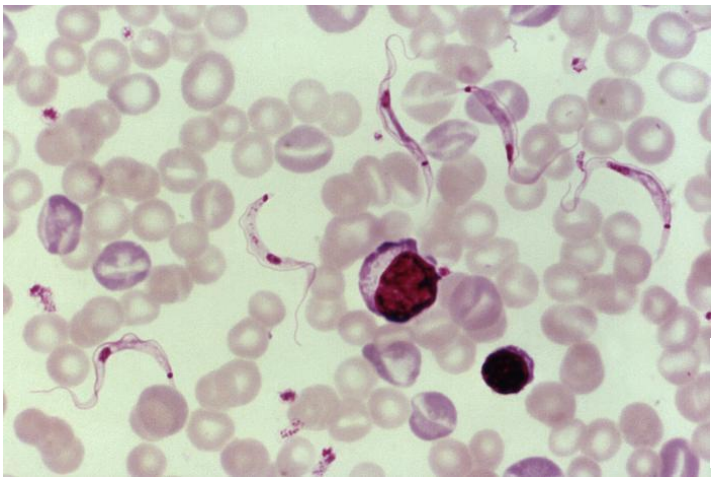
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20. A protein has 100 amino acids. Calculate the number of nitrogenous bases in the gene for this protein **(2mks**

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21. Study the photomicrograph shown below and answer the questions that follow



a) Name the parasite shown in the photo above **(1mk**

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b) Which organism is the vector of the parasite? **(1mk**

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c) Calculate the magnification used to obtain the image shown above **(3mks**

22. a) Name the chemical form in which the following are transported in the blood **(2mks**

i) Carbohydrates

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ii) Carbon (IV) Oxide

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b) Explain why transfusion of blood from a blood group **B** donor to a recipient with blood group **A** may be fatal. **(2mks**

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23. Use the photograph shown below to answer questions that follow



a) Explain the role of prothoracic gland during this phase of metamorphosis **(2mks**

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b) State the significance of this process to the life of the insect **(1mk**

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24. An animal has 6 molars, 2 canines, 4 incisors and 6 premolars in the lower jaw while the upper jaw has 6 molars, 4 premolars, 0 incisors and 2 canines in the upper jaw

a) What is the significance of absence of incisors in the upper jaw to the feeding of the animal **(2mks**

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b) Write the correct dental formula for the animal **(1mk**

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c) Why do such animals have a longer alimentary canal? **(2mks**

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25. Describe double fertilization in flowering plants **(4mks**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

BIOLOGY (232)

FORM FOUR (4)

PAPER 2

TIME: 2HRS

INSTRUCTIONS TO CANDIDATES

1. *Write your name, admission number, school and sign in the spaces provided above.*

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

3. *This paper contains **two sections A** and **B.** Answer **ALL** questions in section **A**. In section **B**, answer question **6* (Compulsory)** *and **EITHER** question **7 or 8**.*

4. *Note that all questions in section **A** carry equal marks.*

FOR EXAMINERS USE ONLY

Section	Question	Maximum score	Candidates score
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
	Total score	80	

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Section A: 40MKS: Answer all the questions

1. A cross between red flowered plant and white flowered plant produced plants with pink flowers. Using letter **R** to represent the gene for red color and **W** to represent white color;

a. Work out a cross between F_1 plants **(4mks)**

b. Give the;

i. Phenotypic ratio of F_2 plants **(1mk)**

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ii. Genotypic ratio of F_2 plants **(1mk)**

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c. Name a characteristic in humans which is controlled by multiple alleles. **(1mk)**

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d. Which is the biological term used to refer to the condition exhibited by F_1 plants. **(1mk)**

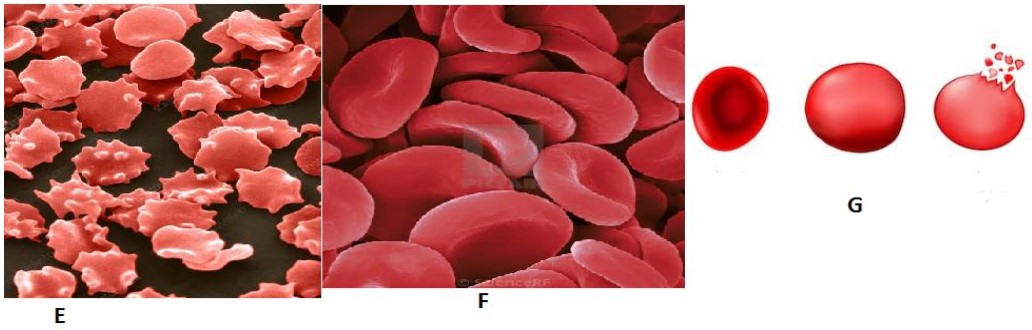
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2.The photograph below shows red blood cells that have been put in different solutions. Examine them and answer the questions that follow.



E F G

a) i) Identify the type of solution in which F was placed. **(1mk)**

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ii) State the process which the red blood cells underwent in illustration G. **(1mk)**

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b) Account for the appearance the red blood cells underwent in illustration E. **(3mks)**

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c) Explain what would happen if plant cells are placed in the solution in which the cells in G were immersed. **(3mks)**

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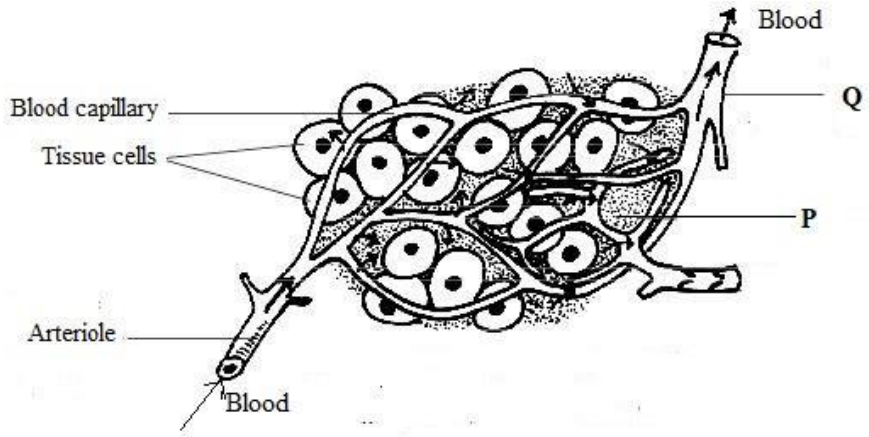
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3.The diagram below shows blood circulation in a mammalian tissue.



a. Name the parts labelled **P** and **Q**. **(2mks)**

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b. Name the substances that are:

i. Required for respiration that move out of capillaries. **(1mk)**

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ii. Removed from tissue cells as a result of respiration. **(1mk)**

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c. Explain how substances move from the blood capillaries into the tissue cells. **(3mks)**

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d. Name **one** blood component that is not found in the part labeled **P**. **(1mk)**

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4.a. The diagram below represents a member of kingdom Animalia.



i. Name the phylum to which the organism belong. **(1mk)**

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ii. Using observable features in the diagram, give **three** reasons for the answer in 4a (i) above. **(3mks)**

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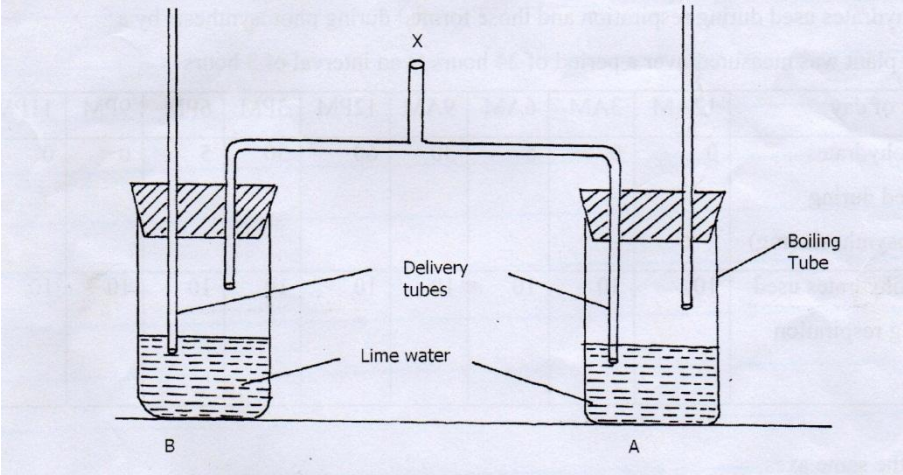
b. To estimate the population size of crabs in a certain lagoon, traps were laid at random. 400 crabs were caught, marked and released back into the lagoon on the first day. Four days later, traps were laid again at random. Out of the 374 crabs caught the second time, 80 were found to have been marked.

i. Calculate the population size of the crabs in the lagoon. **(3mks)**

ii. What is the name given to this method of estimating the population size? **(1mk)**

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5.An experiment was set up as show below.



(a) A student blew air in and out through point X. Using arrows indicate how air gets in and out of the set up. **(2mks)**

(b) [i] In which of the tube would lime water form white precipitate first. **(1mk)**

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ii] Give a reason. **(1mk)**

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(c) What is the effect of lactic acid in the thigh muscle of an athlete after a short fast race? **(2mks)**

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(d) Identify the type of muscle in human being where the formation and effect of lactic acid is not felt. **(1mk)**

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(e) What is the biological significance of boiling milk. **[1mk]**

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SECTION B: 40 Mks: Answer question 6 (compulsory) and either question 7 or 8.

6. An experiment was carried out to investigate the effect of temperature on the rate of reaction catalyzed by an enzyme. The results are shown in the table below.

Temperature ^{0}c	Rate of reaction in mg of product per unit time
5	0.2
10	0.5
15	0.8
20	1.1
25	1.5
30	2.1
35	3.0
40	3.7
45	3.4
50	2.8
55	2.1
60	1.1

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

(b) When was the rate of reaction 2.6 mg of product per unit time? **(2mks)**

(c) Account for the shape of the graph between

(i) 5^0 C and 40^0 C **(2mks)**

(ii) 45^0 C and 60^0C **(3mks)**

(d) Other than temperature name **two** ways in which the rate of reaction between 5^0C and 40^0C could be increased. **(2mks)**

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(e)(i) Name one digestive enzymes in the human body which works best in acidic condition **(1mk)**

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(ii) How is the acidic condition for the enzyme named in (e) (i) above attained? **(2mks)**

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(f) The acidic conditions in (e) (ii) above is later neutralized

(i) Where does the neutralization take place? **(1mk)**

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(ii) Name the substance responsible for neutralization **(1mk)**

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7.Describe:

a. How the structure of mammalian heart is adapted to its function. **(15mks)**

b. The process of blood clotting. **(5mks)**

8.a) After a meal of carbohydrate, the glucose level in the blood rose to 150mg/ cm^3 .

Explain the role of the liver in bringing the sugar level down back to normal. **(8mks)**

b) Explain six importance of plants excretory products. **(12mks)**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

BIOLOGY (233/3)

PAPER 3

TIME: 1 HOUR 45 MIN

Instructions to candidates

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

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

c) *You are required to spend the first **15 minutes** of the **1 ¾ hours** reading the whole paper carefully before commencing your work.*

d) *This paper consists of **6** printed pages*

e) *Candidates should answer the questions in English*

FOR EXAMINER'S USE ONLY:

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCOR
1	13	
2	15	
3	12	
TOTAL	40	

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1. a). You are provided with a specimen labelled **L**. Slice off about $2cm^2$ cube from the specimen. Peel it, crush to obtain a paste. Carefully tie one end of the 8cm LONG transparent visking tubing provided. Place the paste and tie the other end to ENSURE THERE IS NO LEAKAGE AT BOTH ENDS OF THE TUBING.

Rinse the outside of the tubing with water. Immerse the tubing with its content in 100ml beaker containing iodine solution. Leave the set up for 20 minutes.

(i) Record your observations in the table below. **(4mks)**

	Contents inside tubing	Iodine solution Outside tubing
Before the experiment		
After the experiment		

(ii) What physiological process is demonstrated by this experiment ? **(1mk)**

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(iii) Account for the results obtained in (a) above. **(3mks)**

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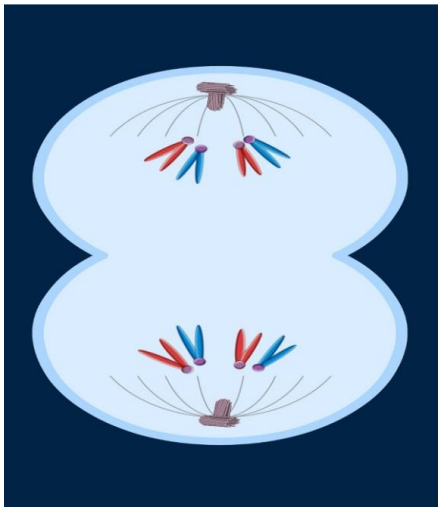
(iv) Name any one part of the human body where a similar physiological process takes place. **(1mk)**

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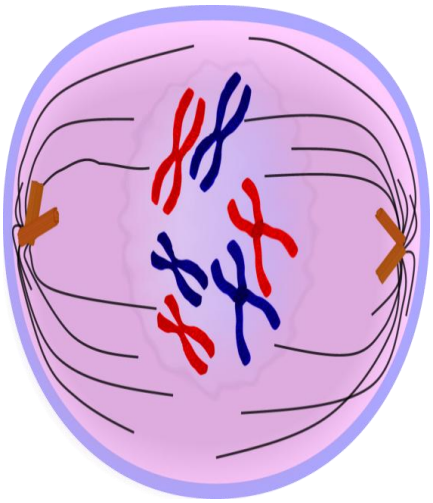
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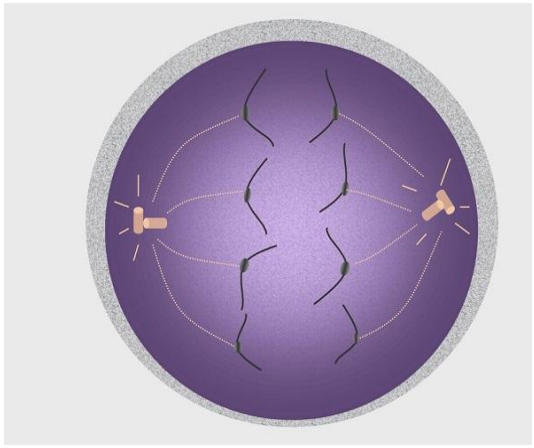
(b) The diagrams below show a type of cell division occurring in animal.



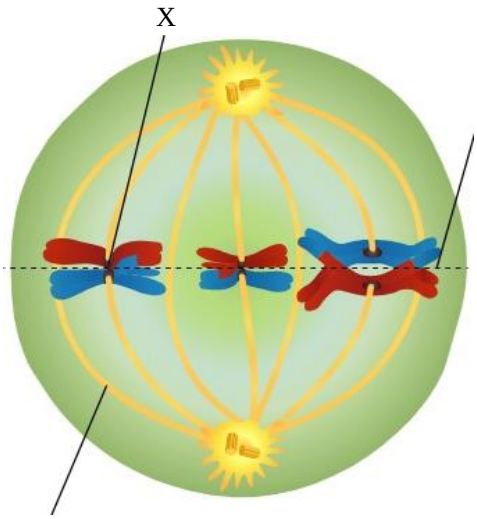
A



B



D



C

(i) Identify stages B and C. **(2mks)**

B……

C……

(ii) State the functions of the parts labeled **X a**nd **Y** **(2mks)**

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2. You are provided with specimen **Q, R S T** and **U**. Study them to answer the questions below.



Specimen Q





R



S



T



U

(a) Work the actual length of specimen **T,** given that the shatter resistant ruler measures **Q** from tip of mouth to tip of abdomen. **(2mks)**

(b) A boy immobilised specimen **Q** and attempted to drown and suffocate it in water by placing its head in water. Using observable features, explain why he couldn't succeed. **(1mk)**

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(c) Use the features in order given below and construct a dichotomous key that can be used to identify the specimen above. Wings, long or short hind limbs, number of legs, antenna. **(8mks)**

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(d) State two ways in which specimen **Q** is adapted to evade its predators in its ecological niche. **(2mks)**

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(e) State **two** observable differences between the specimen Q and R **(2mks)**

Specimen Q	Specimen R

3. You are provided with a solution L. Using the reagents provided, determine the food substances in L. Fill in the table below. (12 marks)

FOOD SUBSTANCE	PROCEDURE	OBSERVATION	CONCLUSION

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

BUSINESS STUDIES FORM FOUR

PAPER ONE

TIME: 2 HRS

1. Highlight four ways in which business studies may be of benefit to an individual. **(4Mks)**

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2. Outline four features of economic resources**.** **(4Mks)**

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3. Outline four challenges that a firm would experience as a result of expansion of the entire industry in which it is found. **(4Mks)**

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4. Outline four factors that affect business activities and which the business has control over. **(4Mks)**

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5. Identify four gaps that may create a business opportunity in a market. **(4Mks)**

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6. Highlight four merits of an open office layout to a business **(4Mks)**

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7. Outline four reasons why cash payment is preferred to cheque payment. **(4Mks)**

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8. Identify four types of insurance policies relevant to a supermarket owner**.** **(4Mks)**

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9. The following information relates to Kembe Traders as at 31st December 2008

Rate of stock turnover 3 times

Mark up 20%

Opening stock sh.160,000

Closing stock sh.200,000

Required : Determine

i) Gross profit

ii) Sales

10. Highlight **four** characteristics of a perfect competitive market**.** **(4mks)**

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11. The table below relates to four different businesses, insert the correct values for A, B, C and D. **(4mks)**

ASSETS	CAPITAL	LIABILITIES
2,310,642	A	486,932
B	40,385	96,483
941,682	31,685	C
3,104,611	D	395,348

12. The population of the youth in country X is likely to be 3/4 of the total population in ten years time. Highlight four challenges this country will face at this point in time. **(4Mks)**

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13. Highlight four factors that may cause the demand curve to shift to the right **(4Mks)**

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14. For each of the following transactions indicate the account to be debited or credited.

Transaction	A/C debited	A/C credited
a) Received discount from Top suppliers		
b) Allowed discount to Shujaa Traders		
c) Sold furniture to Owuor on credit		
d) Took stock worth sh.200 for personal use		

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15. List four items that may affect the capital of a business **(4Mks)**

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16. State four ways in which advertising agencies assist in sales promotion. **(4Mks)**

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17. State **four** ways in which the Kenyan currency qualifies as good money**.** **(4mks)**

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18. State four advantages of using the internet as a means of communication. **(4mks)**

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19. Highlight four ways in which transport is important to a business**.** **(4mks)**

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20. State four circumstances under which a producer would sell his goods directly to the consumer. **(4mks)**

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21. In the spaces provided state the source document for each of the subsidiary books given below. **(4mks)**

Subsidiary book	Source document
a) Sales Journal	
b) Purchases journal	
c) Returns inwards journal	
d) Returns outwards journal	

22. List four assumptions of the circular flow of income in a two sector closed economy. **(4mks)**

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23. Mention four small scale retailers with shops. **(4mks)**

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24. The following balances were extracted from the books of Highway stores on 31st Dec. 2015

Land and buildings	650000
Stock	470000
Bank overdraft	80000
Debtors	350000
Ten year loan	500000
Creditors	220,000
Cash	50000
Motor van	150000

Required :

i) Prepare a balance sheet for Highway Stores as at 31st Dec. 2015. **(4mks)**

25. Chumo industries want to open a warehouse for her products. Give the management some advice on **four** factors it should consider in establishing the warehouse**.** **(4Mks)**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

BUSINESS STUDIES FORM FOUR

PAPER 2

2 ½ HOURS

Kenya Certificate of Secondary Education

FORM FOUR BUSINESS STUDIES

Paper 2

2½ hours

Instructions to candidates

- *This paper consists of **six** questions*
- *Answer any **five** questions*
- *All questions carry equal marks*
- *Write your answers in spaces provided.*

For Examiner's Use Only

Question	Maximum score	Candidate's Score
1	20	
2	20	
3	20	
4	20	
5	20	
6	20	
	TOTAL SCORE	

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1.a) Highlight **four** ways in which the economic environment may positively influence the activities of a business. **(8mks)**

(b) On 1st July 2021, Shujaa Traders had Shs.36,500 at bank and cash in hand Shs. 250. During the month the following transactions took place.

July 2	Cash sales Shs.42,630 paid directly to the bank.
July 3	Received a cheque for Shs.14,100 from Mkora in full settlement of a debt.
July 7	Credit sales Shs. 15,500 to Otonglo
July 8	Bought goods for Shs.26,240 on credit from Mali Mali Enterprises.
July 12	Cash sales Shs.42,450.
July 14	Paid Mwema by cheque Shs.23,750 in full settlement of his account after deducting 5% cash discount.
July 15	Paid wages Shs.24,000 in cash.
July 16	Withdrew Shs.36,000 from the bank for office use.
July 17	Cleared Mali Mali account of Shs. 26,240 in cash less 12.5% discount.
July 18	Otonglo cleared her account of Shs 15,500 in cash less 11.5% discount.
July 20	Cheque received from Mkora was dishonoured.
July 28	Paid salaries by cheque Shs.48,600.
July 30	All cash was banked except Shs.5,000.

Required: Prepare a three-column cash book. **(12mks)**

2.a) Amobi is launching a new Bookshop for schools in Kenya. If you are their marketing manager what five factors would you consider when choosing an appropriate media for promoting the bookshop. **(10mks)**

b)Highlight five accounting documents used in home trade. **(10mks)**

3.a) Explain five factors that influence entrepreneurial practices in Kenya. **(10mks)**

b)With the aid of a well labelled diagram, show the effects of increase in supply on equilibrium price and quantity. **(10mks)**

4.a) Nyalego is an importer of assorted goods from different countries. Explain five advantages he may enjoy while his goods are stored in a bonded warehouse. **(10mks)**

b) The following information relates to Msafi traders.

MSAFI TRADERS

TRIAL BALANCE

AS AT 31/12/2021

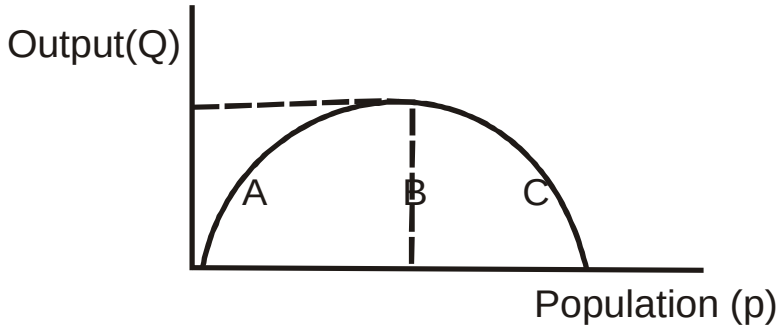
Details	Dr. (Shs.)	Cr. (Shs.)
Capital		200,000
Motor vehicle	10,000	
Machinery	16,000	
Stock (1/1/2021)	12,000	
Debtors	83,500	
Cash	68,000	
Bank	112,800	
Creditors		45,000
Sales		280,000
Purchases	120,000	
Carriage inwards	2,000	
Returns	1,200	1,000
Carriage on sales	4,000	
Discount	3,000	4,000
Salaries	2,000	
Rent		21,500
Insurance	10,000	
Electricity	17,000	
	551,500	551,500

Closing stock Shs.8,000.

Required: Prepare Trading and Profit and Loss Account. **(10mks)**

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5.a) The graph below represents population and output levels of three countries, A B and C



(i) State the type of population found in each country

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

Country C..... **(1mk)**

(ii) Explain **four** challenges that country C may be facing **(8mks)**

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

6.a) Explain five activities that may be carried out in the process of distributing goods. **(10mks)**

(b) Outline five internal diseconomies of scale that a firm that grows in size is likely to encounter. **(10mks)**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

CHEMISTRY PAPER 1 (233/1)

FORM FOUR (4)

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

- *Write your **name, admission number, date, index number** and school in the spaces provided*
- *Answer **all** the questions in the spaces provided*
- *All working **MUST BE** clearly shown where necessary*
- *Scientific calculators may be used*
- *Candidates should answer the questions in English*

FOR EXAMINER'S USE ONLY

Questions	*Maximum score*	*Candidate's score*
1 – 28	80	

1. State and explain the change in mass that occur when the following substances are separately heated in open crucibles.

a) Copper metal **(1 $\frac{1}{2}$ mks)**

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b) Copper (II) nitrate **($1\frac{1}{2}$mks)**

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

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(b) A volume of 120 cm^3 of nitrogen gas diffused through a membrane in 40 seconds, how long will 240cm^3 of carbon (IV) oxide defuse through the same membrane? **(2mks)**

3. A reaction of Propane with chlorine gas gave a compound of formula C_3H_7Cl.

a) What condition is necessary for the above reaction to take place. **(1mk)**

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b) Draw the structural formula of the compound C_3H_7Cl **(2mks)**

4. Name a gas which is used together with Oxygen in welding. **(1mk)**

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

(The letters are not the actual symbols of the elements)

Element	B	C	D	E	F
Atomic number	18	5	3	5	20
Mass number	40	10	7	11	40

(i) Which two letters represent the same elements? Give reason. **(2mks)**

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(ii) Give the number of neutrons in an atom of element D. (Show your working) **(1mk)**

6. A hydrated salt of copper has the formula $CuSO_4.nH2O$. About 25g of the salt was heated until all the water evaporated. If the mass of the anhydrous salt is 16.0g, find the value of n.

