BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4 EXAMS *(ALL SUBJECTS TESTED)*



BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4 EXAMS

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: …….. DATE: ……..

443/1
AGRICULTURE
PAPER 1
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

a) Write your name, school and index number in the spaces provided above
b) Sign and write the date of the examination in the spaces provided above
c) This paper consists of **THREE** sections A,B and C
d) Answer all the questions in section A,B and any **TWO** in the section C

For examiners use only

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
A	1 -19	30	
B	20 – 25	20	
C	Q	20	
	Q	20	
TOTAL SCORE		**90**	

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SECTION A:30 MARKS

Answer ALL questions in this section in the spaces provided

1. Define the term pomology as used in crop production **(1 ½ mks)**

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(b) Give three effects of low temperature in crop production **(1 ½ mks)**

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2. List four factors considered when siting a compost pit on the farm **(2mks)**

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3. (a)Outline three ways how weeds lower the quality of agricultural produce **(1 $^{1}/_{2}$mks)**

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b)How does timely planting help to control weeds? **($^{1}/_{2}$ mks)**

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4. Give four factors that affect the depth of planting **(2mks)**

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5. Outline four disadvantages of using seeds as planting materials **(2mks)**

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6. (a)State two practices carried out during the hardening off of tomatoes seedlings **(1mk)**

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(b)Define the term chitting as used in Agriculture **(1mk)**

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7. State two advantages of ridging in land preparation **(1mk)**

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8. (a)Name two methods of soil sampling **(1mk)**

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(b)Name the plant parts used for vegetative propagation of the named crops **(1mk)**

(i)Sweet potatoes……..

(ii)Sugarcane……

9. List four factors that lead to land fragmentation **(2mks**

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10. Give two uses of mulching in soil and water conservation **(2mks)**

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11. (a)State three advantages of paddocking as a grazing system **(1 $^{1}/_{2}$mks)**

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(b)Give a reason why Columbus grass should be dried before feeding to livestock **($^{1}/_{2}$mks)**

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12. State three reasons why health records should be kept on the farm **(1 1/2mks)**

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13. Give three methods for controlling Blossom-end rot in tomatoes **(1 1/2mks)**

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14. State two sources of agricultural credit to farmers **(2mks)**

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15. Name the chemical used to coagulate solid particles during water treatment **(1 ½mks**

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16. Give two harmful effects of crop diseases **(1mk)**

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17. Define the term land adjudication (1mk)

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18. State two limitations of plastic pipes in conveyance of water on the farm **(1 1/2mks)**

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19. Name the financial documents used on the farm for the following purposes **(1mk)**

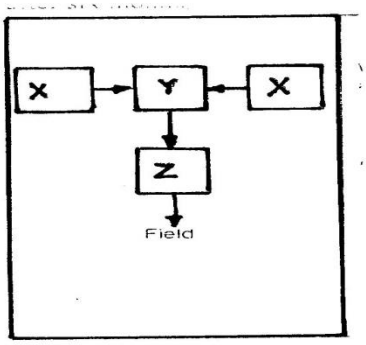
(a)A document that accompanies goods on delivery…….

(b)A document issued when cash payment for delivery of services rendered…….

SECTION B:20MARKS)

Answer all questions in this section in the spaces provided

20. The diagram below illustrates a method used in preparation of manure on farm.



Study it carefully and answer the questions that follow.

(a)Name the method illustrated above **(1mk)**

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(b)State a reason why the materials used should be frequently turned **(1mk)**

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(c)State two limitations of manure use in crop production **(2mks)**

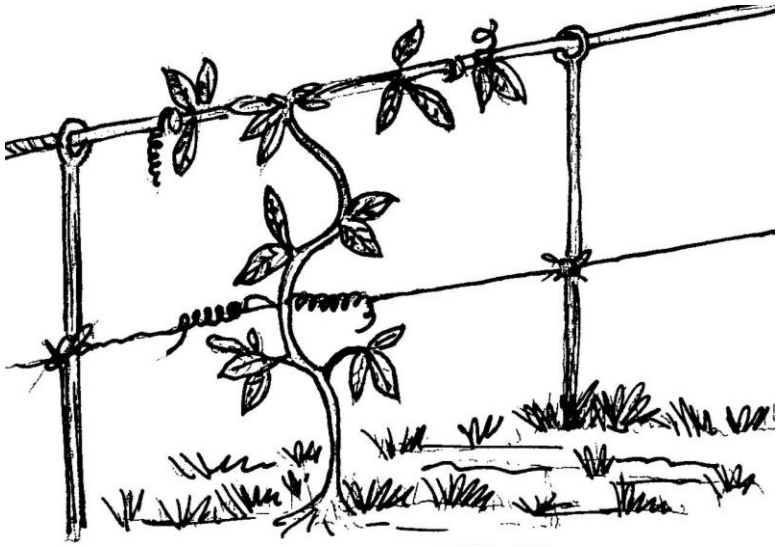
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21. The diagram below shows an agronomic practice carried out on some crops. Study it carefully and answers the questions that follow.



(a) Name the agronomic practice shown above **(1mk)**

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(b) Name one crop where farmers are encouraged to carry out the above practices **(1mk)**

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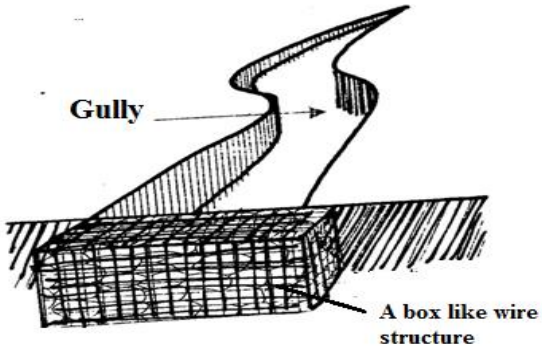
(c) State the importance of earthing up in the production of

(i) Groundnuts…….. **($\frac{1}{2}$mk)**

(ii) Tobacco……..**($\frac{1}{2}$mk)**

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22. The diagram below shows a structure used on the farm for soil and water conservation.



(a) Name the above structure **(1mk)**

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(b) State two ways how the structure above is useful in soil and water conservation **(2mks)**

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23. The illustration below shows a method used in irrigation of crops on the farm



(a) Name the method of irrigation shown above **(1mk)**

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(b) State two advantages of the irrigation methods shown above **(2mks)**

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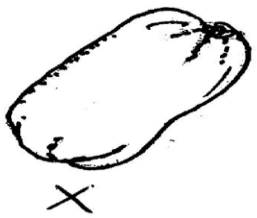
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24. The diagrams below illustrates tomatoes fruits of different varieties





(a) Name the tomatoes variety labelled

(i) X……

(ii) Y……..

(b) What quality does the tomato fruit labeled X have over Y? **(1mk)**

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(c) Calculate the plant population of tomatoes in a plot measuring 17m x13m spaced at 90x60cm show your working **(2mks)**

25. The diagrams below illustrates some crop pests a on the farm

(a) Name the crop pest labeled S **(1mk)**

(b) Name two methods suitable to control the pest labeled S **(1mk)**

(c) State one damage caused by pest P **(1mk)**

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SECTION C :(40 MARKS)

Answer any two questions from this section in the spaces provided after question 28

26. (a)Outline five reasons why the nursery is important in crop propagation **(5mks)**

(b)Outline five factors considered when selecting a suitable site for nursery establishment **(5mks)**

(c)Describe five nursery management practices **(10mks)**

27. Describe the cultural methods of crop pest control **(20mks)**

28. (a)State four characteristics of fertile soils **(4mks)**

(b)State and explain six ways how soil loses fertility **(12mks)**

(c)Outline four characteristics of the top soil in a soil profile **(4mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

443/2
AGRICULTURE
PAPER 2
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

a) Write your name, school and index number in the spaces provided above
b) Sign and write the date of the examination in the spaces provided above
c) This paper consists of THREE sections A,B and C
d) Answer all the questions in section A,B and any TWO in the section C
e) All the questions should be answered in the spaces provided

For examiners use only

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
A	1 -19	30	
B	20 – 23	20	
C	24-25	40	
TOTAL SCORE		**90**	

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SECTION A:30 MARKS

Answer ALL questions in this section in the spaces provided

1. Name two camel breeds **(1mk)**

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2. Why are goats suited to dry parts of Kenya **(1 ½ mks)**

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3. State three practices that make ranching an improved system of pastoral nomadism **(1½ mks)**

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4. (a)Give four precautions taken by farmers when using tools for farm operations **(2mks)**

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(b)Give examples of plumbing tools **(1mk)**

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5. State three factors that influence the digestibility of food in livestock **(1 ½ mks)**

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6. Give two properties of pye-grease make it suitable for controlling ticks in livestock **(1mk)**

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7. (a)What is embryo transplant **(1mk)**

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(b)Give two advantages of embryo transplant **(2mks)**

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8. How does docking sheep help prevent spread of diseases in sheep management **(1mk)**

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9. State three reasons of feeding calves on colostrum **(1 1/2mks)**

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10. List two types of calf pens **(1mk)**

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11. State two reasons for lubricating tractor **(2mks)**

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12. Outline any three digestive processes that occur in the rumen of cattle **(1 1/2mks)**

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13. State three properties of concrete that make it popular in construction of farm structures **(1 1/2mks)**

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14. State four roles of worker bees in a colon **(2 mks)**

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15. Give two symptoms observed from a carcass of an animal that dies from anthrax **(2mks)**

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16. State four advantages of battery cage system over deep litter systems in poultry management **(1mk)**

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17. Why is it not advisable to feed a lactating cow on potato vines and Mexican marigold **(1mk)**

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18. (a)Name two machines whose engines operate on the mechanism of two –stroke cycle **(1mk)**

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(b)State two structural differences between four stroke –cycle engines and two stroke-cycle engines **(1mk)**

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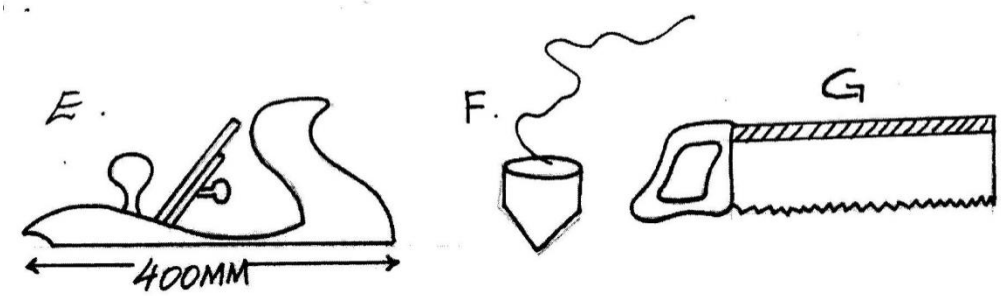
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SECTION B (20 MARKS)

Answer all questions in this section in the spaces provided

19. Below is an illustration of farm tools and equipment. Study them and answer the questions that follow



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(i) Identify the tool labeled E,F and G **(2mks)**

E……

F……

G……

(ii) State the functions of the tools labeled F and G **(2mks)**

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(iii) Give three maintenance practices of the tool labeled E **(3mks)**

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(iv) State the functional differences between drenching gun and bolus gun **(2mks)**

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20. (a)Define the term digestive crude protein (DCP) **(1/2 mk)**

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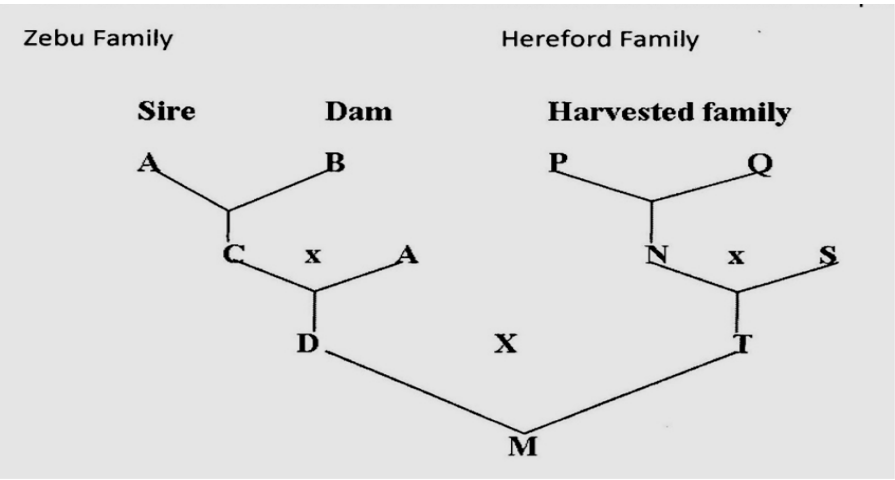
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(b)A farmer wanted to prepare a 200kg of calf rearing ration containg 20% DCP.Using the pears Square Method,calculate the amount of maize containg 10% DCP and Sunflower containing 35 % DCP the farmer would need to prepare the ration (show your work) **(4mks)**

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21. The illustration below show different livestock families. Use it to answer questions that follow



(a) Identify the breeding system between

(i) C and A **(1mk)**

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(ii) D and T **(1mk)**

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(b) state two advantages of the breeding system indentified in a (ii) above **(2mks)**

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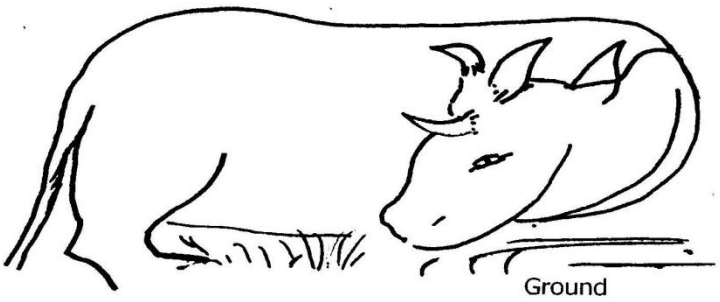
(c) why is the breeding system indentified in a (i) not recommended in dairy cattle **(1mk)**

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22. The following diagram illustrates a diseases symptom in cattle. Study it carefully and answer the questions that follow



(a) Identify the diseases in cattle with the shown symptoms **(1mk)**

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(b) Give two other causes of the diseases named in (a above **(2mks)**

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(c) A part from the symptom shown on the diagram, state other two symptoms of the diseases **(2mks)**

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SECTION C 40 MARKS)

Answer any two questions in the spaces provided

23. (a)Describe the parts of a plunge dip stating their various function **(10mks)**

(b) Describe the tools used and their functions during the construction of a rabbit hutch **(5mks)**

(c)State the structural requirements of a calf pen **(5mks)**

24. (a)How can a tractor be maintained on a farm **(10mks)**

(b)Describe the factors considered when choosing building materials in the farm **(6mks)**

(c)Give the advantages of animal power over tractor power in seedbed preparation **(4mks)**

25. Describe the procedure of processing honey using the heat method **(8mks)**

(b)State the differences between ruminant and non-ruminants **(6mks)**

(c) Describe the management practices carried out to ensure maximum harvesting of fish from a fish pond **(6mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

231/1
BIOLOGY
PAPER 1
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

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

2.Sign and write the date of examination in the spaces provided above.

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

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

5.All working must be clearly shown where necessary.

6.Candidates should check the question paper to ascertain that all the pages are printed as indicated and no question is missing.

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QUESTIONS	MAXIMUM SCOR	CANDIDATE'S SCORE
1-24	80	

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SECTION A

(Answer all questions in this question paper in the spaces provided)

1.(a)What is meant by the term taxonomy? **(1mk)**

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(b)When are two organisms considered to belong to the same species. **(2mks)**

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2.State three activities of the cell that are control by the nucleus **(3mks)**

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3.Distinguish between haemolysis and plasmolysis **.** **(2mks)**

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4. State two adaptation of leaves that maximize efficiency in trapping sunlight for photosynthesis. **(2mks)**

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5.State two roles of hydrochloric acid in the digestion of food. **(2mks)**

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6.(a)Name the blood vessel that link arterioles with venues. **(1mk)**

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(b)How are the blood vessels above situated to carry out their function. **(2mks)**

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7. Explain how the following adaptations will reduce the rate of respiration**.** **(2mks)**

(a) Sunken stomata

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(b) Leaf folding

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8. (a) Name two structures for gaseous exchange in amphibians**.** **(2mks)**

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(b) What is the effect of relaxation of diaphragm muscles during breathing in mammals. **(3mks)**

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9.The equation below represents a process that occurs in plants

$C_6 H_{12} 0_6 \longrightarrow$ [B] + $C_2 H_5 OH$ + Energy

(a) Name the process **(1mk)**

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Name the product B **(1mk)**

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(b) State the economic importance of this process **(2mks)**

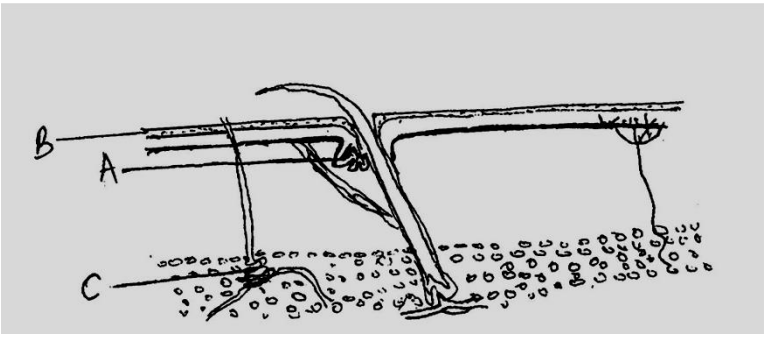
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10. The diagram below represents a transverse section through human skin



(a)Name the structure labeled A and B **(2mks)**

A……

B……

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(b)State the function of the parts labeled C **(1mk)**

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(c) State two physiological changes that take place in a human skin in order to facilitate heat loss from the body. (2mks)

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11. (a)In what ways are fungal and plant cells similar. **(2mks)**

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(b)List two external features that distinguish members of class Mammalia from other classes. **(2mks)**

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12. Name the disease caused by each of the following micro-organism. **(2mks)**

(a)Plasmodium falciparum

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(b)Entamoeba histolytica

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13. State how excessive use of agrochemicals affects large water bodies. **(2mks)**

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14. (a)Distinguish between ecological niche and habitat. **(2mks)**

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(b)Explain why the ecosystem is said to be a self sustaining natural unit. **(2mks)**

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15. (a)Define the following terms in human reproduction. **(2mks)**

(i)Parturition

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(ii)Inplantation

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(b)Name the hormone involved in the development in the female secondary sexual characteristics. **(1mk)**

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(c) Give one function of amniotic fluid during pregnancy. **(1mk)**

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16. (a)State two factors within the seed that causes seed dormancy. **(2mks)**

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(b)Distinguish between epigeal and hypogeal germination. **(2mks)**

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17. (a)Define the following terms. **(2mks)**

(i)Mutation

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(ii)Discontinuous variation

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(b)Hemophilia is more common in men than in women .Suggest reasons to account for this. **(2mks)**

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18. (a)State two evidences of evolution. **(2mks)**

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(b)Explain the concept adaptive radiation. **(2mks)**

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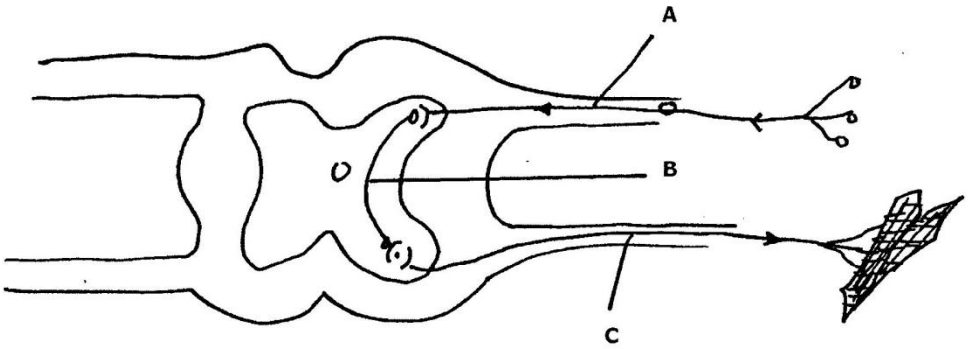
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19. The diagram below represents a simple reflex ark



(a)Name the parts labeled A, B and C **(3mks)**

A……

B……

C……

(b)What is the role of part A **(1mk)**

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20. Give three structural differences between the skeletal muscles and smooth muscles. **(3mks)**

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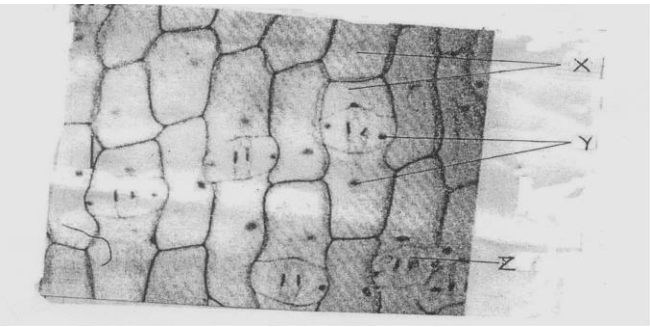
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21. Below is a photomicrograph of the surface view of the lower epidermis of a monocotyledonous leaf



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(a)Name the cells labeled X and Y. **(2mks)**

X……

Y……..

(b)State two roles of the part labeled Z in plants. **(2mks)**

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22. State three structural adaptations of the proximal convoluted tubules to their functions**.** **(2mks)**

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23. (a)What is parthenocarpy. **(1mk)**

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(b)Which hormone can be used to induce parthenocarpy in unpollinated flowers. **(1mk)**

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(c)What is the significance of slippery seeds in tomatoes during dispersal? **(1mk)**

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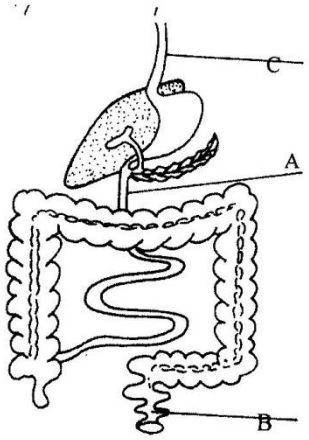
(d)Why is a maize grain considered as a fruit? (1mk)

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24. The diagram below shows part of alimentary canal of a mammal



(i)Name the parts labeled A and C **(2mks)**

A……

C……

(ii)State the function of the part labeled B **(1mk)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

231/2
BIOLOGY
PAPER 2
TIME: 2HOURS.