(Cu = 64.0, S = 32.0, O = 16.0, H = 1) **(3mks)**

7. The table below shows the pH values of the solutions I, II, III and IV

Solution	I	II	III	IV
pH	2	7	11	14

a) Which solution is likely to be that of calcium hydroxide? **(1mk)**

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b) Select the solution in which a sample of aluminum oxide is likely to dissolve. Give a reason for your answer. **(2mks)**

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c) Select a pair of solutions that would likely give a pH of 7 when equal volumes are reacted with each other. **(1mk)**

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8. Sodium chloride has a higher melting point than hydrogen chloride, explain. **(2mks)**

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9. Study the table below and answer the questions that follow

substance	M.pt ^oC	B.pt ^oC	Electrical conductivity in solid state	Electrical conductivity in molten state
J	365	463	Nil	Nil
K	1323	2773	Good	Good
L	1046	1680	Nil	Good
M	2156	2776	Nil	Nil

Place J, K, L and M in the appropriate categories from the following:

i. Metallic solid _____ **(1mk)**

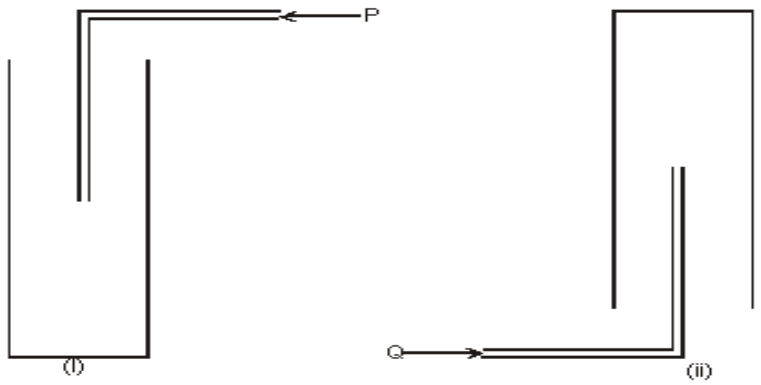
ii. Covalent network solid _____ **(1mk)**

iii. Ionic solid _____ **(1mk)**

iv. Covalent molecular solid_____ **(1mk)**

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10. The diagram below shows how two gases, P and Q were collected.



a) Name the two methods used. **(2mks)**

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b) State properties of P and Q that enable them to be collected through the methods shown. **(2mks)**

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11. Study the information in the table below and answer the questions in the table below and answer the questions below the table

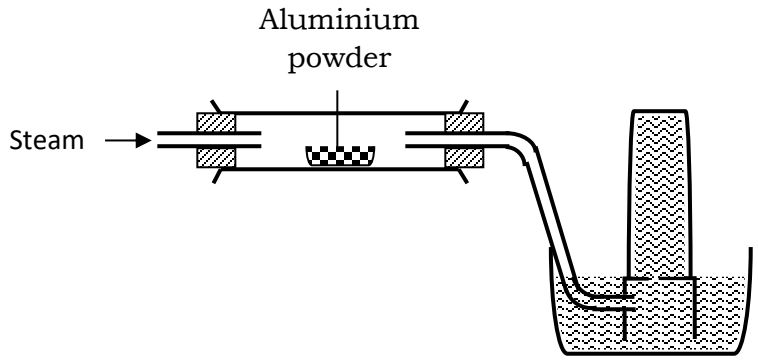
Bond	Bond Energy ($KJmol^{-1}$)
C-H	414
Cl-Cl	244
C-Cl	326
H-Cl	431

Calculate the enthalpy change of the following reaction

$CH_{4\,(g)} + Cl_{2\,(g)} \xrightarrow{\text{U.V. light}} CH_3Cl_{(g)} + HCl_{\,(g)}$ **(3mks)**

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12. Study the diagram below used to investigate the property of steam on aluminium



(a) Explain why no gas was collected in the set up above. **(1mk)**

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(b) Explain why the reaction between aluminium and steam stops after a short time. **(2mks)**

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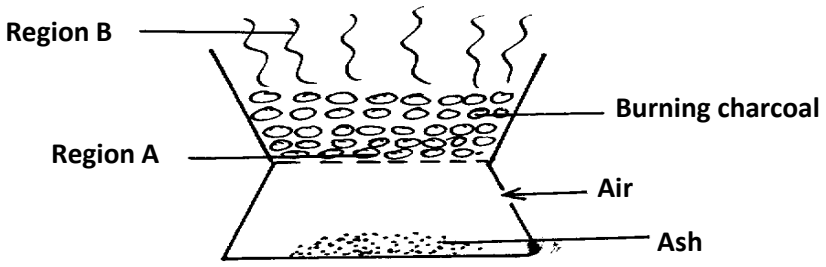
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13. A pupil analyzed a commercial vinegar solution by titration and found that 24.5cm^3 of 0.09 M sodium hydroxide solution was required for titration of 1cm^3 of vinegar. Calculate the molarity of ethanoic acid CH_3COOH in vinegar. **(3mks)**

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14. The diagram below shows a 'jiko' when in use. Study it and answer the questions that follow



(a) Identify the gas formed at region **B** **(1mk)**

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(b) Using an equation, explain what happens at region **A** **(2mks)**

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15. Sodium chloride is contaminated with copper (II) oxide. Explain how pure sodium chloride can be obtained from the mixture. **(3mks)**

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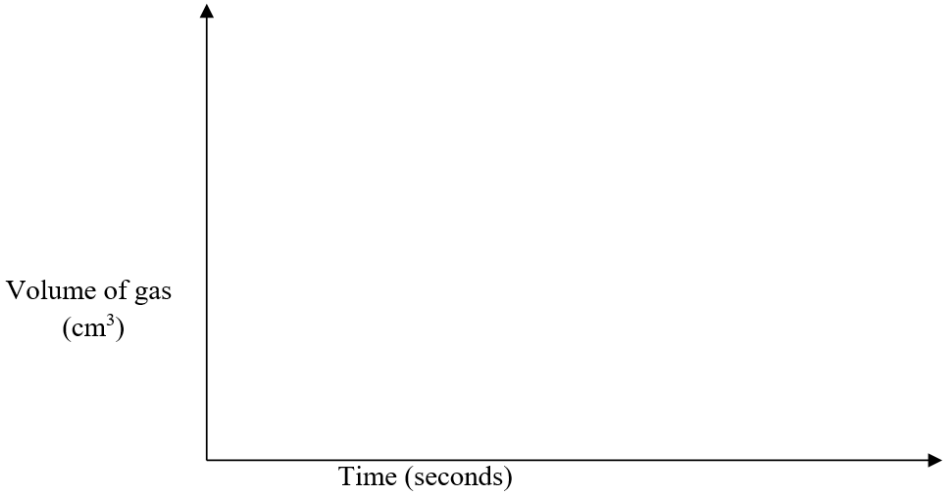
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16. The table below gives three experiments on the reaction of excess sulphuric (VI) acid and 0.5g of zinc done under different conditions. In each the volume of gas was recorded at different time intervals.

Experiment	Form of zinc	Sulphuric (VI) acid solution
I	Powder	0.8M
II	Powder	1.0M
III	Granules	0.8M

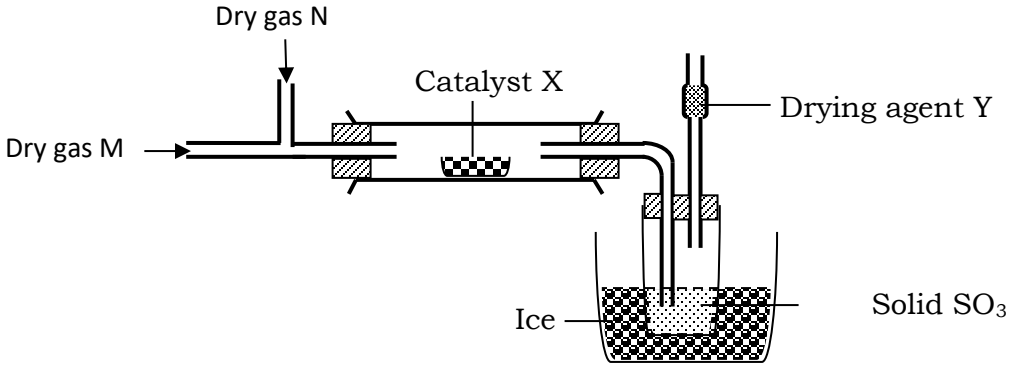
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On the axis below, draw and label the **three curves** that could be obtained from such results. **(3mks)**



17. The set-up of apparatus below used to prepare sulphur (VI) oxide:

18.



(i) Name Gas N…… and Gas M…….. **(1mk)**

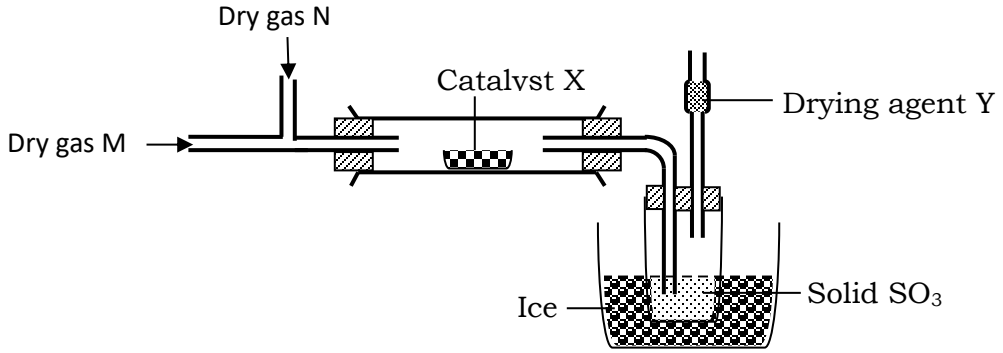
(ii) Catalyst X…….... **(1mk)**

(iii) Why is it necessary to use drying agent Y? **(1mk)**

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19. State and explain the observation made when chlorine gas is bubbled into potassium iodide solution. **(2mks)**

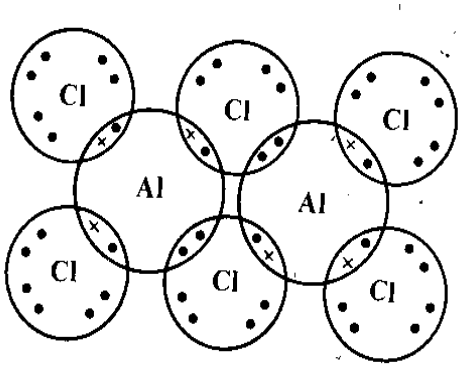
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20. The diagram below shows an arrangement of electrons in Aluminium chloride dimer.



(i) Write down the structural formula of the above molecule. **(1mk)**

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(ii) On the diagram, indicate using an arrow the dative bond. **(1mk)**

21. When Magnesium metal is burnt in air, it reacts with both oxygen and nitrogen gases giving a white solid with black specs. Write two equations for the reactions that take place. **(2mks)**

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22. Below is a representation of an electrochemical cell.

$Pb_{(s)}|Pb^{2+}_{(aq)}||Ag^{+}_{(aq)}|Ag_{(s)}$

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

……

……

b) Given the following:

	E^0 (volts)
$Pb^{2+}_{(aq)} + 2e^- \longrightarrow Pb_{(s)}$	-0.13
$Ag^+_{(aq)} + e^- \longrightarrow Ag_{(s)}$	+0.80

Calculate the E.M.F of the electrochemical cell **(2mks)**

23. When hot concentrated nitric (V) acid is added to sulphur, a red – brown gas and a colourless liquid are formed.

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

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……

(ii) Identify the oxidizing agent in the reaction above. **(1mk)**

……

……

(iii) State **one** environmental hazard of the nitrogen compounds. **(1mk)**

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24. Draw the dot (.) and cross (x) structure of:

a) Carbon (II) oxide - CO **(2mks)**

b) Ammonium ion - NH_4^+ **(2mks)**

25. Using sodium hydroxide solution, describe a chemical test that can be used to distinguish between copper (II) ions and iron (II) ions. **(3mks)**

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26. State and explain what would be observed if concentrated sulphuric (VI) acid is added to:

(a) Sugar crystals **(1½mks)**

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(b) Copper (II) sulphate crystals **(1½mks)**

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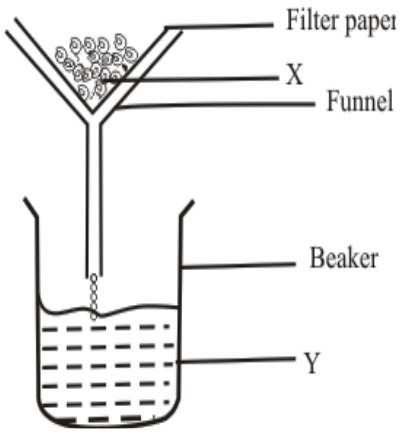
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27. When 100 cm^3 of 0.5 M sulphuric acid solution, H_2SO_4, react with 100 cm^3 of 1 M sodium hydroxide solution, NaOH, the temperature rises by 6.85 Kelvins. Calculate the molar heat of neutralization described by the equation: **(3mks)**

$$\mathbf{H_2SO_{4(aq)} + 2NaOH_{(aq)} \rightarrow Na_2SO_{4(aq)} + 2H_2O_{(l)}}$$

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28. Filtration is carried out in the apparatus shown



a) Name **X** …… **($\frac{1}{2}$mk)**

b) State **one** property that makes it possible to separate mixtures using filtration. **($\frac{1}{2}$mk)**

……

……

28. Calculate the oxidation numbers of Sulphur in the following species: **(3mks)**

a) SO_3^{2-}

……

……

b) SO_3

……

……

c) $S_2O_3^{2-}$

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: …….....

DATE:…….. ADM NO: …… SIGNATURE:……

CHEMISTRY PAPER 2 (233/2)

FORM FOUR (4)

TIME: 2 HOURS

Instructions

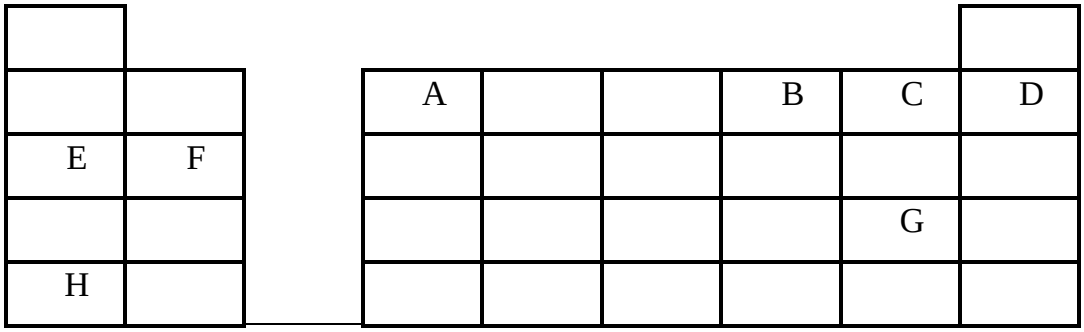
- ✓ *Write your name and index number in the spaces provided above.*
- ✓ *Sign and write the date of examination in the spaces provided above.*
- ✓ *Answer **all** the questions in the spaces provided*
- ✓ *Silent electronic calculators may be used.*
- ✓ *All working **must** be clearly shown where necessary.*
- ✓ ***Candidates should check the question paper to ensure that all the pages are printed as indicated and that no questions are missing.***

For Examiner's use only

Question	Maximum Score	Candidate's Score
1	13	
2	12	
3	12	
4	10	
5	11	
6	10	
7	12	
Total Score	80	

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1. The grid below shows part of the periodic table. Study it and answer the questions that follow. The letters are not the actual symbols of the elements.



(a) Give the name of the family to which element F belongs. **(1mk)**

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(b) Identify an element which forms a stable divalent anion **(1mk)**

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(c) Give the formula of:

(i) The compound formed between A and B **(½mk)**

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(ii) The sulphate of H **(½mk)**

……

……

(d) Using dot(.) and cross(x) diagram, show the bonding in the compound formed between E and C. **(2mks)**

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(e) Compare the atomic radii of elements C and D. Explain. **(2mks)**

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(f) Select the element that has the lowest ionization energy. Explain. **(1mk)**

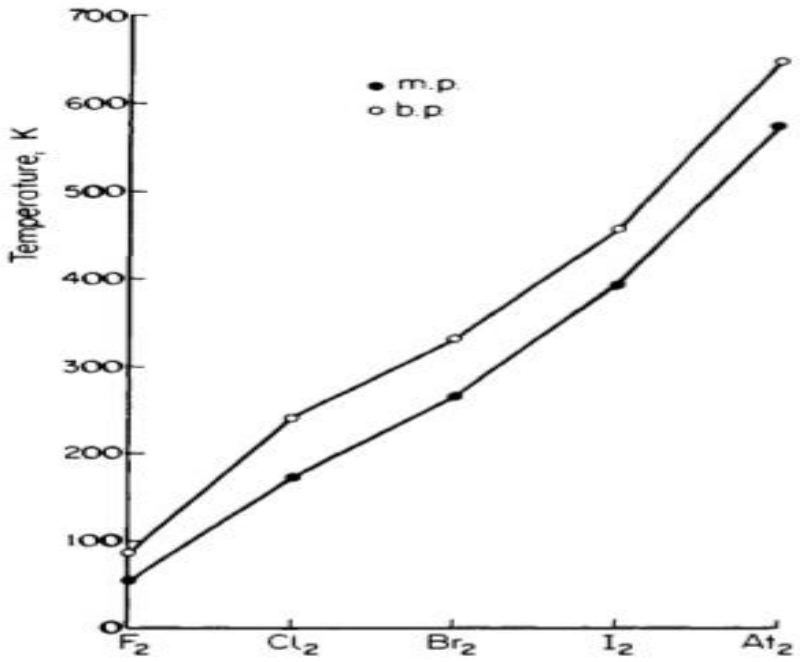
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(g) 0.081g of element A reacts with $20cm^3$ of dilute hydrochloric acid. Calculate the molarity of the hydrochloric acid. (R.A.M = 27) **(3mks)**

(h) The graph below shows the trend of the melting points and the boiling points of the family to which element G belongs. Explain the trend in the melting points. **(2mks)**



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2. (a) (i) What is a fuel? **(1mk)**

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(ii) Calculate the heating value of propane, C_3H_8, given that its molar enthalpy of combustion is 2200 kJ mol^{-1}. **(2mks)**

(C=12, H=1)

(b)(i) Define molar enthalpy of combustion. **(1mk)**

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(ii) Use the information provided by the thermochemical equations below to calculate the molar enthalpy of combustion of ethyne**.** **(3mks)**

$C(s) + O_2(g) \longrightarrow CO_2(g)$ $\Delta H = -394$ kJ mol^{-1}

$H_2(g) + ½O_2(g) \longrightarrow H_2O(g)$ $\Delta H = -286$ kJ mol^{-1}

$2C(s) + H_2(g) \longrightarrow C_2H_2(g)$ $\Delta H = +226$ kJ mol^{-1}

(c) Study the data given below and answer the questions that follow.

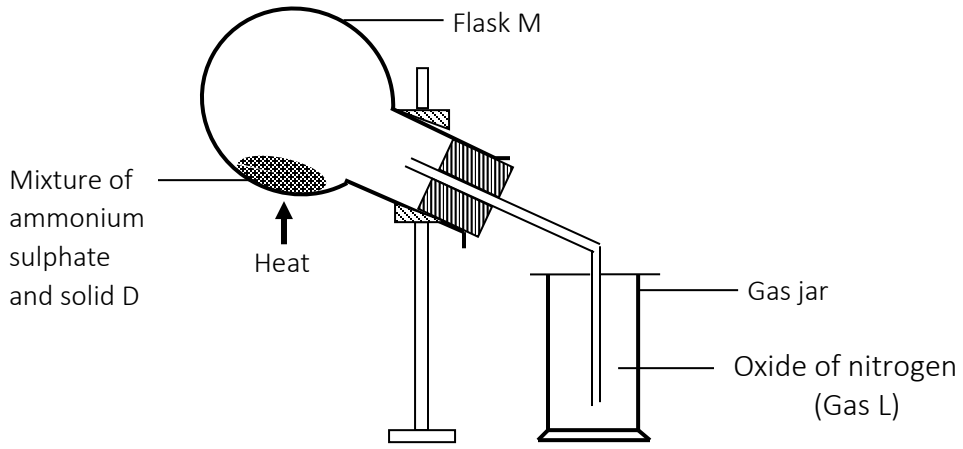
Substance/ion	Enthalpy change
$CaCl_2(s)$	Lattice energy = -2237 kJ mol^{-1}
$Ca^{2+}(g)$	Hydration energy = -1650 kJ mol^{-1}
$Cl^-(g)$	Hydration energy = -364 kJ mol^{-1}

(i) Determine the molar enthalpy of solution of calcium chloride in water. **(2mks)**

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(ii) Draw an energy level diagram for the dissolution of calcium chloride in water. **(3mks)**

3. (a) The diagram below shows the preparation of an oxide of nitrogen. Study the diagram and answer the questions that follow.



(i) Name the solid D. **(1mk)**

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(ii) Write the equation for the reaction in the flask M **(1mk)**

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(iii) Burning magnesium ribbon was lowered into the gas jar containing gas L. State and explain the observations made. **(2mks)**

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(iv) Write the two equations for the reactions taking place in (iii) above. **(2mks)**

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(v) A drop of water was added to the product formed in (iii) above. A colourless gas **K** with a choking smell was produced. Write the chemical equation for the production of gas **K** **(1mk)**

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(b) (i) Give **two** uses for nitric (V) acid. **(2mks)**

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(ii) A factory uses nitric (V) acid and ammonia gas as the only reactants for the preparation of ammonium nitrate. If the daily production of the ammonium nitrate is 4800kg, calculate the mass of ammonia gas used daily in kg. (N=14.0, O = 16.0 H= 1.0) **(3mks)**

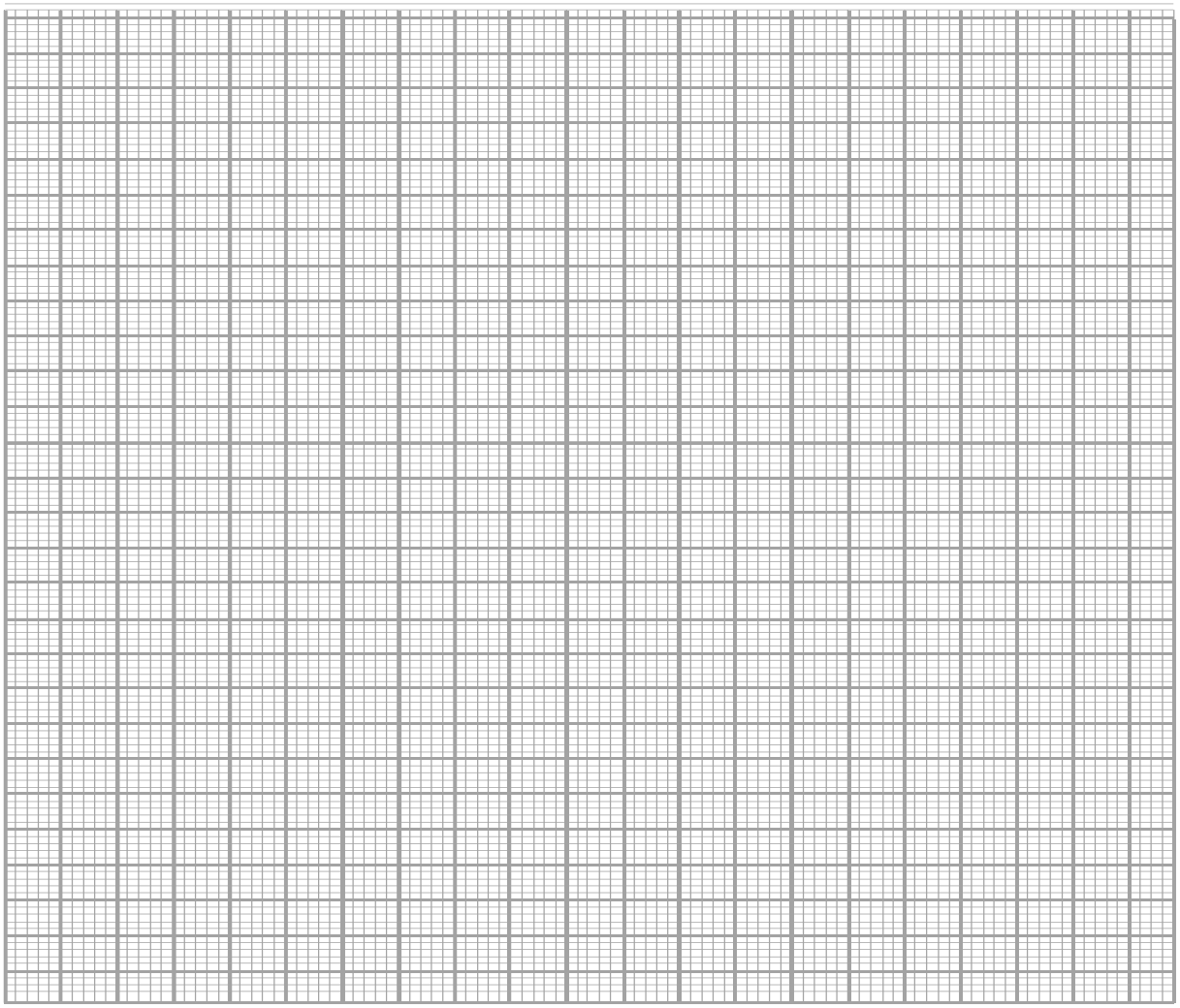
4. A group of form four students of Cockelbet Secondary School carried out an experiment to determine the solubility of potassium chlorate. The table below shows the results obtained.

Total volume of water added(cm^3)	10.0	20.0	30.0	40.0	50.0
Mass of $KClO_3$(g)	5.0	5.0	5.0	5.0	5.0
Temperature at which crystals appear(^0C)	80.0	65.0	55.0	45.0	30.0
Solubility of $KClO_3$(g/100gH_2O)					

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(a) Complete the table to show the solubility of $KClO_3$ at different temperatures. **(3mks)**

(b) Plot a graph of mass of $KClO_3$ per 100g water against temperature at which crystals form.**(3mks)**



(c) From the graph, determine ;

(i) The solubility of $KClO_3$ at 40^oC**.** **(1mk)**

(ii) The temperature at which the solubility of $KClO_3$ is 35g/100g water. **(1mk)**

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(d) Explain the shape of the graph**.** **(1mk)**

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(e) State **one** application of solubility and solubility curves. **(1mk)**

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5.(a) Use the standard reduction potentials for elements P, Q, R, S and T given below to answer the questions that follow. (The letters do not represent the actual symbols of the elements).