INSTRUCTIONS TO CANDIDATES

- Write your **Name**, **School** and **Index** number in the spaces provided.
- Answer **all** questions in section **A** in the spaces provided. In Section **B**, answer question **6** (compulsory) and either **7** or **8** in the spaces provided after question **8**.
- Candidates should answer all the questions in **English**.

FOR EXAMINERS USE ONLY

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
SECTION A	1 2 3 4 5	8 8 8 8 8	
SECTION B	6 7 8	20 20 20	
TOTAL SCORE		**100**	

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SECTION A

(Answer ALL questions in this section)

1.(a) The table below shows the concentration of sodium and iodine ions in pond water and in the cells sap of water lettuce plant

	Sodium ion concentration	Iodine concentration
Ponch water	180	0.4
Cell sap	90	500

(a) Giving reasons name the process through which each of the ions is taken up by the plant

(i)Sodium ion **(2mks)**

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(ii)Iodine ion **(2mks)**

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(b) The lettuce plant was then treated with a chemical substance that inhibit the syntheisis of ATP

Giving a reason ,state which ion was affected by the treatment **(2mks)**

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(c) Explain why fresh water fish cannot survive in marine habitat . (2mks)

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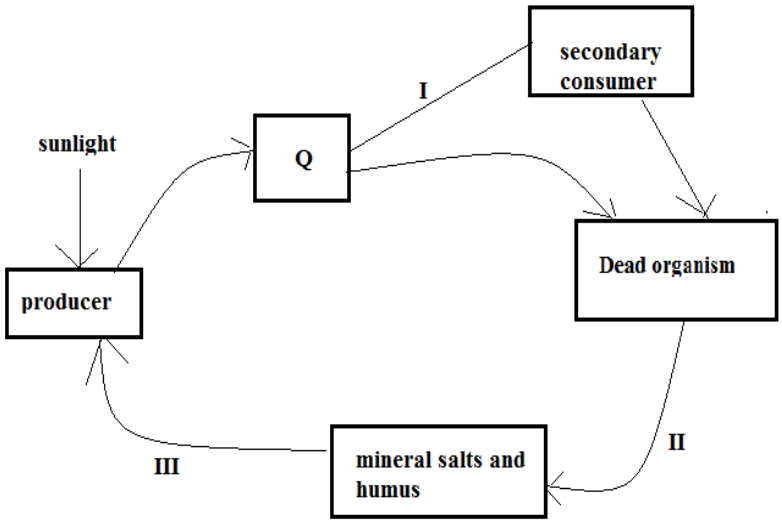
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2.The diagram below represents recycling of nutrients in a certain ecosystem



(a) Name the trophic level represented by Q. **(1mk)**

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(b) Name the process represented by**;** **(3mks)**

I……

II……

III……

(c) Name the organism involved in process II. **(1mk)**

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(d) What would happen within the ecosystem if all the secondary consumers were eliminated? **(3mks)**

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3. In a garden of plants of the same species 705 plants have red flowers which 224 had white flowers.

(a) Work out the ratio of the red to white flowers (show your working). **(2mks)**

(b)(i) Using letter R to represent the dominant gene, work out a cross between F1 offspring and a white flowered plant **(4mks)**

(ii)What is the genotypic ratio from the cross in (i) above? **(1mk)**

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(c)What is meant by the term allele? **(1mk)**

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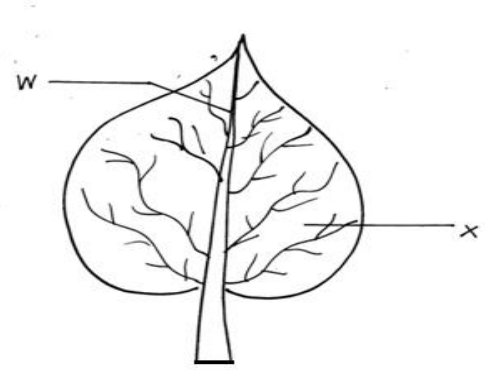
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4. The diagram below shows a leaf of a certain plant



(i)Name the parts labeled W and X **(2mks)**

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(ii)State how the parts labeled W and X are adapted to their functions **(2mks)**

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(B) (I)Using observable features only ,state the class to which the plant from which the leaf above was obtained belongs **(1mk)**

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(ii)Give two reseasons for your answer in (i) above **(2mks)**

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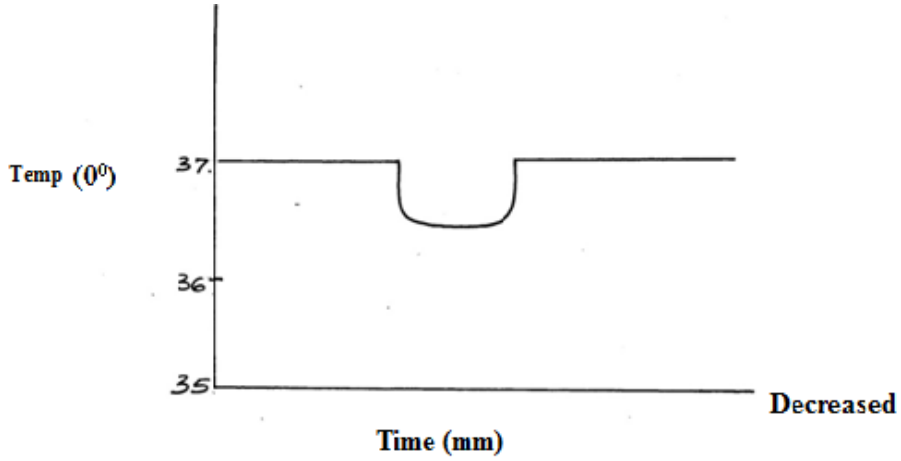
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(iii)Give one climatic conditions that favors the growth of the plant from which the leaf was obtained (1mk)

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5.The temperature of a person was taken before, during and after a cold bath. The results are shown in the graph below.



(a)Explain why the temperature decreased during bath. **(3mks)**

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(b)What changes occurred in the skin that enabled the body to return to normal. **(4mks)**

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(c)Name the specific part that controls body temperature in humans. **(1mk)**

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SECTION B (40MARKS)

Answer question 6 (compulsory) and either question 7 and 8 in the spaces provided after question 8.

6.In an experiment 900 viable seeds of a certain plant species were divided into groups of 100 seeds each. Each group of seeds was placed at different temperatures but same conditions of air and moisture. The percentage of germination was determined after 10 days .The table below shows percentage germination at normal temperatures.

Temp (0c	0	5	10	15	20	25	30	35	40
Percentage germination	0	0	2	5	16	50	84	30	2

(a)Using a suitable scale, draw a graph of percentage germination against temperature (^{0}c). **(6mks)**

(PROVIDE A GRAPH PAPER)

(b)Account for percentage germination at

(i)5^0C **(3mks)**

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(ii) 30^0C (3mks)

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(iii) 40^0C **(3mks)**

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(c)Explain the role played by each of the following factors in germination of seeds.

i) Water **(3mks)**

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ii) Oxygen **(2mks)**

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7.Describe the various ways in which seeds and fruits are adapted for dispersal. (20mks)

8. (a)What is natural selection? (2mks)

(b)Discuss three examples of natural selection in action. (18mks)

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

231/3

BIOLOGY

PAPER 3 (PRACTICAL)

Time: 1 ¾ HOURS

INSTRUCTIONS TO CANDIDATES

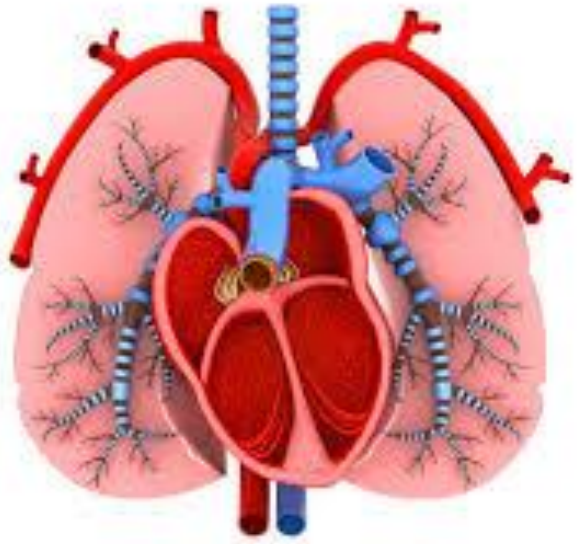
- Answer ALL the questions.
- Answers must be written in the spaces provided in the question paper.
- Additional pages must not be inserted.

FOR EXAMINERS USE ONLY

Question	Maximum score	Candidate's score
1	12	
2	14	
3	14	
Total Score	*40*	

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1. Study the photograph below and answer the questions that follow.



a) State two organ systems in which the two organs in the photograph above are found. **(2mks)**

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b) Label on the photograph the following structures**.** **(4mks)**

(i) Bronchi

(ii) Left ventricle

(iii) septum

(iv) trachea

c) State one feature of the following structures identified in(b) above and give the importance of the features**.(4mks)**

structure	feature	Importance
Left ventricle		

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Trachea		

d) Use an arrow to show the flow of carbon (iv) oxide molecule thorough the chambers of the heart towards the lungs. (1mk)

e) State one observable features of lungs in the photograph above that suits them to their function. **(1mks)**

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2) You are provided with the following. Solution **P**, **Q** and **Z**.

(a) (i) Put 2 cm^3 of solution **P** into two test tubes labeled **A** and **B**. Add three drops of iodine solution into test tube **A**. Observe and record. **(1 mark)**

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(ii) To test tube **B**, add an equal amount of Benedict's solution. Heat to boil. Record your observation. **(1 mark)**

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(iii) From the results in (a) (i) and (ii), identify solution **P**. **(1 mark)**

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(iv) Put 2cm^3 of solution **Z** into a clean test tube labeled **C**. Add equal volume of Benedict's solution. Heat to boil. Record your observation **(1 mark)**

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(v) Open the visking tubing provided and tie one end tightly, Pour solution **P** into the visking tubing and add 1cm^3 of the solution **R**. Tie the other end of the visking tubing and ensure there is no leakage at both ends. Pour solution **Z** into a clean beaker till it is half full. Immerse visking tube in the solution **Z** in the beaker. Allow it to stand for 30 minutes. After 30 minutes, take 2cm^3 of solution **Z** from the beaker into a clean test tube labeled **D**. Add equal amount of Benedict's solution. Heat to boil. Record your observation. **(1 mark)**

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(vi)Account for the observation made in (v) above. **(3 marks)**

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(vii) What is the identity of solution **R?** **(1 mark)**

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(viii) State **one** factor that can affect the process demonstrated in 2a **(v**) above **(1 mark)**

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b) Use the reagents provided to test for the food substance in solution Q. **(4mks)**

Food substance	procedure	observation	conclusion

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3. The photograph below shows specimen L. You are also provided with other two specimens labeled **k** and **M**. Study them then answer questions that follow:

Photograph L.



a) Identify the specimens. **(3mks)**

K……..

L……..

M…….

b) State **two** adaptive characteristic features of the specimen **L**. **(2mks)**

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c) State two observable differences between specimen L and M. **(2mks**

Bone L	Bone M

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d) (i) Draw and label the anterior parts of specimen K. **(3mks)**

(ii)State ways by which specimen K is adapted to its functions. **(2mks)**

(iii) Name the bone that articulates with specimen K at the:

Proximal end (1mk)

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Distal end (1mk)

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

565/1
BUSINESS STUDIES
PAPER 1
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

- *Write your **name** and **index number** in the spaces provided above*
- ***Sign** and write the **date** of examination in the spaces provided.*
- *Answer **all** the questions. (25 questions).*
- *All answers should be written in the spaces provided in this booklet.*
- *Candidates should answer all questions in English*
- ***This paper consists of 8 printed pages.***
- ***Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.***

For Examiners Use Only

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

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Question	13	14	15	16	17	19	20	21	22	23	24	25	Total score
Marks													

1.Outline four ways in which a good business structure contributes to the success of a business **(4mks)**

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2.The government is committed to promoting business activities in the country state four ways through which the government is creating an enabling environment to achieve this goal **(4mks)**

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3.From the current population statistics Kenya comprise of 60 % youthfull people Give four benefits that the country can attain from such a population structure **(4mks)**

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4.Outline four principles that guide the taxation syatem of the country **(4mks)**

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5.Identify four characteristics that are unique to basic wants **(4mks)**

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6.State four ways in which consumers benefits from the activities of a warehouse **(4mks)**

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7.Outline four circumstances under which a producer finds it necessary to use an a appointed distribution in the distribution of his products **(4mks)**

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8.Give four reasons to account for the increased use of mobile banking services **(4mks)**

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9.List four types of information that should be highlighted in a business plan **(4mks)**

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10. Give four reasons why you may encourage a person to take out an endowments life assurance policy **(4mks)**

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11. Highlight four features that are common with countries that have high level of national income (4mks)

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12. The following information relates to Mwamba enterprises on 31st December 2015

Stock	40,000
Cash	20,000
Furniture	10,000
Premises	50,000
Bank overdraft	20,000
Creditors	80,000
Debtors	120,000

Prepare a balance sheet from the above information

13. A trader had capital amounting to Shs 560,000 at the end of the trading on 31st December 2015.The following information was also provided

(a) Profit for the year was Shs 210,000

(b) The owner drew Shs 50,000 for personal use during the year

(c) The owner introduced a van worthy Shs 120,000 into the business from his personal services

Calculate the traders capital as at 1st January 2015

14. The following information was extracted from the books of Elgon traders on 31st December 2015

Stock 1:1.2015	70,000
Stock 31:12.2015	80,000
Purchases	130,000
Mark up	20%

Prepare the trading account of Elgon traders

15. The following cash book relates to a trader for the period of January 2015

Dr. CASH BOOK Cr

Date 2015		Cash Shs	Bank shs	Date 2015		Cash Shs	Bank Shs
1/1	Balance Building	120,000	300,000	2/1	John Sambu		20,000
15/1	Sales	60,000		10/1	Furniture	10,000	
20/1	Bank	10,000		20/1	Cash		10,000
				30/1	Balance bld	180,000	270,000
						190,000	300,000
		190,000	300,000				
30/1	Balance bld	180,000	270,000				

Describe the transactions that took place on the following dates

(a) 2/1/2015.....

(b) 10/1/2015.....

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(c) 15/1/2015.....

(d) 20/1/2015..... **(4mks**

16. Outline four circumstances under which a firm finds it suitable to use sales persons to promote it' **(4mks)**

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17. For each of the following transaction state the most suitable means of paymen **(4mks)**

Transaction	Means of payment
To pay salaries to many workers using one cheque	
To pay fees into the school accounts	
To pay rent every end of the month	
To transfer money from one account to another	

18. Most countries in Africa suffer from balance of payment deficit.Advance four possible causes of this problem **(4mks)**

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19. State four differences between perfect competition and monopolistic completion market structures **(4mks)**

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20. Despite advancement in the transport sector, human porterage continues to be relevant .Give four reasons to account for this **(4mks)**

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21. Give four possible reasons why the government has encouraged matatu operators to start savings and credit co-operatitive society (saccos) **(4mks)**

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22. State four reasons why the Kenyan economy is dominated by small firms **(4mks)**

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23. Outline four reasons why source documents are important in accounting **(4mks)**

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24. State four duties of department manager in an organization **(4mks)**

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25. Highlight four factors that can results in a shift of the demand curve of a product to the right (**4mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

565/2
BUSINESS STUDIES
PAPER 2
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

- *Write your **name** and **index number** in the spaces provided above*
- *The paper consist of six questions*
- *Answer any **five** questions*
- *All questions carry equal marks*
- ***Sign** and write the **date** of examination in the spaces provided.*

For Examiners Use Only

Question	Maximum score	Candidates score
1		
2		
3		
4		
5		
6		
Total score		

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1.Explain five positive effects of inflation in an economy **(10mks)**

(b)Highlight five ways in which the office takes care of property in an Organization **(10mks)**

2.(a) A high population growth is undesirable .Outline methods of controlling the growth rate **(10mks)**

(b)Explain five factors that limit the ability of consumers to protect themselves against unfair practices by business men **(10mks)**

3.(a) Explain five factors that an entrepreneur should consider when evaluating a business opportunity **(10mks)**

(b)Highlight five limitations of using ---- capital income as a measure of warfare in an economy **(10mks)**

4.(a)The following information was extracted from the books of Muliru Enterprises as at 30th April 2016

Item	Sh	Item	Sh
Sales	1,280,000	Returns out	50,000
Purchases	900,000	Returns in	60,000
Carriage out	30,000	Carriage in	150,000
Opening stock	230,000	Insurance	40,000
Advertising	80,000	Closing stock	260,000
Discount received	50,000	Discount allowed	30,000

(a) Required: Prepare a Trading, profit and loss Account **(12mks)**

(b) Outline four current trends in product promotion in Kenya **(8mks)**

5.(a) Explain five classifications of Economic resources **(10mks)**

(b)Explain five principles that would lead to efficient management of co-operative society **(10mks)**

6.(a)Give five differences between Economic growth and Economic development **(10mks)**

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(b)The following information belongs to Handa Retailers as at 1st January 2016

	Sh
Furniture	39,500
Debtors (Shikhu)	18260
Bank	6190
Capital	48150
Creditors Mwami	7,250
Juma	8,550

The following transactions took place during the month of Jan.4 sold goods on credit to Shikhu for Sh 10,500 and paid Sh 2,500 by cheque for carriage of goods

Jan 10 Shikhu returned goods worth Sh 7,500

Jan 14 withdrew Sh 10,0

/

00 from the bank to pay school fees for his children

Required: Record all the above information in the relevant ledger

Accounts and extra balance for Shikhu A/C and Bank A/c **(10mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

233/1

CHEMISTRY

PAPER 1

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

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

2.Sign and write the date of examination in the spaces provided above.

3.Answer all the questions in the spaces provided.

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

5.All working must be clearly shown where necessary.

6.Candidates should check the question paper to ascertain that all the pages are printed as indicated and no question is missing.

FOR EXAMINER'S USE ONLY

QUESTIONS	MAXIMUM SC	CANDIDATE'S SCORE
1-28	80	

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1. Explain the following

i) It is always advisable to scoop chemicals using a clean spatula**.** **(1mk)**

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ii) Flammable substances should always be kept away from flames in the laboratory. **(1mk)**

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2. Name one reagent that can be used to distinguish between Al^{3+} and Zn^{2+} ions in solution and state what would be observed if each of the ions is treated with the reagent you have named**.** **(3mks)**

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3. Manganese sulphide reacts with acids according to the following equation.

$$MnS_{(s)} + 2H_3O^+_{(aq)} \rightleftharpoons Mn^{2+}_{(aq)} + 2H_2O + H_2S_{(g)}$$

State giving a reason what would happen to the equilibrium if;

i) Water is added to the equilibrium mixture. **(2mks)**

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ii) Hydrogen chloride is bubbled into the equilibrium mixture. **(2mks)**

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4.State the conditions under which copper reacts with sulphuric (vi) acid and give an equation for the reaction. **(2mks)**

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5. When 8.8g of hydrocarbon Z was burnt in excess air 14.4g of water and 11.95 dm^3 of carbon (vi) oxide were obtained at s.t.p. Determine the empirical formula of Z. **(3mks)**

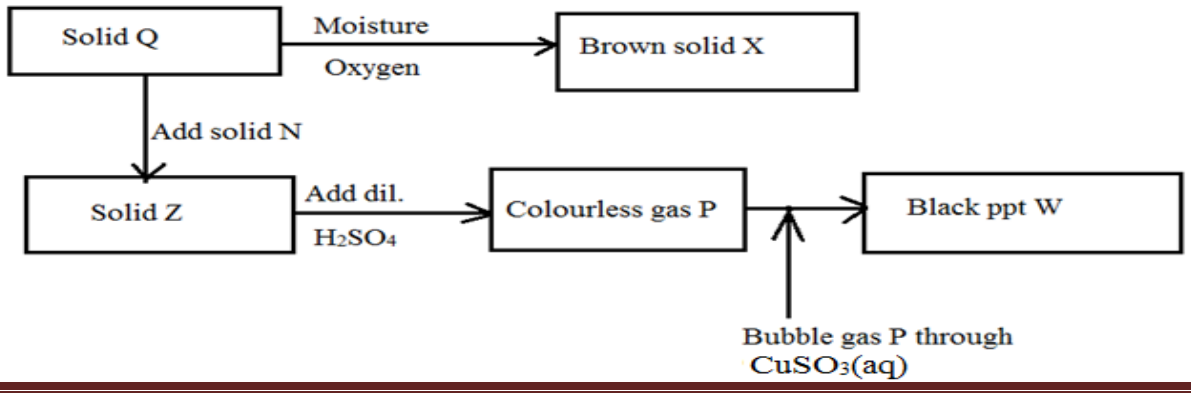
6.When zinc granules are dropped into two separate solutions of dilute sulphuric (vi) acid effervescence of a colourless gas occurs in each case. Give equations to represent the reactions that take place. **(2mks)**

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7. Study the chart below and answer the questions that follow.



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

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b) Write the ionic equation for the reaction between P and copper (ii) sulphide solution. **(1mk)**

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c) State the observations made when gas P is bubbled through iron (iii) chloride solution. **(1mk)**

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8. State and explain the observation made when a moist red litmus paper is put in a gas jar of dry chlorine gas. **(2mks)**

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9. Use the information in the table below to answer the questions that follow.

Melting point	**Element**	**Atomic number**
97.8	R	11
660	S	13
1440	T	14
-40.1	U	17
63.1	V	19

a) Write the electron arrangement of

i) Ion of S

……

ii) atom of T

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b) Explain why the melting point of T is higher than that of U. **(2mks)**

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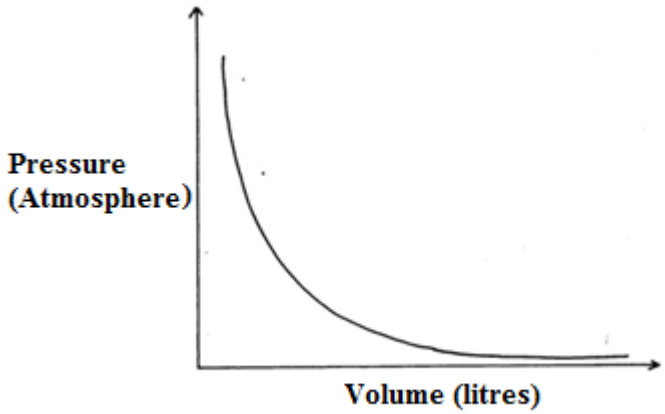
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10. Calculate the volume of nitrogen (i) oxide produced when 38.2g of ammonium nitrate is completely decomposed by heating (at s.t.p). (N=14, H=1, O=16) **(3mks)**

11. The graph below shows the behavior of affixed mass of a gas at constant temperature.



a) What is the relationship between the volume and the pressure of the gas? (1mk)

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b) $60cm^3$ of oxygen gas diffused through a porous partition in 50 seconds. How long would it take $60cm^3$ of sulphur(iv) oxide gas to diffuse through the same partition under same conditions? (S = 32, O = 16.0) **(3mks)**

12. a) When extinguishing a fire caused by burning kerosene carbon(iv) oxide is preferred to water. Explain. **(2mks)**

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b)Write the formula of the oxide of carbon which is 'silent killer'**.** **(1mk)**

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13. What is an Amphoteric oxide? Give two examples. **(2mks)**

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14. A certain fertilizer is suspected to be containing nitrate ions. Describe how the presence of nitrate ions can be determined in such fertilizer. (3mks)

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15. Starting with zinc carbonate solid, described how zinc hydroxide can be prepared in the laboratory. **(3mks)**

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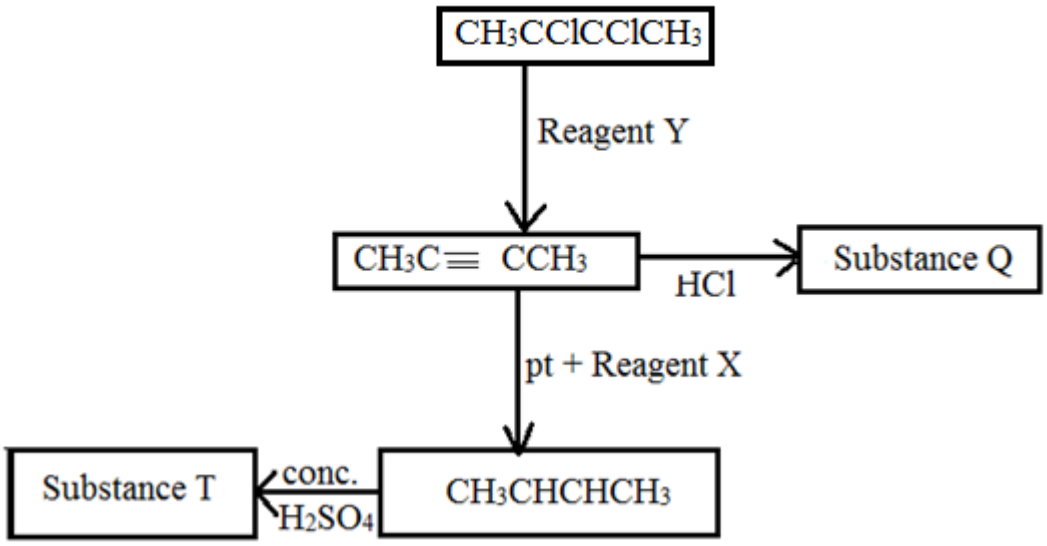
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16. Below is a scheme of some reactions starting with but-2-ene. Study it and answer the questions that follow.



a)Name Y, X and T. **(1 ½ mks)**

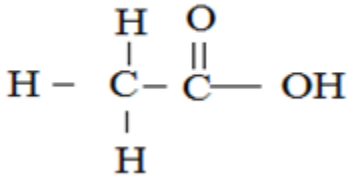
Y……

X……

T……

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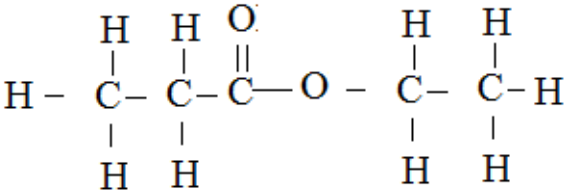
b)i) Give the name of the following organic compounds. **(½ mk)**



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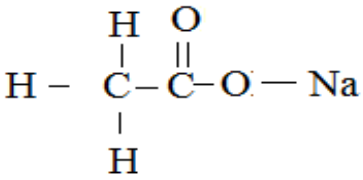
ii)



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iii)



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17. The following results were obtained during an experiment to determine the solubility of potassium nitrate in water at 30^0C.

Mass of dish = 15.86g

Mass of dish + saturated solution at 30^0C = 26.86g

Mass of dish + solid KNO_3 after evaporation to dryness = 16.7g

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Calculate the mass of saturated solution containing 60.0g of water at 30^0C**.** **(3mks)**

18. Apart from their location, state any two differences between a proton and an electron. **(1mk)**

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19. Explain why chlorine is a gas while iodine is a solid at room temperature. **(2mks)**

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

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b)Give the total number of atoms present in the gas produced when water is added to magnesium nitrate. (1mk)

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21. Use the thermo chemical equations below to answer the questions that follow.

$C_2H_2 + \frac{7}{2} O_2(g) \longrightarrow 2\ CO_2(g) + 3H_2O(l)$ $\Delta H = -1560KJ/MOL$

$C(s) + O_2(g) \longrightarrow CO_2\ (g)$ $\Delta H = -394KJ/MOL$

$H_2(g) + ½\ O_2(g) \longrightarrow H_2O\ (g)$ $\Delta H = -286KJ/MOL$

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i) Draw an energy cycle diagram to the enthalpy of formation of ethyne**.** **(1 ½ mks)**

ii) Calculate the enthalpy of formation of ethyne. **(1 ½ mks)**

22. For the reaction

$$Cl_2\ (g) + 2I^-\ (aq) \longrightarrow 2Cl^-\ (aq) + I_2(s)$$

Use oxidation numbers determine the reducing agent. **(3mks)**

23. When aqueous sodium hydroxide solution was added to freshly prepared acidified iron (ii) sulphate solution a green precipitate was formed. When hydrogen peroxide was first added to iron (ii) sulphate solution followed by sodium hydroxide solution, a brown precipitate was formed.

Explain the observations. **(3mks)**

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24. Use the following information to answer the questions that follow.

$Sn^{2+}(aq) + 2e^- \longrightarrow Sn(s)$ $\quad E^\theta = -1.014V$

$Cu^{2+}(aq) + 2e^- \longrightarrow Cu(s)$ $\quad E^\theta = 0.34V$

a) Write the cell representation for the cell made up of two half cells. **(1mk)**

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

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c) Calculate the E^θ value for the cell**.** **(1mk)**

25. i) Define the term electrolysis. (1mk)

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ii) Hydrogen and oxygen can be obtained by electrolysis of acidified water. Using equation for the reaction at the electrode, explain why the volume of hydrogen obtained is twice that of oxygen **(2mks)**

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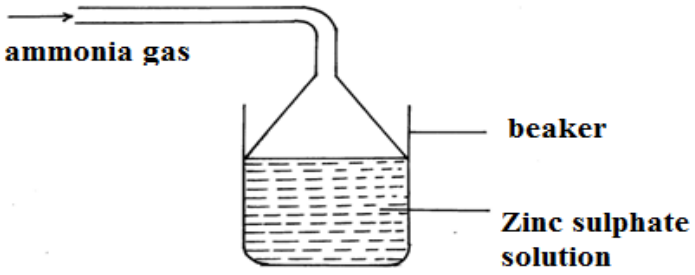
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26. A student prepared ammonia gas and let it into a solution of zinc sulphate using the arrangement shown below.



a) State and explain the observations that were made in a beaker. **(2mks)**

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b) Write the ionic equation involving zinc ions. **(1mk)**

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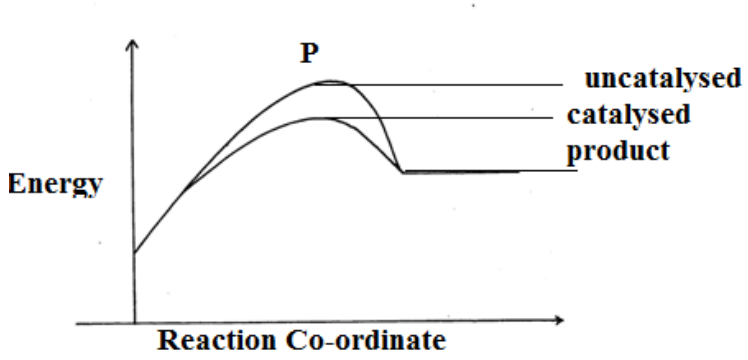
27. Use dots (**.**) and cross (x) to show the bonding in:

a) The compound formed between phosphorous and hydrogen. (P = 15, H = 1**)** **(2mks)**

c) Carbon (ii) oxide. (C = 6, O = 8) **(1mk)**

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28. The energy level diagram below shows the effect of catalyst on the reaction path.



a) What does point P represent? **(1mk)**

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b) With reference to energy level diagram, explain how a catalyst increases the rate of reaction. **(2mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

233/2

CHEMISTRY

PAPER 2

TIME: 2 HOURS

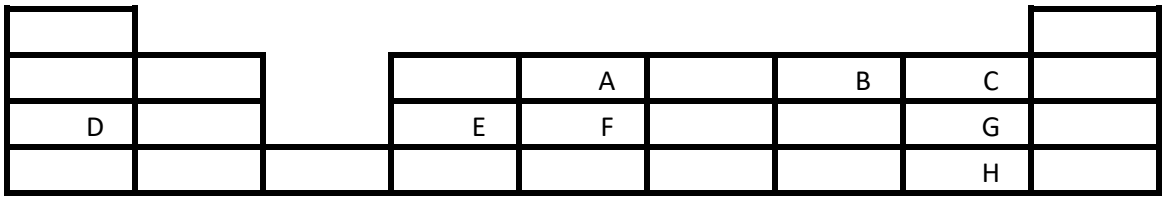
INSTRUCTIONS TO CANDIDATES
*-Answer **ALL** questions in the spaces provided after every question.*

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	10	
2	12	
3	12	
4	13	
5	10	
6	12	
7	11	
TOTAL SCORE	80	

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1.The grid below is part of the periodic table. Use it to answer the questions that follow. (The letters are not the actual symbols of the elements)



a) Which is the most reactive non-metallic elements shown in the table? Explain**.** **(2mks)**

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b) i)Write the formula of the compound formed when element A reacts with element B. **(1mk)**

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ii) Name the bond type in the compound formed in b(i) above.

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c) i)What is the name given to the family of elements where C, G and H belong**?** **(1mk)**

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ii) Write an equation for the reaction that occurs when C in gaseous form is passed through a solution containing ions of element H. (1mk)

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d) The melting points of elements F and G is1410^0C and -101^0C respectively. In terms of structure and bonding, explain why there is a large difference in the melting points of F and G. **(2mks)**

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e) D forms two oxides. Write the formula of each of the two oxides. **(1mk)**

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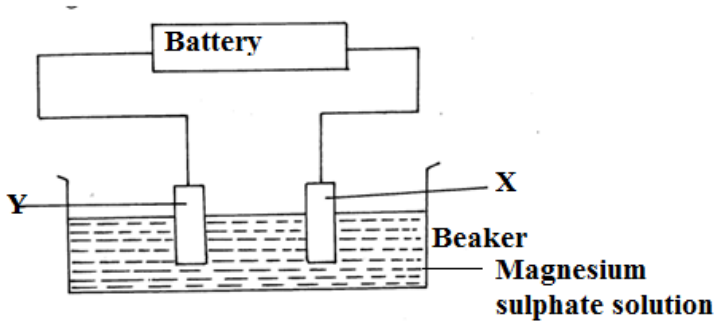
f) K is an element that belongs to the 3rd period of the periodic table and is a member of the alkaline earth elements. Show the position of K in the grid. **(1mk)**

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2. (a) The set-up below was used to investigate products formed at the electrodes during electrolysis of aqueous magnesium sulphate using inert electrodes. Use it to answer the questions that follow:-



i) During the electrolysis, hydrogen gas was formed at electrode x. Identify the anode, give a reason for your answer**.** **(2mks)**

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ii) Write the equation for the reaction which takes place at electrode Y. **(2mks)**

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iii) Why is the concentration of magnesium sulphate expected to increase during electrolysis. **(2mks)**

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iv) What will be observed if red and blue litmus papers were dipped into the solution after electrolysis**. (2mks)**

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b) During electrolysis of magnesium sulphate, a current of 0.3A was passed for 30 minutes, calculate the volume of the gas produced at the anode. Molar gas volume 24dm^3, 1 faraday=96500C) **(3mks)**

c) State two application of electrolysis. (2mks)

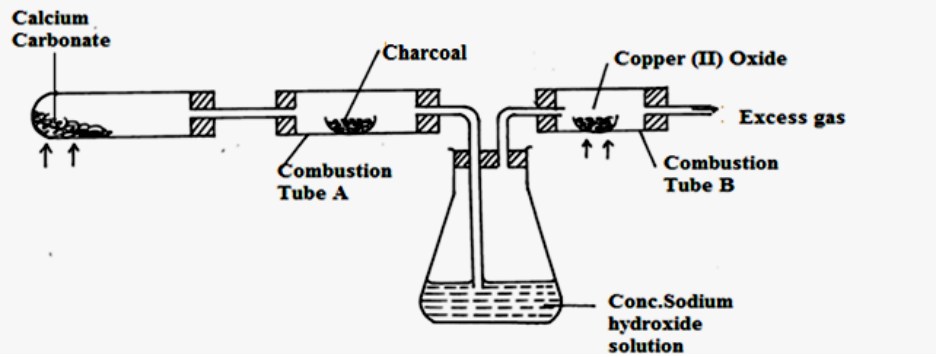
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3.Study the following set-up apparatus and use it to answer the questions that follow:



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a) i) What is the role of concentrated sodium hydroxide solution in the above set-up. **(2mks)**

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ii) Suggest one other compound that could have been used in place of conc. Sodium hydroxide solution. **(1mk)**

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b)State and explain the observation made in combustion tube B at the end of the experiment. **(2mks)**

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c)i) Write an equation for the reaction that took place when calcium carbonate was heated. **(1mk)**

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ii) Suggested one other compound that can be used in place of calcium carbonate. **(1mk)**

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d) What property of charcoal is shown in combustion tube A. Explain your answer. **(2mks)**

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e) i) What observation will be made at the end of the experiment if copper (ii) oxide was replaced with lead (ii) oxide. (2mks)

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ii) Write an equation for the reaction in e(i) above**.** **(1mk)**

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4.a) A form three student carried out an experiment where they titrated 20 cm^3 of M_2CO_3 with 0.5M HCl using phenolphthalein indicator. The M_2CO_3 solution was prepared by dissolving 6.47g of salt in distilled water then made upto 250cm^3 of solution. Complete the table below and answer questions that follows.

Titration	**I**	**II**	**III**
Final burette reading (cm^3)	20.2		45.2
Initial burette reading (cm^3)		20.2	30.2
Volume of titre cm^3	15.2	15.0	

(1 ½ mk)

b) calculate the average titre (show all your working) **(1mk)**

c) Determine number of moles of acid used. **(2mks)**

d) Write the equation of the reaction above. **(1mk)**

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e) Determine number of moles of the carbonate (M_2CO_3) used. **(2mks)**

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f) Calculate the molarity of the carbonate M_2CO_3 used**.** **(2mks)**

g) Determine the relative formulae mars of carbonate M_2CO_3 used. **(2mks)**

h) Show how relative atomic mass of M is obtained. **(1 ½ mks)**

5.a) State Charles law. **(1mk)**

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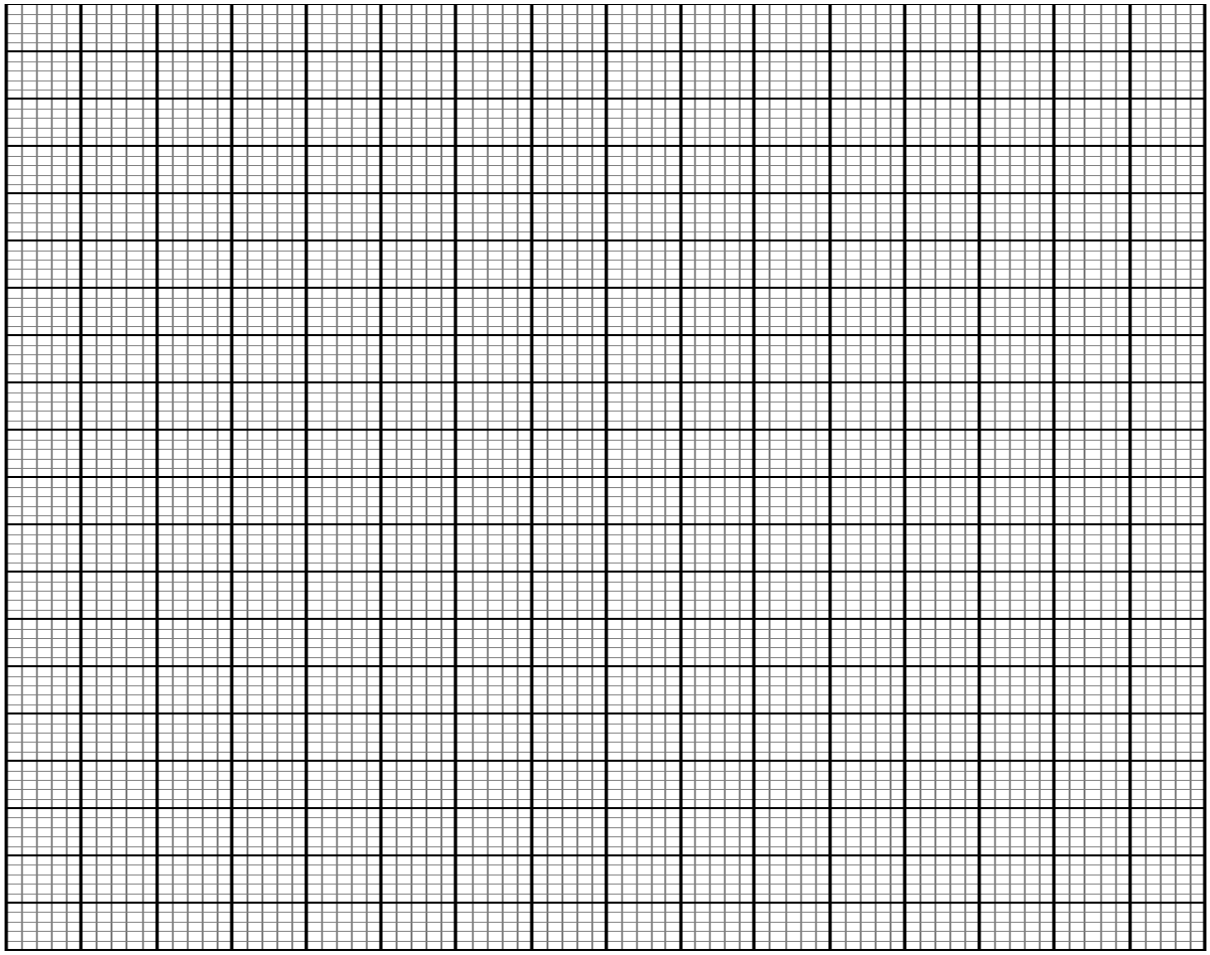
b) A gas occupies 200cm^3 of O^{0}C and 740mmHg pressure. What volume will occupy at 47^{0}C at the same pressure? **(3mks)**

c) The following table gives sample results from an experiment carried out to investigate the relationship between the volume of a fixed mass of gas with its temperature.

Temperature^{o}C	0	20	40	60	80
Volume of the gas (cm^3)	140	150	160	170	180

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i) Plot a graph of volume (Y-axis) against temperature (x-axis). **(4mks)**



ii) Determine the volume of a gas at 50^0C from the graph**.** **(1mk)**

iii) Determine from the graph the temperature in (^{0}C) when the volume of a gas is 165cm^3. **(1mk)**

6.a) Define the following terms as used in organic chemistry.

i) Hydro carbon **(1mk)**

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ii) Isomer **(1mk)**

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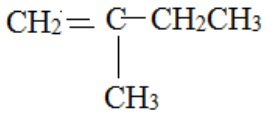
b) Name the following compounds.

i)$CH_3CH_2CH_2CH_3$

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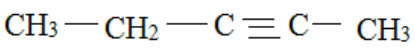
ii)



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iii)



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c) Draw the structure of the following:

i) But-1-yne

ii) 3,3-dimethylbut-1-ene

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iii) 2,2-dimethylpropane **(3mks)**

d) Distinguish between alkenes and alkanes. **(2mks)**

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e) State two sources of alkenes.