			E^{θ} (Volts)
P^{2+} (aq) + 2e	$\rightleftharpoons$	P (s)	- 2.90
Q^{2+}(aq) + 2e	$\rightleftharpoons$	Q (s)	-2.36
R^{+} (aq) + e	$\rightleftharpoons$	½R_2 (g)	0.00
S^{2+} (aq) + 2e	$\rightleftharpoons$	S (s)	+ 0.33
½ T_2 (g) + e	$\rightleftharpoons$	T^{-} (aq)	+2.86

(i) Which element is likely to be hydrogen? Give a reason for your answer. **(1½mks)**

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(ii) What is the **E^{θ}** value of the strongest reducing agent? **(1mk)**

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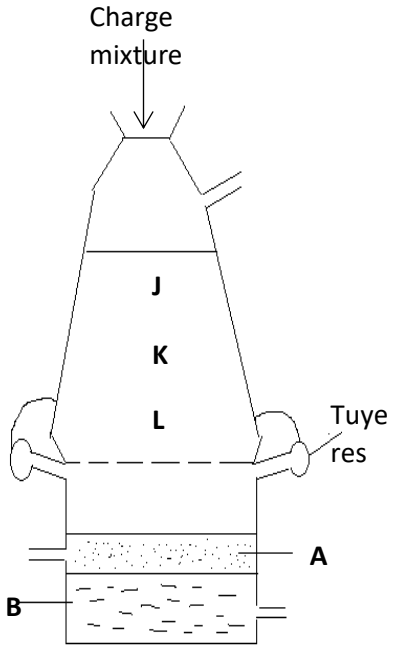
(iii) A form four student chose $S^{2+}_{(aq)}$ / $S_{(s)}$ as the reference half-cell. Use the space at the right side of **E^{θ} Volts)** to rewrite the **E^{θ}** values of the above half-cells. **(2½mks)**

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(iv) In the space provided below draw a labeled diagram of the electrochemical cell that would be obtained when half-cells of elements Q and S are combined. **(3mks)**

(b) An iron spoon is placed in an electrochemical cell with $AuCl_3$ solution to be gold plated. How long must the spoon be in the electrolytic cell if the spoon is to be plated with 0.293 g of Au and the current of the cell is 1.03A. (RAM of Au =197; 1F = *96,485 C*). **(3mks)**

6 The diagram below represents a blast furnace used for the extraction of iron.



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(a) Name three substances contained in the charge mixture. **(1½mks)**

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(b) Name the substances labeled A and B. **(2mks)**

A……

B……

(c) Arrange regions J, K and L in order of decreasing temperature. **(1mk)**

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(d) Write an equation for the reaction that occurs in region L. **(1mk)**

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(e) What is the function of the tuyeres? **(1mk)**

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(f) Distinguish between cast iron and wrought iron. **(1mk)**

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(g) Write an equation for the reaction between heated iron and chlorine. **(1mk)**

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(h) Iron-60 is a radioisotope of iron (half-life 2.6 x 10^6 years). Its ultimate decay product is nickel-60.

Write a nuclear equation for this process. (Atomic numbers: Fe= 26, Ni= 28) **(1mk)**

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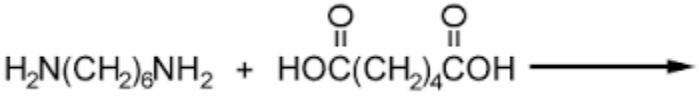
(i) State one use of stainless steel. **(½mks)**

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7. (a) Draw and name all the isomers of C_4H_6 **(2mks)**

(b) The following monomers react to form a polymer:



Draw and name the structure of the polymer **(2mks)**

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(c) Chlorofluorocarbons have a wide range of uses. However they have been linked to depletion of ozone.

(i) Explain the problem caused by depletion of ozone layer. **(1mk)**

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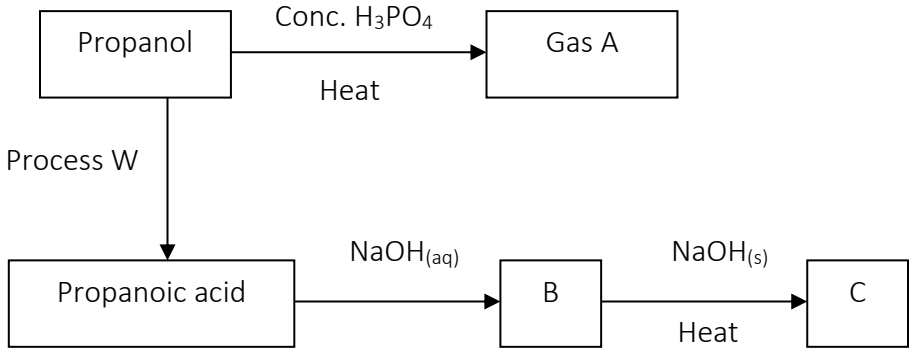
(ii) Give one other environmental problem caused by chlorofluorocarbons. **(1mk)**

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(d) Study the flow chart below and use it to answer the questions that follow.



(i) Name:

I: Process W **(½mk)**

……

……

II: Substances A, B and C **(1½mks)**

A:…….

B:…….

C:…….

(ii) Write an equation for the combustion of substance C **(1mk)**

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(iii) Give one use of gas A **(1mk)**

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(e) Explain how a sample of propan-1-ol could be distinguished from a sample of propanoic acid by means of a chemical reaction **(2mks)**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

CHEMISTRY PAPER 3 (233/3)

PRACTICAL

FORM FOUR (4)

TIME: 2 1/2 HOURS

INSTRUCTIONS TO CANDIDATES

(a) Write your name and Index number in the spaces provided in the question paper.

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

(c) Answer ALL questions in the spaces provided on the question paper

(d) You are NOT allowed to start working with the apparatus for the first 15 minutes of the 2 ¼ hours allowed for this paper. This time is to enable you to read the question paper and make sure you have all the apparatus and chemicals that you may need.

(e) All working MUST be clearly shown where necessary

(f) Mathematical tables and silent non-programmed electronic calculators may be used.

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QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1	22	
2	11	
3	07	
Total Score	40	

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1. You are provided with:

i) Solution A which is 2.0M hydrochloric Acid (HCl)

ii) Solution B, which is 0.1 M sodium thiosulphate ($Na_2S_2O_3$)

iii) Solution C which is alkali of 0.1 M concentration

You are required to:

i) Find the effect of change of temperature on the rate of reaction between sodium thiosulphate, solution B, and hydrochloric Acid, solution A.

ii) Prepare a dilute solution of hydrochloric acid, solution A

iii) Write an ionic equation for the reaction between hydrochloric acid, solution A, and the alkali solution C.

Procedure I

Using a measuring cylinder measure 10 cm^3 of solution B into a clean 100cm^3 glass beaker. Place it together with its contents on a white piece of paper marked with a **cross (X)** on it with bold blue print. Measure the temperature of the solution and record it as shown in the table below.

Using a clean measuring cylinder, measure 5cm^3 of solution A. add it to the contents of the beaker containing solution B and immediately start the stop watch. Record the time it will take for the cross (X) to become invisible when viewed above the reaction mixture in the beaker.

Wash the glass beaker used and repeat the experiment at the temperature indicated in the table below by warming sodium thiosulphate solution B to the stated temperature before adding hydrochloric Acid, solution A.

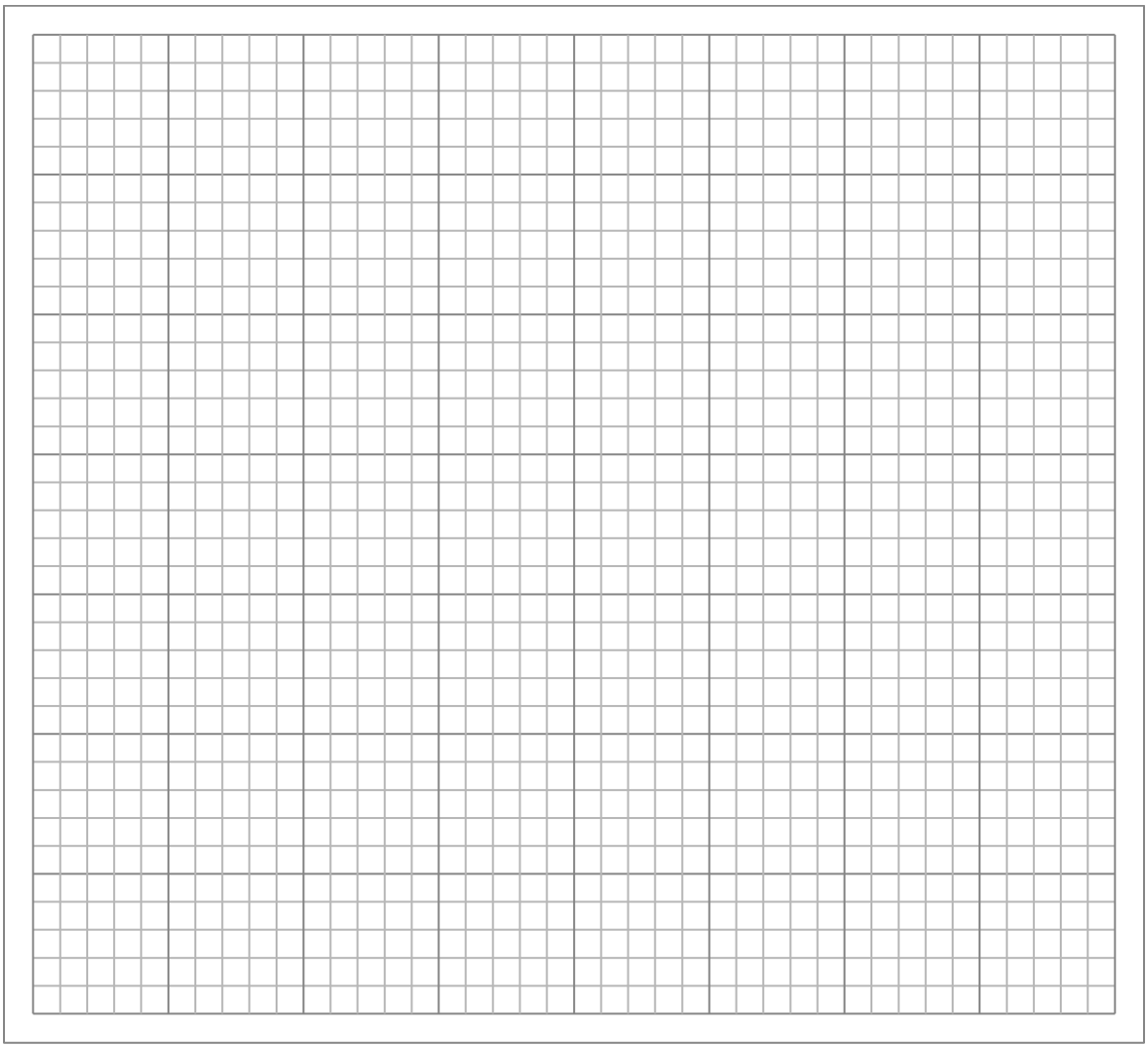
Table I

Experiment number	1	2	3	4	5	6	7	8
Volume of hydrochloric Acid, solution A (1 cm^3)	5	5	5	5	5	5	5	5
Volume of sodium thiosulphate solution B(cm^3)	10	10	10	10	10	10	10	10
Temperature (^{0}C) of sodium thiosulphate, solution B	Room temp.	30	35	40	45	50	55	60
Time in seconds								
Reciprocal of time $\left(\frac{1}{t}\right)$ per seconds, S^{-1}								

(6mks)

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a) On the grid provided, plot a graph of reciprocal of time $\left(\frac{1}{t}\right)$ against temperature **(3mks)**



b) Comment on the effect of change in temperature on the rate of reaction between sodium thiosulphate, solution B and hydrochloric acid, solution A. **(1mk)**

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c) Use your graph to determine:

i) The time taken by the reaction when the temperature is 58^0C. **(1mk)**

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ii) The temperature at which the rate of the reaction is 0.045 sec^{-1}. **(1mk)**

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Procedure II

Using a clean measuring cylinder, place **12.5 cm^3** of solution A in a 250ml volumetric flask. Add 200 cm^3 of distilled water and shake. Add distilled water upto the mark. **Label this solution D**. Fill a burette with solution D. Using a pipette and pipette filler, place 25.0 cm^3 of solution C into a 250 ml conical flask. Add two drops of phenolphthalein indicator and titrate with solution D until the pink colour disappears. Record your results in table II. Repeat the titration two more times and complete the table.

Table II

	I	II	III
Final Burette Reading(cm^3)			
Initial Burette Reading(cm^3)			
Volume of solution D (cm^3)			

(5mks)

d) Calculate:

i) The average volume of solution D used. **(1mk)**

ii) Moles of hydrochloric Acid, solution D used. **(1mk)**

iii) Moles of Alkali solution C used**.** **(1mk)**

iv) Determine the reacting mole ratio between the hydrochloric acid, solution D, and the alkali, solution C. **(1mk)**

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v) Write ionic equation for the reaction between hydrochloric acid, solution A and alkali, solution C. **(1mk)**

2. Place all **solid R** provided into a clean boiling tube then add about **$10cm^3$** of distilled water. Shake the contents thoroughly then filter. Retain both the filtrate and residue. Divide the filtrate into four equal portions.

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

Observation	Inference
(½ mark)	**(½ mark)**

(b) To the second portion, add about $2cm^3$ of Barium Chloride Solution.

Observation	Inference
(1mk)	**(1mk)**

(c) To the third portion, add 3 drops of lead (ii) nitrate solution provided followed by about $2cm^3$ of 2M nitric (V) acid and shake the mixture.

Observation	Inference
(1mk)	**(1mk)**

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(d) To the fourth portion, add 3 drops of acidified potassium manganate (VII).

Observation	Inference
(1mk)	**(1mk)**

(e) Transfer all the residue into a clean boiling tube, then add about $2cm^3$ of 2M nitric acid and add about $3cm^3$ of distilled water when all the solid has dissolved. Divide the resulting product into three equal portions.

(i) To the 1st portion add sodium hydroxide solution drop wise until in excess.

Observation	Inference
(½ mark)	**(½ mark)**

(ii) To the second portion, add ammonia solution drop wise until in excess.

Observation	Inference
(½ mark)	**(½ mark)**

(iii) To the third portion, add a few drops of potassium iodide solution.

Observation	Inference
(½ mark)	**(½ mark)**

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3. You are provided with solid V. You are required to carry out the tests indicated below.

Place a spatulaful of solid V in a boiling tube. Add about 6 cm^3 of distilled water and shake well. Divide the mixture into four equal portions in test tubes.

a) To the first portion, add two drops of potassium manganate (VII) solution.

Observation	Inference
(1mk)	**(1mk)**

b) To the second portion, add three drops of bromine water.

Observation	Inference
(1mk)	**(1mk)**

(c) To the third portion, add all the sodium carbonate.

Observation	Inference
(1mk)	**(1mk)**

(d) Test the pH of the solution using universal indicator solution provided.

Observation	Inference
(½mk)	**(½mk)**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

Kenya Certificate of Secondary Education

CODE451/1 SUBJECT: COMPUTER STUDIES

Paper 1

TIME $2\frac{1}{2}$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	QUSTIONS	CANDIDATE'S SCORE
A	1 -15	
B	16	
	17	
	18	
	19	
	20	
	TOTAL SCORE	

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SECTION A (40 MARKS)

Answer ALL the questions in SECTION

1. A programmer always uses command line operating system more than the other types of operating systems. State two reasons why he likes this type of operating system **(2mks)**

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2. Biometric systems is used for both physical and data security. State three disadvantages of using biometric systems **(3mks)**

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3. What is automatic recalculation **(2mks)**

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4.

(a) State three causes of data loss in computing **(3mks)**

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(b) List two precautions taken against crashing of hard disk **(2mks)**

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5. Differentiate between COM ports and LPT ports **(2mks)**

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6. Describe three main parts of a file Name **(3mks)**

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7. Ventilation is an important practice in the computer lab because it enhances proper circulation of air. Outline three ways in which air is regulated in the computer room. **(3mks)**

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8. Warranty must be signed during the purchase of a computer. Name three items a buyer must consider before signing the warranty **(3mks)**

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9. Mention two cause of system entropy **(2mks)**

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10. Explain why two's complement is preferred to one's complement in computing. **(1mks)**

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11. Computers have evolved through a number of generations. List three limitations of the first generation of computers. **(3mks)**

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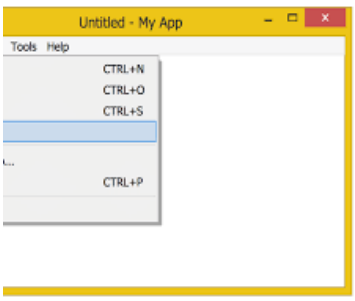
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12. Identify the type of operating system represented in Figure 1 and 2 **(2mks)**



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13. Give two benefits of writing a program in Low Level programming Language **(2mks)**

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14. State four function of an operating system in respect to disk management **(4mks)**

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15. Due to rapid changes in Technology the World is slowly moving from the magnetic and optical storage devices to solid state storage devices

(a) Define the term solid state storage devices **(1mk)**

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(b) Give two advantages of solid state storage devices **(2mks)**

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SECTION B (60 MARKS)

16.

(a) State three basic types of program control structures **(3mks)**

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(b) Mention three causes of syntax errors **(3mks)**

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(c) An organization intends to increase salaries of employees using the following rates

Current Salary	Percentage Increase
Greater than or equal to 70000	5%
Greater than 50,000 and less than 70,000	8%
Less than or Equal to 50,000	10%

Design a flowchart that reads the total population of the employee in the organization and the perform the following for each employee **(9mks)**

- ❖ Read the current salary
- ❖ Compute the increment
- ❖ Display current Salary , Increment and the new salary

17.

(a) Convert the following numbers to their decimal equivalent **(6mks)**

(i) 11.011_2

(ii) 12.15_8

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(iii) A1H

(b) Outline four ways in which data integrity may be maintained **(4mks)**

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(c) Explain three advantages of using questionnaires as a fact finding tool**.** **(3mks)**

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(d) What is the role of a recycle bin **(2mks)**

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18.

(a) Masai teacher's college has decided to automate its library for effective services to the students.

Identify four methods they are likely to use to gather information during system development. **(4mks)**

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(b) What do the following terms mean in relation to internet? **(5mks)**

(i) Downloading

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(ii) Hyperlink

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(iii) Web browser

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(iv) ISP

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(v) Search engine

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(c) Differentiate between sorting and filtering as used in electronic spreadsheet program **(2mks)**

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(d) What do the following terms mean **(4mks)**

(i) Spam mails

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(ii) Inbox

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(iii) Onboard Modem

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(iv) WIMP

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19.

(a) Mention three types of database model **(3mks)**

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(b) List three advantages of using database management systems **(3mks)**

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(c) In a database system, data integrity ensures the correctness and completeness of the data in the database. Differentiate the following types of integrity constraints: **(3mks)**

(i) Domain Integrity

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(ii) Entity Integrity

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(iii) Referential Integrity

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(d) Use diagrams to describe the following types of relationships **(3mks)**

(i) One to One

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(ii) Many to Many

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(iii) One to Many

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(e) File organization refers to the arrangement of records on secondary storage. Briefly describe the following file organization methods. **(3mks)**

(i) Serial

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(ii) Sequential

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(iii) Random

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20.

(a) What is a website **(2mks)**

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(b) Name three facilities that are needed to connect to the internet**.** **(3mks)**

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(c) State three ways students can benefit by having internet in a school **(3mks)**

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(d) State the function of the following protocols **(3mks)**

(i) TCP

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(ii) IP

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(iii) POP3

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(e) Describe the following topologies **(4mks)**

(i) Ring

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(ii) Mesh

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

451/2 COMPUTER STUDIES

Paper 2 (PRACTICAL)

2 ½ hours

FORM FOUR

INSTRUCTIONS TO CANDIDATES

a) Indicate your name and index number at the right hand corner of each printout

b) Write your name and index number on the CD/removable storage medium provided

c) Write the name and version of the software used for each question attempted in the answer sheet provided

d) Answer all the questions

e) All questions carry equal marks

f) Passwords should not be used while saving in the CD/removable storage Medium

g) Marked printout of the answers on the sheet

h) Arrange your printouts and staple them together

i) Hand in all the printouts and the CD/removable storage medium used

j) All the work should be saved at the desktop of your computer in a folder named with our name and index number. All the work in your folder should be burned to the CD/WR provided

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QUESTION ONE (50 MARKS)

1. The following table contains details of Baharini Girls school

ADM NO	House No	Stud name	DOB	RECEIPT NO	Fees Paid(kshs)	Fees Bal(kshs)	House Name	KCPE MARKS	House Capacity
1001	H20	Alice K	7/4/1999	101	20000	5000	simba	380	200
1050	S08	Lilly O	2/3/2002	894	18000	7000	chui	350	150
1202	P30	Mary	8/10/2000	500	23000	2000	Kifaru	400	180
1025	H20	Juliet	4/4/2000	258	25000	0	Simba	358	200
1200	S08	Joan	5/1/2001	259	15000	10000	chui	398	150
1278	H20	Milly	3/4/1998	200	15000	10000	simba	402	200
1201	P30	Linet	2/7/1998	205	20000	5000	kifaru	356	180
1203	S08	Lisper	9/5/2001	209	25000	0	chui	403	150

REQUIRED

a) Create a database file that can be used to store the above data. Name the file Baharini school database. **(2mks)**

b) Create Three tables, **student details**, **Accounts table** and **dormitory table** **(11mks)**

c) Format the following fields as follows:

- **a.** House number to maximum of 3 characters. **(1mk)**
- **b.** Datae of birth as medium date **(1mk)**
- **c.** Fees pad and fees balance in Ksh. In two decimal points **(2mks)**

d. House name of data type look up typed. **(1mk)**

d) Create a relationship between the three tables **(3mks)**

e) Using appropriate forms, Enter the information given into the three tables **(15mks)**

f)Create a query for all students housed in Chui with their adm no and fee balance save as **Chui query** **(3mks)**

g) Design a "**current age query"** to display name, Fee paid and current ages of all the students **(5mks)**

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h) Create a query **Last born** to display adm no of all the students who were born after 1999 and have paid more than 20,000. **(4mks)**

i) Create a report "**Hefty Balances"** showing students with fees balances and calculate total balance **(3mks)**

j) Print, The **Last born query, Hefty balance report** **(2mks)**

2. **QUESTION 2** *(50MARKS)*

Use a spreadsheet to manipulate data in the table below.

Adm No	Name	Stream	Comp	Art	Bus	Eng	Mat	Student mean	Rank
C001	Barasa	H	56	45	36	56	26		
C002	Wangila	K	58	57	90	54	23		
C003	Wafula	H	48	56	54	45	25		
C004	Wanjala	K	78	95	78	46	24		
C005	Kerubo	H	49	86	68	35	52		
C006	Akinyi	K	56	45	25	63	54		
C007	Odhiambo	H	75	78	45	65	56		
C008	Okunyuku	K	89	69	65	53	51		
C009	Nekesa	H	69	58	45	54	52		
C010	Simiyu	H	85	46	78	52	53		
	TOTAL								
	TOTAL	FOR H							
	TOTAL	FOR K							

a) Enter the data in all bordered worksheet and fit all column. Save the workbook as **mark 1** **(16mks)**

b) Find the total marks for each subject **(2mks)**

c) Find total for each subject per stream using a function **(4mks)**

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d) Find mean mark for each student using a function **(2mks)**

e) Rank mean student in descending order using the mean **(3mks)**

f) In cell B17 count the number of students with a mean mark of 70 and above. **(2mks)**

g) Create a column called Grade. Grade all the students based on the mean score as follows:
greater than 70 "Distinction" Greater than 50 "Credit" Greater than 30 "Pass" else fail. **(3mks)**

h) Create a well labeled column chart on a different sheet to show the mean mark of every student. Rename the sheet as **mark 2.** **(5mks)**

i) Using **mark1,** use subtotals to find the average mark for each subject per stream. **(6mks)**

j) Copy the data in sheet 1 to sheet 3 and filter the data display only the students with distinction. **(3mks)**

k) Print **sheet 1,mark 2** and the **sheet 3** **(3mks)**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

FORM FOUR

CRE (313/1)

QUESTION PAPER

PAPER 1

TIME 2 1/2HRS

INSTRUCTIONS: Answer any **FIVE** questions

1a) Describe the second account of creation in genesis 2:4b-25 **(7mks)**

b) With reference to the Genesis stories of creation in Chapter 1 and 2 outline the attributes of God. **(7mks)**

c) State the problems faced by Bible authors. **(6mks)**

2a) Describe how the Israelites worshipped God before the Babylonian exile.

b) Explain what the Israelites understood about God from the Exodus experience.

c) Give ways in which the Israelites disobeyed the Ten Commandments.

3 a) Identify **six** reasons why it was difficult for Elijah to stop idolatry in Israel **(8mks)**

b) With reference to 1st kings 21:17-29, give the forms of punishment prophesied by Elijah to King Ahab and Queen Jezebel. **(6mks)**

c) Explain ways in which injustice can disrupt peace in society. **(6mks)**

4a) Outline the various ways through which the Old Testament prophets communicated their messages to the people. **(7mks)**

(b) Give **seven** teachings of prophet Amos about the day of the Lord. **(7mks)**

(c) How can Christians assist the church leaders to perform their duties effectively? **(6mks)**

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5.(a) Describe how the people of Judah renewed their covenant with God under the leadership of Ezra. **(8mks)**

(b) Outline measures taken by Nehemiah to ensure completion of rebuilding the broken walls of Jerusalem. **(7mks)**

(c) What do Christians learn from the dedication of the wall of Jerusalem? **(5mks)**

6.(a) Give reasons why oaths were administered in traditional African communities **(7mks)**

(b) Explain the role of the sponsor during the traditional African circumcision ceremonies **(7mks)**

(c) Identify **six** aspects of traditional African worship that have been incorporated in Christian worship. **(6mks)**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

CRE (313/2)

PAPER 2

INSTRUCTIONS: Answer any FIVE questions

1a) Describe what took place when Mary visited Elizabeth **(6mks)**

b) State the differences between the work of John the Baptist and that of Jesus Christ. **(8mks)**

c) Give reasons why Christians dedicate children to God in church today. **(6mks)**

2. a) With reference to Luke 5:17-26, describe the healing of the paralytic man. **(8mks)**

b) Give six lessons learnt about Jesus from the cure of the Paralytic man. **(6mks)**

c) State six reasons why some Christians do not believe in miracles today **(6mks)**

3.a) Identify six petitions in the Lord's prayer. **(6mks)**

b) With reference to Jesus 'journey to Jerusalem, state four teachings of Jesus about salvation **(7mks)**

c) What seven lessons can Christians learn from the parable of the prodigal son? **(7mks)**

4. a) Explain the gift of the Holy Spirit as taught by Saint Paul. **(7mks)**

b) Identify Peter's understanding of the person of Jesus during the Day of Pentecost. **(6mks)**

c) Outline the causes of disunity in the church today. **(7mks)**

5.a) State ways in which sex is abused in Kenya **(6mks)**

b) Explain the Christian teaching on responsible sexual behaviour **(8mks)**

c) State the ways used by traditional communities to prevent pre-marital sex among the youth. **(6mks)**

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6. a) Give reasons why Christians pay taxes to the government of Kenya. **(7mks)**

b) What are the obstacles to effective maintenance of law and order? **(7mks)**

c) Outline steps the church is taking to reduce lawlessness in Kenya today. **(6mks)**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

ENGLISH

FUNCTIONAL SKILLS

PAPER 1(101/1)

FORM FOUR (4)

TIME: 2 HOURS

Instructions to candidates:

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

b) Sign and write the date of exam in the spaces provided.

c) Answer all the questions in this paper.

d) All your answers must be written in the spaces provided.