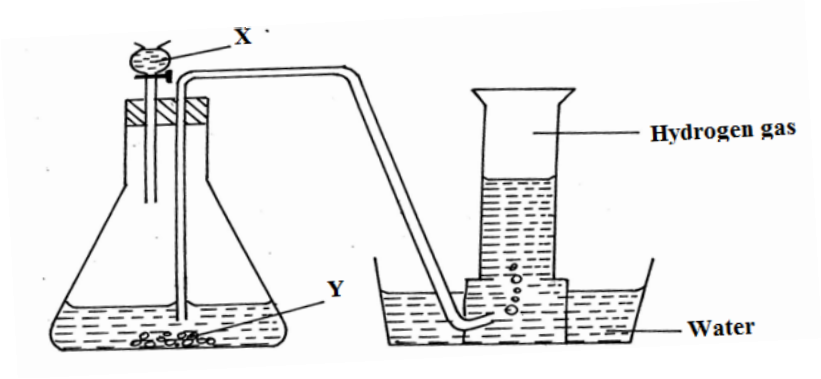
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7.The figure below is asset up of apparatus for the preparation of hydrogen gas.



a) State mistake made in the set up. **(1mk)**

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b) Identify substance

i)X……..

ii)Y…….

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c) Write an ionic equation for the reaction between X and Y. **(1mk)**

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d)State and explain the observation made when hydrogen gas was passed over heated copper(ii)oxide in a combustion tube. **(2mks)**

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e) Under suitable conditions hydrogen reacts with nitrogen to produce ammonia.

i) Name the catalyst used in the reaction. **(1mk)**

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ii) Explain why the catalyst used should be powdered. **(1mk)**

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iii)Give a reason why concentrated sulphuric (vi) is not a suitable drying agent for ammonia gas. **(1mk)**

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iv) State two commercial uses of hydrogen gas**.** **(2mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

233/3
CHEMISTRY
PAPER 3
TIME: 2 ¼ HOURS
INSTRUCTIONS TO THE CANDIDATES:-

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

For Examiners use Only

QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1	15	
2	15	
3	10	
TOTAL	40	

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1.You are provided with the following solutions

- M_1 containing 95g of a mixture of sodium carbonate and sodium chloride per litre of solution.
- M_2 which is 1MHCl.

You are to determine the percentage of sodium chloride in the mixture.

Proceed as follows

Pipette 25.0cm^3 of M_1 and titrate with M_2 from the burette using 3 – 4 drops of methyl orange indicator. Stop titrating when a permanent pink colour appears. Repeat the experiment and complete the table below.

TABLE 1

	I	**II**	**III**
Final burette reading (cm^3)			
Initial burette reading (cm^3)			
Volume of M_2 used (cm^3)			

4mks

a) Determine the average volume of M_2 used. Show your workings.**1mk**

b) Determine the number of moles of M_2 used **2mks**

c) Write down an ionic equation for the substances that react. **1mk**

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d) Determine the number of moles of the base used. **2mks**

e) Calculate the concentration of sodium carbonate. **2mks**

f) Determine the mass of sodium carbonate in 1 litre of the solution (Na=23, C=12, O=16) **(2mks)**

g) Determine the percentage of sodium chloride in the mixture. **2mks**

2. You are provided with the following solutions

- 1M HCl, solution M_2
- 1 M NaOH, solution M_3

You are expected to determine the molar heat of neutralization of hydrochloric acid.

Proceed as follows:

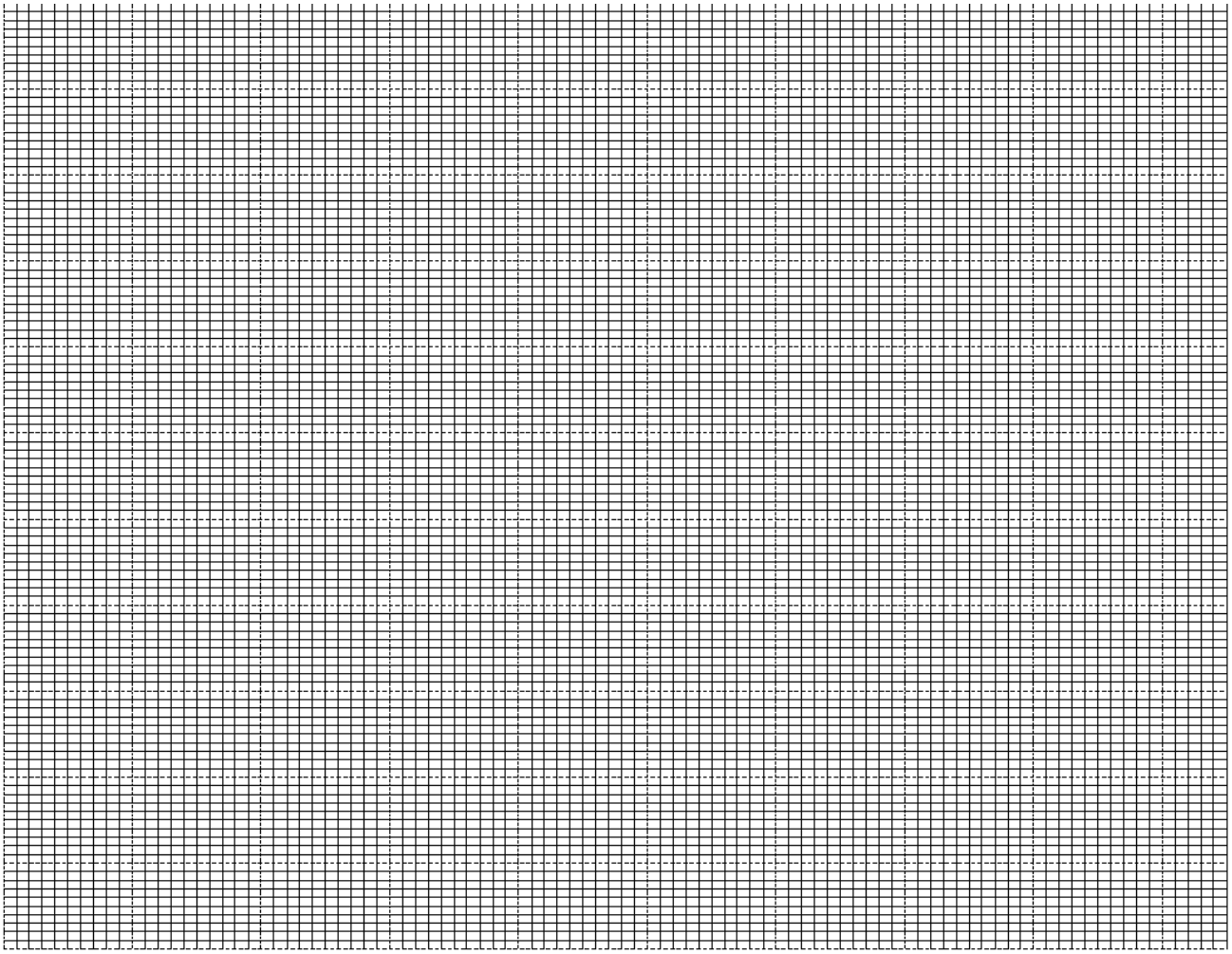
Measure 23cm^3 of M_2 and put in a 100ml beaker. Measure its temperature and record in the table below under first column. By use of measuring cylinder measure 5cm^3 of M_3 and add to M_2 in the beaker. Stir with the thermometer and record the final steady temperature. Continue adding 5cm^3 at a time and recording the temperature till 35cm^3 of M_2 has been added, complete the table below.

a) TABLE II

Volume of M_3 added (cm^3)	0	5	10	15	20	25	30	35
Temperature (C^0)								

4mks

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b) Plot a graph of temperature (vertical axis) against volume of NaOH added. **4mks**

c) From your graph determine

(i) Volume of 1M NaOH needed to neutralize $23cm^3$ of 1M HCl **1mk**

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(ii) Rise in temperature ΔT. **1mk**

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d) Calculate the amount of heat evolved in the above reaction.

Take specific heat capacity of solution to be 4.2J/gK, density of solution $1glcm^3$. **2mks**

e) Calculate the number of moles of HCl used. **1mk**

f) Hence determine the molar heat of neutralization of hydrochloric acid. **2mks**

3. You are given solid W. carry out the tests below and infer accordingly.

a) Take a spatula endful of W and put in a boiling tube. Add about $8cm^3$ of water and shake. Keep the mixture for the tests below.

Observations	Inferences
1mk	**1mk**

b) To about $2cm^3$ of solution of W add Sodium Hydroxide (2M NaOH) dropwise till in excess.

Observations	Inferences
1mk	**2mks**

c)To about $2cm^3$ of solution W, add Ammonia solution (2M $NH_{3(aq)}$) dropwise till in excess.

Observations	Inferences
1mk	**2mks**

d) Add about $2cm^3$ of solution W, add about 5 drops of Nitric Acid ($HNO_{3(aq)}$) followed by 2 drops of Barium chloride.

Observations	Inferences
1mk	**1mk**

BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

451/1
COMPUTER STUDIES
PAPER 1
(THEORY)
TIME:2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

- Write your **name** and **index number** in the spaces provided above.
- This paper consists of **TWO** sections **A** and **B**.
- Answer **ALL** the questions in section **A**.
- Answer question **16** (Compulsory) and any other **THREE** questions from section **B.**
- All answers should be written in the spaces provided.

SECTION	QUESTION	CANDIDATES SCORE
A	1 – 15	
B	16	
	17	
	18	
	19	
	20	
	TOTAL SCORE	

SECTION A: (40 MARKS)

Answer All the question in this section

1.A computer should be connected to a stable power supply.Highlight two reasons **(2mks)**

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2.(a) Give four characteristics of cathode ray tube monitors **(2mks)**

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(b)Name two examples of flat panel display (FPD) **(2mks)**

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3.Optical storage media are preferred as compared to magnetic media give four reasons (**2mks)**

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4.Many organizations nowadays use in-house developed programs. Highlight four disadvantages of standard software over in house developed, software (2mks)

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5. Briefly explain classification of operating system by human computer interface **(3mks)**

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6.Differentiate the following

(i)Insert mode and type over mode **(2mks)**

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(ii)Text alignment and indentation **(2mks)**

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7.(a)Explain the functions of the following spreadsheet inbuilt functions

(i) SUM IF **(1mk)**

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(ii) COUNT **(1mk)**

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(b)Explain the following errors as displayed in a spreadsheet cell **(2mks)**

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(i) ####

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(ii) ## NAME

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(iii) ## NUM!

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(iv) ## DIV/O!

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8.Controls in database can either be bound or unbound .Explain **(2mks)**

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9.State three ways of moving round the page in a desktop publishing window **(3mks)**

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10. Why is it difficult to detect and prevent computer crimes? Give four reasons **(2mks)**

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11. Mrs. Jane decided to use electronic data processing method to analyze her data. Highlight four factors to consider while choosing the method to use (2mks)

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12. (a)State two disadvantages of mesh topology **(1mk)**

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(b)Name two functions of network operating system **(1mk)**

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13. (a) Define the term Artificial Intelligence **(1mk)**

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(b)List four areas where artificial intelligence is applicable **(2mks)**

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14. (a)Give four features of micro computers and ICT in future **(2mks)**

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(b) Name two advantages of automated manufacturing **(1mk)**

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15. Highlight three types of job opportunities that are available in the field of computer software **(3mks)**

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SECTION B (60 MARKS)

Answer question 16 compulsory and any other three questions from this section

16. (a)Define the following terms

(i) Structured programming **(1mk)**

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(ii) Constants **(1mk)**

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(iii) Variable **(1mk)**

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(b)Distinguish between dummy data and real data as used in system testing (2mks)

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(c) Mr.Etarukot borrowed a loan of 200,000 from Akukuranut cooperative society at a rate of 10% payable in 2 years flat rate. Draw a flow chart that can be used to develop a computer program that will keep track of monthly repayments **(5mks)**

(d)Write the pseudo code for the flowchart in question (c) above **(5mks)**

17. (a)Define the term simulation **(1mk)**

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(b)Highlight four areas where simulation is applicable **(2mks)**

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(c) Give four disadvantages of a good system analysist **(2mks)**

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(d)Name four qualities of agood system analyst **(2mks)**

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(e)What do you understand by the term Articial Neural Network ? **(2mks)**

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(f)Give two features of neural networks **(2mks)**

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(g)Explain the following conditions

(i) Computer Vision Syndrome (CVS) **(2mks)**

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(ii)Repetitive Stress Injury (RSI) **(2mks**

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18. (a)Briefly explain the following terms as used in networking **(2mks)**

(i) Distributed processing **(1mk)**

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(ii) Remote communication **(1mk)**

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(b)Many people today prefer use of cell phones instead of fixed lines. List four advantages of cell phones **(2mks)**

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Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

(c)Distinguish between logical and physical network topology **(2mks)**

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(d)A school decided to replace its administration system. The current had restrited reporting facilities. The school is considering using parallel running and direct change over .

(i) Explain the terms parallel running and direct changeover **(2mks)**

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(ii)Give four disadvantages of direct changeover **(2mks)**

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(e)Name three tasks carried out during system changeover **(2mks)**

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19.

(a) Give and explain two computational errors committed during data processing **(2mks)**

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(b) Highlight four ways of minimizing threats to data integrity **(2mks)**

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(c) Name three risks associated with distributed data processing system **(3mks)**

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(d) Differentiate between logical and physical computer files **(2mks)**

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(e) Give two advantages of compiling a program rather than interpreting it **(2mks)**

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(f) Highlight four errors detecting methods used in program development (2mks)

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Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

(g) Give four benefits of structural programming **(2mks)**

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20.

(a) Internet connects millions of computers and telecommunication devices that have different software and hardware configurations.

(i) Explain how these devices work together **(2mks)**

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(ii) Name four telecommunication devices used **(2mks)**

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(b) Outline four ways of preventing piracy with regard to data and information **(2mks)**

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(c) Perform the following operation

(i)7ABEX to denary (2mks)

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(ii)37_{10} -13_{10} using two's compliment giving your answer to 8 binary digit **(3mks)**

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(d) List and explain the three parts of the window taskbar **(3mks)**

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(e) Give two reasons why the hard disk may be partitioned **(1mk)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

451/2
COMPUTER STUDIES
PAPER 2
TIME:2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

- **Type your name and index number at the top right hand corner of each print out and your CD**
- **Write the version of software used for each question attempted**
- **Write your name and index number on the CD**
- **Password should not be used while saving**
- **Answer ALL the questions**
- **All questions carry equal marks**
- **Hand in all printouts and the CD**

FOR OFFICIAL USE

Question	Maximum score	Student score
1	50	
2	50	
Total	100	

Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

Question 1

Type the following passage exactly as it appears in to a word processor and save is as A:DOCA

GEOGRAPHICAL INFORMATIONN AND DATA

Geographical data is spatially reference data which can be displayed graphically as map images. That is the attitude of a location represented on a map. These data could be either quantitative (like elevation temperature) or qualitative (like land use in the location).In addition the attribute could be temporal. A lot of geographic attribute change with time of day, month, season, solar cycle and even over the ages. This information can be displayed on a map in four different forms.

(i) Point data:-This could represent the location of a city ,a hospital, a police station etc
(ii) Line data: Items normally represents on a maps as a line include railway line,roads,coastline,borderline,rivers etc
(iii) Polygon data:-These represents the boarders of specific regions such as seas,counties,city etc
(iv) Surface data:-This is information over region such as country,province,district,lake ,ocean, forest e.t.c

Functionally GIS should at least consist of a geographical data process subsystem, geographical data analysis subsystem and a geographical use subsystem, a geographical data analysis subsystem and geographical information use subsystem.

A few examples of GIS users land surveyors

Planners, resources forecasters and managers, public

Protection and security officers, property developers

And investors, education and transport managers

This list expanding day as GIS systems are becoming more affordable.

Hardware trends affecting GIS

The most important hardware activity that will affect GIS is cheapening or processor cost.With falling cost of the high speed microprocessors,Graphical workstations are now available for less than three thousand pounds sterling.This means that there are graphic based computer systems being used by more and more users.

(26 marks)

(b) (i) Search and replace the passage with word information except in all of those occurrences in bold type face.

(ii) Capitalalize the first character of all occurrences of the word geographical

Save the passage as A :DOCB

(c) (i)Reformat the paragraph starting with ‘ A few example “ so that the left and right margins are the same as those of the paragraph above it.

(ii) Save the passage as A:DOCC **(6 marks)**

(d) Re-order the section labeled (i),(ii),(iii) and (iv) such that the original iii becomes (i) ,original (iv) becomes (ii) ,original (ii) becomes (iii) and original

(i) that order and retain the formatting style **(6mks)**

(e) (i) Change the paper orientation to landscape

(ii) Save the passage as A:DOCD **(6marks)**

(f)Print DOCA, DOCB,DOCC and DOCD **(6marks)**

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QUESTION TWO

Using DTP software, create the following document as it is. Save it as software in drive A. Print your publication. (50 marks)

SOFTWARE

COMPUTER SOFTWARE

System software

system software performs a variety of fundamental operations that avails computer resources or to help the user accomplish specific tasks.

Functions :-

1. Booting the computer and making sure that all elements of the hardware are working properly.
2. Perform operations such as retrieving, loading, executing and storing programs.

System Software can further be divided into :

Application software

Designed to help the user accomplish specific tasks.

Classification according to acquisition

- **In-house developed programs**
- **Standard software**

Advantages of standard software over the in-house developed programs

- They can be easily installed and run
- They are ready available for almost any task
- Since they are thoroughly tested before they are released , chances of errors in them are rare.
- They can be easily modified
- They are less expensive to acquire

Software	*Uses*	*Examples*
Word processor	Typing documents like letters.	Ms Word, Lotus, WordPro, WordStar
Spreadsheets	Calculating budgets	Ms Excel, Lotus 123
DTP	Design Publications like Newspapers	Adobe Page Maker, Publisher
CAD	Technical Drawing	AutoCAD
Databases	Keeping records and files	Ms Access Dbase
Graphics Software	Creating & Manipulating pictures	Corel Draw, Adobe Photoshop

Factors to consider when selecting software

The following factors should be considered when selecting software:

Authenticity

This refers to genuineness , validity and or legitimacy of an item. Software should be accompanied by licenses and certificate of authenticity.

Compatibility and system configuration

Refers to the ability of the computer program to run the software depending on the system setup.

User friendliness

This is a measure of how easily the user can be able to operate the computer.

User needs determines the type of operating system and application programs that should be considered for application.

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

313/1
CHRISTIAN RELIGIOUS EDUCATION
PAPER 1
TIME: 2 ½ HOURS

Kenya Certificate of Secondary Education (K.C.S.E)

INSTRUCTIONS TO CANDIDATES

*i) Write your **Name** and **Index** no in the spaces provided*

ii) *Answer **Any five (5)of the given** questions* in the material provided

iii) *Each question carries equal (20) marks*

Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

1.Outline the first account of creation in Genesis 1:1-2-4a **(8mks)**

(b)Give six causes of sin according to Genesis 3-11 **(6mks)**

(c)Give six ways in which humankind continues with God's work of creation today **(6mks)**

2.(a)Explain the problems that Moses faced as he led the Israelites **(8mks)**

(b)What conditions did God expects the Israelites to fulfill; with the renewal of the covenant **(7mks)**

(c) Identify any five values a modern Christian leader would learn from the call of Moses **(5mks)**

3.(a)Give six achievements of Saul as the first King of Israel **(6mks)**

(b)Give seven reasons why Israelites demanded for a king **(7mks)**

(c) Give seven problems that Christians face when they condemn idol worship in Kenya today **(7mks)**

4.(a)How were the prophetic messages in the Old Testament written? **(6mks)**

(b)Describe any four visions of prophet Amos **(8mks)**

(c)State six ways in which God speaks to His servants today **(6mks)**

5.(a)Outline four religious practices of the exiles in Babylon **(8mks)**

(b)State seven symbolic actions used prophet Jeremiah to illustrate God's judgment and punishment for Judah **(7mks)**

(c)Identify any five evils that Jeremiah condemned **(5mks)**

6.(a)Describe the traditional African Understanding of hierarchy of beings **(8mks)**

(b)Identify seven roles placed by God in Traditional African Communities **(7mks)**

(c)Identify five factors which contribute to harmony and mutual responsibility in the African community **(5mks)**

Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

313/2
CHRISTIAN RELIGIOUS EDUCATION
PAPER 2
TIME: 2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

*iv) Write your **Name** and **Index** no in the spaces provided*

v) *Answer **Any 5** questions*

This paper consists of 2 printed pages. Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing

Answer any five questions

1.(a)Describe the annunciation of the birth of John the Baptist in Luke 1:5-25 **(8mks)**

(b)What did the angel Gabriel reveal about John the Baptist when he announced his birth to Zacharia **(7mks)**

(c)Why are Christians finding it difficult to apply the teachings to John the Baptist in their lives today **5mks)**

2.(a)Narrate the healing of the man with a withered hand in Luke ;6-11 **(6mks)**

(b)Outline the duties and privileges of Jesus 'disciples **(7mks)**

(c)What lessons do Christians learn from the teachings of Jesus using the parable of the lost coin and the lost sheep **(7mks)**

3.(a)Identify ***seven*** teachings of Jesus about the kingdom of God as outlined in Luke 13:1-35

(b)With reference to LK14:25-30, state Jesus's teaching on the cost of discipleship **(7mks)**

(c) State ***six*** ways in which Christians prepare themselves for the kingdom of God **(6mks)**

4.(a)Explain the teaching of Jesus about the vine and the branches in John 15:1-10 reveal about the unity of believers **(8mks)**

(b)Identify ***six*** teachings of Saint Paul on similarities between the church and the husband wife relationship {Ephesians 5:21 **(6mks)**

(c) Give ***six*** ways through which Christians can promote unity among themselves in Kenya today **(6mks)**

5.(a)Outline ***eight*** Christians teachings on work **(8mks)**

(b)What are moral obligations and duties of an employer towards **(6 mks)**

(c)Show ***six*** ways in which the church promoted self-employment in Kenya today **(6mks)**

6.(a)Explain how unfair distribution of wealth can lead to social disorder in Kenya **(7mks)**

(b)Highlight ***eight*** consequences of the introduction of money economy on Traditional African Communities **(8mks)**

(c)Give reasons why life skills are important to a Christian in a acquiring and using wealth **(5mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

101/1
ENGLISH
PAPER 1
(Functional skills, cloze test and oral skills)
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

a) Answer all questions.
b) All answers must be written in the space provided.

FOR EXAMINERS USE

Question	Maximum	Score
1		
2		
3		
Total		

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1.<u>Functional writing</u>

There has been a consistent drop in the academic performance of students in K.C.S.E Exams in your school for the last four years. As the senior Academics secretary, the principal asks you to investigate the likely causes and make recommendations to improve the performance.

Write the report of your findings and recommendations.

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2.**CLOZE TEST (10MARKS)**

Read the passage below and fill in each blank space with an appropriate word.

Any time the word Leadership 1_____ my mind, a phrase pops up; Lead-a ship. A captain leads a ship through rough and 2_____

Seas. Avoiding icebergs and keeping his focus on the worth, the 3_____ knows well the direction and destiny of the ship in entirely on him. That's leadership. Do we have leadership in Kenya? What is the in word?

Leadership is 4_____ looking at the times, looking for opportunities, looking for people and ideas that can take the people you lead from 5_____ they are to the place they should. A leader who fails to be on the 6_____ out falls into the cycle of redundancy and trying to face new problems 7_____ old solutions. Einstein defined madness as doing the same thing again and again and expecting 8_____ results. Leadership without ethics is not leadership and it 9_____ up in racism, selfishness and an economy of exclusion where a majority is excluded from the national 10_____.

3.ORAL SKILLS (30MARKS)

Read the oral narrative and answer the questions that follow.

The stupid monkeys

Once upon a time, a tribe of monkeys made their home in the pleasure garden of the King. On a certain holiday when the drum was beaten to call people together, the King's head gardener, hearing the drum, said to himself, 'Even though it is a holiday, the garden must be watered. Accordingly, I will ask the monkeys to water the garden for me, so that I can be off to enjoy myself and keep holiday with the rest. So he called the monkeys and asked them to water the garden. When the monkeys had promised to water all the young trees faithfully, the gardener gave them water skins and the wooden watering pot with which to perform the task.

After the gardener had gone, the monkeys took up the water skins and the watering pot and began to water the young trees. But the leader of the monkeys stopped them. 'Wait, he' said, 'we must be careful not to waste water. Before you water them you must first pull up each tree and look at the size of the roots. Then you must give plenty of water to those which have long, deep roots, but less to those with short roots. For when this water is finished, we shall have hard work to get any more.'

'To be sure,' said the other monkey that is what we must do.' So they pulled up all the trees just as their leader had told them to do and all the young trees died.

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Questions

i. What would you do to prepare your audience to listen to the above story? **(2mks)**

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ii. Mention and illustrate two oral devices you would use in narrating this story effectively? **(4mks)**

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iii. Identify two non-verbal cues you would use in narrating the above narrative. Indicate where you would use each of them. (4mks)

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iv. Explain two things that would indicate to you that the audience is following the story. **(4mks)**

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Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

3. b) Your school has invited a bank manager to come and address form four students on banking as a career. During the discussion, the students seemed not to be concentrating . Suggest the manager's shortcomings.**(5mks)**

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c) For each of the following letters, provide a word in which the letter is silent. **(3mks)**

i. r……

ii. h……

iii. t……

d) Imagine you were in a meeting and you disagree with the views of one of the speakers.

Mention four polite phrases you would use to express your dissatisfaction. **(4mks)**

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e) Explain one verbal and one non-verbal cue you would use to

i. express excitement **(2mks)**

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ii. express disappointment **(2mks)**

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f) Identify the type of intonation used in the following sentences. Use falling ↓ or rising ↑

(4mks)

i. Are you coming? .....

ii. Oh, my God!.....

iii. You broke the glass, didn't you?.....

iv. The play was very interesting……

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

101/2
ENGLISH
Paper 2
(Comprehension, Literary Appreciation and Grammar)
Time: 2 ½ Hours

Instructions to students

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

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

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QUESTION 1 ***(20mks)***

Read the passage below and answer the questions that follow

Cities and towns are experiencing massive population growth the world over receiving huge numbers of migrants ever year.

In 1950, urban population accounted for only 29 percent of the world population, according to the United Nations Educational Scientific and Cultural Organization (UNESCO). At the turn of the century, the figure had risen to 45percent. This was enough to declare the Twentieth Century the century of urbanization and city life. Now the figure is projected to hit 70 percent by 2025.

In Africa, urbanization is most intense in Algeria, Tunisia and South Africa, which have more than 50 percent of their population living in urban areas. Generally, cities in the developing world are growing at a rate of 3.5 per cent per annum.

These figures indicate that there is a continuous massive movement of people from rural to urban areas worldwide. Driven by the desire for better living conditions, they flock to cities in droves in search of greener pastures. But, slowly the **illusion** disappears, and is replaced by harsh realities of urbanism: unemployment or underemployment, crime, poverty, hunger and life in the slums.

To cope with this fast – moving wave of rural flight requires new strategies for urban planning and the use of urban spaces. Thus urban planners, policymakers and governments seek **pragmatic** and timely ways of addressing this challenge. The process of urbanization transforms land use and farming systems, patterns of labour force participation, infrastructural requirements, and natural resource systems. When cities grow, their population expands, putting a strain on food production.

As a way of easing the food shortage, many urban households, particularly the poor, have taken to growing food on small plots. Today, if you take a walk through some of the residential estates in Nairobi such as Ngara, Eastleigh and Buru Buru, you might be forgiven for thinking that a green revolution is under way. And on the outskirts of the city, green – houses and ponds compete for space with small gardens planted with flowers, vegetables and fruits. Banana plants and palm trees dwarf wrought – iron gates, their green dotting the skyline, Kale, cabbage and maize gardens sprout in the middle of urban squalor. In this unusual rare blend, urban features and rural agrarian patterns are combined in a new form of settlement and one might call 'garden cities.'

Although it is often not given much attention, urban agriculture is steadily increasing. The practice involves cultivating, processing and distributing food in and around a town or city. It also encompasses an array of activities including horticulture, aquaculture, animal husbandry and bee keeping.

a) What are the challenges facing major cities and towns **(2mks)**

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Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

b) What does the mention of 70% by 2025 reveal? **(2mks)**

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c)What do we learn about urbanization in Africa from the passage **(2 mks)**

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d) Mention the reason for rural to urban migration **(2mks)**

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e)How are urban households easing the problems of food shortage? **(3 mks)**

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f) What is meant by the term 'garden city?' **(1mk)**

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g) In note form, list the influences of urbanization **(4 mks)**

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Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

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h) Urban populations accounted for only 29% of the world population **(1 mks)**

(**Rewrite the statement adding a question tag**)

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i) Explain the meaning of the following words as used in the passage (3 mks)

i) Illusion

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ii) Pragmatic

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iii) Squalor

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QUESTION 2: THE COMPULSORY SET TEXT (25 MARKS)

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

Professor Kimani joined the University of Nairobi directly as a senior lecturer. Even before taking off, he was already flying. There was a reason. Kenya, Tanzania, and Uganda had justdismantled théir University of East Africa. Kenya's part of the university, now renamed the University of Nairobi, found itself with a vacancy it had to fill immediately in its Institute of Development Studies.

Professor Kimani, who had just completed his studies at the University of Oxford, wrote fromthere to say he wanted to fill it. To ensure he came and filled it for sure, the University of Nairobi raised his entry point from that of a lecturer to that of a senior lecturer.

He came. Only a month after his arrival, he launched a noisy debate in which he demanded that the University of Nairobi henceforth strive for relevance to the society rather than simplyexcellence of its work. It was not clear exactly what he meant by relevance to the society rather than simply

Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

excellence of its work. It was not clear exactly what he meant by relevanceto the society. However, a short six months later, he prevailed. The university's official mottobecame, 'Relevance to the society'.

After winning this war, he started another war which was even noisier. Now he wanted the university to be an agent of change, not a mere spectator of it. This was when people still thought this view was too radical and ridiculed it as simple- minded. So, not surprising, some of his colleagues, puzzled by his refusal to see that it was simple-minded, did or said little, convinced that he would fall on his face before long and self-destruct on his own without their help.

He did not care. After all, his antics in wars that he had started, and won, had also won him the heart of a campus beauty queen. Her name was Asiya Omondi. He married her on a rainy but approving Saturday, to claps of thunder and flashes of lightning. How marriage then accelerated academic success! A professorship soon followed. After that achievement, he feltfulfilled. His persona now was complete. Had anyone told him this happiness would one dayend as it did, he would have laughed himself upside down.

QUESTIONS

a) After Kimani fills a vacancy in University of Nairobi's Institute of Development Studies,he demands for two changes at the university in quick succession. What are these changes? **(2mks)**

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b) Identify and illustrate three characters traits of Kimani brought out in this excerpt. **(6mks)**

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c) Discuss three themes raised in the excerpt. **(6mks)**

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Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

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d) (i) To ensure he came and filled it for sure, the University of Nairobi raised his entry point from that of a lecturer to that of a senior lecturer. (Write beginning with the mainclause). **(1mk)**

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ii) His persona now was complete**.** **(1mk)**

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e) Identify one stylistic device used in the excerpt. **(4mks)**

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f) Explain the meaning of the following words used in the excerpt. **(4mks)**

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g) The writer says, 'Had anyone told him this happiness would one day end as it did, hewould have laughed himself upside down." What later happened to Professor Kimani in the text? **(2mks)**

Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

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QUESTION 3: ORAL LITERATURE (20marks)

Read the narrative below and then answer the questions that follow.

Once upon a time, all animals in the jungle were of the same plain colour but when they were invited by king lion for his son's wedding, they decided to decorate themselves for the occasion. The tortoise was given the task of making the dye to be used. Though he was slow, he was the most intelligent.

The big day was fast approaching but the tortoise had only managed to make one big pot of black dye. He called a meeting and they all decided to use the available dye to make various patterns in their skins.

The leopard was allocated the job of painting the rest of the animals. The zebra was the first on queue followed by the giraffe, then the donkey and all the other animals were to follow. The giraffe and the zebra were painted and they looked very beautiful.

Then the donkey's turn came but he was undecided on the pattern to choose. The leopard decided to paint him like a zebra and got down to work. He had a long line along the donkey's spine from head towards the tail. On reaching the tail, the donkey started giggling. The leopard continued and the donkey jumped and threw him his hind legs saying the brush was tickling and he could not contain himself any longer.

He had thrown his hind legs so hard that he hit the pot containing the dye. The dye spattered all over the animals on the queue. The cheetah got speckles all over his body, the leopard got spotted and the crow who happened to be passing by with an urgent letter for the king hanging on its neck was splashed by the dye which covered him the whole body apart from the neck where the letter was. On seeing this, the hyena started laughing but got a large splotch on his mouth.

All the animals rushed to the stream to try and wash out the dye but it was already dried and had become permanent. Nobody could get off the spots, streaks, speckles and splotches. And that is how the donkey was responsible for the various patterns we see on animal's bodies today.

a) Classify the narrative above. **(2mks)**

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b) Indentify and illustrate any two social aspects of society from which this narrative is taken **(4 marks)**

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Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

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c) Indentify and illustrate any three features peculiar to oral narratives evident in this narrative. **(6mks)**

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d) Indentify and illustrate any two character traits of the Leopard. **(4 mks)**

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e) Who would be the target audience of such a narrative **(2mks)**

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f) If you were to collect this narrative from the field, what preparations would you make before the actual field work **(2mks)**

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Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

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QUESTION 4: GRAMMAR (15 mks)

(a) Rewrite the following sentences according to the instructions given after each. Do not change the meaning.

1. The children welcomed the teachers. (Begin with: The teachers)

……

……

2. John does not take Lunch. His sister does not take Lunch.(Begin with: Neither)

……

……

3. Gatwiri asked, "Can we meet here tomorrow morning?"(Rewrite in direct speech)

……

……

4. This novel is far better than the one I bought last week. (Rewrite using the word 'superior')

……

……

5. It is not necessary to collect the garbage today.(Rewrite being: You do not)

……

……

(b) Rewrite the following sentences to correct the errors.

1. Of the two books, the first is longest

……

……

2. The quarter of the three girls sleeps earlier.

……

……

3. I did not find any fellow colleagues in class when I arrived late.

……

……

Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

(c) Supply the appropriate question tags in the blank spaces in the following sentences.

1. We needn't worry about tomorrow,

……

……

Let me have a taste,

……

……

2. They'll come early in the morning,

……

……

(d) Replace the underlined words with phrasal verbs formed from the words in brackets

1. Lucy asked Julius <u>not to involve</u> himself with her personal matters. (keep)

……

……

……

2. My mother <u>accidentally met</u> me along Jamhuri highway in the town (run)

……

……

……

(e) Use the words in bracket in their correct form to replace the underlined words.

1. The candidate was <u>not popular</u> amongst the electorate. (famous)

……

……

……

2. The vehicle that <u>was moving very fast</u> caused the accident. (speed)

……

……

……

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

101/3 ENGLISH

PAPER 3

TIME: 2½HRS

Instructions to students

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

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

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Q1 IMAGINATIVE COMPOSITION (COMPULSORY)

Either

1a) Write a composition beginning:

It all began like an uneventful day; yet how wrong I was! **(20mks)**

OR

b) Write a composition to illustrate the saying:

When the deal is too good, think twice**.** **(20mks)**

Q2 The Compulsory Set Text (The Samaritan)

Citizens have a role of voting in men and women of honor. When they elect selfishleaders, they end up suffering. Write an essay to qualify this claim basing your illustrations on John Lara's The Samaritan. **(20mks)**

OPTIONAL SET TEXTS

Either:

Q3a. The short story: **(20mks)**

A silent song and other stories (Edited by Godwin Siundu)

When we carry ourselves with dignity, we earn respect from those around us. Drawing specific illustrations from pather's story, 'Ninema', write an essay to show the truth of this statement. **(20mks)**

OR

b Drama: Parliament of owls (Adipo Sidang)

In most African countries, misuse of authority is a wide spread occurrence. Validatethis statement by focusing your argument on (Adipo Sidang's) play 'Parliament of owls'. **(20mks)**

OR

c The Novel: An Artist of the Floating World. (Kazuo Ishiguro).

"Drawing illustrations from the life of Masuji Ono in Ishiguro's An Artist of the Floating World, write an essay to show why mentorship is important in career development. **(20mks)**

BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

312/1
GEOGRAPHY
PAPER 1
TIME: 2 3/4 HRS

INSTRUCTIONS TO CANDIDATES

*a) This paper consists of **TWO** sections* **A,** *and* **B**

b) Answer all the questions in section A,

c) Answer question 6 and any other two questions from section B

d) Candidates should check the question paper to ascertain that all the pages are printed and that no questions are missing

e) Candidates should answer the questions in English

SECTION A		SECTION B			
1- 5	6	7	8	9	10

GRAND TOTAL

Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

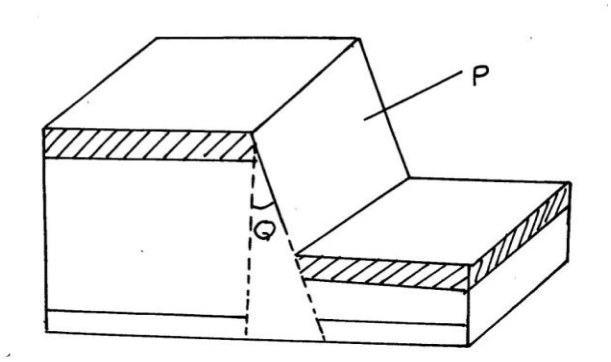
1.(a)Give ***two*** reasons why the interior of the earth is hot **(2mks)**

(b) State three effects of the revolution of the earth **(3mks)**

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

(b)state three characteristics of minerals **(3mks)**

3.(a)The diagram below shows parts of a fault. Use it to answer the questions (a) and (b



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

(b) Give three examples from Kenya of the part labelled P **(3mks)**

4.(a)List two processes of chemical weathering **(2mks)**

(b)Give three ways in which plants cause weathering **(3mks)**

5.(a)Give two reasons why wind action is dominant in deserts **(2mks)**

(b)State three characteristics of a barchan **(3mks)**

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SECTION B (75MARKS)

6.Study the map provided Busia 1:50000(sheet101/1)and answer the following questions.

(a) (i) Give the six figure grid reference of the dam at Lubanga **(2mks)**

(ii) Calculate the area of land to the west of the international boundary in the area covered by the map **(2mks)**

(iii) Give the shortest distance of the all weather road loose surface C526 from junction of Odiado to the Eastern edge of the map **(2mks)**

(b) (i)Describe the drainage of the area covered by the map **(5mks)**

(ii)Identify three settlement patterns in the area covered by the map **(3mks)**

(c) State three economic activities carried out in the area covered by the map **(3mks)**

(d) Using a vertical scale of 1cm to represent 100m,draw a 1 cross-section along northing 37 from Easting 28 to 33 **(4mks)**

(i) On it mark and name ;

- Riverine trees **(1mk)**
- Road **(1mk)**

(ii) Calculate vertical exaggeration for the cross-section **(2mks)**

7.(a) (i)A part from eluviation and illuvitaion list two other processes of soil formation **(2mks)**

(ii)Explain how the following processes of soil formation occurs

Eluviation **(3mks)**

Illuviation **(3mks)**

(b)(i)Give three factors that influence soil formation **(3mks)**

(ii)Explain three effects of soil erosion on water sources **(6mks)**

(iii)State four uses of soil **(4mks)**

(c) You are required to carry out field work within the local community

(i) State how you would collect information in the field **(2mks)**

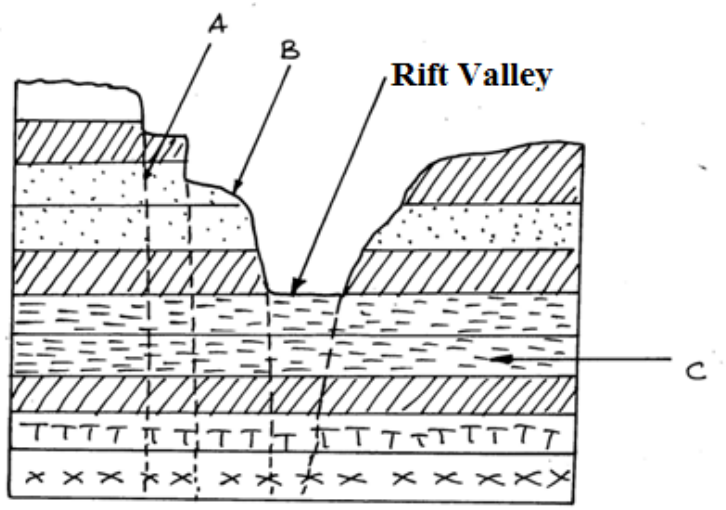
(ii) List two characteristics of soils you would identify **(2mks)**

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8.(a) (i)Name two examples of relief features found on the floor of the rift valley **(2mks)**

(ii)Using well labelled diagrams, describe stages involved in the formation of a fault mountain **(8mks)**

(b) (i)The diagram below represents a region that has undergone faulting. Name the features marked A,B and C **(3mks)**



(ii)State four characteristics of Lake formed by faulting **(4mks)**

(c)Explain four effects of faulting to human activities **(8mks)**

9.(a)(i)What is natural vegetation **(2mks)**

(ii)Explain how altitude and winds influence the distribution of vegetation **(8mks)**

(b) In which major climatic regions of the world are the following types of vegetation

(i) Selvas **(1mks)**

(ii) The maquis /chaparral **(1mks)**

(iii)The pambas **(1mks)**

(iv)The Taiga **(1mks)**

(d) (i)State five characteristics of coniferous forests of the cold temperate climate **(5mks)**

(ii)Explain three ways in which the trees in these forests are adapted to the climatic conditions **(6mks)**

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10a (i) What is a rock **(2mks)**

(ii)Name two examples of plutonic rocks **(2mks)**

B(i) State three characteristic of sedimentary rocks **(3mks)**

(ii)Describe how mechanically formed sedimentary rocks are formed **(4mks)**

(c) Explain four ways in which rocks contribute to the economy of Kenya **(8mks)**

(d) You carried out a field study on metamorphic rocks in the area around your school.