For Examiner's Use Only:

S/No.	Question	Maximum Score	Candidate's Score
1	Functional Writing	20	
2	Cloze Test	10	
3	Oral Skills	30	
	TOTAL	60	

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1. FUNCTIONAL WRITING (20MKS)

You are the environment club chairperson in your school. You have been invited to give a speech on how to conserve the environment during the "Environmental Awareness Day" in your sub-county. The sub-county director of environment, the area chief, students, the club patrons and members from the community will attend.

In your speech you will address the following issues: deforestation, pollution and waste disposal. Write the speech that you will deliver. **(20mks)**

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2.Read the passage below and fill in each blank space with the most appropriate word. (10mks)

Curriculum reform in education is a worldwide-practiced phenomenon that is involved in striving for the **(i).....**educational practices, primarily with the demands of the twenty-first-century knowledge economy. African **(ii).....**immediately after independence had to inherit the colonial education system, which **(iii).....** discriminative and which demanded realignment to societal and cultural demands of the nation. Coincidentally, curriculum **(iv).....** in most African nations adopted the content or knowledge-based approach. Not long, the Knowledge-based curriculum dissatisfied most countries for its products were too academic, but lacking skills and knowledge **(v).....**the applicability as required by the demands from the workplace. Kenya and Tanzania adopted a curriculum with the philosophy of education for self-reliance**;(vi) .....** due to the inadequately trained teachers and insufficient resources, it ended up being **(vii).....**examinable and losing its goal. That **(viii).....**to unemployment, increased vices, and rampant dropouts, among other factors. Currently, due to technological advancement, most countries have opted **(ix).....**a competency-based curriculum (CBC), which appears as worldwide trends in offering skills that match with the requirements of companies' employers. (**x).....**question shall be: does the job market currently determine the curriculum reforms in education?

3. a) Read the poem below and then answer the questions that follow: 30 MARKS

<u>The Song of the Engine by Worsely Benison</u>

With a snort and pant the engine dragged
Its heavy train uphill,
And puffed these words the while she puffed
And laboured with a will:

"I think-I can-I think-I can
I've- got- to reach- the top.
I'm sure- I can- I will- get there
I sim-ply must-not stop."

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At last, the top was reached and passed,
And then-how changed the song!
The wheels all joined in the engine's joy,
As quickly she tore along.

"I knew I could do it; I knew I could win,
Oh, rickety, rackety, rack!
And now for a roaring rushing race
On my smooth and shining track!"

i) How has the poet made the above poem rhythmic? **(4mks)**

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ii) How would you say the last two lines of the poem? **(2mks)**

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b) The underlining indicates the stressed word in the sentences below. Briefly explain what each sentence means. **(3mks)**

I bought a camera for you.

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I **bought** a camera for you.

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I bought a **<u>camera</u>** for you.

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c) Write another word with a similar pronunciation for each of the ones given below. **(4mks)**

(i) Clime**.....**

(ii) Packed**.....**

(iii) Blew**.....**

(iv) Serial**.....**

d) Your friend wishes to visit you over the December holidays but she has never been to your place. She requests you to give her directions that will enable her reach your home. How would you ensure that the directions you give enable her to reach her destination? **(4Mks)**

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e) Imagine you have been invited to give a speech on the topic "Devastating effects of Covid19." State three introductory strategies of your speech. **(3Mks)**

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f. Study the genre below and answer the questions that follow.

If Peter Piper picked a peck of pickled peppers, where's the peck of pickled peppers Peter Piper picked?

i) Giving a reason, classify the genre. **(2mks)**

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ii) Identify the dominant sound pattern used in the above genre**.** **(2mks)**

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iii) State two functions of the genre above. **(2mks)**

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iv) If the above genre was to be translated to another language, what would be lost? **(1mk)**

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g. Indicate whether you would use falling intonation or rising intonation in the sentences below. **(3mks)**

i) Did you remember to buy tomatoes? **……**

ii) Where did you buy these? **……..**

iii) Open the window! **……**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

ENGLISH PAPER 2 (101/2)

FORM FOUR

Time: 2 ½ hours

INSTRUCTIONS

i. Write your name and index number in the spaces provided above.

ii. Answer ALL the questions in this question paper in the spaces provided

FOR EXAMINER'S USE ONLY

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

1. COMPREHNSION 20 MARKS

Read the passage below and answer the questions that follow

When God made women out of man according to the biblical story of creation, He did not restrict her from doing certain type of jobs, nor did He forbid man from doing any king of chores. The only problem with us today is that we think like those who lived in age where men's roles and women's roles were clearly specified.

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Consequently, it is rare to find a man at home doing chores like washing the dishes , preparing supper for the family or even cleaning the house while women of the house sits to watch the news or a programme she enjoys on television. This mindset has also been passed down to children, where you will find a girl working tirelessly around the house while her brother is comfortably stretched out on the sofa watching a movie. Why can't we train our children to do what needs to be done irrespective of their gender?

Personally, I was brought up in a home where chores are divided equally among those present, and no amount of protesting could **exonerate** me from my assigned chores, which is why I find this gender sensitive somewhat discriminative. I once broached the issue of sharing chores with a friend of mine and his reaction was unpredictable, "You expect me to cook, wash dishes, clean the house and look after the baby? These are things I can't do no matter how much I love her! My job is to put the food on the table and secure my children's future," he responded passionately. These are biases so deeply **ingrained** that it seems odd if a man tells he is a nurse. The question that naturally comes to mind will be, "Isn't that a woman's job?" because you expect a nurse to be a woman in pretty white or small stripped dress and white cap. However, the truth is that men are just capable of providing nursing care as female counterparts.

And turning to politics, how many of our constituencies have female representatives in parliament? Just a handful. And how many countries in the world have women presidents or prime ministers? Another handful. Many women have joined politics hoping to succeed where men have failed but quit after being frustrated by men's obvious lack of trust in their abilities. But from those who have persevered, we can see that women do better than men since they start from basic level of the home, where they take care of their families and do everything to keep them going.

Another very **peculiar** field is football. Fans flock pub to watch male players juggle the ball and make their fancy moves and sometimes fight erupt after heated arguments about football games like world cup, premier League and other tournaments. But I have never heard people fight over Women's World Cup or anybody disappointed after a women's team he supports took a thrashing from an opponent.

Careers like engineering have also been affected by this negative trend. It is getting increasingly rare to find a woman in overalls lying under a heavy truck checking for engine trouble or repairing the brakes. This is considered a man's job and many people believe cannot do it properly.

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I believe it is time we got rid of those outdated beliefs and started appreciating women for who they are. We should give them a chance to prove themselves and open up more opportunities. Men should also realize that to do perfectly, one requires brain, not brawn, and if this continues, it will do more than good. Besides, what a man can do, a woman can do, sometimes even better. Giving women an opportunity, will create a balance and bring the best in everyone.

(Adapted from: *Daily Nation*24th February2010, *Living Magazine* page 2 – Gichuru Hesbon)

Questions

a) According to the passage, what seems to cause conflicts in gender roles today? **(1mk)**

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b) What is the author's opinion on defined gender roles? **(2mks)**

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c) How has upbringing contributed to this opinion? **(2mks)**

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d) Make notes on duties of men and women as brought out in passage. **(5mks)**

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e) According to the passage, why are some careers considered male dominated in our society today?

(2mks)

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f) In your opinion, should there be gender defined duties for boys and girls**?** **(2mks)**

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g) According to the passage, what should be done to get rid of outdated practice of defined gender roles?

(2mks)

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h) Explain the meaning of the following words as used in the passage. **(4mks)**

I. Exonerated

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II. Ingrained

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III. Peculiar

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IV. Brawn

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

Cute as a button and sharp as a needle, he thought. Her eyes were wide and white like a pairof moons. She continued. "My natural parents were Gambian, but I will never see them. aredead. Oh, well." She wriggled in her chair. "Goodness me, what am I doing? Dictating my autobiography?" She waved that idea away. "Let's talk business now, shall we?" She pulledout of her handbag a small device then switched it on. "Mind if I start recording?"

"You're a reporter?" He had not thought she was."Yes, for the Gambian News."

"I see. Now, how can I help you, Ms Mckenzie?""I'd like to ask you a few questions, if I may."

"Yes, you may. In fact, why don't I start you off? My name is Abiola Afolabi, which you seem to know already. But you can just call me Abiola, my first name. Take it from there."

"I will: you studied at Harvard University in the USA. Now you teach at the University of Ibadan in Nigeria." She smiled. "I got that from the cover of your book: Failure of States." Heaverted his eyes to enjoy this fame in the correct manner— with humility, he hoped she would easily see through. This black Scotswoman surely knew her tread, he thought.

"when I heard you were heard at The Seamount Hotel, Dr Afolabi, I decided to come and seeyou. So here I am. This is also funny."

"Funny?"

"Yes. I expected to see an academic scarecrow dressed in jeans. Instead, I see a well- dressedman who might well be a business person..."

QUESTIONS

a) Explain what happens immediately g) Explain the meaning of the following before thisexcerpt.**(4mks)**

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b) Identify and illustrate two aspects of style in this excerpt. **(4mks)**

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c) Discuss one theme evident in this excerpt. **(2mks)**

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d) Discuss two-character traits of Fiona in the excerpt. **(4mks)**

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e) Briefly explain what happens what happens after this excerpt. **(2mks)**

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f) How are Afolabi's thoughts in his book fulfilled later in the book? Briefly explain **(4mks)**

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g) Explain the meaning of the following words as used in the excerpt. **(5mks)**

i) Averted

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ii) Autobiography

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iii) Wriggled

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iv) Tread

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v) Menacingly

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3. Read the poem below and then answer the questions that follow. (20mks)

No coffin, No grave **by Jared Angira**

He was buried without a coffin
Without a grave
The scavengers performed the post-mortem
In the open mortuary
Without sterilized knives
In front of the night club

Stuttering rifle put up
The gun salute of the day
That was a state burial anyway
The car knelt
The rad plate wept, wrapped itself in blood its
Master's

The diary revealed to the sea
The rain anchored there at last
Isn't our flag red, black and white?
So he wrapped himself well

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Who could signal yellow

When we had to leave politics to the experts

And brood on books

Brood on hunger

And school girls

Grumble under the black pot

Sleep under torn mosquito net

And let lice lick our intestines

The Lord of bar, money speaks madam

Woman magnet, money speaks madam

We only cover the stinking darkness of the cave of our mouths

And ask our father who is in hell to judge him

The quick and the good.

Well, his diary, submarine of the third world

War

Showed he wished

To be buried in a golden-laden coffin

Like a VIP

Under the Jacaranda tree beside his palace

A shelter for his grave

And much beer for the funeral party

Anyway one noisy pupil suggest we bring

Tractors and plough the land.

QUESTIONS;

a) Who is being referred as "we" in the 4th stanza? **(1mk)**

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b) Briefly explain what this poem is about. **(3mks)**

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c) Comment on the use of two stylistic devices in the above poem**.** **(6mks)**

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d) Explain the tone of the poem. **(2mks)**

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e) What is the attitude of the persona toward his or her subject**?** **(2mks)**

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f)In your own words, suggest ways people can changes in the society without assassinating politicians.

(2mks)

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g) Explain the following lines **(2mks)**

Who could signal yellow

……

……

Submarine of the Third World War

……

……

h) Explain the meaning of the following words as used the poem. **(2mks)**

i. Anchored**……..**

ii. Brood**……..**

4. GRAMMAR (15 MARKS)

1. Fill in the blank with the correct forms of the words in brackets. (3 Marks)

i) The tragedy was beyond everyone's …….. (comprehend)

ii) The driver of the lorry declined to accept…….. (liable)

iii) She filed a…… (sue) against her employer.

2. **Choose the right word to from the options given to fill the blanks.** (3 Marks)

i) We went home before it ……..(begun/began) to rain.

ii) Doctor Rank always…… (visit/visits) Torvald and family.

iii) Always do the right thing to avoid…… (3 Marks)

(embarrasing/embarrassing/embarassing)

iv) **Punctuate the following sentences correctly.** (3 Marks)

i) I need a copy of memories we lost and other stories.

……

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ii) Why does he James like chicken?

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……

iii) Everyone knows hard work pays.

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3. **Explain the ambiguity in the following sentences.** (3 Marks)

i) The tourist saw the monkey with a telescope.

……

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……

ii) He narrated to him his success story.

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iii) Valentine spent all the money he had set aside for emergency.

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4. **Supply the correct question tag.**

i) Let us go.

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ii) You had some coffee before assembly

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……

iii) We have a lot to do.

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

ENGLISH PAPER 3 (101/3)

FORM FOUR (4)

TIME: 2 ½ HOURS

(Creative Composition and Essays Based on the Set Texts)

INSTRUCTIONS TO CANDIDATES

Write your name, the name of your school, your index number and stream in the spaces provided at the top of the page.

Answer three questions only.

Questions one and two are compulsory

In question three, choose only one of the optional texts you have prepared on.

Where a candidate presents work on more than one optional text, the first one to appear will be marked.

Each of your essays must not exceed 450 words.

All answers must be written in the answer sheets provided.

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	20	
2	20	
3	20	
TOTAL	60	

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Answer Three Questions Only

1. Imaginative Composition (20mks)

Either
Write a composition ending with the following statement:
....."Given another chance I would have done things differently."

Or

Write a composition supporting or opposing this statement:

"Both boys and girls have equal rights to their parent's property."

2. The Compulsory Set Text. (20mks)

"Nicole is, generally, an appealing character." With appropriate illustrations from ***The Samaritan by John Lara,*** write an essay showing the truthfulness of this statement.

3. The Optional Set Texts. (20mks)
Answer any one of the following questions.

Either
The short story: A Silent Song and Other Stories.

Drawing illustrations from Meja Mwangi's, **An incident in the park**, write an essay to discuss the problems of urbanization

Or

The novel: An Artist of the Floating World.

Yearning for reputation and social status can lead someone down to a path of fear and obsession. Making reference to Ono in the Novel 'An Artist of the Floating World', discuss the validity of this statement. **(20 marks)**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

GEOGRAPHY (312/1)

FORM 4

QUESTION PAPER

TIME 2 3/4Hrs

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.*

SECTION A

Answer ALL questions in this section.

1. (a) What is a weather station? **(2mks)**

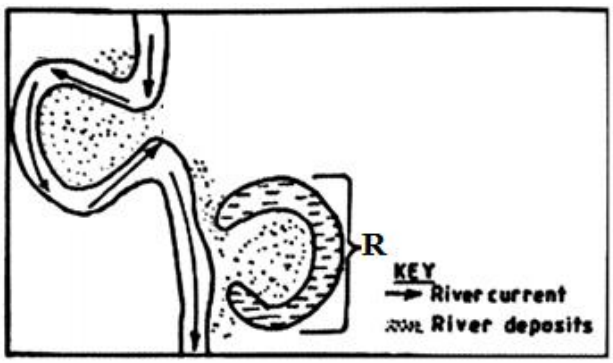
(b) Give **three** factors that influence wind direction. **(3mks)**

2. (a) Name **two** types of tectonic plate boundaries. **(2mks)**

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

3. State **four** causes of the decline of the areas under forests in Kenya. **(4mks)**

4. The diagram below shows a section of a river. Use it to answer the questions that follow.



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(a) Identify the stage of development of the section of the river. **(1mk)**

(b) A part from feature marked **R**, give **two** other features formed at this stage. **(2mks)**

(c) State **three** conditions necessary for the formation of the feature marked **R**. **(3mks)**

5. (a) Differentiate between an aquifer and a water table. **(2mks)**

(b) Give **three** problems associated with artesian wells. **(3mks)**

SECTION B

Answer question 6 and any other two questions from this section

6. Study the map of Nyeri 1:50,000 (sheet 120/4) provided and answer the following questions.

(a) (i) Give the longitudinal extent of the area covered by the map. **(2mks)**

(ii) Give the six figure grid reference of the trigonometric station at Nyeri Hill forest. **(2mks)**

(iii) Calculate the area of Nyeri forest. Give your answer in square kilometres. **(2mks)**

(b) (i) What is the bearing of The Ark Lodge from the trigonometric station **120 UT 16.** **(2mks)**

(ii) Identify **three** man-made features in grid square **7263.** **(3mks)**

(iii) Give **three** drainage features found in the area covered by the map. **(3mks)**

(c) Describe the relief of the area covered by the map. **(5mks)**

(d) Citing evidence from the map, identify **three** social services offered in Nyeri Township. **(6mks)**

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

(ii) Describe the following characteristics of minerals:

- Lustre **(2mks)**
- Colour **(2mks)**
- Cleavage **(2mks)**

(b) Describe **three** ways in which igneous rocks are formed. **(9mks)**

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

8. (a) (i) State **three** causes of faulting. **(3mks)**

(ii) Differentiate between a normal fault and a reverse fault. **(4mks)**

(b) (i) A part from rift valley, give **three** other relief features formed due to faulting. **(3mks)**

(ii) With the aid of diagrams, describe how compressional forces can lead to formation of a rift valley. **(8mks)**

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(c) Students from your class are planning to carry out a field study on an area affected by faulting.

(i) State **four** reasons why it is important to have a pre-visit to the area. **(4mks)**

(ii) Give **three** reasons why it would be inappropriate to use observation to collect data during the field study. **(3mks)**

9. (a) (i) What are ocean tides? **(2mks)**

(ii) Name **two** ocean currents along the western coast of Africa. **(2mks)**

(b) State **three** factors that determine the rate of coastal erosion. **(3mks)**

(c) With the aid of labeled diagrams, describe the formation of the following coastal features:

(i) Fringing reef **(5mks)**

(ii) Spit **(5mks)**

(d) Explain the significance of oceans to human activities. **(8mks)**

10. (a) Name three components of soil. **(3mks)**

(b) Explain how the following factors influence the formation of soil:

(i) Climate **(4mks)**

(ii) Topography **(4mks)**

(c) Describe how laterization occurs. **(6mks)**

(d) Explain four ways in which human activities contribute to soil erosion. **(8mks)**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

GEOGRAPHY

(QUESTION PAPER)

FORM FOUR

PAPER 2

TIME: 2 3/4 HOURS

INSTRUCTIONS TO CANDIDATES:

- This paper consists of **two** sections: **A** and **B**
- Answer **all** the questions in section **A**
- Answer question **6** and **any two** questions from **section B**
- All answers **must** be written in the answer booklet provided

SECTION A25 MARKS

1.a) Name three tourist attractions found in the Rift Valley of Kenya. **(3mks)**

b. Give any two measures the Kenyan government has taken to attract more tourists. **(2mks)**

2.a) Define the term agroforestry. **(2mks)**

b)State three reasons why agroforestry is being encouraged in Kenya. **(3mks)**

3.a) State two characteristics of market gardening. **(2mks)**

b)Give two reasons why horticulture is more developed in Netherlands than in Kenya. **(2mks)**

c)Cite two advantages of growing horticultural crops in green houses. **(2mks)**

4.a) What is energy crisis? **(2mks)**

b)State any three effects of energy crisis in Kenya in the recent past. **(3mks)**

5.a) State two reasons why some industries are located near the sources of raw materials. **(2mks)**

b)State two reasons why the new county government system should encourage the Jua Kali industries in their regions. (2 marks)

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SECTION B

6. The table below shows three main crops produced in Kenya in the years 2008 – 2010(amounts in metric tonnes). Use it to answer questions below.

Crop	2008	2009	2010
Maize	200,000	380,000	400,000
Wheat	100,000	130,000	150,000
Tea	250,000	300,000	350,000

a) i) Using a scale of 1cm represent 50,000 metric tonnes, draw a **comparative bar graph** to represent the data above. **(8mks)**

ii) State **two** advantages of using comparative bar graph. **(2mks)**

b) i) Name **two** countries in Kenya where wheat is grown in large scale. **(2mks)**

ii) State **three** conditions that favour wheat farming in Kenya. **(3mks)**

c) State **four** benefits of wheat growing in Kenya. **(4mks)**

d) Explain t**hree** factors that make Canada produce more wheat than Kenya. **(6mks)**

7.**(a) (i)** Name **three** types of minerals. **(3mks)**

(ii) State **three** ways in which minerals occur. **(3mks)**

(b)(i) Describe shaft mining method. **(5mks)**

(ii) Outline **three** challenges faced by shaft miners. **(3mks)**

(c) Explain **four** problems facing the mining industry in Kenya. **(8mks)**

(d) Highlight **three** ways in which mining derelicts can be reclaimed. **(3mks)**

8.(a) Name **four** major fishing grounds in the Atlantic and Pacific oceans. **(4mks)**

(b) State **five** main factors favouring these fishing grounds. **(5mks)**

(c) Name **three** types of fishing and **for each** one, state **one** method of fishing used. **(6mks)**

(d) (i) Give **four** reasons why the marine fishing industry in East Africa is not well developed. **(4mks)**

(ii) State **six** ways in which the fishing industry is of significance in Kenya. **(6mks)**

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9. (a) Apart from Mwea, name **five** large irrigation schemes in Kenya. **(5mks)**

(b) Explain **four** conditions that made Mwea a suitable location for irrigation scheme. **(8mks)**

(c) Explain **three** benefits to farmers in the Pekerra irrigation scheme. **(6mks)**

(d) Explain **three** problems experienced by farmers in the Perkera irrigation scheme. **(6mks)**

10.(a) Name **two** breeds of dairy cattle reared in Kenya. **(2mks)**

(b) State **four** factors that favour dairy farming in Denmark **(4mks)**

(c) State **five** problems faced by dairy farmers in Kenya. **(5mks)**

(d) Explain **six** factors that favour beef farming in Argentina. **(6mks)**

(e) Explain **four** ways in which the government of Kenya could assist nomadic pastoralists to improve the quality of their livestock. **(8mks)**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

HISTORY AND GOVERNMENT (QUESTION PAPER)

FORM FOUR

PAPER 1

TIME: 2½ HOURS

INSTRUCTIONS TO CANDIDATES

- This paper has three sections: A , B and C
- Answer ALL questions in section A; three questions from Section B answer and two questions from section C .
- All answers MUST be written in the Foolscap papers provided.

Section A	Question	Maximum score	Candidates Score
	1- 17		
Section B	18		
	19		
	20		
	21		
Section C	22		
	23		
	24		

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SECTION A (25 MARKS)

ANSWER ALL THE QUESTIONS IN THIS SECTION

1. Identify one source of Kenyan History. **(1mk)**

2. Name two sub-clans of the Mijikenda. **(2mks)**

3. State two natural factors that facilitated the coming of the early visitors to the Kenyan Coast before 1500 A.D. **(2mks)**

4. Name one Portuguese commander who led the Portuguese expeditions to the E. Africa Coast. **(1mk)**

5. Identify one peaceful method of conflict resolution in Kenya. **(1mk)**

6. Give two symbols of national unity in Kenya. **(2mks)**

7. Give one right of person with disability. **(1mk)**

8. State one strategic reason for the colonization of Kenya. **(2mks)**

9. Identify two social challenges of the early political associations in Kenya. **(2mks)**

10. Name one independent churches founded in Kenya before 1940. **(2mks)**

11. Identify the national philosophy associated with President Daniel T. arap Moi. **(1mk)**

12. State two features of missionary education in colonial Kenya. **(2mks)**

13. Identify one qualification of a county governor. **(1mk)**

14. Identify two functions of the Senate in Kenya. **(2mks)**

15. State one way in which criminal activities can be reduced. **(1mk)**

16. Give two sources of revenue for the national government. **(2mks)**

17. State one way in which the government of Kenya is promoting games and sports. **(1mk)**

SECTION B. (45 MARKS)

ANSWER THREE QUESTIONS IN THIS SECTION. (45 MARKS)

18.(a) Give five reasons which influenced the migration of the plain Nilotes to Kenya during the Pre-Colonial period. **(5mks)**

(b) Explain five results of the migration and settlement of the Maasai in Kenya during the pre-colonial period. **(10mks)**

19. (a) State three reason for the coming of the Portuguese to Kenyan Coast in the 15th century**.** **(3mks)**

(b) Explain six effects of the Portuguese rule on the East African Coast. **(12mks)**

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20.(a) Give five grievances of the Kikuyu Central Association which were Presented by Jomo Kenyatta to the colonial secretary in 1929. **(5Mks)**

(b) Explain five factors which led to the migration of African to the urban areas in Kenya during the colonial period. **(10mks)**

21.(a) State three factors that have contributed to high illiteracy levels in Kenya since Independence. **(3mks)**

b) Discuss six factors that have facilitated industrialization in Kenya since Independence. **(12mks)**

SECTION C (30 MARKS)

Answer any TWO questions from this section.