(i) Give two reasons why you might have conducted a reconnaissance for the study **(2mks)**

(ii) State four problems you might have encountered during the field study. **(4mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

312/2
GEOGRAPHY
PAPER 2
TIME: 2 3/4 HRS

INSTRUCTIONS TO CANDIDATES

*a) This paper has of **TWO** sections* **A,** *and* **B**

b) Answer all the questions in section A,

c) Answer question 6 and any other two questions from section B

d) Candidates should check the question paper to ascertain that all the pages are printed and that no questions are missing

e) Candidates should answer the questions in English

SECTION A				SECTION B	
1- 5	6	7	8	9	10

GRAND TOTAL

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SECTION A (25 MARKS)

Answer All the questions in this section

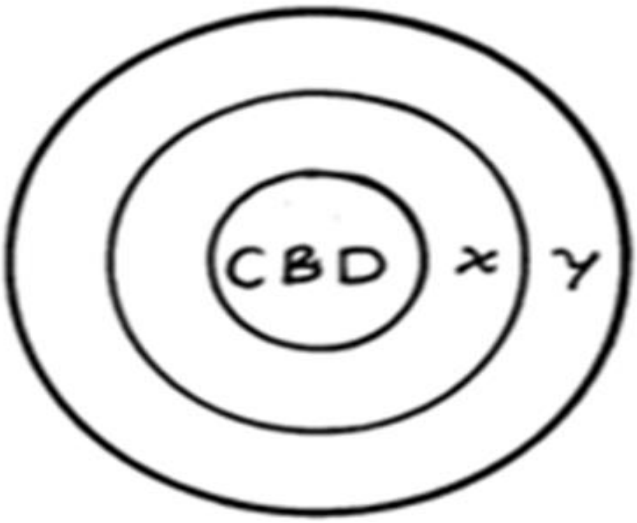
1.(a)Give three methods used to preserve fish **(3mks)**

(b)State two problems experienced in the marketing of fish in Kenya**.** **(2mks)**

2.(a)What is tourism **(2mks)**

(b)Name three tourist attractions found in the Rift valley region of Kenya **(3mks)**

3.(a)The diagram below shows the functional zones s of an ideal urban centre



Farming area

(i)Name X and Y **(2mks)**

(b)List three functions of the central Bussines District **(3mks)**

4. (a) List three documents that provide information on population data **(3mks)**

(b)What information is derived from a population pyramid **(2mks)**

5.(a)What is international trade **(2mks)**

(b)State three negative effects of international trade **(3mks)**

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SECTION B(75MARKS)

Answer questions 6 and any other two questions from this section

6.The table below shows maize production in Uasin Gishu county from the years 2009 to 2013

Maize production in 000s tonnes

YEAR	TONNES PRODUCTION
2009	800
2010	750
2011	500
2012	350
2013	

(a) Find

(i) The total maize produced in five year period **(2mks)**

(ii) Explain two reasons that could have likely led to decline in maize production **(4mks)**

(iii) Draw a divided rectangle 12cm in length to represent the data provided above **(8mks)**

(b) A part from Uasin Gishu , name three other counties where maize is grown on large scale **(3mks)**

(ii)State five physical conditions necessary for the growth of maize **(5mks)**

(iii)Identify three uses of maize **(3mks)**

7.(a)Name three tree species commonly found in planted forests in Kenya **(3mks)**

(ii)State four characteristics of planted forests **(4mks)**

(b)Explain three factors that favour forestry on Mt.Kenya **(6mks)**

(c) (i)Explain three ways through which trees improves the quality of soil on a farm **(6mks)**

(iii)Explain three economic importance of Agro-forestry to farmers **(6mks)**

8.(a) (i)Differentiate between tertiary and secondary industry **(2mks)**

(ii)Name three towns in Kenya with Motor Assembly industry **(3mks)**

(b).(i)State five characteristics of the Jua Kali industry in Kenya **(5mks)**

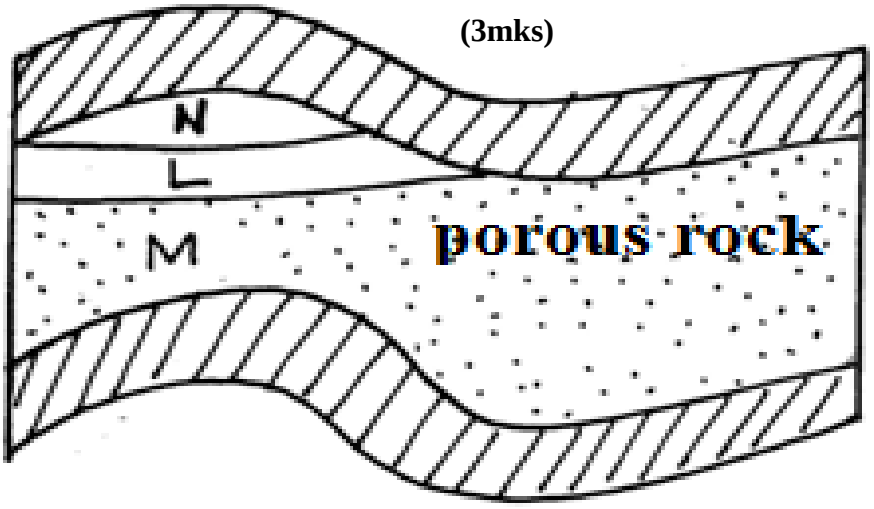
(ii)Explain three problems arising from Jua Kali industry in the counties **(6mks)**

(c)(i)Show how the following factors influence the location of industries in the Ruhr Region of German

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- Presence of the Krupp family **(2mks)**
- Availability of coal **(2mks)**
- Presence of river Rhine **(2mks)**

(ii)Students carried a video camera during a field study of a local industry Of what importance was it to the study **(3mks)**



9.(a)The diagram below shows the occurance of petroleum in the earth's crust.Use it to answer question a(i

(i)Name the substance in the areas labelled L,M and N **(3mks)**

(ii)Give three by –products obtained when crude oil is refined **(3mks)**

(b)State five effects of mining on the environment **(5mks)**

(c) (i)Describe the stages involved in the processing of trona from lake Magadi **(6mks)**

(ii)Explain four ways in which Kenya has benefited from the mining of trona on lake Magadi **(8mks)**

10. (a)(i) Give three methods used to drain swamps in Kenya (3mks)

(b)(i)State four factors that favored Mwea as a suitable location for an irrigation scheme **(4mks)**

(ii)State five benefits from Mwea irrigation scheme **(5mks)**

(c) What is a polder? **(2mks)**

(ii)Name three crops grown in the polders **(3mks)**

(d) Describe stages involved in the reclamation of land from the sea in the Netherland s **(8mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

311/1
HISTORY AND GOVERNMENT
PAPER 1
TIME: 2 ½ HRS

INSTRUCTIONS TO CANDIDATES

f) This paper consists of three sections A, B and C
g) Answer all the questions in section A, three questions from section B and two questions from section C
h) Candidates should check the question paper to ascertain that all the pages are printed and that no questions are missing
i) Candidates should answer the questions in English

This paper consists of 2 printed pages. Candidate should check to ascertain that all pages are printed as indicated and that no questions are missing.

SECTION A(25MARKS)

1.Give **two** activities of man that were involved in Economic History **(2mk)**

2.Name **one** community in Kenya whose ancestors settled on Mt.Elgon **(1mk)**

3.Identify **two** social practices that the Agikuyu adopted from the Maasai in the pre-colonial period **(2mks)**

4.State **two** reasons that facilitated the coming and settlement of the Arabs to the Kenyan coast **(2mks**

5.Give **one** term /provision of the Moresby treaty in 1822 which was signed between the british with Sultan at the Kenyan coast **(1mk)**

6.State **two** functions of the governor during the colonial period **(2mks**)

7.Give **on**e role of welfare associations during the colonial period **(1mk)**

8.Identify **on**e aspect of natural Justice in Kenya **(1mk)**

9.Who is the chief legal advisor of the government in Kenya **(1mk)**

10. Give **two** characteristics of Independent churches and schools during the colonial period **(2mks)**

11. Identify **two** rights of an alien in Kenya

12. State **one** way in which the constitution promotes National unity **(1mk)**

13. Identify **one** political event which threatened the stability of Kenya between 1975 and 1978 **(1mk)**

14. Give **one** main function of opposition parties in Kenya **(1mk)**

15. State **two** ways in which Missions stations promoted the spread of Christianity **(2mks)**

16. Name **two** classes of land in Kenya **(2mks)**

17. Identify ***one*** of the two houses of parliament in Kenya **(1mk)**

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SECTION B(45MARKS)

Answer Any three questions from this section

18. (a) Give five reasons which made circumcision an important event among the Nandi during the pre-colonial period. **(5mks)**

(b) Explain **five** activities of the Economic organization of the Borana **(10mks)**

19. (a) Give **five** methods that were used to acquire slaves **(5mks)**

(b)Explain **five** challenges that were encountered by missionaries **(10mks)**

20. (a)Identify the **five** aims of missionary education offered to Africans during the Colonial **(5mks)**

(b) Explain the **five** effects of colonial land policies

21. (a)Give **five** reasons why corruption is being discouraged in Kenya **(5mks)**

(c) Identify **five** measures taken to improve the health sector in post-colonial Kenya **(10mks)**

SECTION 3 (30MARKS)

Answer Any two questions from this section

22. (a)State the **three** symbols of national unity in Kenya

(b)Explain the **six** economic causes of conflict

23. (a)Give the **three** organs of national security **(3mks)**

(b)Explain **six** reforms that have been undertaken to improve the conditions of correctional services **(12mks)**

24. (a)Give the **three** institutional that exercise sovereign power of the people of Kenya **(3mks)**

(b)Explain **six** reasons why parliament is supreme **(12mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

311/2
HISTORY AND GOVERNMENT
PAPER 2
TIME: 2 ½ HRS

INSTRUCTIONS TO CANDIDATES

*j) This paper consists of **three** sections A, B and C*
*k) Answer **all** the questions in section **A**, t**hree** questions from section B and **two** questions from section C*
l) Candidate may be penalized for not following the instructions in this paper
m) Candidates should check the question paper to ascertain that all the pages are printed and that no questions are missing
n) Candidates should answer the questions in English

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SECTION A-(25 MARKS

1.Give **one** short coming of using written records as a source of History **(1mk)**

2.State **two** methods used by archeologists to date fossils **(2mks)**

3.Identify **two** ports that were used during the Transatlantic slave trade **(2mks)**

4.State **two** changes that marked the agrarian revolution in Britain **(2mks)**

5.Give **two** reasons that made man to develop trade **(2mks)**

6.State **two** disadvantages of human porter age **(2mks)**

7.State **two** importance's of written massages over verbal **(2mks)**

8.Name **one** invention that improved the textile manufacturing industry in Britain in the 18^{th} C **(1mk)**

9.State **two** factors that led to the growth of Meroe town **(2mks)**

10. List **two** functions of Lukiiko in Buganda Kingdom **(2mks)**

11. **Why** was the Berlin conference called? **(1mk)**

12. **Who** was the head of the British South Africa Company **(1mk)**

13. Give the **main** reasons why non-aligned movement was formed **(1mk)**

14. State the **main** reason why Samori Toure fought the French during the nineteenth century **(1mk)**

15. Identify the **first** chairman of Organization of African Unity **(1mk)**

16. State the **main** reason why USA joined World War I **(1mk)**

17. Identify the ruling party in USA **(1mk)**

SECTION B 45 MARKS)

18. (a)State **three** inventions that enable the development of early agriculture in Egypt **(3mks)**

(b) Explain **six** factors that made early man to change from hunting and gathering to food production **(12mks**)

19. (a)State **five** uses of electricity in Europe during the industrial revolution **(5mks)**

(b)Explain **five** factors undermining scientific revolution in developing countries **(10mks)**

20. (a)Name **three** Kings of Buganda who collaborated with the British in the 19th C **(3mks)**

(b)Explain **six** results of the Buganda agreement in 1900 **(12mks)**

21. (a)Identify **five** problems encountered by nationalists in South Africa **(5mks)**

(b)Discuss the **role** of **Nelson Mandela** in the struggle against apartheid **(10mks)**

SECTION C (30 MARKS)

22. (a) State **three** weapons used during the cold war **(3mks)**

(b)Explain **six** steps taken to ease the cold war **(12mks)**

23. (a)State **three** features of Arusha declaration of 1968 **(3mks)**

(b)Explain **six** political challenges that Tanzania has faced since independence **(12mks)**

24. (a)State **three** levels of elections in the USA **(3mks)**

(b)Explain **six** functions of the federal government in the USA **(12mks)**

Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

441/1
HOME SCIENCE
PAPER 1
TIME:2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

f) Write your name and index number in the spaces provided above
g) Sign and write the date of the examination in the spaces provided above
h) This paper consists of THREE sections A,B and C
i) Answer ***all*** the questions in section A,B and any TWO in the section C in the spaces provided.
j) Candidates should answer all questions in English

For examiners use only

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
A	1 -21	40	
B	22	20	
C		20	
		20	
TOTAL SCORE		**100**	

SECTION A 40 MARKS)

1.Give **two** uses of talcum powder when applied to the feet **(2mks)**

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2.State **two** points to consider when selecting a toilet brush **(2mks)**

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3.Mention **two** important reasons for greasing and liming a cake tin **(2mks)**

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4.Suggest **two** reasons why fish takes a shorter time to cook than meat **(2mks)**

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5.State **three** reasons why wool is not suitable for sport wear **(1 1/2mks)**

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6.Name **three** layers of fabric which make up a pleat **(1 1/2mks)**

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7.Suggest **two** importance of sebaceous glands in relation to a healthy skin **(2mks)**

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8.Highlight **two** ways of making a double pointed dart lie flat **(2mks)**

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9.State **three** precautions to take when using dry cleaning agents **(1 1/2mks)**

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10. Give **four** precautions to take when lendering loose colours garments **(2mks)**

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11. List **four** areas in an a article where interfacing is a pplied **(2mks)**

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12. Name **thre**e methods of managing hens (1 $^{1}/_{2}$mks)

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13. State **two** important points on the care of labels (2mks)

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14. Identify **two** problems that may be encountered when planning a meal for vegetarians (2mks)

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15. Give **two** reasons why low heeled shoes are recommended for a pregnant mother **(2mks)**

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Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

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16. State **two** reasons that make a blend of cooking fat and margarine most suitable for making parties **(2mks)**

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17. Suggest **two** causes of craking in ceramic charcoal store **(2mks)**

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18. Give **two** reasons why some international disorders are referred to as lifestyle related (2mks

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19. State any **two** functions of riboflavine (2mks

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20. Complete the table on primary and secondary colours

Primary colours	**Secondary colours**
Yellow +_____	**_____**
Blue +_____	**Green**
_____+Red	**Purple**

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21. Mention any two disadvantages of supplementary feeding **(2mks)**

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SECTION B 20 MARKS)

Answer questions 22 in the spaces provided

22. You have been left at your rural home with your small brother.Describe how you would carry out the following cleaning processes

(a)Laundering a fast colored cotton blouse with a wax stain **(10mks)**

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Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

(b)Clean an aluminum pan that has been used to cook ugali **(5mks)**

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(c)Daily clean an earthened pit-latrine **(5mks)**

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Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

SECTION C (40 MARKS)

Answer two questions from this section in the spaces provided at the end of this section

23. (a)State any **five** uses of water in the body **(5mks)**

(b)With aid of diagram ,explain how to filter water at home using homemade filter **(5mks**

(c)Highlight **five** measures that should be taken to ensure that water storage containers are safe for use **(5mks)**

24. (a)Name any **six** types of sleeves **(3mks)**

(b)Sate **four** rules for darming clothes **(4mks)**

(c)Highlight **three** features of a well cut out crown of a sleeve **(3mks)**

(d)Discuss the process of setting in a plain sleeve **(10mks)**

25. (a)List **five** rights of a consumer **(5mks)**

(b)Define quarantee in relation to consumer buying **(2mks)**

(c)Explain **three** factors why polythene bags are popularly used in refrigerators to pack foods **(6mks)**

(d) Giving specific examples ,state the meaning of each of the following terms **(6mks)**

(i)Dovetailing

(ii)Sequencing

(iii)Pre-paration

(e)Give any **two** functions of teeth **(1mk)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……...……

ADM NO: …….. SIGN: ……. DATE: ……..

441/2

HOME SCIENCE

(CLOTHING CONSTRUCTION)

PAPER 2

PRACTICAL

TIME:2 ½ HOURS

This paper consists of 2 printed pages. Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing.

A pattern of a girls blouse is provided .You are advised to study the sketches, instructions and layout carefully before you begin to test.

Materials provided

1.Pattern pieces for the blouse
A-Blouse front
B-Blouse back
C-Collar
D-Pocket
2.Left weight plain cotton fabric 50cm long by 90 cm wide.
3.Sewing thread to match
4.One large envelope

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THE TEST:

Using the materials provided ,cut out and make the LEFT HALF of the blouse to show the following processes.

(a) Making of an open seam at the shoulders **(4 1/2 mks)**

(b) Making of the side seam using a French seam **(3 1/2 mks)**

(c) Neatening of the blouse front facing **(2mks)**

(d) Preparation of the collar **(5mks)**

(e) Attachment of the collar,use hemming stitches at the Back.

(f) Hold the facing on to the blouse using dioaggonal tacks.DONT REMOVE **(61/2mks)**

(g) Preparation and attachment of the patch pocket **(6mks)**

(h) Management of the blouse hem

(i) Use even tacking to hold the hem DO not remove **(1 1/2 mks)**

(ii) Use machine hemming **(2mks)**

- At the end of the examination, remove all pins; firmly sew onto your work, on a single fabric label bearing your name and index number.
- Fold your work carefully and place it in the envelope provided .Do not put scraps of materials in the envelope.

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

441/3
HOME SCIENCE
(FOOD AN D NUTRITION)
PAPER 3
(PRACTICAL)
TIME:1 ¾ HOURS

Kenya Certificate of Secondary Education (K.C.S.E)

PLANNING SESSION 30 MINUTES

PRACTICAL TEST SESSION 1 ½ HOURS

INSTRUCTIONS TO CANDIDATES

- Read the test carefully
- Write your name and index number on every sheet of paper used.
- Text books and recipes may be used during the planning session as reference materials
- You will be expected to keep to your order of work during the practical session.
- You are allowed to take away **ONLY** your reference materials at the end of the planning session
- You are allowed to bring additional notes to the practical session

This paper consists of 2 printed pages. Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing.

THE TEST

You are hosting three officials of your Home science club.

Using the ingredients listed below, prepare, cook and present a refreshing drink and two snacks for yourselves.

Ingredients

- Margarine
- Bread
- Plain wheat flour
- Eggs
- Sugar
- Oil
- Salt
- Tomatoes
- Fruits in season
- Baking powders

Planning session 30 minutes

Use separate sheets of paper for each task listed below and use carbon paper to make duplicate copies then proceed as follows.

1.Identify the beverage and the refreshing drink items, then write down their recipes
2.Write down your orders of work
3.Make a list of the food stuffs and equipments you will require.

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

JINA:……

SHULE: ……..……

NAMABARI YA USAJILI: …….. SAHIHI: ……. TAREHE: ……

102/1
KISWAHILI
INSHA
MUDA: SAA 1 ¾

MAAGIZO

a) Andika insha **mbil**i

b) Insha ya kwanza ni ya **LAZIMA**, kisha chagua ya pili kati ya mada tatu zilizosalia.

c) Kila insha isipungue maneno **400**.

d) Andika kwa lugha ya Kiswahili.

1. Ukiwa Mhariri wa Gazeti la Jicho Pevu andika tahariri kuhusu hatua zinazofaa kuchukuliwa ili kukabiliana na ufisadi katika Wizara za serikali kuu.

2. Jadili umuhimu wa michezo kwa wanafunzi wa shule za sekondari nchini Kenya.

3. Andika kisa kitakachothibitisha ukweli wa methali:Haba na haba hujaza kibaba.

4. Anza kisa kwa maneno haya: Umati mkubwa ulikusanyika uwanjani . Wote walimsubiri kwa hamu kuu. Baada ya muda mrefu, alifika kwa kishindo……..

BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

JINA:……

SHULE: ……..……

NAMABARI YA USAJILI: …….. SAHIHI: ……. TAREHE: ……

102/2
KISWAHILI
LUGHA
MUDA: SAA 2 ½

Andika jina lako, nambari , terehe na sahihi katika nafasi ulizoachiwa hapo juu.

Jibu maswali yote. Majibu yako yaandikwe katika nafasi zilizoachwa katika kijitabu hiki cha maswali.

SWALI	UPEO	ALAMA
1	15	
2	15	
3	40	
4	10	
JUMLA		

1.<u>UFAHAMU (ALAMA 15)</u>

Soma taarifa ifuatayo kasha ujibu maswali

Ilikuwa Jumamosi. Nilifika nyumbani kwangu saa moja jioni. Tangu nistaafu miaka miwili awali sikupenda kuchelewa Taarifa ya Habari.

Mwezi mmoja ukawa umepita tangu nipewe pesa za **<u>kiinua mgongo</u>**. Mwezi mmoja mzima nilikuwa katika shughuli za kulipa deni hapa na kulipa karo huku. Kuwekeza kwenye mradi ule na kununua hili. Sasa shilingi laki mbili tu zilikuwa zimesalia katika benki.

Watu wengi walinishawishi nijaribu kilimo cha mahindi. Bei ilikuwa imeanza kuimarika. Katika taarifa ya habari jioni hiyo, Waziri wa kilimo alitangazaa bei mpya , shilingi 1,500 kwa kila gunia. Nami nilikuwa naanza kuumakinikia mradi huu.

Baada ya taarifa, nilioga nikala na nikaenda kulala. Kwa sababu ya uchovu, usingizi ulinichukuwa mara moja. Usingizini niliota. Katika ndoto niliutekeleza mradi wangu. Msimu huo wa kulima nilitenga hekari kumi za shamba langu. Wataalamu walinishauri kuwa wakati mzuri wa kulima ni wa kiangazi. Mwezi wa Januari ulipoanza tu nilitafuta trekta na kulima. Malipo yalikuwa shilingi 1,200 kila ekari. Katikati ya mwezi wa Mechi, nilitafuta trekta la kutifua shamba tena kwa gharama ya shilingi 15,000 ekari zote kumi. Kufuatia ushauri wa **<u>manyakanga wa kilimo</u>**, nililipa shilingi elfu kumi na tatu kupiga shamba lote haro.

Mwishoni mwa mwezi huo, nilienda mjini kutafuta pembejeo. Kwanza, nililipa shilingi 20,500 kwa magunia 15 ya mbolea. Kisha nilinunua magunia manne ya mbegu ya mahindi yenye uzani wa kilo 25 kwa shilingi 3,300 kila gunia. Mwezi wa Aprili ulipotimia tu, niliamua kupanda ili nipate mazao bora, nilipanda kwa tandazi. Gharama ilikuwa shilingi 1,000 kila ekari. Mvua ilinyesha vizuri na baada ya siku saba, mahindi yalianza kuota. Ilifurahisha kuhesabu mistari ya kijani iliyonyooka. Hali hii iliwezekana tu baada ya kuajiri vijana wa kuwafukuza korongo na vidiri ili wasifukue mbegu mchangani.

Baada ya mwezi mmoja, hatua ya kupalilia ilifika. Nilitafuta vibarua wa kupalilia. Malipo yalikuwa shilingi 700 kila ekari. Kumbe kupalilia kulichochea mtifuko wa mahindi. Punde yakawa yananifikia magotini. Hii ikawa ishara kuwa yanahitaji kumwagiwa mbolea ya kunawirisha iitwayo ‘amonia’. Gharama yake ikawa shilingi 1,300 kila gunia. Hivyo , nikalipa shilingi 19,500 kwa magunia kumi na matano.