22. (a) State three characteristics of human rights **(3mks)**

(b) Explain six rights of an accused person in Kenya **(12mks)**

23.(a) Give three functions of the prisons department in Kenya **(3mks)**

(b) Explain six reforms that have been introduced in the prisons department in Kenya **(12mks)**

24. (a) Describe the stages in the preparation of the National Budget **(3mks)**

(b) Explain six ways in which the National Government uses its funds **(12mks)**

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Prefer Calling Amobi Group of Examiners @ 0743 333 000 or 0706 851 439 for Marking Schemes

EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

HISTORY AND GOVERNMENT (311/2)

PAPER 2

FORM FOUR (4)

Time: 2 ½ Hours

INSTRUCTIONS TO CANDIDATES

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

B) Answer **ALL THE QUESTIONS** from section **A, THREE QUESTIONS** from section B and **TWO QUESTIONS** from section **C** in the foolscaps provided.

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

Section A (25mrks)

1. Give the **main** method used by anthropologists to gather their historical data**.** **(1mk)**

2. Identify the method used making sangoan tools **(1mk)**

3. Identify the external reasons for Lewanika's collaboration with the British. **(2mks)**

4. Identify the chartered company that British used to administer parts of West Africa. **(1mk)**

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5. Give the reasons why the location of Samore Toure's second empire contributed to his defeat by French. **(2mks)**

6. Identify two ancestors of man associated with the making of Oldowan tools. **(2mks)**

7. List two invention which Jethro Tull, a British farmer, invented **(2mks)**

8. State two regions where salt was mined during the Trans-Saharan trade **(2mks)**

9. State two ways in which knowledge of iron-working led to the rise of kingdoms in the pre-colonial period. **(2mks)**

10. Identify the social classes that made up the Buganda society in the pre-colonial period. **(2mks)**

11. State one way through which the European nations maintained peace among themselves during the partition of African. **(1mk)**

12. State two duties of Native Affairs Department in Zimbabwe during the pre- colonial period. **(2mks)**

13. Name the underground movement that spearheaded armed resistance in South Africa during the apartheid system. **(1mk)**

14. Identify one weapon used during the cold war. **(1mk)**

15. Identify the vessel used in space exploitation. **(1mk)**

16. Give the UN agency tasked with promoting workers welfare. **(1mk)**

17. State the official head of commonwealth organization. **(1mk**

SECTION B: (45 MARKS) -ANSWER ANY THREE QUESTIONS

18a) Identify three reasons why African slaves were more preferred than other races during the Trans – Atlantic trade. **(3mks)**

b)Explain six factors that contributed to the decline of Trans – Saharan trade. **(12mks)**

19a) Give three advantages of using radio over newspaper in modern society. **(3mks)**

b)Discuss six contribution of television of economic development. **(12mks)**

20a) Outline five factors that led to the rise of Shona kingdom during the 19^{th} **(5mks)**

b)Describe the political organization of Asante Empire in the pre- colonial period. **(10mks)**

21a)Other than Nigeria name other three countries colonized by the British in West Africa **(3mks)**

b) Explain six reasons why the British used direct rule in Zimbabwe. **(12mks)**

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SECTION C (30MRKS) ANSWER ANY TWO QUESTIONS

22a) Name three political parties that struggled for independence in Ghana. **(3mks)**

b) Explain six factors for the rise nationalism in Ghana. **(12mks)**

23a) Give three reasons for the failure of peace settlement after the First World War. **(3mks)**

b) Discuss six causes of the Second World War. **(12mks)**

24a) Name three founders of Non- Aligned Movement. **(3mks)**

b)Explain six factors that undermined the activities of Non- Aligned movement. **(12mks)**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

HOME SCIENCE

PAPER 1 (Theory)

TIME:2 ½ hours

Instructions to students

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

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

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

d) *Answer **all** the questions in sections **A** and **B** and any two questions in section **C***

e) *Answers to all the questions must be written in the spaces provided in the paper*

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

g) ***Students should answer the questions in English***

For examiner's use only

Section	Question	Maximum Score	Student's Score
A	1- 20	40	
B	21	20	
C		20	
		20	
TOTAL SCORE		100	

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SECTION A: (40 marks)

1. State **two** signs of vitamin A deficiency. **(1mk)**

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2. List **four** accessories used in home decoration. **(2mks)**

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3. Mention **two** reasons why a classroom should be well ventilated. **(2mks)**

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4. Outline **three** dangers of weaning a baby late. **(3mks)**

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5. Name **two** metals used in making saucepans. **(1mk)**

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6. Mention **two** points on the care of a baby with diarrhoea. **(2mks)**

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7. Suggest **two** factors that determine the choice of an opening. **(2mks)**

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8. Mention **three** danger signs that should be reported to a doctor when taking care of the sick at home. **(3mks)**

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9. State the reason for sprinkling water on an earthen floor before sweeping. **(1mk)**

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10. Suggest **three** reasons for laundering clothes. **(3mks)**

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11. Give **two** meanings of basting in Home Science. **(2mks)**

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12. Highlight **three** points to look out for when buying carrots. **(3mks)**

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13. Identify **four** labour saving equipment that may be found in a modern kitchen. **(2mks)**

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14. Mention **three** problems that consumers face when shopping. **(3mks)**

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15. Suggest **four** possible danger areas in the home where a child can drown at home. **(2mks)**

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16. Give **two** ways of disinfecting hospital linen. **(1mk)**

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17. Highlight **four** signs of dehydration in a baby. **(2mks)**

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18. Give **two** qualities of a good fabric for beginners in sewing. **(2mks)**

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19. Suggest **four** ways of finishing the neckline of a little girl's dress. **(2mks)**

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20. Mention **two** items in a First Aid kit that could be used to manage a cut. **(1mk)**

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SECTION B: (20 marks)

COMPULSORY

Answer question 21 in the spaces provided after the question

21. You are going out on a youth camp over the holiday.

a) Outline the procedure you will follow when cleaning the coloured canvas bag that you will use to pack your clothes. **(7mks)**

b) Describe how you will clean the hand mirror you will pack to use at the camp. **(6mks)**

c) Outline how you will clean the muddy plastic sandals you will use at the camp. **(7mks)**

SECTION C: (40 marks)

*Answer any **two** questions from this section in the spaces provided at the end of this section.*

22.

a) Outline **five** advantages of food preservation. **(5mks)**

b) Explain **five** advantages of using a shopping list. **(5mks)**

c) Highlight **four** dangers of washing clothes without sorting them. **(4mks)**

d) Discuss **three** points to observe when planning meals for an elderly person. **(6mks)**

23.

a) Draw and name **six** possible care label symbols that may be found on a loose coloured cotton shirt. **(6mks)**

b) Outline **five** reasons why consumers need to be informed. **(5mks)**

c) Suggest **four** possible hindrances to breastfeeding. **(4mks)**

d) Mention **five** reasons why play is important in the life of a three year old child. **(5mks)**

24.

a) Suggest **five** ways of ensuring safe outcomes in pregnancy. **(5mks)**

b) Highlight **four** qualities of a good laundry brush. **(4mks)**

c) Discuss **three** considerations to bear in mind when painting a bedroom. **(6mks)**

d) Mention **five** dangers posed by piles of uncollected garbage. **(5mks)**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

441/2

HOME SCIENCE

(CLOTHING CONSTRUCTION)

PAPER 2

PRACTICAL

TIME: 2½ HOURS

Kenya Certificate of Secondary Education (K.C.S.E)

441/2

HOME SCIENCE

(CLOTHING CONSTRUCTION)

PAPER 2

PRACTICAL

TIME: 2½ HOURS

INSTRUCTIONS TO CANDIDATES

a) This paper consists of **three** printed pages.

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

c) Candidates are advised to ensure that the pattern pieces match with sketches shown on question paper.

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A pattern of a pair of shorts is provided. You are advised to study the sketches, instructions and the layout carefully before you begin the test.

MATERIALS PROVIDED.

1. Pattern pieces.
   - A short front
   - B Short back
   - C Pocket
   - D Waistband
   - E Front short facing
   - F Back short facing
2. Plain light weight cotton fabric 50cm long by 90cm wide.
3. Cotton sewing thread to match the fabrics
4. One large envelope

THE TEST

Using the materials provided cut out and make the left leg of the short to show the following processes.

a) Making of the back dart.

b) Preparing and attaching the pocket.

c) Working of the inner leg seam using machine fell seam.

d) Working of the side seam using an open seam.

e) Attaching the facings onto the lower edge of the shorts.

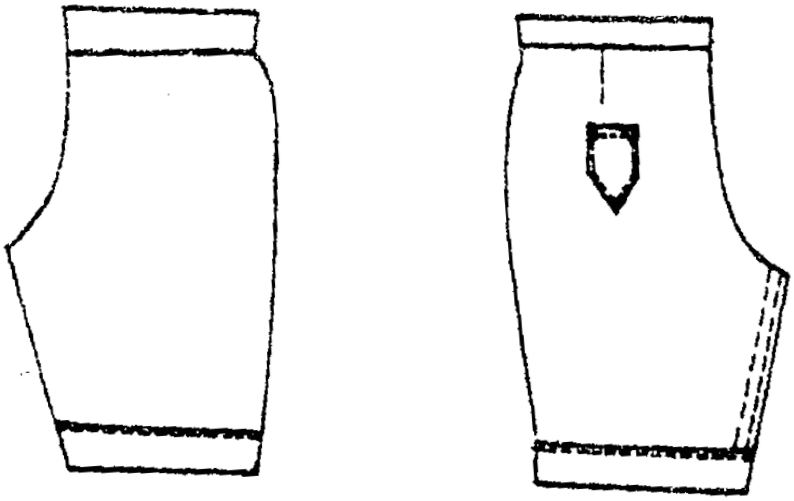
f) Preparing and attaching the waistband.

g) Finishing the waistband using hemming stitches.

At the end of the examination firmly sew on your work on a single fabric a label bearing your name and index number. Remove the needles and pins from your work then fold your work neatly and place it in the envelope provided. Do not put scrapes of fabric in the envelope.

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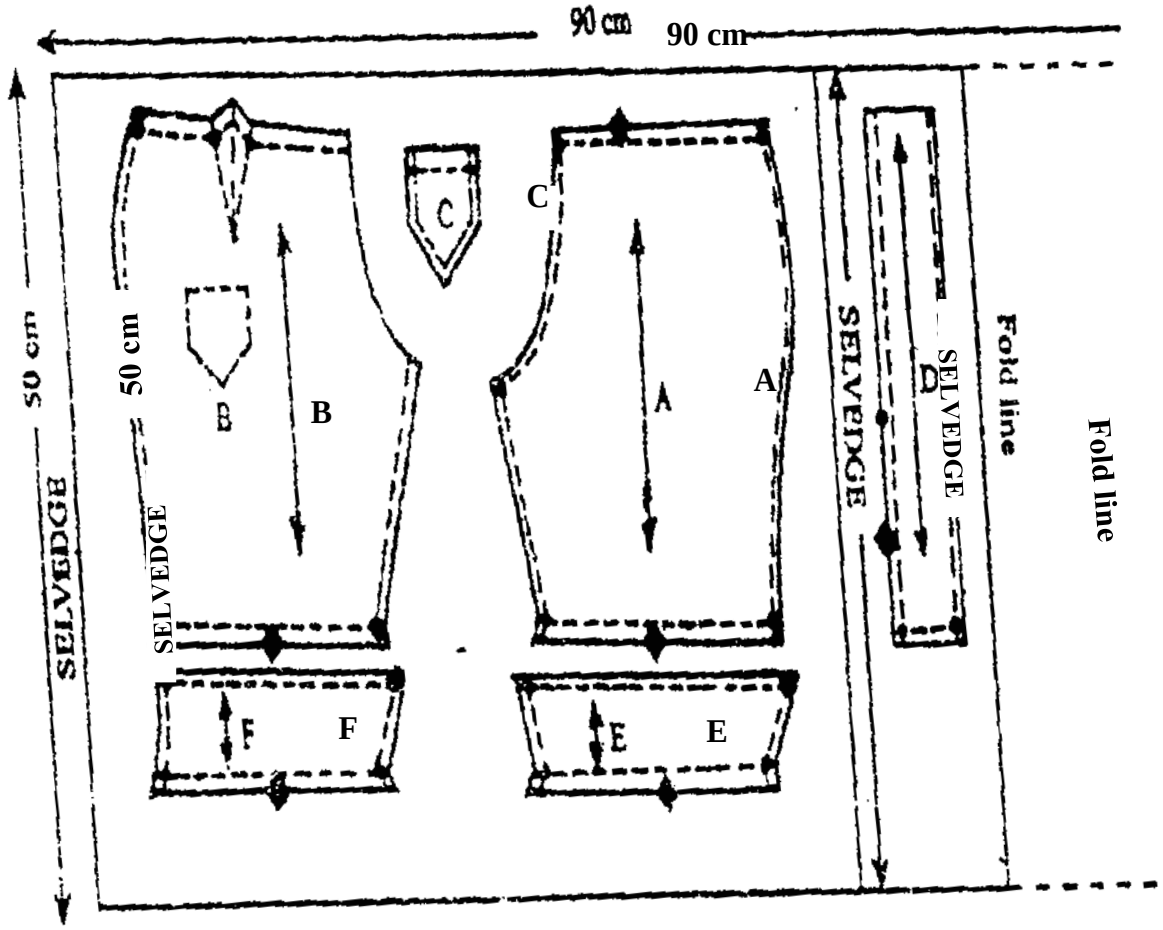
VIEW OF PAIR OF SHORTS



F FRONT

BACK

LAYOUT (NOT DRAWN TO SCALE)



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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

441/3

HOMESCIENCE

FOODS AND NUTRITION

PAPER 3

PRACTICAL

1 ¾ HOURS

FORM FOUR TERM 1 EXAM

PLANNING; 30 MINUTES

PRACTICAL TEST SESSION; 1 ¼ HOURS

INSTRUCTION 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 to your order of work during the practical session

5. You are allowed to take away ONLY your reference materials at the end of the planning session

6. You are not allowed to bring additional noted to the practical session.

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THE TEST

You are going out camping and need to pack some food for lunch. Using all the ingredients listed below; prepare, cook and pack a suitable meal for you and your friend. In addition prepare and pack a suitable refreshing drink.

INGREDIENTS

Irish potatoes/wheat flour

Liver/chicken

Sugar

Oil/Cooking fat

Carrots

Capsicum

Salt

Lemon

Onion

Cucumber/cabbage

Fruit in season

PLANNING SESSION- 30 MINUTES

Use separate sheets of paper for each tasks listed below and a carbon paper to make duplicate copies. Then proceed as follows:

1. Identify the food items and write down their recipes.
2. Write down your order of work
3. Make a list of foodstuff, materials and equipment you will require.

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

JINA: …….....

SHULE: …….....

TAREHE:…….. NAMBARI YA USAJILI: ……SAHIHI:……

102/1

KISWAHILI INSHA

KARATASI YA KWANZA (102/1)

KIDATO CHA NNE (4)

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.*

1. Wewe ni katibu wa jopo lililochunguza sababu zinazozifanya jamii mbalimbali nchini zisiwe na maridhiano na utangamano. Andika ripoti.

2. Mtoto mvulana anakabiliwa na hatari ya kukosa kufaulu masomoni kuliko mtoto msichana katika karne hii. Fafanua.

3. Andika insha inayofafanua ukweli wa methali: Bila silaha usiingie vitani.

4. Andika insha itakayoanza kwa maneno yafuatayo: Sauti hiyo ilikuwa ya kutisha…

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

JINA: …….....

SHULE: …….....

TAREHE:…….. NAMBARI YA USAJILI: ……SAHIHI:……

KISWAHILI

KIDATO CHA NNE (4)

102/2

MUDA: SAA 2:30

MAAGIZO:JIBU MASWALI KATIKA NAFASI ULIOACHIA

1.SEHEMU YA A UFAHAMU (15)

Soma ufahamu huu kisha uyajibu maswali yanayofuata:

Basi huu ni mwanzo tu *Mwanzo wa ngoma ni lele*.Huu ni mwanzo wa safari ndefu .Itachukua miaka na mikaka.Lakini msiwe na papara.Sharti mwanzo tutanabahi twaelekea wapi ndipo tuamue tutasafirije .Tahadhari na hatari ya hasira , visasi na papara pamoja na maradhi yanayozidi yote yaani maradhi ya matumaini yanayozidi uhalisia.Matumaini yaliopindukia ndiyo huwalewesha watu wakadhani watapata afueni wakizifuata pepo za siasa za chama kimoja au siasa za vyama vingi , mfumo wa soko huria au mfumo wa ukiritimba , mfumo wa utandawazi au mfumo wa kibepari , utawala wa kidekteta au utawala wa kidemokrasia na udini, ujamaa na ukomonisti na kadhalika.

Hatari kabisa ni ya kujenga nyumba ya karata.Nasema tena,tahadhari na ulevi wa ushindi .Mimi nashauri hivi ;hatua ya kwanza ya elimu si elimu ya shahada au stashahada zipatikanazo vyuoni.Elimu ya kuijielewa sisi ni nani twatoka wapi , twaelekea wapi na tutaurejeshaje utu pahali pake mahsusi toka kule mwituni kwa wanyama uliotokomea.

“Amani awe mtemi !”Umati ukadai Hapana hata kidogo.Badala yake acha amani iwe na mtemi mpya msinivishe joho ambalo si makamo yangu kulivaa,” aliwaambia .”Kaeni mfikirie vyema juu ya

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mustakabali wenu.Nilichodhamiria mimi ni kushirikiana na ndugu yangu Madhubuti kumnyonyoa kipungu mmoja , ila sikutaka niingie pahala pake niruke juu nikijihadaa kwamba nitafika mbinguni." Ila msikubali dhuluma .Dhuluma msikubali , ikija dhuluma tena msimlaumu mtu mwingine, jilaumini wenyewe.Jilaumini tu wenyewe .Nawakumbusha tu kwamba kuwepo mamlakani kwa mtemi Hamisi muda huu wote si kosa lake tu .Alisema Amani.Ni kosa letu sote .Ni kosa letu sote kwa kukubali dhuluma zake na udahlili wetu.Kwa kila mtawala katili kuna umma uliomruhusu ama kumpa uwezo wa kutekeleza ukatili wake.

Pia hatuwezi kuwa binadamu kamili endapo hatuoni walemavu kama wenzetu .Tutakuwa tumelemaa ulemavu mbaya zaidi kuliko ulemavu.Kauli hii ilkuwa tokeo la funzo alilojifunza Mwalimu Fasiri kutokana na amali na kalima za imani kuwaelekea Watoto wake walemavu.

Maswali

a) Kulingana na mwandishi ni mambo gani ambayo yafaa tujitahadharishe nayo? **(alm3)**

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b)Tambua aina za elimu katika maisha . **(alm3)**

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c) Kulingana na taarifa ni mambo gani yanayochochea dhuluma katika jamii? **(alm4)**

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d) Ukirejelea kifungu hiki, eleza maana ya ngoma ni lele. **(alm2)**

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e) Binadamu kamili ana sifa gani? **(alm1)**

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f)Eleza maana ya vifungu hivi kama vilivyotumika katika kifungu;

i) nikijihadaa nitafika mbinguni **(alm1)**

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ii) Kumnyonyoa kipungu **(alm1)**

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2. SEHEMU YA B. UFUPISHO (alm15)

Soma kifungu kisha ujibu maswali

Ripoti za kila mara kuhusu uharibifu wa pesa za umma katika serikali za kaunti ni za kusikitisha .Kuna mabilioni ya pesa za mlipa ushuru ambazo hufujwa katika serikali kuu na hivyo basi wananchi wanakosewa sana wanapoona mtindo huu ukiendelea pia katika serikali za kaunti. Wakati katiba ilipitishwa mwaka wa 2010, Wakenya wengi walikuwa na matumaini mno kwamba ugatuzi ungewatatulia matatizo ambayo walikuwa wakiyapitia katika tawala zilizotangulia hasa katika maeneo yaliotengwa kimaendeleo.

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Miaka Ishirini na mbili baadaye, kuna mafanikio yamepatikana ila hatua kubwa Zaidi inaweza kupigwa katika kuboresha Maisha ya raia kama mianya ianyotumiwa kufuja pesa za raia itazibwa. Wizi huu unajumuisha pia jinsi magavana wanavyobuni nafasi za kazi zisizo na maana ambazo wakati mwingine hutoewa kwa jamaa na marafiki wao , ni sharti ukomeshwe mara moja.

Kuna wananchi wengi ambao tayari wameanza kufa moyo kuhusu umuhimu wa ugatuzi ilhali ukwel ni kwamba hatungependa kurejelea utawala ulio chini ya serikali kuu pekee.Changamoto za ugatuzi zinazosababishwa na ulafi wa viongozi wachache zinatoa nafasi kwa wakosoaji wa mfumo wa uongozi kushawishi wananchi n ahata wahisani wasishughulike kuchangia katika maendeleo ya kaunti zao. Juhudi zozote zile za maendeleo haziwezi kufanikishwa bila ushirikiano kutoka kwa wananchi na wahisani na hivyo basi ni jukumu la viongozi kuonyesha nia ya kutumia mamlaka walizopewa kwa manufaa ya raia. Tume ya maaddili ya kupambana na ufisadi (EACC) kufikia sasa imeonekana kufanya kazi nzuri kwa kuwasaka na kuwashtaki magavana walio mamlakani na wengine walioondoka kwa kushukiwa kufuja mali za umma.Tungependa asasi zote zinazohusika na msuala ya kupambana na uhalifu , Pamoja na wadu wengine katika jamii wenye nia njema kwa wananchi wasitambue mambo maovu yanayotendeka katika kaunti zao.

Nchi hii inatawala kwa misingi ya kisheria na hivyo basi hakuna sababu kumhurumia kiongozi yeyote anayekiuka sheria anapokuwa mamlakani kwa msingi wa mamlaka anayoyashikilia .Ni kupitia adhabu kali za kisheria pekee ambapo tutafanikiwa kukomesha uongozi mbaya kwani kama wananchi watakuwa wakisubiri kuwaadhibu wahusika kwa kuwaondoa mamlakani pekee watakuwa wametoa nafasi ya ufujaji kwa viongozi wapya kila miaka mitano.

a) Fupisha ujumbe wa aya tatu za kwanza kwa maneno 80. **(Alm8, alm1 ya mtiririko)**

Matayarisho

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Nakala safi

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b)Fupisha aya mbili za mwisho kwa maneno 70.(alama 7, 1 ya mtiririko)

Matayarisho

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Jibu

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3.SEHEMU YA C: SARUFI NA MATUMIZI YA LUGHA (alama40)

a)

i) Andika vigezo muhimu vya kuainisha konsonanti **(alm2)**

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ii) Tofautisha sauti zifuatazo /sh/ na /ch/ **(alm1)**

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b)Tumia kiimbo katika sentensi mbili tofauti sahii kudhihirisha uamilifu wake**.** **(al.2)**

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c) Eleza maana za maneno yafuatayo kwa kuzingatia mahali ambapo shadda imewekwa **(alm2)**

‘ala

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A’la

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d) Fafanua dhana ya sauti mwambatano kwa kutolea mfano sahihi. **(alm2)**

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.e) Bainisha majukumu ya viambishi katika kitenzi hiki **(alm2)**

Nimemkimbilia

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f)Weka nomino hizi katika ngeli mwafaka

i)debe **……** **(alm1)**

ii) Mtaimbo**……** **(alm1)**

g)Yakinisha

Mgonjwa yule hasikii wala kusema lolote**.** **(alm2)**

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h) Andika kwa ukubwa **(alm2)**

Panya huyo alinaswa mtegoni na nyama kubwa mdomoni.

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i)Geuza kauli iliyo kwenye mabano

i)Wanyama pori huwavutia watalii(tendwa) **(alm1)**

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j) Andika katika usemi halisi **(alm3)**

Mama alitaka kujua kama kulikuwa na jamaa yake ambaye alikuwa ameugua ugonjwa huo.

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k) Tumia kiwakilishi cha pekee chenye kuleta dhana ya msisitizo katika sentensi sahihi **(alm2)**

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l) Changanua kwa njia ya mstari **(alm4)**

Waswahili husema chema chajiuza ,kibaya chajitembeza.

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m) Andika sentensi upya kulingana na maagizo **(alm2)**

Ongezeko la visa vya uhalifu linatishia kuangamiza amani katika miaka ya hivi karibuni.

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n) Tunga sentensi moja kwa kutumia kirai kihusishi kisha uigie mstari **(alm2)**

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o) Bainisha vishazi

Tangu alipowasili kutoka Nairobi amewasaidia maskini wengi**.** **(alm2)**

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p)Eleza matumizi mawili ya alama ya mkato **(alm2)**

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q) Onyesha shamirisho na chagizo katika sentensi ifuatayo **(alm3)**

Wanawali walirembeshwa nyusi kwa wanja mweusi.

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……

r)Kamilisha methali ifuatayo **(alm1)**

Mchama ago hanyeli**……..**

4.ISIMU JAMII (ALAMA 10)

a)Taja mambo matatu yanayopelekea kufa kwa lugha **(alm3)**

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……

b) Isimu jamii ina umuhimu gani kwa wanafunzi wa Shule ya Upili ? **(alm4)**

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c) Andika sifa tatu utakayotumia kuwatangazia watu kuhusu kinyang'anyiro cha soka. **(alm3)**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

JINA: …….....

SHULE: …….....

TAREHE:…….. NAMBARI YA USAJILI: ……SAHIHI:……

KISWAHILI

MUHULA WA KWANZA

KIDATO CHA NNE (4)

102/3

MUDA: SAA 2:30

MAAGIZO KWA MTAHINIWA

a) *Jibu maswali* ***manne*** *pekee*

b) *Swali la* ***kwanza*** *ni la* ***lazima***

c) *Maswali hayo mengine matatu yachaguliwe kutoka sehemu nne zilizobaki ; yaani : riwaya, Tamthlia, hadithi fupi na ushairi.*

d) *Usijibu maswali mawili kutoka sehemu moja.*

Kwa matumizi ya mtahini pekee

Swali	1	2	3	4	5	6	7	8	Jumla

SEHEMU YA A: LAZIMA:FASIHI SIMULIZI

1. **Soma kisa kifutacho kasha ujibu maswali**

Hapo zamani za kale paliishi mtoto katika kisima kimoja. Siku moja, mtoto aliokota kijiwe karibu na soko kuu. Kijiwe kilikuwa kikimeremeta kwa rangi mbalimbali na kuzingirwa na pete ya dhahabu.

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Mtoto huyo na wenzake walianza kurushiana kijiwe hicho. Baada ya muda kikaanza kuongezeka umbo na kuonekana kama kiwiwili cha binadamu. Kikaanza kuwakimbiza wale watoto wawili. Kutokana na ukelele wao, watu walikuja kutazama ni nini kilikuwa cha mno. Walipofika walikutana ana kwa ana na dubwana hilo. Lilizidi kuongeza kwa umbo na likawameza wote pamoja na mifugo wao. Wachache waliojaribu kukimbia liliwashika kwa mikono yake mirefu na mipana. Kwa bahati njema kulikuwa na mama mmoja aliyeyaona hayo yote. Alikuwa mbali kiasi na hapo. Aliteremka kutoka kilele cha mlima na kuwapata wakulima makondeni na sawia akawajuza kuhusu kilichomwogofya sana. Wote wakaacha shughuli zao na wakatwaa silaha zao wakaelekea soko kuu.

Dude sasa lilikuwa limejilaza baada ya shibe. Wakulima wale waliwachagua watu sita ambao walijulikana kwa ushujaa wao. Pamoja walilinyemelea lile nyangarika na kulikata mara moja. Lilitoa mkoromo mkuu kabla halijakata kamba. Punde, wanakijiji kwa uangalifu mkubwa walitoboa tumbo lake wakitarajia kupata maiti za wapenzi wao. Wote walijawa na furaha kuu walipoona wapenzi wao wakichomoza kutoka tumboni, mmoja baada ya mwingine hadi akatoka yule wa mwisho. Mbuzi, kondoo na ng'ombe wote walitoka mmoja mmoja.

Siku hiyo kuliandaliwa sherehe kuu ya kumshukuru muumba kwa wema wake. Watoto wakashauriwa wasithubutu kuchezea vitu wasivyojua. Hadithi yangu inaishia hapo.

a) Bainisha kipera cha utungo huu. **(alm.1)**

b) Fafanua sababu nne za kuthibitisha jibu lako. **(alm4)**

c) Eleza manufaa manne ambayo jamii itapata kwa kurithisha kipera hiki kwa jamii. **(alm4)**

d) Bainisha shughuli mbili za kiuchumi zinazoendelezwa na jamii inayosawiliwa na utungo huu **(alm2)**

e) Bainisha mbinu za kimtindo ambazo msimulizi ametumia kufanikisha ujumbe wake. **(alm4)**

f) Kipera hiki kimeanza kudidimia kutoka kwa jamii yako. Eleza hatua tano ambazo utashauri jamii yako ichukue ili kudumisha kuwepo wake katika jamii. **(alm.5)**

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SEHEMU YA B: USHAIRI

2. Soma shairi hili kisha ujibu maswali.

Wasiwasi n'ondokeya, ondoka enenda zako,
Ondoka andama ndiya, n'ondosheya uso wako,
Ondoka!wanisikiya? ziwate jeuri zako,
Jishughulishe na yako, yangu wayatakiani?

Wasiwasi siitaki, suhuba yako si nzuri,
Haisatahimiliki, uwovu umekithiri,
Inganyoshwa hainyoki, ikukutene kikiri
Siitaki yako shari, enda zako wasiwasi

Huna kazi ufanyayo, ela kuwafitinisha,
Viumbe na zao nyoyo, vitwa kuwagotanisha,
Hiino ndiyo kaziyo, yenye kukufurahisha,
Ni kazi isokuchosha, mno umeizoweya.

Tukaapo wanambia, hayawi niyatakayo,
Kwamba tamaa ngatiya, nasumbuwa wangu moyo,
Kwamba hata ningojeya, hayo niyangojeyayo,
Ng'o siyapati hayo, ni bure najisumbuwa.

Mara waja na bahari,mambo yalivyo nyumbani,
Ati mambo si mazuri, mambo yote tafashani,
Wanitaka nifikiri,usemayo ni ya yakini,
Nisononeke moyoni, upate kufurahika.

Au mara unijiya, na kingine kisahani,
Kukhusu zao afiya,hao waliyo nyumbani,
Huwa hwishi kunambiya, hali zao taabani,
Zingawa; watakiyani? Ni zako au ni zao?

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Na mara huja nambiya, nitakapotoka humu,
Ya kwamba yaningojeya, nde maisha agumu,
Ulilonikusudiya, ni kunitiya wazimu?
Kama ndiyo yako hamu, basi ushatahayari

Huo urafiki wako, wa kuja niungulisha,
Kunipa masikitiko, na mateso yasokwisha,
Kutoka leo ni mwiko, sitautaka maisha,
Kamwe hutanikondesha, tokomeya mwanakwenda.

(Abdilatif Abdala, 1971)

Maswali

a) Eleza ujumbe wa shairi hili. **(alm3)**

b) Taja na ueleze umuhimu wa aina ya urudiaji katika shairi hili. **(alm2)**

c) Bainisha aina zifutazo za idhini za kishairi katika shairi hili **(alm4)**

Inksari

Lahaja

Mazda

Kubananga sarufi

d) Eleza namna sheria za kiarudhi zimetumiwa kuboresha ubeti wa kwanza wa shairi hili **(alm.4)**

e) Bainisha nafsinenewa wa shairi hili. **(alm.2)**

f) Eleza toni katika shairi hili. **(alm.1)**

g) Andika ubeti wa mwisho katika lugha nathari. **(alm.4)**

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SEHEMU YA C: NGUU ZA JADI: JIBU SWALI LA 3 AU 4

3. Bainisha nguu mbalimbali zilizotinga maendeleo ya nchi ya Matuo kulingana na riwaya ya Nguu za Jadi. **(alm20)**

4. ‘‘Mrima, dunia yote inajua aliyemsaliti Yesu Kristo. Unajua mtu huyo aliishia wapi?

a) Fafanua muktadha wa dondoo hili **(alm4)**

b) Tambua mbinu mbili za kimtindo zinazojitokeza katika dondoo hili. **(alm4)**

c) Fafanua namna wahusika walivyowaendea kinyume wenzao katika riwaya ya Nguu za Jadi. **(alm12)**

SEHEMU YA D: BEMBEA YA MAISHA: JIBU SWALI LA 5 AU 6

5. ‘‘Japo nilipungukiwa na mengi niliyotamani, nilitaka nyinyi muote mbawa mpae juu na kuitazama dunia kutoka kule juu kwa niaba yangu. Stahamala yangu haikuniletea hasara...’’

a) Fafanua muktadha wa dondoo hili **(alm4)**

b) Bainisha toni inayojitokeza katika dondoo hili **(alm2)**

c) Eleza umuhimu wa mandhari ya dondoo hili **(alm8)**

d) Onyesha namna stahamala ya msemaji ilimletea manufaa **(alm6)**

6. ‘‘....Mara ile ya kuzuka, ulikuwa kimbaumbau mwiko wa pilau. Upepo kidogo tu ungekuyumbisha kama jani kavu wakati wa kipupwe.’’

a) Tambua mbinu nne za kimtindo katika dondoo hili **(alm4)**

b) Onyesha namna wahusika mbalimbali walivyoyumbishwa na hali tofauti katika tamthilia **(alm10)**

c) Eleza umuhimu wa msemaji wa maneno haya katika kukuza : **(alm6)**

i) ploti

ii) wahusika wengine

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SEHEMU YA E: MAPAMBAZUKO YA MACHWEO NA HADITHI NYINGINE: JIBU SWALI LA 7 AU 8

7. Fafanua namna ukiukaji wa haki umeendelezwa katika hadithi zifuatazo **(alm20)**

a) Fadhila za Punda

b) Sabina

c) Kifo cha Suluhu

d) Nipe Nafasi

Pupa: F.M. Kagwa

8. a. "Pupa imenitumbukiza kwenye kisima nilichochimba, sasa naingia mwenyewe …"

a) Bainisha mbinu za kimtindo katika dondoo hili. **(alm2)**

b) Huku ukitolea mifano mwafaka, onyesha ukweli wa kauli hii. **(alm8)**

Kila Mchezea Wembe: Pauline Kea Kyovi

8. b"Dunia hii nayo kubwa, anasa zake nyingi huwezi kuzimaliza"

a) Eleza muktadha wa dondoo hili. **(alm4)**

b) Fafanua toni katika dondoo hili. **(alm2)**

c) Jadili namna ambavyo anasa imejitokeza katika hadithi hii. **(alm4)**

MWISHO

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

MATHEMATICS PAPER 1 (121/1)

FORM FOUR (4)

TIME: 2 ½ HOURS

Instructions to Candidates

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

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

(c) *This paper consists of **two** sections**; Section I** and **Section II.***

(d) *Answer **all** the questions in **Section I** and any **five** 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, except where stated otherwise.*

(h) ***Candidates should check the question paper to ascertain that all the pages are printed as indicated and that 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

								Total
17	18	19	20	21	22	23	24	

Grand Total

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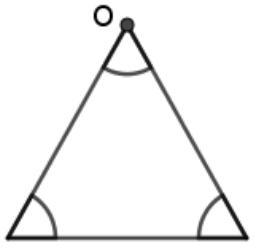
SECTION I (50 Marks)

*Answer **all** the questions in this section in the spaces provided below each question*

1. Ibrahim spends a quarter of his monthly salary on school fees, one-ninth on water and electricity bills, two-thirds of the remainder on house up keep and saves the rest. The difference between what he saves and the amount he spends on house up keep is Kshs. 10,350. Calculate Ibrahim's monthly salary. **(3mks)**

2. Lessons in Lake Primary and Kisumu Girls High Schools take 30 minutes and 40 minutes respectively. The two bells ring simultaneously at 7.50 a.m. How many times will they ring together again between 7.50 a.m. and 3 p.m.? **(3mks)**

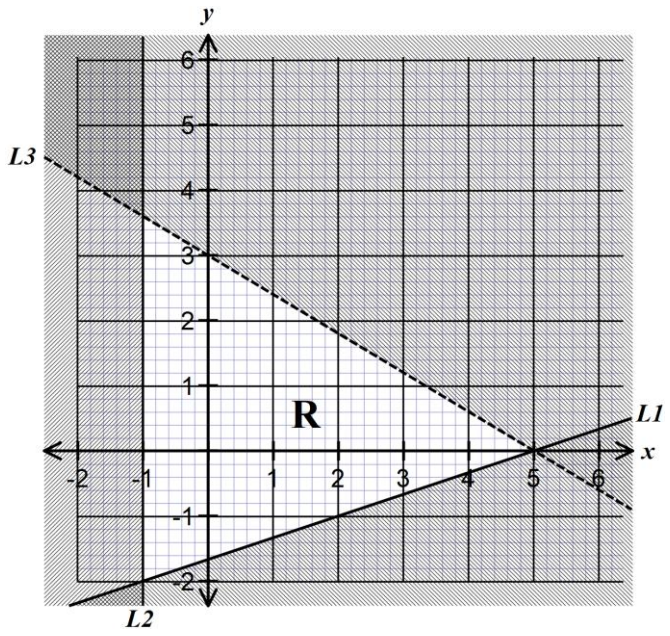
3. Complete the figure below to show a rotational symmetry of order 6 about O. **(3mks)**



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4. The sum of the interior angles of a regular polygon is 1260^0. Find the number of sides of the polygon, hence give the name of the polygon. **(3mks)**

5. Find the inequalities that satisfy the region labeled **R** in the figure below. **(3mks)**



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6. Rodi walked from Kisian to Otonglo, a distance of 8 km for 1½ hours. He then took a motorbike to Rabuor that traveled at a speed of 80 km/h and took 15 minutes. From Rabuor, he boarded a car to Kendu Bay, 60 km away and took 45 minutes to arrive in Kendu Bay. Calculate his average velocity for the whole journey. **(3mks)**

7. Simplify the expression **(3mks)**

$$\frac{(-4b+3a)^2-(3a+4b)^2}{12a}$$

8. A saleslady earns a commission of 3% and 5% for sale of goods up to Kshs. 100,000 and above Kshs. 100,000 respectively. In a certain month. Sarah's total commission was Kshs. 15,100. Calculate the value of goods that Sarah sold that month. **(3mks)**

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9. The position vectors of points A and B are $2\boldsymbol{i} - 3\boldsymbol{j} + 9\boldsymbol{k}$ and $-5\boldsymbol{i} + \boldsymbol{k}$ respectively. Calculate $|\boldsymbol{AB}|$, leaving your answer in surd form. **(4mks)**

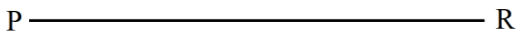
10. Nerry paid Kshs. 955,000 for a car at Sammy Traders. This was a discount of 4.5%. Sammy Traders made a profit of 16% from this sale. What is the amount of profit that Sammy Traders realized from this sale? Give your answer to the nearest Kshs. 100. **(4mks)**

11. Solve for θ in the equation

$2\sin(2\theta - 30^0) = 1$ for $0^0 \leq \theta \leq 360^0$ **(4mks)**

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12. The line below shows a diagonal of a rhombus PQRS. Given that QS=5 cm, complete the rhombus. Hence find the PQ. **(3mks)**

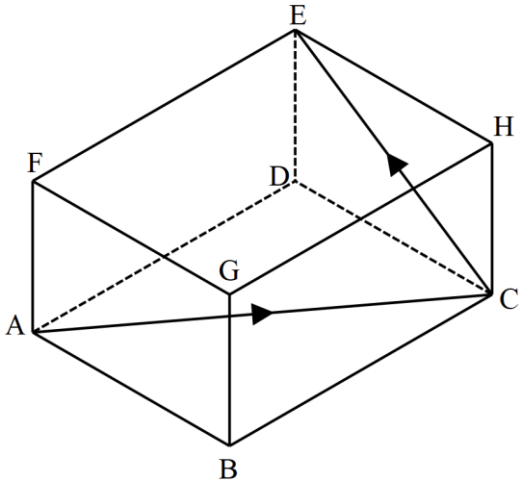


13. The cost of three toners and four cartridges is Kshs. 36,000. Oyoo bought one more toner and one less cartridge that are similar to the above and paid and paid Kshs. 1,500 more. Calculate the cost of one toner and one cartridge. **(3mks)**

14. A measuring cylinder has a diameter of 7 cm. Water fills the cylinder up to a height of 6 cm. A solid sphere is immersed into the cylinder and the height of water in the cylinder increases to 10 cm. calculate the radius of the sphere correct to 4 significant figures. **(3mks)**

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15. The figure below shows an open cuboid ABCDEFGH. A particle traces a path from A to E through C as indicated by the arrows.



Draw the net of the solid and show the path on it. **(3mks)**

16. Without using a calculator or mathematical table, solve for x in **(2mks)**

$x^5 = 161{,}051$

SECTION II (50 marks)

Answer any ***five*** questions in this section

17. A cylindrical milk urn has diameter 40 cm and height 1.4 metres.

(a) Calculate the capacity of milk in litres in the urn when it is full, to the nearest litre. Use $\pi = \frac{22}{7}$.

(2mks)

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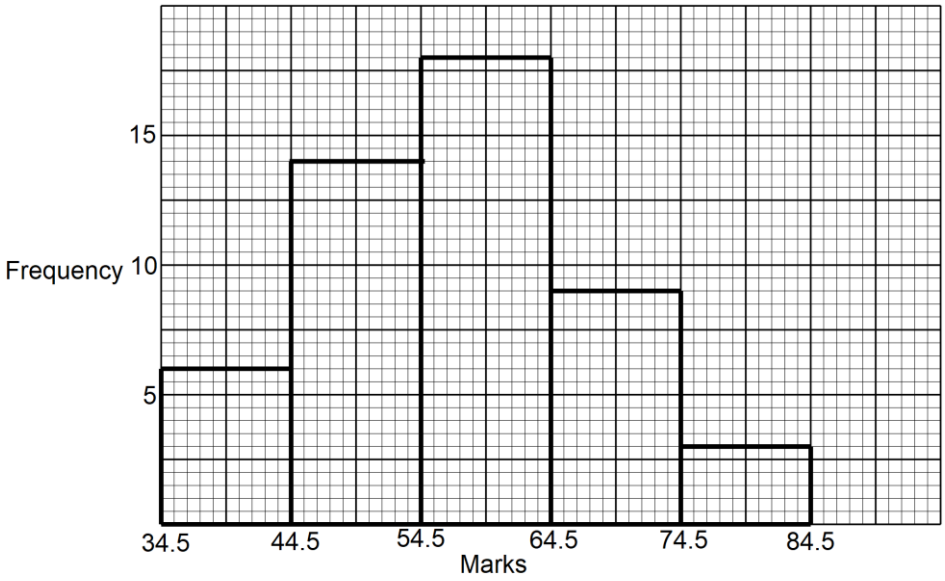
(b) The milk is packed into tetrahedron packets of capacity 200 ml. Calculate the number of packets used. **(2mks)**

(c) The packets are packed into boxes that contain 24 packets each. How many complete boxes are used to package the milk? **(2mks)**

(d) Each box is sold at Kshs. 840, a profit of 12%. Calculate the buying price of each packet. **(4mks)**

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18. The figure below shows a histogram drawn for marks scored by students in a mathematics contest



(a) State the modal class. **(1mk)**

(b) Draw a frequency distribution table from the histogram. **(2mks)**

(c) Use the table in (b) above to calculate the mean mark **(3mks)**

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(d) On the histogram, draw a vertical line showing where the median mark lies **(4mks)**

19. The displacement S of a particle after t seconds is given by $S = 4t^3 - \frac{5}{2}t^2 - 3t + 3$.

Determine the:

a. Velocity of the particle when $t = 3$ **(3mks)**

b. value of t when the particle is instantaneously at rest **(3mks)**

c. Displacement when the particle is instantaneously at rest. **(2mks)**

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d. Acceleration of the particle when $t = 2$ seconds **(2mks)**

20. The distance between towns A and B is 360km. A minibus left town A at 8.15 a.m. and traveled towards town B at an average speed of 90km/hr. A matatu left town B, $2\frac{1}{3}$ hours later on the same day and travelled towards A at average speed of 110km/hr.

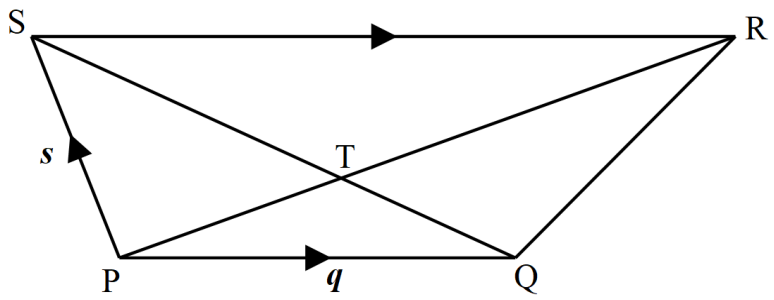
(a) (i) At what time of the day did the two vehicles meet? **(4mks)**

(ii) How far from A did the two vehicles meet? **(2mks)**

(b) A motorist started from her home at 10.30 a.m. on the same day as the matatu and travelled at an average speed of 100 km/h. She arrived at B at the same time as the minibus. Calculate the distance from A to her house. **(4mks)**

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21. In the figure below, PQRS is a trapezium. PQ is parallel to SR. The diagonals SQ and PR intersect at T and SR=2PQ. $\boldsymbol{PQ = q}$, $\boldsymbol{PS = s}$, $\boldsymbol{PT = hPR}$ and $\boldsymbol{ST = kSQ}$, where h and k are constants



a. Find in terms of $\boldsymbol{q}$ and $\boldsymbol{s}$:

(i) $\boldsymbol{QR}$; **(2mks)**

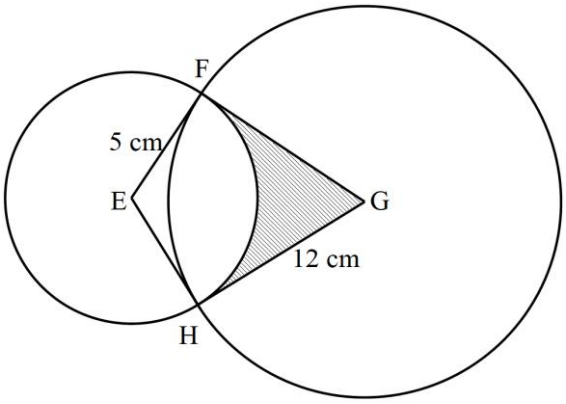
(ii) $\boldsymbol{PT}$; **(2mks)**

(iii) $\boldsymbol{ST}$. **(1mk)**

b. Determine the values of h and k **(5mks)**

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22. The figure below, two circles, centres E and G and radii 5 cm and 12 cm respectively intersect at F and H. EG = 13 cm.



(a) Show that $\angle EFG = 90^0$. **(3mks)**

(b) Calculate

(i) The size of obtuse $\angle FEH$ **(3mks)**

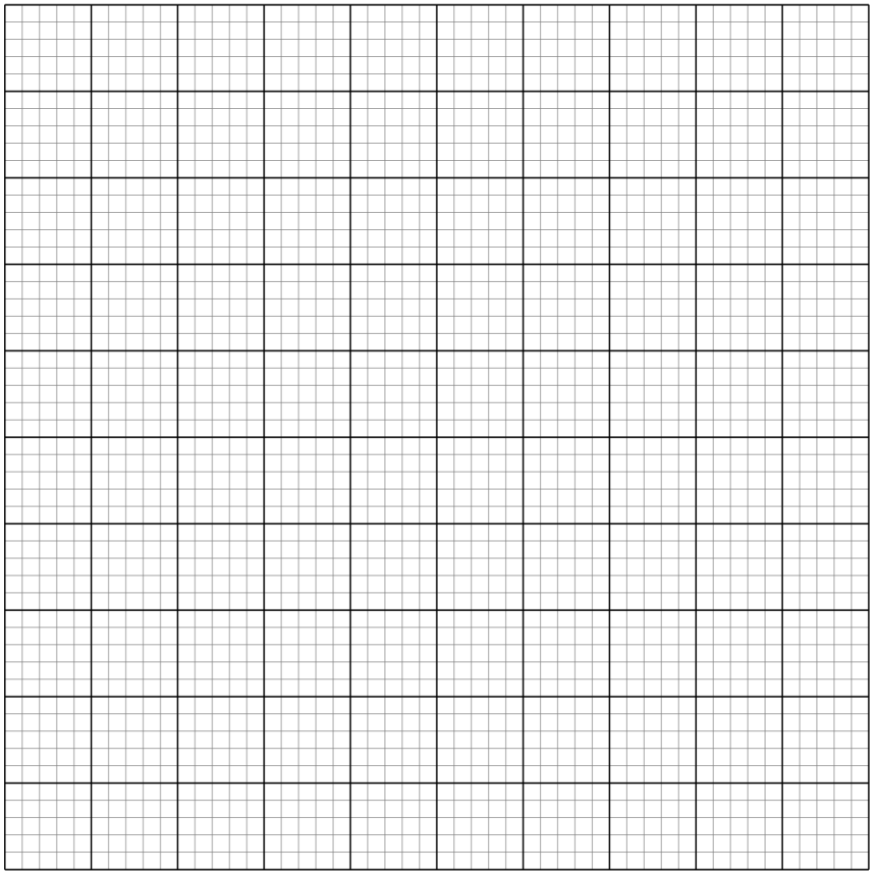
(ii) The area of the shaded part, correct to 2 decimal places. Use π=3.142 **(4mks)**

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23. (a) Fill the table below for the function $y = x^2 - 4x + 2$ for $-1 \leq x \leq 5$ **(2mks)**

x	-1	0	1	2	3	4	5
y							

(b) (i) Draw the graph of the function $y = x^2 - 4x + 2$ for $-1 \leq x \leq 5$ **(3mks)**



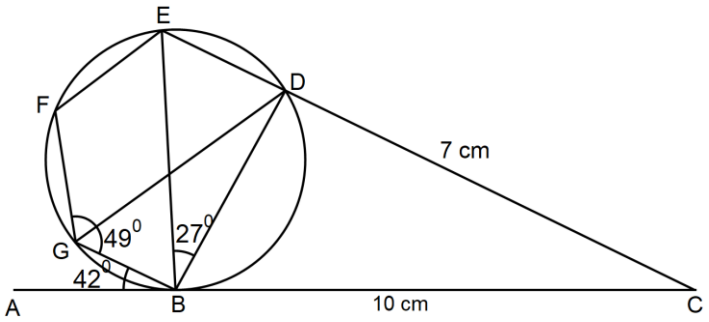
(ii) On the same axes, draw line $y = x - 1$ **(1mk)**

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(c) Determine the values of *x* at the points of intersection between the curve $y = x^2 - 4x + 2$ and line $y = x - 1$ **(2mks)**

(d) Give the equation of the line of symmetry of the curve **(2mks)**

24. In the figure below, ABC is a tangent to the circle at B.



a. Given that $\angle ABG = 42^0$, $\angle EBD = 27^0$ and $\angle BGD = 49^0$, calculate the sizes of the following angles. Give reasons in each case

(i) $\angle DGE$ **(2mks)**

(ii) $\angle GFE$ **(3mks)**

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(iii) $\angle$ DBC **(2mks)**

b. Given that BC $=$ 10 cm and CD $=$ 7 cm, calculate TS **(3mks)**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

MATHEMATICS PAPER 2 (121/2)

FORM FOUR

TIME: 2 ½ HOURS

Instructions to Candidates

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

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

(c) *This paper consists of **two** sections**; Section I** and **Section II.***

(d) *Answer **all** the questions in **Section I** and any **five** 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, except where stated otherwise.*

(h) ***Candidates should check the question paper to ascertain that all the pages are printed as indicated and that 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

					Total

Grand Total

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SECTION I (50 Marks)

*Answer **all** the questions in this section in the spaces provided below each question*

1. A milk urn has a capacity of 18.48 litres. A cylindrical container of diameter 14 cm and height 10 cm is used to draw milk from the urn for sale. How many times will it be used to completely drain the milk from the urn? **(3mks)**

2. An arithmetic progression is such that its first term and common difference are 3 and 2 respectively. The difference of the last and forty-first terms of this progression is 48. Find the number of terms in the progression. **(3mks)**

3. Make x the subject of the formula; **(3mks)**

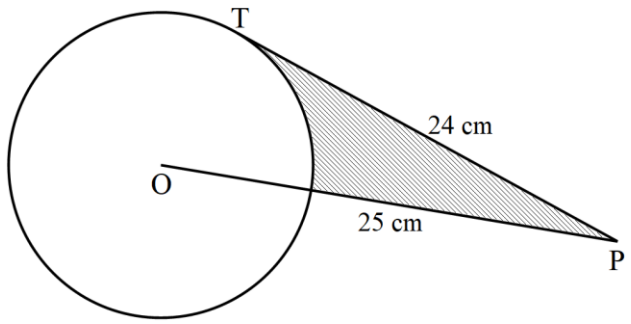
$$p = \sqrt{\frac{x^2 - q}{r + x^2}}$$

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4. Find the value of p if the expression $px^2 - \frac{3}{2}x + \frac{1}{16}$ is a perfect square, given that p is a constant.