Mahindi yalibadilika kimiujiza. Ghafla tu yalirefuka na kunenepa mashina. Yalibadilika rangi yakapiga weusi. Shamba liligeuka likawa kama msitu wa rangi ya kijani iliyokolea. Wapita njia waliajabia mimea na juhudi zangu. Shamba langu sasa likawa kielelezo. Maafisa wa kilimo wakawa kila siku wanawaleta wakulima wengine kujifunza siri ya ufanisi wangu. Hapo nikaanza kuhesabu mavuno nitakayopata na kukadiri faida. Nilipuuza kabisa ushauri wa wahenga kuwa **<u>‘Usikate majani, mnyama hajauawa.’</u>**

Bila taarifa wala tahadhari mvua ilitoweka. Hayakupita majuma mawili mahindi yakaanza kubadilika. Juma moja baadaye mahindi yalinyauka. Badala ya mahindi, shamba likageuka la vitunguu vilivyochomwa na jua. Makisio yangu ya faida yaliyeyuka jinsi ufanyavyo moshi.

Lakini ‘Muumba ndiye Muumbua.’Siku moja mawingu yalitanda na mvua ikanyesha , muda si muda mahindi yalianza kunawiri. Kumbe tukio lililowavunja moyo lilikuwa laja. Siku moja mvua kubwa ilinyesha. Asubuhi nilipotoka nje nilipigwa na butwa. Barafu ilitapakaa pote. Shamba lilikuwa limetapakaa barafu nafuu. Nilipotazama upande wa shamba niliona dalili za majani mapya ya mahindi yakianza kuchomoza. Maumbile ni kitu cha ajabu kweli.

Muda si mrefu mahindi yalirudia hali yake tena, kasha yakakomaa. Harakati za kutafuta watu wa kuyakata na kuyakusanya zilianza. Gharama ya shughuli hii ikawa shilingi 5,000 kuvuna kusafirisha kutoka shamba na kukoboa kwa mashine magunia 200 yakachukua shilingi 20,500. Kufikia hapo nilikuwa nimetumia takribani shilingi 192,700. Gharama nyingine zilikuwa za usafiri, gharama ya dharura na usimamizi, usumbufu wangu binafsi, gharama ya magunia na kadhalika. Mahindi yalipokuwa tayari kwenye magunia nilifunga safari kwenda mjini kutafuta soko. Niliposhuka tu niliona gazeti. Habari motomoto siku hiyo ilikuwa ‘MAHINDI GUNIA 900/=’ Niligutuka usingizini.

MASWALI

a) Ni changamoto zipi zinazokumba kilimo. **(al.4)**

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b) Msimulizi alikuwa na kiasi gani cha pesa katika benki baada ya mradi kukamilika? **(al.2)**

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c) Eleza maana ya methali zifuatazo kwa mujibu wa makala.

i. Usikate majani, mnyama hajauawa. **(al.1)**

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ii. Muumba ndiye Muumba. **(al.1)**

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d) Eleza mambo mawili yaliyosababisha msimulizi asipate faida alivyotarajia**. (al.4)**

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e) Kwa nini msimulizi alisema maumbile ni kitu cha ajabu? **(al.1)**

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f) Eleza maana ya:

i. Kiinua mgongo **(al.1)**

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ii. Manyakanga wa kilimo. **(al.1)**

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2.**UFUPISHO: (ALAMA 15)**

Soma kifungu kifuatacho kasha ujibu maswali.

Katika ulimwengu huu tunaoishi wenye hekaheka nyingi, mwanadamu anaendeshwa na maisha mfano wa gurudumu la gari. Kwa watu wenye kufanya kazi katika mazingira ya ofisi ambapo wanaketi mchana kutwa,

mazoezi ni muhimu sana. Baadhi ya watu huona fahari wapigapo tai na kuelekea au kutoka kazini kwa gari. Tabia hii ya mwanadamu inamsahaulisha kuwa mwili wake ulidhamiriwa kufanya mazoezi ya viungo kwa kutembea au kufanya kazi zenye kuhitaji misuli kuoashwa moto. Watu wengi hawana habari kuwa mazoezi yana faida tele kwao.

Wataalamu wa sayansi wamebainisha kuwa watu wanaoidhiki miili yao kwa mazoezi ya mara kwa mara huishi zaidi kuliko wasiofanya mazoezi. Watu hawa huwa wamo katika hali nzuri ya afya na wenye nguvu kuliko wale ambao hawaishughulishi miili yao kwa mazoezi au kazi zinazohitaji utumiaji nguvu.

Ni dhahiri kwamba mazoezi huchochea kuundwa kwa seli mpya za ubongo. Utafiti wa kisayansi umebainisha kuwa sehemu za ubongo zenye kusisimuliwa kwa mazoezi ndizo hutekeleza jukumu la kukumbuka na kujifunza. Bila mazoezi sehemu hizi zitashindwa kukumbuka au kujifunza maarifa mapya. Vile vile, imethibitishwa kwamba watu wanaoshiriki shughuli zenye kuwahitaji kutumia nguvu hutia fora katika mambo yanayowahitaji kukumbuka, kufanya maamuzi, pamoja na kusuluhisha matatizo.

Hali kadhalika, mazoezi huimarisha siha ya binadamu. Mathalani, matatizo ya moyo yanaweza kukabiliwa kwa kufanya mazoezi ya viungo. Kufanya mazoezi mara kwa mara huufanya moyo kuwa imara na kuuwezesha kutekeleza jukumu lake ipasavyo. Ifahamike kwamba moyo wenye siha huweza kupiga kiasi kikubwa cha damu bila ya juhudi kubwa. Hili bila shaka litamkinga binadamu dhidi ya kulemewa na kazi.

Isitoshe, kushiriki mazoezi au shughuli zenye kutumia nguvu mara kwa mara huuweka mwili katika hali nzuri ya kupambana na magonjwa. Utafiti wa kisayansi umeonyesha kuwa shughuli kiasi zinazomhitaji mtu kutumia nguvu, pamoja na upunguzaji wa uzito, na uzingatiaji wa lishe bora, huweza kupunguza uwezekano wa kupata ugonjwa wa kisukari kwa baina ya asilimia 50 na 60. Mazoezi hayapunguzi tu shinikizo la damu, bali pia hatari ya kupata kiharusi. Aidha, kufanya mazoezi mara kwa mara husaidia kuthibiti uzani wa mwili. Mtu anapokula kiasi cha chakula kinachozidi mahitaji yake ya kimwili huweza kujinenepea na kushindwa kutekeleza majukumu ya kimsingi. Mazoezi husaidia kuzichoma kalori zisizohitajika mwilini. Hatua hii, licha ya kusaidia kupunguza uzani, huvisisimua viungo vya mwili. Matokeo ya haya ni utendakazi wa hali ya juu bila kuchoka. Vilevile mwili unaofanya mazoezi haudorori. Umbo la mtu anayefanya mazoezi hupendeza.

Juu ya hayo, kufanya mazoezi mara kwa mara husaidia kujenga misuli yenye nguvu. Misuli inapokuwa na nguvu tunaweza kulifanya jambo kwa muda mrefu bila kuchoka. Mbali na misuli kuimarika, mazoezi na shughuli zinazohitaji utumiaji nguvu husukuma hewa na virutubisho kwenye viungo mahususi vya mwili na kuvisaidia kufanya kazi vyema zaidi.

Hali kadhalika mazoezi husaidia kujenga mifupa. Kadri binadamu anavyoshiriki katika shughuli kama vile kuruka, ndivyo anavyoimarisha mifupa yake. Shughuli ya aina hii huipa mifupa uzito ambao unaiwezesha kukua na kujengeka ikiwa na nguvu. Mazoezi pia hukawiza kudhoofika kwa mifupa.

Kunyooshanyoosha viungo nako huchangia kuufanya mwili kuwa imara na wenye kunyumbuka. Hali hii ya mwili hupunguza uwezekano wa kupata majeraha. Mwili usionyumbuka humfanya mtu ashindwe kutekeleza hata shughuli nyepesi zinazomhitaji kutumia nguvu. Si ibra kupata kwamba kuitekeleza shughuli ndogo tu humfanya mtu kupata maumivu.

Utulivu wa akili nao huweza kupatikana kwa kufanya mazoezi. Imebainishwa kwamba kufanya mazoezi kwa angalau dakika thelathini kwa muda wa baina ya siku tatu na tano kwa wiki hupunguza kwa kiasi kikubwa, dalili za unyong'onyevu. Na je, wajua kwamba kufanya mazoezi husaidia kupata usingizi? Mazoezi ni mfano wa bembea inayokutuliza na kukupa usingizi.

Mke ni nguo, mgomba kupaliliwa. Nao mwili wa binadamu, kama mgomba, unahitaji kushirikishwa katika mazoezi ili kuuwezesha kuwa na hamu ya kutenda kazi.

Maswali

a) Kwa kurejelea aya **tano** za kwanza, eleza matatizo ya kiafya yanayoweza kupatikana kwa kutofanya mazoezi. (maneno 100) **(al.9, 1 ya mtiririko)**

<u>Matayarisho</u>

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<u>Nakala safi</u>

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b) Fupisha ujumbe wa aya tano za mwisho kwa maneno 80. (al. 6,1 ya mtiririko)

Matayarisho

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Nakala safi

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3.MATUMIZI YA LUGHA (ALAMA 40)

a) i) Eleza maana ya Kirai. **(al.2)**

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ii) Tambua aina za virai vilivyopigiliwa mstari katika sentensi ifuatayo. **(al.1)**

Jirani <u>mwema alinipa chakula</u>.

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b) Bainisha aina ya chagizo katika sentensi ifuatayo:

Barabara za mjini zimetengenezwa upya. (al.1)

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c) Onyesha viambishi awali na tamati katika kitenzi:

Alimchezea. **(al.2)**

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d) Tunga sentensi **moja** kutofautisha maana ya **karama** na **gharama**. **(al.2)**

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e) Onyesha **Kiima** na **Shamirisho** katika sentensi ifuatayo:

Maria alimbebea mwalimu mzigo kwa gari. **(al.2)**

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f) Changanua sentensi ifuatayo kwa kutumia jedwali. **(al.3)**

Mama alifika tulipokuwa tukilima.

g) Kwa kutoa mifano mwafaka, eleza aina za sentensi zifuatazo:-

i. Sentensi ya masharti. **(al.2)**

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ii. Sentensi tata. **(al.2)**

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h) i) Eleza maana ya mofimu. **(al.1)**

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ii) Bainisha mofimu katika neno:

atamnywea **(al.3)**

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i) Tunga sentensi mojamoja kubainisha:-

i. Kihusishi cha wakati. **(al.1)**

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ii. Kihusishi cha ulinganisho. **(al.1)**

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iii. Kitenzi kishirikishi kipungufu. **(al.1)**

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iv. Kiunganishi cha kinyume. **(al.1)**

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j) Tunga sentensi **tatu** kudhihirisha matumizi **matatu** ya mshazari. **(al.3)**

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k) Andika sentensi ifuatayo katika wakati uliopita hali timilifu. **(al.2)**

Yohana huwapigia watu nguo pasi.

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l) Tunga sentensi kutumia kitenzi **fa** katika kauli tendwa. **(al.1)**

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m) Tumia 'kwa' katika sentensi kuonyesha.(al.2)

i. Sababu

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ii. Pamoja na

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n) Andika sentensi ifuatayo katika hali ya udogo. (al.1)

Madebe hayo yatasafirishwa pamoja na nyundo hizi.

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o) Andika sentesni ifuatayo katika hali yakinishi. **(al.1)**

Usingeacha masomo, usingetaabika vile.

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p) Taja na utofautishe vipasuo vya ufizi. **(al.2)**

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q) Eleza maana mbili za sentensi. **(al.2)**

Yohana alimpigia Juma mpira.

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r) Andika katika msemo wa taarifa "Nitakuarifu nikimwona",Maria alisema. **(al.1)**

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4.**ISIMU JAMII (ALAMA 10)**

a) Eleza maana ya viziada lugha. (**al.2)**

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b) Toa sababu **tatu** zinazofanya watu watumie viziada lugha. **(al.3)**

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c) Ni siku ya wazazi shuleni mwenu. Umechaguliwa kutoa hotuba siku hii.Eleza sifa **tano** za lugha utakayotumia. (al.5)

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

JINA:……

SHULE: ……..……

NAMABARI YA USAJILI: …….. SAHIHI: ……. TAREHE: ……

KISWAHILI

KARATASI YA 3,

FASIHI

MUDA: 2 ½

MAAGIZO

1.Jibu maswali manne pekee

2.Swali la kwanza ni la lazima

3.Maswali hayo mengine matatu yachaguliwe kutoka sehemu zilizobaki

4.Usijibu maswali mawili kutoka katika sehemu moja

5.Kila swali lina alama 20

Swali	1	2	3	4	5	6	7	8	Jumla

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SEHEMU YA A: FASIHI SIMULIZI

SWALI LA LAZIMA.

Soma kifungu kifuatacho kisha ujibu maswali yafuatayo;

i) Kufa kupona.

a) Tambua utanzu na kipera cha utungo ulichopewa. **(alm2)**

b) Tambua kipengele kimoja cha kimtindo katika utungo huo. **(alm1)**

c) Taja vigezo vyovyote vinne vya kuainisha utungo wa namna hii**.** **(alm4)**

d) Eleza dhima tatu za utungo huu katika jamii. **(alm3)**

ii) Kakangu analilia mwituni. – Shoka

a) Eleza muundo wa utungo huu. **(alm2)**

b) Eleza sifa nne za utungo huu. **(alm4)**

c) Unanuia kukusanya data nyanjani kuhusu kipera hiki. Eleza changamoto zitakazokukabili wakati wa shughuli hii. **(alm4)**

SEHEMU YA B: HADITHI FUPI

Timothy M. Arege.: Bembea ya Maisha

Jibu swali la 2 au la 3

2. Soma dondoo lifuatalo kisha ujibu maswali yafuatayo: “Unayafanya makubwa bure mwenzangu. Unafahamu vizuri kuwa hiyo si hulka yangu. Sasa mimi nina haja gani kuuvunja mji?”

(a) Eleza muktadha wa dondoo hili. **(alm4)**

(b) Bainisha toni ya msemaji. **(alm2)**

(c) Msemaji amepitia dhiki mbalimbali katika jamii yake, Tambua dhiki alizopitia. **(alm4)**

(d) Onyesha namna maudhui ya mgogoro yanavyojitokeza katika tamthilia nzima **(ala10)**

AU

3. "Sasa kichwa hicho kisizunguke? Kikae pale pale ndiyo ujue ni kichwa? Kichwa kazi yake

kuzunguka. Lipi lisilozungusha kichwa? Kutafuta lisilokizungusha kichwa ni kama kuwinda hewa

kutaka kufumbata kwenye konzi."

(a) Changanua mtindo katika dondoo hili**.** **(alm3)**

(b) Eleza umuhimu wa msemaji wa maneno haya katika kukuza tamthilia ya Bembea ya Maisha.. **(alm5)**

(c) Asasi ya ndoa inakumbwa na changamoto nyingi katika maisha. Thibitisha kwa kurejelea tamthilia ya Bembea ya Maisha. **(alm12)**

SEHEMU YA C: HADITHI FUPI

D.W Lutomia na Phibbian Muthama: Mapambazuko ya Machweo na Hadithi Nyingine

Jibu swali la 4 au la 5

4. "Enhee! Mpaka sasa hukupata nafasi ya kupiga simu, au angalau kutuma arafa?"
"Samahani ... ulipopiga nilikuwa barabarani, singeweza kupokea simu."

(a) Eleza muktadha wa dondoo hili. **(alm5)**

(b) Tambua toni katika dondoo hili. **(alm1)**

(c) Eleza vipengele viwili vya kimtindo katika dondoo hili. **(alm2)**

(d) Eleza sifa nne za aliyekuwa barabarani akapigiwa simu na kushindwa kuipokea. **(alm4)**

(e) Harubu ni sehemu ya maisha ya binadamu. Hakiki kauli hii kwa hoja nane kwa kurejelea hadithi Harubu ya Maisha. **(alm8)**

AU

5. ...akikiomba radhi kile kitawi cha mti kilichonasa kwenye kazu yake ya rangi ya udongo iliyoficha

kiwingu cha nongo kwa kukosa kuoshwa tangu ainunue! Nikauacha mpambano ule kati ya mzimu na

mwenye dhamana ya mzimu ambao sina shaka ulidumu hadi asubuhi pale wanakijiji walipofika

kushuhudia siri nzito iliyomezwa na mzimu ule waliokuwa wakiogopa na kuamini kiasi cha kuabudu kwa

unyenyekevu na uchaji uliotukuka!

(a) Eleza muktadha wa dondoo. **(alm4)**

(b) Fafanua umuhimu wa mandhari katika dondoo hili. **(alm4)**

(c) Fafanua mbinu za kimtindo katika dondoo. **(alm4)**

(d) Onyesha jinsi itikadi ilivyomwezesha ‘mwenye dhamana ya mizimu’ na wenzake kuwafanya wanakijiji kuogopa na kuamini Mzimu wa Kipwerere kiasi cha kuabudu kwa unyenyekevu na uchaji uliotukuka. **(alm8)**

SEHEMU YA D: HADITHI FUPI

C. MOMANYI: Nguu Za Jadi

Jibu swali la 6 au la 7

6. "Lazima amejiunga na kundi la marafiki wenye pesa wanaojaribu kumpotosha."

(a) Eleza muktadha wa dondoo. **(alm4)**

(b) Anayesema maneno haya ni jasiri. Thibitisha kwa hoja tano. **(alm5)**

(c) Tathmini kwa hoja kumi na moja nafasi ya wenye pesa katika kuendeleza tamaa na ubinafsi katika nchi ya Matuo. **(alm11)**

AU

7. "Mangwasha siku zote hizi ulikuwa unachezeshwa kayamba tu. Ati walisema Osama alikuwa hatari kwa usalama duniani; kuna Osama kuliko huyu?" alijiskia kusema. Alishusha pumzi kwa nguvu akajiuliza kimoyomoyo kwa nini Mungu aliruhusu moto kumtia kwenye shimo la maangamizi na wanawe. Hata hivyo, aliamini kuwa wakati mwingine Mungu huruhusu mabaya kutokea ili kuwafunza waja. Waaidha, alijua kuwa mashaka yanapomkumba mja, huwa ni funzo pia. Humtayarisha kuyahimili

machungu zaidi ulimwenguni ama kumuasa dhidi ya kuabudu maovu. Maovu yanapotendwa na wachache, hata wale wasio na hatia pia hujikuta wamo humo uovuni. Ni mtego wa waliomo na wasiokuwemo.

(a) Changanua mtindo katika dondoo hili. **(alm5)**

(b) Eleza umuhimu wa mandhari ya kanisani aliko Mangwasha katika kukuza Riwaya ya Nguu za Jadi **(alm5)**

(c) Nchi ya matuo imeshinikizwa na Nguu Za Jadi zinazorudisha nyuma usawa katika jamii. Tathmini kauli hii kwa hoja kumi. **(alm10)**

SEHEMU YA E: USHAIRI

8. Soma shairi lifuatalo kisha uyajibu maswali

Mungu naomba subira, subira nayo imani

Imani iliyo bora, bora hapa duniani

Duniani mwa kombora, kombora nayo hiani

Hiani pamwe ukora wenye kuhini. Kuhini kwenye kiburi, kiburi na ufidhuli

Ufidhuli wa kudhuri, kudhuri wangu muwili

Muwili hata kidari, kidari kuwa thakili

Thakili kisinawiri, kisinawiri misuli. Misuli kuwa hafifu, hafifu kama muwele

Muwele wa hitilafu, hitilafi ya nduwele

Nduwele kutakilifu, kutakilifu milele

Milele kutoniafu, kutoniafu na vishale. Vishale vinitomele, vinitomele vikwato

Vikwato pia maole, maole kufanya mito

Mito ya matozi tele, tele mithili kitoto

Kitoto kilo vipele, vipele vyenye fukuto. Fukuto lanipa neno, neno hili kutamka

Kutamka wazi vino, vino subira kutaka

Kutaka imani mno, mno n'sipate wahaka

Wahaka wa matukano, matukano na mashaka.