(2mks)

5. In the figure below, PT is a tangent to the circle from an external point P. PT=24 cm and OP=25 cm.



Calculate the shaded area correct to 2 decimal places. **(4mks)**

6. The cost C of hiring a conference facility for one day consists of two parts, one which is fixed and the other varies as the number of participants n attending a conference. If Kshs. 45,000 is charged for hiring the facility for 100 participants and Kshs. 40,000 for 60 participants, find the number of participants if Kshs. 63,000 is used to hire the facility. **(4mks)**

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7. (a) Expand $(1 + 2x)^6$ in ascending powers of x up to the term in x^4 **(1mk)**

(b) Use the expansion in (a) above to find the value of $(0.98)^6$ correct to 5 decimal place. **(2mks)**

8. The cash price of a deep freezer is Kshs. 50,000. Mary bought the freezer on hire purchase terms by paying a deposit of Kshs. 25,000 followed by 24 equal monthly instalments of Kshs. 2,250 each. An annual interest, compounded quarterly was charged on the balance for a period of 2 years. Determine, correct to 1 decimal place, the interest rate per month. **(4mks)**

9. The equation of a trigonometric function is $y = 3\sin(a\theta - 60)^0$. The function has a period of 720^0.

(a) Identify the phase angle of the function **(1mk)**

(b) Determine the value of a **(1mk)**

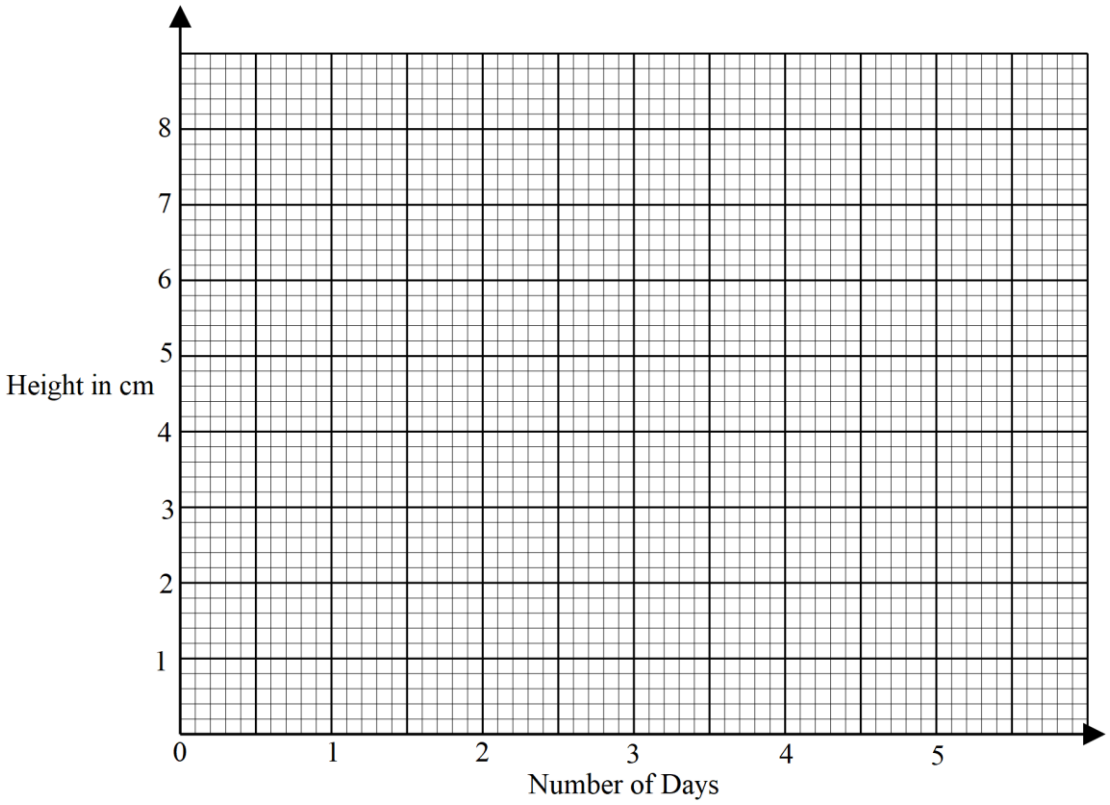
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10. An airport R is 4320 nautical miles to the north of another airport T (45^0S, 108^0E). find the position of T **(3mks)**

11. The table below show the number of days (d) and heights of tree seedlings (h) in a tree nursery

Number of days (d)	1	2	3	4	5
Height (h cm)	3.7	6.0	7.5	8.3	8.8

(a) On the grid provided, draw a graph to represent the information in the table given. **(2mks)**

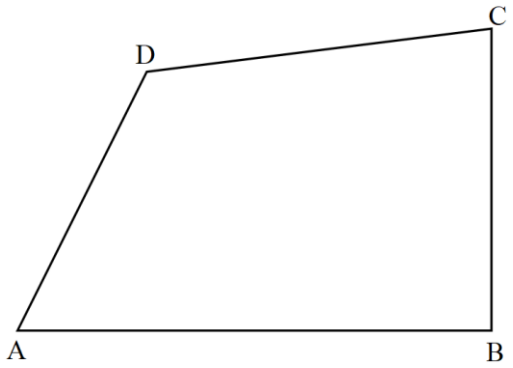


(b) Use the graph to determine the rate of change of height (h) with the number of days at $d = 3$ **(2mks)**

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12. The probability of Kisumu Day High School to win a hockey match is $\frac{7}{8}$. If it losses in hockey, then it has a probability of winning in soccer as $\frac{3}{4}$. Otherwise, the probability of winning the soccer match is $\frac{2}{3}$. Calculate the probability of the school winning either of the two games. **(3mks)**

13. The figure below shows a ranch ABCD drawn to a scale of 1: 100,000. A security light tower is to be installed in the ranch such that it meets the following conditions:



- It is nearer to A than it is to B
- It is at least 200 metres from the point C
- It is further from the line CD than it is to A

Shade the possible region in the ranch where the tower would be installed to meet the above conditions.

(4mks)

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14. Calculate the percentage error in the perimeter of a circle of radius 3.5 cm. **(3mks)**

15. Use logarithms only to evaluate, correct to 4 decimal places **(4mks)**

$$\sqrt[3]{\frac{14.70\tan 35^0 24'}{69.85^2}}$$

16. Solve for x in the equation **(3mks)**

$$\log(5x+75) - 2\log 3 = \log(2x-9)$$

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SECTION II (50 marks)

Answer any ***five*** questions in this section

18. The table below shows the heights of tree seedlings measured in a tree nursery.

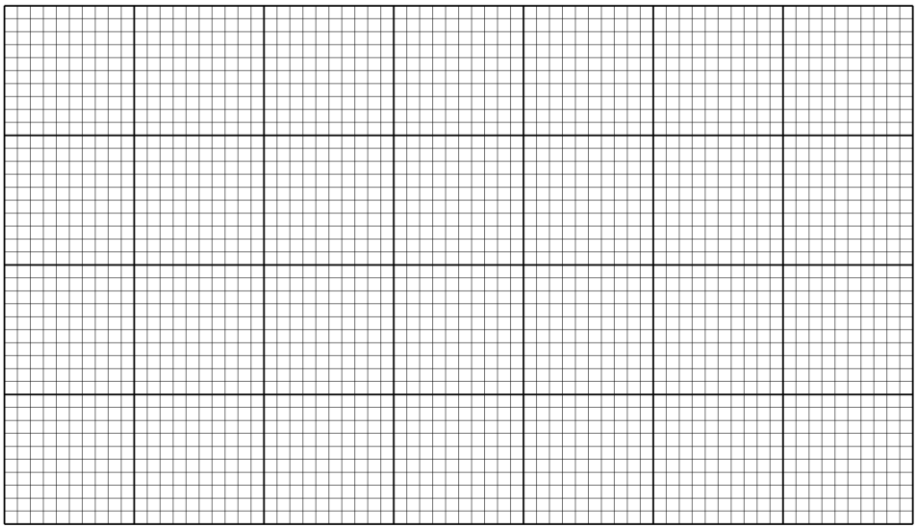
(a) Complete the table below. **(2mks)**

Height	f	x	$d = x - 5.45$
3.0 – 3.9	3		
4.0 – 4.9	5		
5.0 – 5.9	7		
6.0 – 6.9	8		
7.0 – 7.9	5		
8.0 – 8.9	2		

(b) Use the table to calculate the standard deviation correct to decimal places. **(4mks)**

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(c) (i) On the grid provided, draw an ogive to represent the information above. **(2mks)**



(ii) Use the ogive to find the range of height between the 20^{th} and the 80^{th} percentile. **(2mks)**

18. The table below show income tax rate for the year 2019.

Taxable Income (Kshs. per month)	Tax rate (Kshs per Kshs. 20)
1 – 12,000	2
12,001 – 22,500	3
22,501 – 33,000	4
33, 000 – 43,500	5
43,501 – 54,000	6
54,001 and over	7

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Emerick earns a basic salary of Kshs. 38,780. He is entitled to the following allowances per month: house allowance – Kshs. 10,000, medical allowance – Kshs. 3,850 and a non-taxable transport allowance of Kshs. 5,200. He is entitled to a personal tax relief of Kshs. 1,054 monthly.

Calculate:

(a) Emerick's monthly taxable income. **(2mks)**

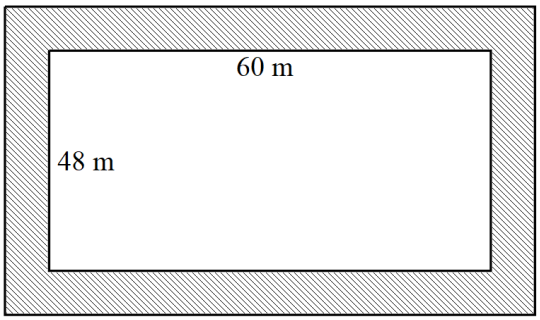
(b) Emerick's monthly Pay As You Earn. **(5mks)**

(c) His net monthly salary given that the following deductions are made from his monthly pay:

NHIF – Kshs. 3,000, Bank loan – Kshs. 7,568, WCPS – Kshs. 780. **(3mks)**

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19. The figure below shows a hockey field of dimensions 60 metres by 48 m. The shaded area is an astroturf that is x metres wide.



(c) Form and simplify an expression in x for the:

(i) Area of the field and the astroturf ; **(1mk)**

(ii) Area covered by the astroturf. **(2mks)**

(d) Given that the shaded area is 220 m^2,

(i) find the value of x; **(4mks)**

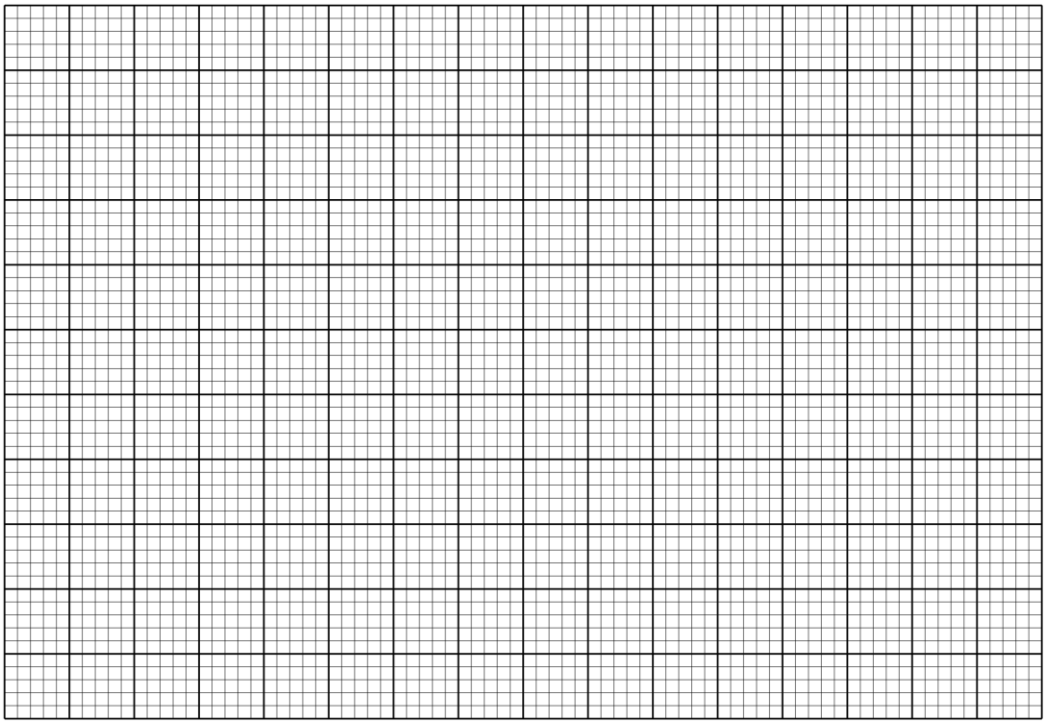
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(ii) Calculate the perimeter of the field with the turf. **(3mks)**

20. $A'(-6,0)$, $B'(-2,-3)$ and $C'(-2,0)$ are the vertices of the image of triangle ABC under a transformation described by the matrix $\mathbf{M} = \begin{pmatrix} 1 & -2 \\ 0 & 1 \end{pmatrix}$

(a) Determine the coordinates of triangle ABC **(3mks)**

(b) (i) On the same grid, draw triangles ABC, $A'B'C'$ **(2mks)**



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(ii) Describe fully the transformation **M** **(1mk)**

(c) Triangle $A''B''C''$ is the image of triangle $A'B'C'$ such that $A''(0,6)$, $B''(6,2)$ and $C''(0,2)$

(i) Draw triangle $A''B''C''$ on the same axes **(1mk)**

(ii) Find a single matrix of transformation that maps triangle ABC onto triangle $A''B''C''$ **(3mks)**

21. (a) Complete the table below giving the values correct to 1 decimal place. **(2mks)**

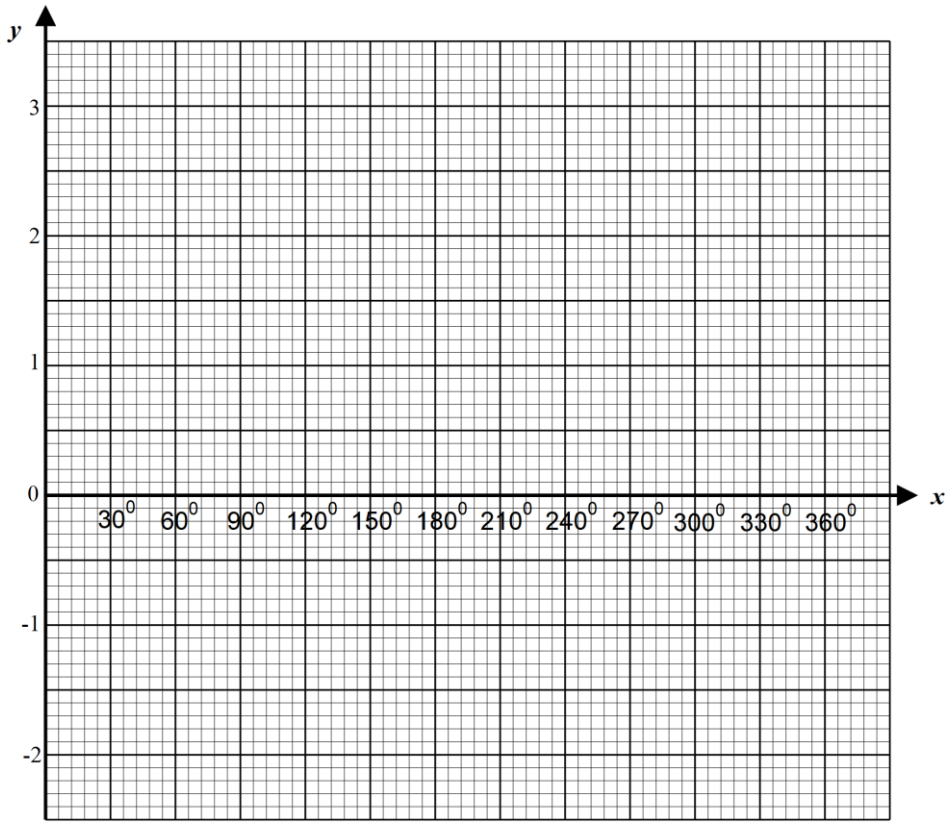
x^0	0	30	60	90	120	150	180	210	240	270	300	330	360
$y = 2\sin\left(\frac{3}{4}x\right) - 2\cos\left(\frac{3}{4}x\right)$	-2.0	-1.1	0.0		2.0		2.8		2.0	1.1	0.0		-2.0
$y = 1 + 2\cos x$	3.0		2.0	1.0	0.0	-0.7	-1.0		0.0	1.0		2.7	3.0

(b) On the grid provided and using the same axes, draw the graphs of

$y = 2\sin\left(\frac{3}{4}x\right) - 2\cos\left(\frac{3}{4}x\right)$ and $y = 1 + 2\cos x$ for $0^0 \leq x \leq 360^0$

(4mks)

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(e) Using graphs in part (b),

(i) Find the values of x for which: **(3mks)**

$$1 + \cos\left(\frac{3}{4}x\right) = \sin\left(\frac{3}{4}x\right)$$

(ii) Determine the values of x for which: **(1mk)**

$$2\sin\left(\frac{3}{4}x\right) - 2\cos\left(\frac{3}{4}x\right) = 1 + 2\cos x$$

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22. Awuor was paid an initial salary of Kshs. 180,000 per annum with a fixed annual increment. Wasonga was paid and initial salary of Kshs. 150,000 per annum with a 10% increment compounded annually.

(a) Given that Awuor's annual salary in the 11^{th} year was Kshs. 288,000, determine:

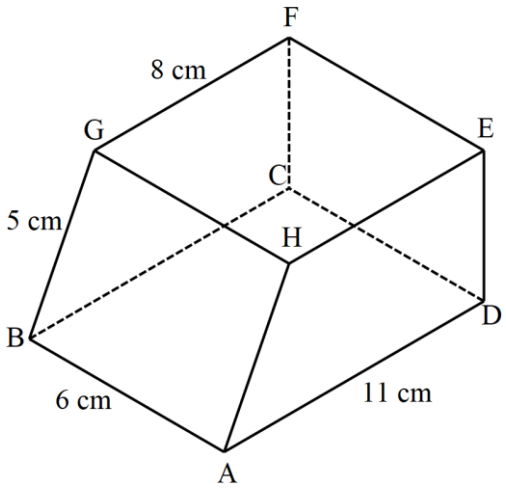
(i) Her annual increment **(3mks)**

(ii) The total amount of money Awuor earned during the 11 years **(3mks)**

(b) Determine Wasonga's monthly earning, correct to the nearest 10 shillings during the 11^{th} year. **(4mks)**

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23. The figure below represents a prism ABCDEFGH of length 6 cm. the section ADEH of the prism is a trapezium in which AD=11 cm, HE=8 cm, BG=5 cm and $\angle ADE = \angle DEH = 90^0$



(c) Calculate correct to 1 decimal place;

(i) The angle between line DG and the plane ABCD. **(3mks)**

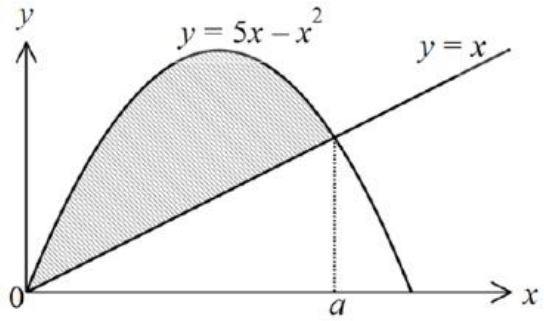
(ii) The angle between planes ABGH and ABCD **(3mks)**

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(d) Calculate the volume of the prism **(4mks)**

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24. The figure below shows the area bound by the curve $y = 5x - x^2$ and the line $y = x$



(a) Find a, the value of x at the point of intersection of the curve and the line. **(3mks)**

(b) Using the trapezium rule with 4 trapezia, estimate the area of the shaded region. **(4mks)**

(c) By integration, calculate the exact area of the shaded region **(3mks)**

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

PHYSICS PAPER 1 (232/1)

QUESTION PAPER

FORM FOUR

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 'g' as $10m/s^2$

For Examiner use only

SECTION	QUESTION	MAX MARKS	NDIDATE'S SCC
A	1 – 14	25	
B	15	13	
	16	13	
	17	13	
	18	09	
	19	07	
	TOTAL	80	

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SECTION A (25 Marks)

1. The figure 1, below shows a section of a tape measure used for measuring the circumference of a cylindrical water tank.

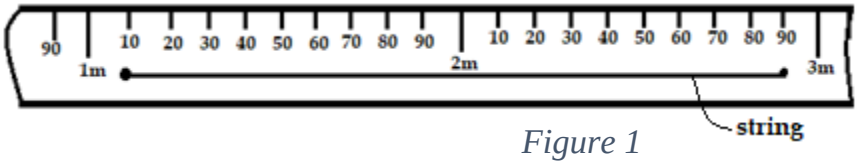


Figure 1

i. State the accuracy of the tape **(1mk)**

ii. Determine the diameter of the tank **(2mks)**

2. Figure 2, shows a metal bolt which is threaded. Explain how a metre-rule may be used to measure the pitch (distance between adjacent peaks) of the threading **(2mks)**

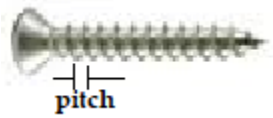


Figure 2

3. State the advantage of fitting wide tyres on a vehicle that move on earth roads **(1mk)**

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4. It may not be possible to suck liquid into your mouth using drinking straw on the surface of the moon. Explain **(2mks)**

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5. A drop of blue ink is introduced at the bottom of a beaker containing water. It is observed that after sometime, all the water in the beaker turns blue. Name the process that takes place. **(1mk)**

6. In the set-up shown below, water near the top of the boiling tube boils while at the bottom it remains cold. Give a reason for this. **(2mks)**

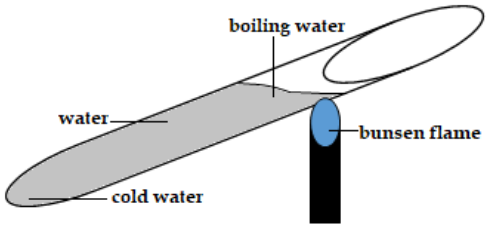


Figure 3

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7. The diagram below shows two glass-tubes of different diameters dipped in water. Explain why h_2 is greater than h_1 **(3mks)**

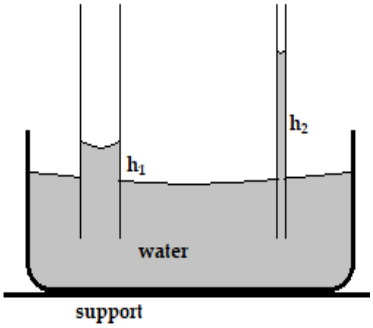


Figure 4

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8. A solid copper sphere will sink in water while a hollow copper sphere of the same mass may float. Explain **(2mks)**

9. Name the instrument that would be most suitable for measuring the thickness of one sheet of this question paper **(1mk)**

10.

a) State how pressure of a moving fluid varies with the speed of the fluid **(1mk)**

b) State Bernoulli's principle **(1mk)**

11. The solid marble shown below is in a stable equilibrium. On the space provided, sketch the same marble in a neutral state of equilibrium **(1mk)**

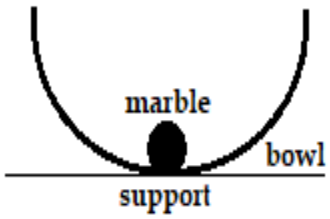


Figure 5

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12. The figure below shows how pressure and volume of a fixed mass of a gas vary at constant temperature. Sketch on the same axes, a graph for the same mass of gas at temperature,T_2 such that $T_2 < T_1$ **(1mk)**

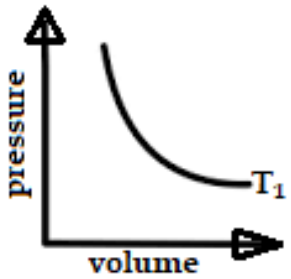


Figure 6

13. The figure below shows a ball being whirled in a vertical plane. Sketch on the same figure the path followed by the ball if the string cuts when the ball is in the same position shown. **(1mk)**

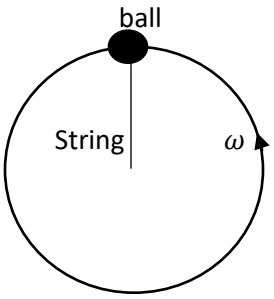


Figure 7

14. A spring extends by 6cm when supporting a mass of 0.06kg on earth. When the spring is used to support the same mass on moon, it extends by 1 cm. determine the moon's gravitational strength **(3mks)**

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SECTION B (55 MARKS)

15.

a) Define the following terms:

i. Angular velocity **(1mk)**

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ii. Centripetal acceleration **(1mk)**

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b) State **two** ways in which the centripetal force on a body of mass m can be increased **(2mks)**

Figure 8 shows an object at the end of a light spring balance connected to a peg using astring. The object is moving in a circular path on a smooth horizontal table with aconstant speed.

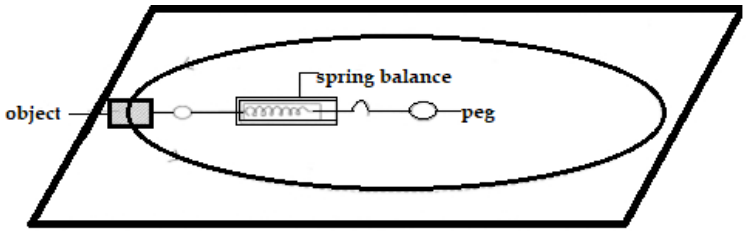


Figure 8

i.State what provides the centripetal force **(1mk)**

……

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ii. On the same diagram Indicate with an arrow the direction of the centripetal force **(1mk)**

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iii. State a reason why the object is accelerating while its speed remains constant **(1mk)**

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iv. The mass of the object is 0.5kg and it is moving at a speed of 8m/s at a radius of 2m. determine the reading on the spring balance **(3mks)**

d) A body moving with uniform angular velocity found to have covered an angular distance 170 radians in t seconds. Thirteen seconds later it is found to have covered a total angular distance of 300 radians. Determine t **(3mks)**

16.

a) State the pressure law for an ideal gas **(1mk)**

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b) The set up shows an arrangement to determine the relationship between temperature and pressure of a gas constant volume.

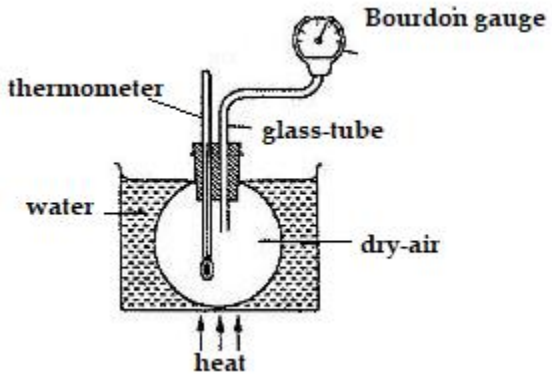


Figure 9

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(i) Describe how measurements are obtained in the experiment. **(3mks)**

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(ii) Explain how the result form the experiment can be used to determine the relationship between temperature and pressure. **(2mks)**

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c) A bicycle tire is pumped to a pressure of 2.2×10^5pa at23^0C. After a race the pressure is found to be 2.6×10^5 pa. Assuming the volume of the tyre did not change, what is the temperature of the air in the tyre. **(3mks)**

d) Air is trapped inside a glass tube by a thread of mercury 240 mm long. When the tube is held horizontally the length of the air column is 240mm.

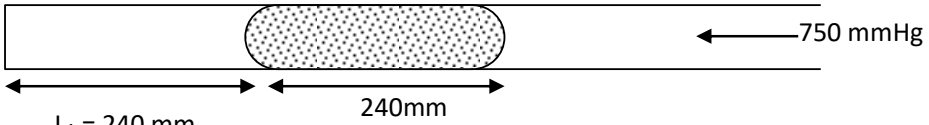


Figure 1

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Assuming that the atmospheric pressure is 750mm Hg and the temperature is constant; calculate the length of the air column when the tube is vertical with open end down. **(3mks)**

e) What is an 'ideal gas?' **(1mk)**

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17.

a) Define the following terms:

i. Mechanical advantage **(1mk)**

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ii. Velocity ratio **(1mk)**

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b) Sketch a labeled diagram to show how an arrangement of a single pulley may be used to provide a mechanical advantage of 2. **(3mks)**

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c) The figure 11, below shows a loaded wheelbarrow.

i. Indicate and label on the diagram three forces acting on the wheelbarrow when a worker is just about to lift the handle. **(3mks)**

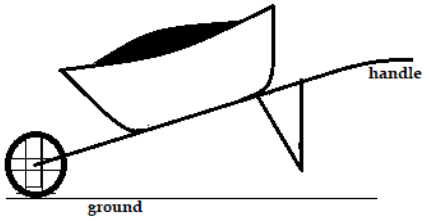


Figure 10

ii. Suppose the handle-bars of the wheelbarrow were extended, which force(s) would change? Explain **(2mks)**

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d) A ball rolls on a table in a straight line. A part from the transitional kinetic energy, state the other form of kinetic energy possessed by the ball. **(1mk)**

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e) The figure 12, below shows how the potential Energy (P.E) of a ball thrown vertically upwards.

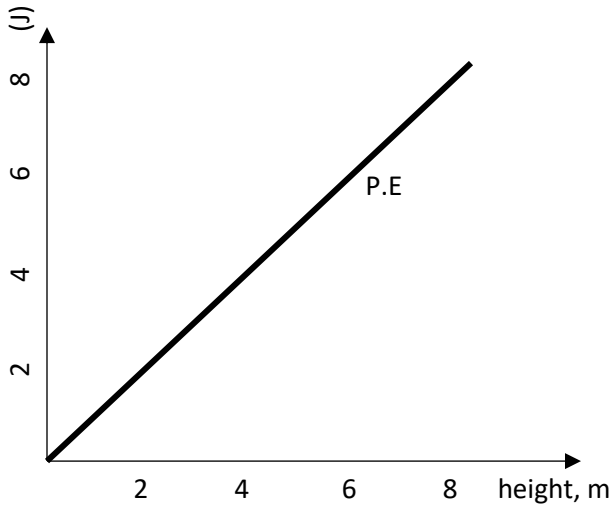


Figure 11

On the same axes, plot a graph of kinetic energy of the ball. **(2mks)**

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18.

a) State the law of floatation **(1mk)**

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b) When a piece of metal is placed on water, it sinks. But when the same piece of metal is placed on a block of wood, both are found to float. Explain this observation. **(2mks)**

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c) Figure 13 shows a cork floating on water and held to the bottom of the beaker by a thin thread

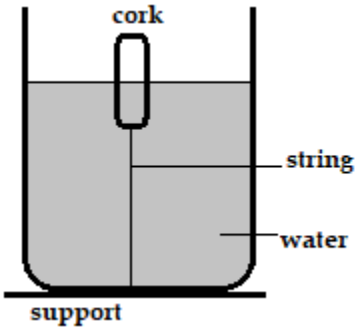


Figure 12

i. Name the force acting on the cork. **(3mks)**

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ii. Describe how each of the forces mentioned in (i) above changes when water is added into the beaker until it fills up. **(3mks)**

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19.

a) Water flows in a horizontal smooth pipe. State the changes that would be observed in the nature of flow if the speed of water is steadily increased from low to high value **(2mks)**

b) A pipe of radius 6mm is connected to another pipe of radius 9mm. if water flows in the wider pipe at a speed of 2m/s, what is the speed in the narrower pipe? **(3mks)**

c) State the reason why it may not be possible to suck liquid into your mouth using drinking straw on the surface of the moon **(1mk)**

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d) A can with a hole on the side is filled with water to a certain height. Water jets out as shown below (figure 14, a). A second identical can is filled with water to the same height and a block of wood floated on the water as shown (figure 14, b). give a reason why the water jet in (b) is longer than that in (a). **(1mk)**

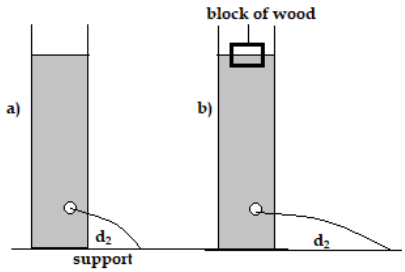


Figure 13

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SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

PHYSICS PAPER 2

QUESTION PAPER

FORM FOUR

2 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) This paper consists of **two** Sections; **A** and **B**.

(d) Answer **ALL** the questions in Sections **A** and **B** in the spaces provided.

(e) All workings must be clearly shown.

FOR EXAMINER'S USE ONLY:

Section	Question	Maximum Score	Candidate's Score
A	**1 – 12**	**25**	
	13	**11**	
	14	**12**	
B	**15**	**13**	
	16	**10**	
	17	**09**	
Total Score		**80**	

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SECTION A (25 MARKS)

1. Figure 1 below shows the formation of a band of colors when white light traverses a drop of water:

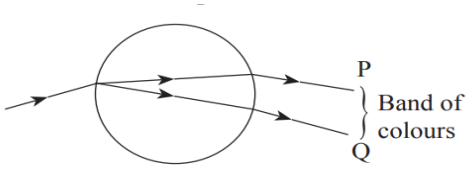


Figure 14

(i) Why does it split into different colors between P and Q**?** **(1mk)**

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(ii) What natural phenomenon is associated with the above**?** **(1mk)**

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2. An electric iron is rated at 1.5 KW, 240 V. Calculate the resistance of the element. **(2mks)**

3. A model preparing for beauty contest stands 70 cm away from a concave mirror of focal length 90 cm. State two characteristics of the image observed. **(2mks)**

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4. The diagram below shows a soft iron ring lying next to the south-pole of a magnet.

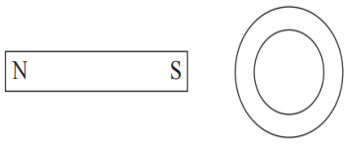


Figure 15

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(a) Complete the diagram to show the magnetic field patterns between the magnet and the ring. **(1mk)**

(b) State a practical application of the above effect**.** **(1mk)**

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5. A boy standing in front of a high wall claps his hands once and hears an echo after 0.64 seconds. If he moves 20 m farther away from the wall and claps again, he hears the echo after 0.76 seconds. Calculate the speed of sound. **(3mks)**

6. The table shows part of the electromagnetic spectrum.

Gamma	X-rays	UV	Visible Light	Infra red	Radio waves

Figure 16

(a) What happens to photo energy as one moves across the spectrum from gamma to radio waves? **(1mk)**

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(b) What part of the electromagnetic spectrum does a TV remote control gadget make use of? **(1mk)**

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7. Explain why sound from a distance source is heard more clearly at night than during the day. **(2mks)**

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8. Explain why the resistance of a metal conductor increases with increase in temperature. **(1mk)**

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9. Figure 4 below shows a graph of displacement against time for a particular point in a wave.

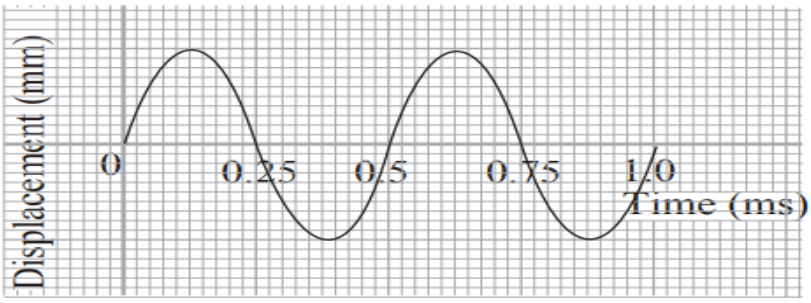


Figure 17

(a) From the graph, determine the frequency of the wave. **(3mks)**

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10. Using a ray diagram, illustrate the use of a lens as a magnifying glass**.** **(3mks)**

11. State ONE advantage of the lead-acid accumulator over the dry cell**.** **(1mk)**

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12. State the two functions of the earth-pin on the three-pin plug. **(2mks)**

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SECTION B (55 MARKS)

Answer ALL the questions in this section in the spaces provided

13.(a) Define the term capacitance of a capacitor. **(1mk)**

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(b) State two factors that affect the capacitance of a parallel plate capacitor. **(2mks)**

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(c) Figure 5 below shows an arrangement of capacitors connected to a 12 V D.C. supply

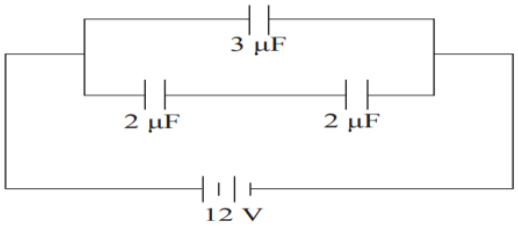


Figure 18

(i) Determine the effective capacitance. **(2mks)**

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(ii) Calculate the charge through the 3 μF capacitor. **(2mks)**

(d) The following figure shows an electrical circuit with a network of resistors connected to a battery

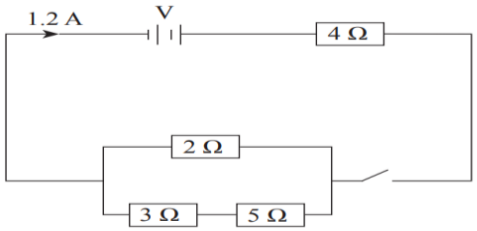


Figure 19

A current of 1.2 A flows through the 4 Ω resistor when the switch is closed. Determine:

i) The total resistance in the circuit. **(2mks)**

ii) The voltmeter reading. **(2mks)**

14.(a) State two conditions necessary for total internal reflection to occur. **(2mks)**

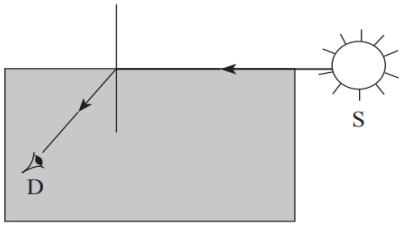
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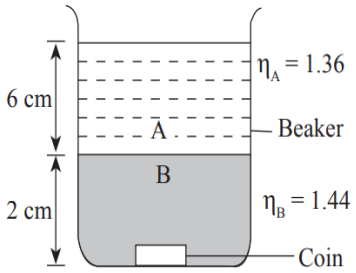
(b) The figure shows a diver positioned at point D below the water surface, and a setting sun S.



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In what direction above the horizontal surface of the water will the diver see the setting sun? (Refractive index of water = 1.33). **(3mks)**

(c) A coin is placed at the bottom of a beaker containing two immiscible liquids A and B of refractive indices ηA = 1.36 and ηB = 1.44 respectively as in the diagram below.



Calculate the apparent depth of the coin as seen by an observer from the top. **(4mks)**

(d) A tree of height 7.5 m is focused on the screen of pinhole camera made using a box of length 15 cm. If the height of the image is 10 cm, determine the distance of the tree from the camera. **(3mks)**

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15.(a) State ONE way of minimizing power loss during transmission. **(1mk)**

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(b) A step-down transformer with turns ratio 12:1 and efficie ncy 95% has 2 000 turns in the primary coil. When the primary circuit is connected to a 240 V a.c. source, the power delivered to a load is found to be 500 W.

Determine:

(i) The number of turns in the secondary coil. **(2mks)**

(ii) The input power. **(2mks)**

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(iii) The secondary voltage. **(2mks)**

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(iv) The secondary current. **(2mks)**

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(b) A consumer uses the following electrical appliances daily: four 60 W bulbs working for 3½ hours, two 75 W bulbs working for 3 hours 45 minutes, an electric blender rated 500 W working for 15 minutes, and a television set rated 100 W working for 12 hours.

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(i) Calculate the total number of units consumed in a day. **(2mks)**

(iii) If the appliances are used for 30days, determine the total cost if the cost per unit is 4.80 cents. **(2mks)**

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16.(a) In an experiment to observe interference of light waves a double slit is placed close to the source. See figure 7

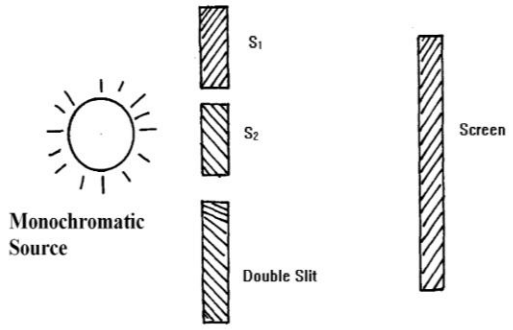


Figure 20

(i) State the function of the double slit **(1mk)**

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(ii) Describe what is observed on the screen **(2mks)**

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(iii) State what is observed on the screen when

I). The slit separation S1 S2 is reduced **(1mk)**

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II) White light source is used in place of monochromatic source **(1mk)**

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b) Figure 8 below shows a set up made by a Form 2 student to study an aspect of a wave.

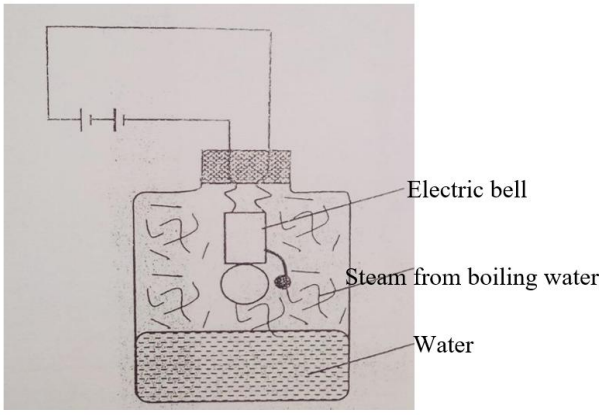


Figure 21

(i) State what happens to the sound from the bell as the bottle and its contents are cooled to 0°C **(1mk)**

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(ii) Explain the observation in (i) above **(2mks)**

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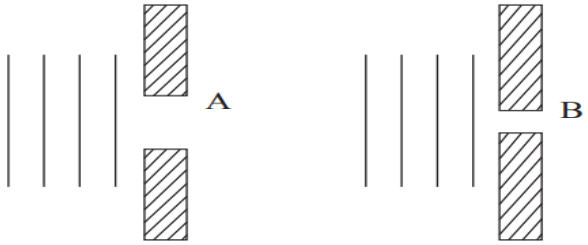
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c) Water waves of same wavelength are incident on different apertures A and B as shown below.



Complete the diagrams to show the pattern of the waves beyond the apertures in each case. **(2mks)**

17. 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. **(3mks)**

(b) State two ways by which the strength of an electromagnet can be increased **(2mks)**

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(c) (i) State Flemings left hand rule **(1mk)**

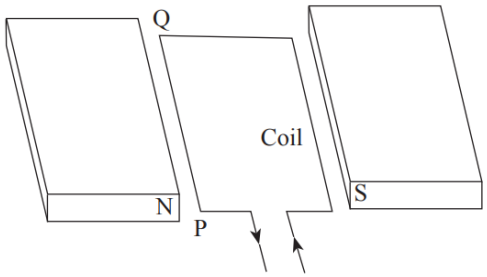
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(ii) The figure below shows current flowing in coil placed in a magnetic field.



(I) Show on the diagram the direction of the force acting on the coil labelled P and Q. **(1mk)**

(II) State two ways of increasing the force on the coil. **(2mks)**

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 # END #

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EXCELLING STUDENTS FORM 4 PRE-MOCK 1 EXAMS

NAME: ……..

SCHOOL: ……..

DATE:…….. ADM NO: …… SIGNATURE:……

PHYSICS PAPER 3 (PRACTICAL) -232/3

FORM FOUR

2.5 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**	

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QUESTION ONE

You are provided with the following apparatus:

- Two dry cells
- A cell holder
- A bulb
- A volt-meter
- An ammeter
- A switch
- Amounted resistance wire labelled AB

a) Set up the apparatus as shown in the circuit below.

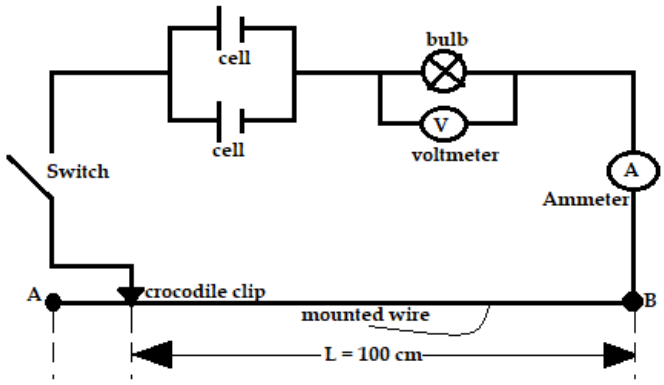


Figure 22

b) With the crocodile clip at A (i.e. L = 100cm) take the voltmeter reading (V) and the ammeter reading (I). Record V and I in the table 1 below.

Table 1

Length l(cm)	100	80	60	40	20	0
Voltage (V)						
Current I (A)						
Length, L (m)						

(7mks)

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c) Repeat the procedure in (b) above for the lengths shown and complete the table above.

d) Explain the changes you observe on the bulb as L decrease from A. **(2mks)**

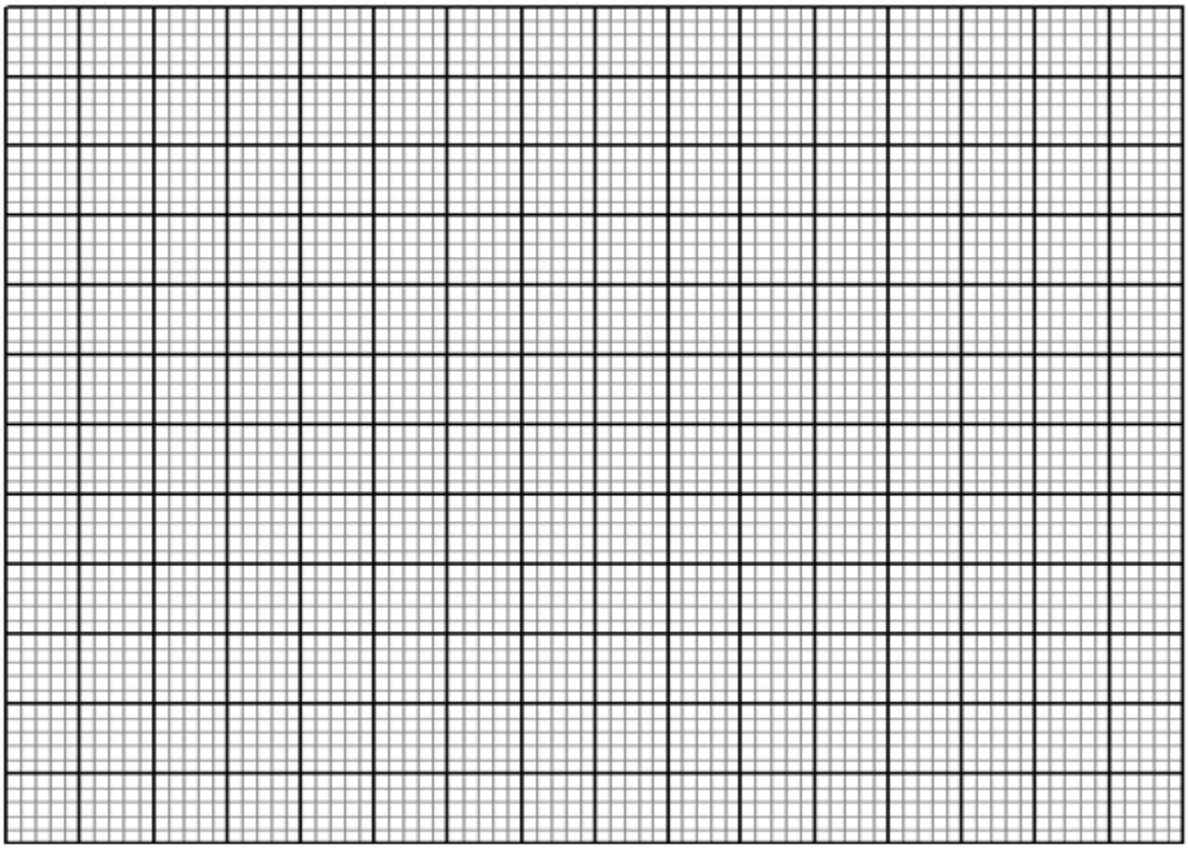
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e) Plot a graph of voltage against current **(5mks)**



f)Determine the slope of the graph when L = 0.60 m **(3mks)**

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g) State the significance of the gradient **(1mk)**

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QUESTION TWO

PART A

You are provided with the following

- A candle
- A lens and a lens holder
- A screen
- A metre-rule
- Some plasticine

a) Set up the apparatus as shown in figure 2 below (ensure that the candle flame and the lens are approximately the same height above the bench)

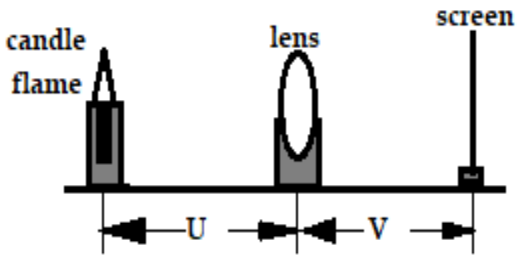


Figure 23

b) Set the position of the lens so that it is 40cm from the candle (U = 40 cm). Adjust the position of the screen until a sharp image of the candle flame is obtained. Measure the distance, V between the lens and the screen. Record the value of V

V = …… cm **(1mk)**

c) Repeat the procedures in b) above for other values of U in the table b below. **(4mks)**

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Table 2

U(cm)	45	50	55
V(cm)			
Magnification (m) $= \frac{v}{u}$			

d) Given that f = $\frac{v}{m+1,}$ where f is the focal length of the lens, use the results in table above to determine the average values of 'f' **(4mks)**

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PART B.

You are provided with the following:

- rubber bung.
- Vernier calipers.
- beam balance. (or electric balance)

Proceed as follows:

e) Using a Vernier caliper, measure the lengths D, d, and h as shown in **figure 2.**

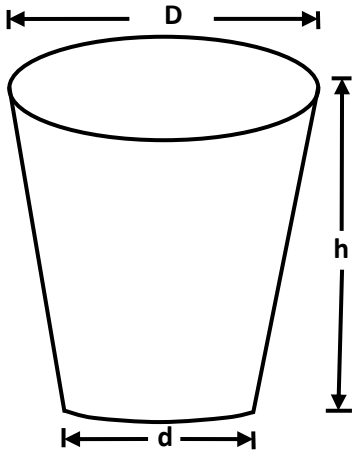


Figure 2

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D = ... m **(1mk)**

d = ... m **(1mk)**

h = ... m **(1mk)**

f) Measure the mass, M of the rubber bung using the electric balance.

M = ……. g M = ... kg **(2mks)**

g)

(i) Given that $Q = \frac{d+D}{4}$ determine the value of Q. **(2mks)**

(ii) Determine the value of r given that: $\pi r Q^2 = \frac{M}{h}$ **(3mks)**

h) State the significance of r **(1mk)**

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