Mashaka haya ya leo, leo yawe yamepita

Yamepita na vilio, vilio vipishe nyota

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Nyota njema ing'arao, ing'arao kunikita

Kunikita salamani, salamani nikadata. Maswali:

(a) Kwa nini nafsi neni inaomba subira na imani? **(alm2)**

(b) Shairi hili ni la aina gani kwa kuzingatia **(alm4)**

(i) Mpangilio wa maneno

(ii) Mpangilio wa vina. (c) Kwa kutolea mifano eleza mbinu mbili za lugha zilizotumika katika shairi. **(alm4)**

(d) Andika ubeti wa tatu kwa lugha nathari. **(alm4)**

(e) Kwa kutolea mifano, eleza jinsi uhuru wa kishairi ulivyotumiwa kutekeleza arudhi. **(alm6)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

121/1
Mathematics
Paper 1
2 ½ Hours

INSTRUCTIONS TO CANDIDATES

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

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

c) This paper consists of **two** sections: **Section I** and **Section II**

d) Answer **ALL** the questions in **section I** and only **FIVE** questions from **section II.**

e) Show all the steps in your calculations, giving your answers at each stage in the 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 answer the questions in English

For Examiner's use Only

SECTION I

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	**Total**

SECTION II

17	18	19	20	21	22	23	24	**TOTAL**

GRAND TOTAL

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SECTION 1: (50 MARKS)

Answer all question in this section in the spaces provided

1.School fees charged in three day secondary schools this year compares as follows; school A charges ¾ of fees charged in school B. School B charges twice the fees charged in school C.If school C charges Kshs 12,000,express fees charged in the three schools in the ratio of C:A:B. (**3mks)**

2.Simplify the expression $\frac{a^2-b^2}{a^2+ab-a-b}$ **(3mks)**

3.Given that $A=x^2+2xh$,find the positive value of x when A=360and h=13 **(3mks)**

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4. A metal bar with a cross-sectional area of $44cm^2$ has a mass of 5.06kg.The density of the bar is $2.3g/cm^3$.Calculate the length ,in cm,of the metal bar **(3mks)**

5. Baba Yao spent $^1/_5$ of his salary on house rent,$^3/_8$ on loan repayment,Ksh,26,000 on domestic expenses and saved the rest. If he saved Ksh 8,000,calculate his monthly salary **(3mks)**

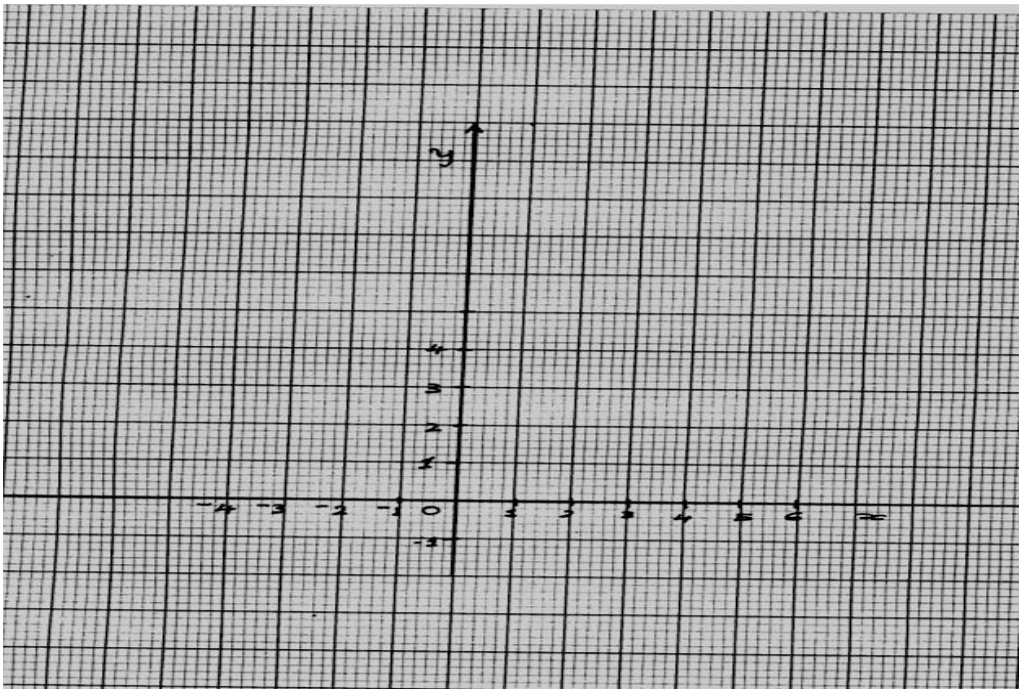
6.Given that $\cos 60^0 = {}^1/_2$,without using mathematical tables or calculator, find ,leaving your answers in surd form;

(a) $\sin 60^0$ **(2mks)**

(b) $\tan 30^0$ **(1mk)**

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7.(a) The vertices of a triangle PQR are P(2,1),Q(5,1) and R(3,3).The triangle PQR is mapped onto triangle $P1Q^1R^1$ by a translation $T\begin{pmatrix}-4\\0\end{pmatrix}$.On the grid provided below, draw the triangle PQR and its image $P^1Q^1R^1$. **(2mks)**

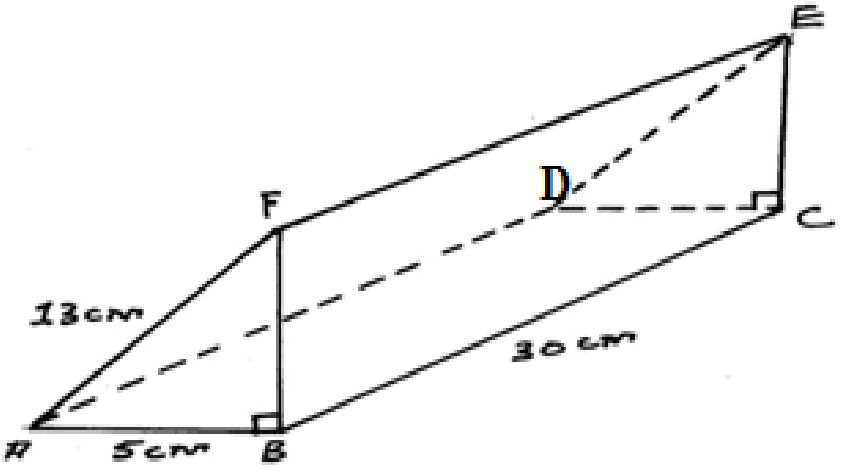


(b) State the type of congruence between the object and image triangle **(1mk)**

8.The volume of a hemisphere is 41.2cm3.Calculate ,correct to one decimal place, the radius of the hemisphere **(3mks)**

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9.The figure below represents a triangular prism. AB=5cm, AF=13cmBC=30cm and angle ABF is a right angle.



Calculate the total surface area (T.S.A) of the prism. **(3mks)**

10. Solve the inequality given below and represent the solution on a number line

$-5x - 3 > 2x + 4$ (**2mks)**

11. The sum of four consecutive odd numbers is 120.If X represents the smallest of the odd numbers, determine the four odd numbers **(3mks)**

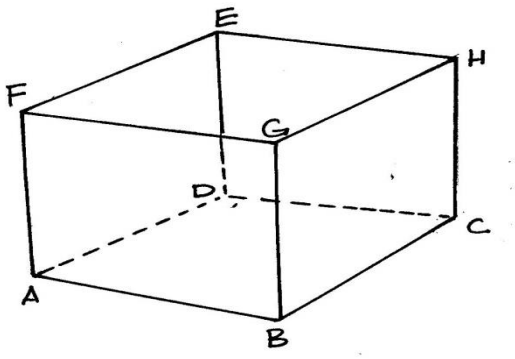
12. The length of a rectangle is twice that of its width. If the area of the rectangle is 200cm^2.Calculate

(a)Calculate the length and width of the rectangle **(2mks)**

(b)the perimeter of the rectangle **(2mks)**

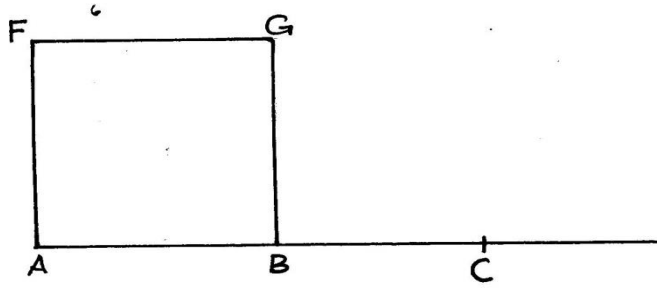
13. Three partners Ambia,Bela and Chaka raised Ksh 20,000,Kshs30,000 and Kshs 50,000 respectively to start an M-Pesa business. After a while they realized a profit which they shared in the ratio of their contributions. If Ambia and Chaka received Kshs,1050 in total. Calculate the total profit realized from the business. **(3mks)**

14. The figure shown below represents a cube of side 3cm.Ends ABCD and EFGH are open



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Complete and label all the remaining vertices of the net of the cube below **(3mks)**



15. Tinkeyi started her journey from town P at 8.00a.m.After walking for 12km at an average speed of 4km/h, she arrived at town Q. She stayed at town Q for 30 minutes. She then took a lift in a car which travelled at an average speed of 72 km/h and arrived at town R at 11.45 a.m .Calculate the distance between towns P and R via Q in kilometers **(4mks)**

16. A police station B is 60 km from town A on a bearing of 045^0.A hospital C is 100km from the police station on a bearing of 150^0.

(a) Using a scale drawing complete the drawing below to show the position of B and C. **(2mks)**



(b) Determine the distance, in kilometer, from town A to hospital C **(2mks)**

SECTION II(50 MARKS)

Answer only five questions in the section in the spaces provided

17. A salesman sold 300 bags of maize to a retailer at Kshs .2000 each .He was given a commission of 3%.The salesman allowed a discount of 0.2% on the maize sold. This discount was deducted from his commission.

(a) Calculate

(i) The discount allowed **(2mks)**

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(ii) The net commission the salesman got **(3mks)**

(b)The retailer sold all the bags of maize at Ksh, 2400 each and paid Ksh 12000 for transport. Calculate the profit made by the retailer **(3mks)**

(c)In additions a value added tax (V.A.T)of 16 % was charged on the profit made by the retailer .Calculate the amount of tax collected. **(2mks)**

18. The base of an open rectanglular tank is 3m by 2.5m and its height is 4m.

(a) Calculate

(i) The capacity of the tank in litres **(3mks)**

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(ii) The total surface area, in m^2 of the tank. **(2mks)**

(b) An open cylindrical tank has an equal capacity and same height as the rectangular tank in (a) above. Calculate correct to one decimal places;

(i) The radius of the cylindrical tank **(3mks)**

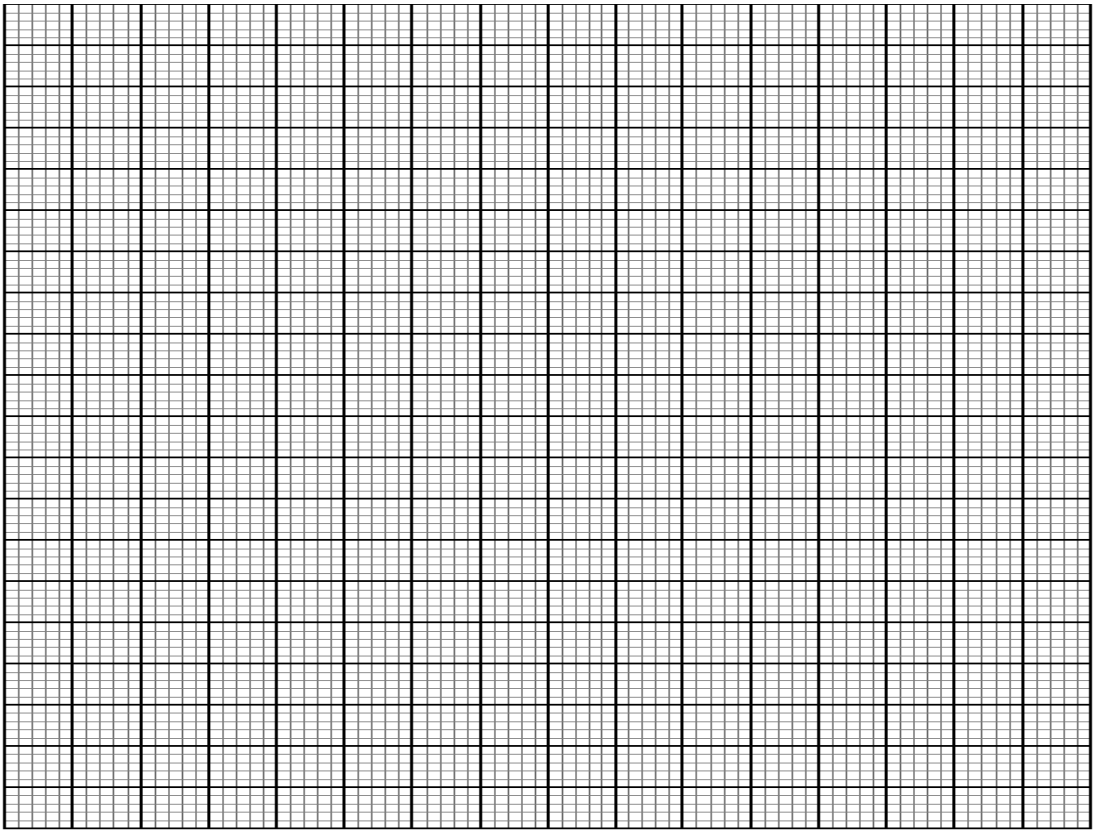
(ii) The total surface area, in the m^2, of the tank **(2mks)**

19. Make scored by students in a mathematics test were recorded in the frequency distribution table shown below;

Marks	21-30	31-40	41-50	51-60	61-70	71-80
No. of students	2	3	14	19	7	5

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(a) On the grid provided below, draw a cumulative frequency curve(0give) for the distribution in the table above **(4mks)**



(b) Use your graph to estimate

(i) The median mark **(3mks)**

(ii) Interquartile range **(2mks)**

(iii) Semi-interquantile range (quartile deviation) **(1mk)**

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20. A piece of wire is bent to form a rectangle whose length is 6cm more than the width. The area of the rectangle formed is $567cm^3$.

(a) Determine the length of the wire **(4mks)**

(b) The same piece of wire could be bent to form a semi-circle .Determine the area that could be enclosed by the same semi-circle correct to one decimal place. **(4mks)**

(c) Express the area of the semi-circle as a percentage of the area of the rectangle, correct to 3 significant figures (2mks)

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21. (a) Using a ruler and a pair of compasses only, construct triangle ABC and ABD on either side of line AB below, such that; <DAB=<DBA=<ABC=<BAC=60^0. (**3mks)**



(b)(i) Name the quadrilateral ADBC **(1mk)**

(ii)Construct a circle touching all the sides of the quadrilateral **(3mks)**

(d)Calculate, correct to one decimal place, the area of the region enclosed by the quadrilateral but outside the circle. **(3mks)**

22. In a certain shop the cost of 3 spades and 2 hammers is Kshs.1180 and the cost of 2 spades and one hammer is Kshs 680. Find, using matrix method ,the cost of one spade and one hammer. **(6mks)**

(b)In another shop, the cost of a spade is 15% higher while the cost of a hammer is 10% lower. Find the total cost of 5 spades and 6 hammers in the shop **(4mks)**

23. The rates of taxation for income earned in acertain year were as follows;

Income Ksh p.m	Tax rate (%)
1- 19200	10
19201-29000	15
29001-38800	20
38801- 48600	25
48601-58400	30
Above 58400	35

Mr Tembo earned a monthly basic salary of Kshs.50,740.He received monthly allowances amounting to 35% of his basic salary and a tax relief of sh .1162.

Calculate;

(a) Mr. Tembo's taxable income **(2mks)**

(b) Mr. Tembo's gross tax **(4mks)**

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(c) Mr.Tembo's net tax **(2mk)**

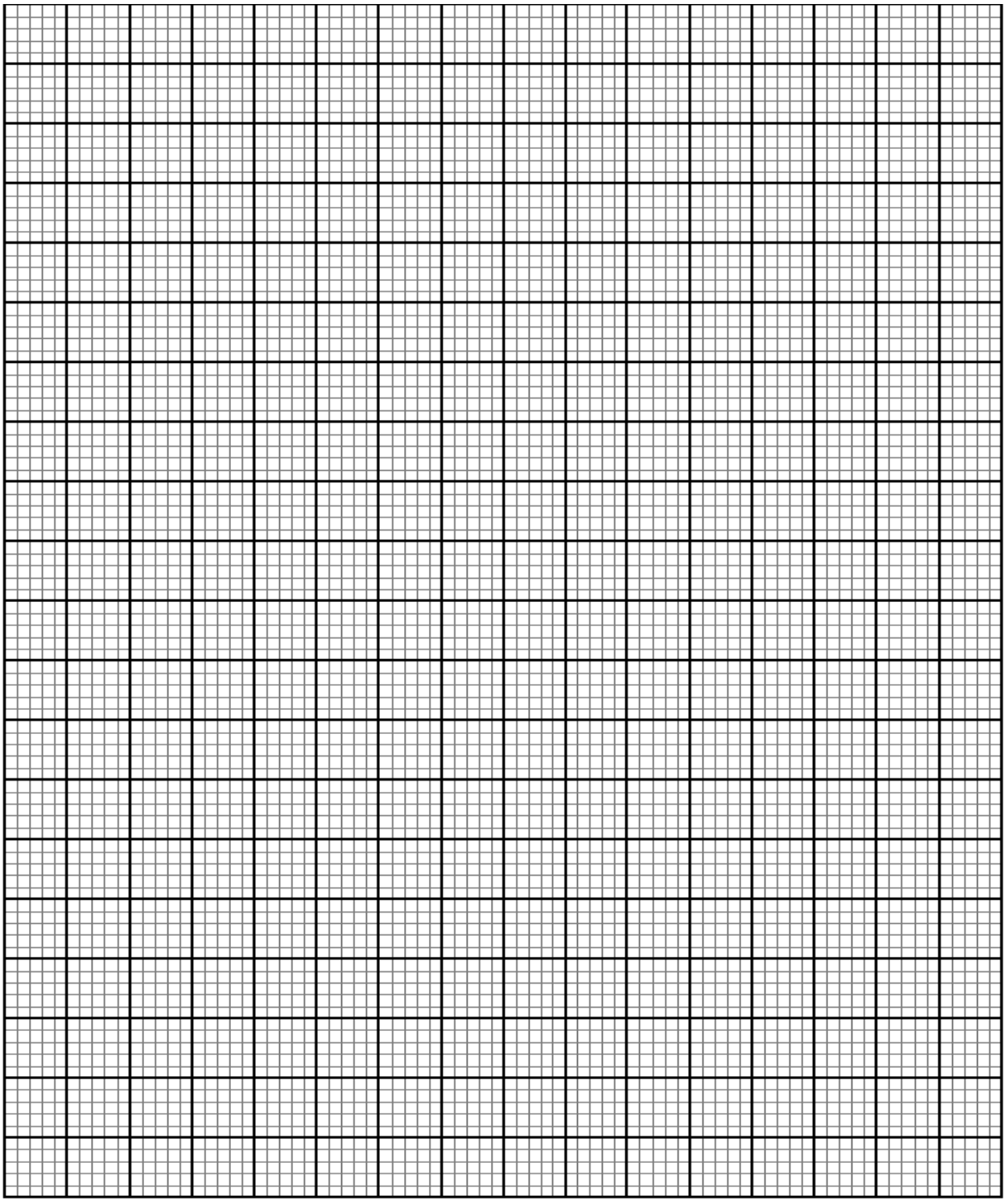
(d) Mr. Tembo's net salary **(2mks)**

24. (a) Complete the table below using the quadratic function $y = x^2+2x-2$. **(1mk)**

X	-6	-5	-4	-3	-2	-1	0	1	2	3	4
y											

(b)Draw the graph of $y = x^2+2x-x$ on the grid provided below **(3mks)**

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(c) Estimate the area bounded by the curve,x-axis, the lines x =1 and x=4 using three equal strips.

i. Using trapezoidal rule **(2mks)**

ii. Using mid-ordinates rule **(2mks)**

iii. By integration **(2mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

121/2
MATHEMATICS
PAPER 2
TIME: $2^{1}/_{2}$ HOURS

INSTRUCTIONS TO CANDIDATES

- *Write **your name, school** and **index number** in the spaces provided above*
- *This paper contains two sections; **Section** 1 and **Section 11**.*
- *Answer all the questions in **section 1** and only **five** questions from **Section 11***
- *All workings and answers must be written on the question paper in the spaces provided below each question.*
- *Marks may be given for correct working **even if** the answer is wrong.*
- *Non programmable silent electronic calculators and KNEC Mathematical tables may be used **EXCEP**T where stated otherwise.*
- *Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.*
- ***Candidates should check carefully to ascertain that all the pages are printed as indicated and no questions are missing.***

FOR EXAMINER'S USE ONLY

Section 1

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total
Marks																	

Section 1I

Question	17	18	19	20	21	22	23	24	**Total**
Marks									

GRAND TOTAL

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SECTION 1(50MARKS)

Answer all questions in this section in the spaces provided.

1.Evaluate using Logarithms $\dfrac{(0.0021+0.0035)^{\frac{1}{2}}}{1.38\times 27.42}$ **(4mks)**

2.Rationalize the denominator $\dfrac{\sqrt{2}}{\sqrt{5-\sqrt{3}}}$ **(2mks)**

3.Make x the subject $P=\sqrt[3]{\dfrac{bx^2-ax}{x}}$ (**3mks)**

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4.Expand the given binomial up to the term with x^4 : $(1+3x)^6$

Use your expansion to evaluate $(1-3)^6$ correct to 4 decimal places **(4mks)**

5.Solve the equation below using the quadratic formular method

$3x^2-7x+2=0$ **(3mks)**

6.Solve for x $\dfrac{81^{2x} \times 27^{x}}{9^{x}} = 729$ **(3mks)**

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7.The sum of the first 14 terms of an A.P =595,Given that the sum of the first 8 terms is 220,Find the first term and the common difference**.** **(4mks)**

8.Determine the centre and the radius of a circle given that the equation of the circle is

$4x^2+4y^2-32x+16y-16=0$ **(3mks)**

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9.Solve the equation for P **(3mks)**

$\text{Log}_2 (2p+3) - 2 = \log_2 (p-2)$

10. Mrs. Amayo bought a plot of land valued at Ksh 226,500, If it appreciates at the rate of 14% p.a. Determine the price of the plot after 5 years. **(3mks)**

11. Solve $2\sin^2 x - 3\sin x + 1 = 0$ for $0^0 \leq x \leq 360^0$ **(3mks)**

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12. Nine men working 8 hours a day can weed a field in 15 days. How many hours a day must 27 men work in order to weed the same field in 5 days? **(3mks)**

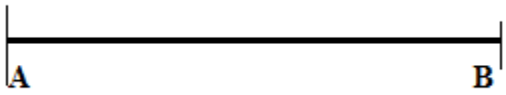
13. Two towns are on the surface of the earth, at (35^0S,25^0W) and (35^0S,17^0E). Calculate the distance in kilometers correct to 1 decimal place, between the two towns. (Use earth's radius R = 6370km) **(3mks)**

14. A function is given as y =3 sin ($2x-45^0$).State the period and the Amplitude of the wave**.** **(2mks)**

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15. Jane bought a T.V set by paying a deposit of sh 2400 plus 15 equal monthly instalment of sh 500each.The hire purchase price was 10% more than the marked price. What was the marked price. **(3mks)**

16. On the line segment AB shown below construct the locus of a point P such that APB is 60^0 on one side of AB. **(3mks)**

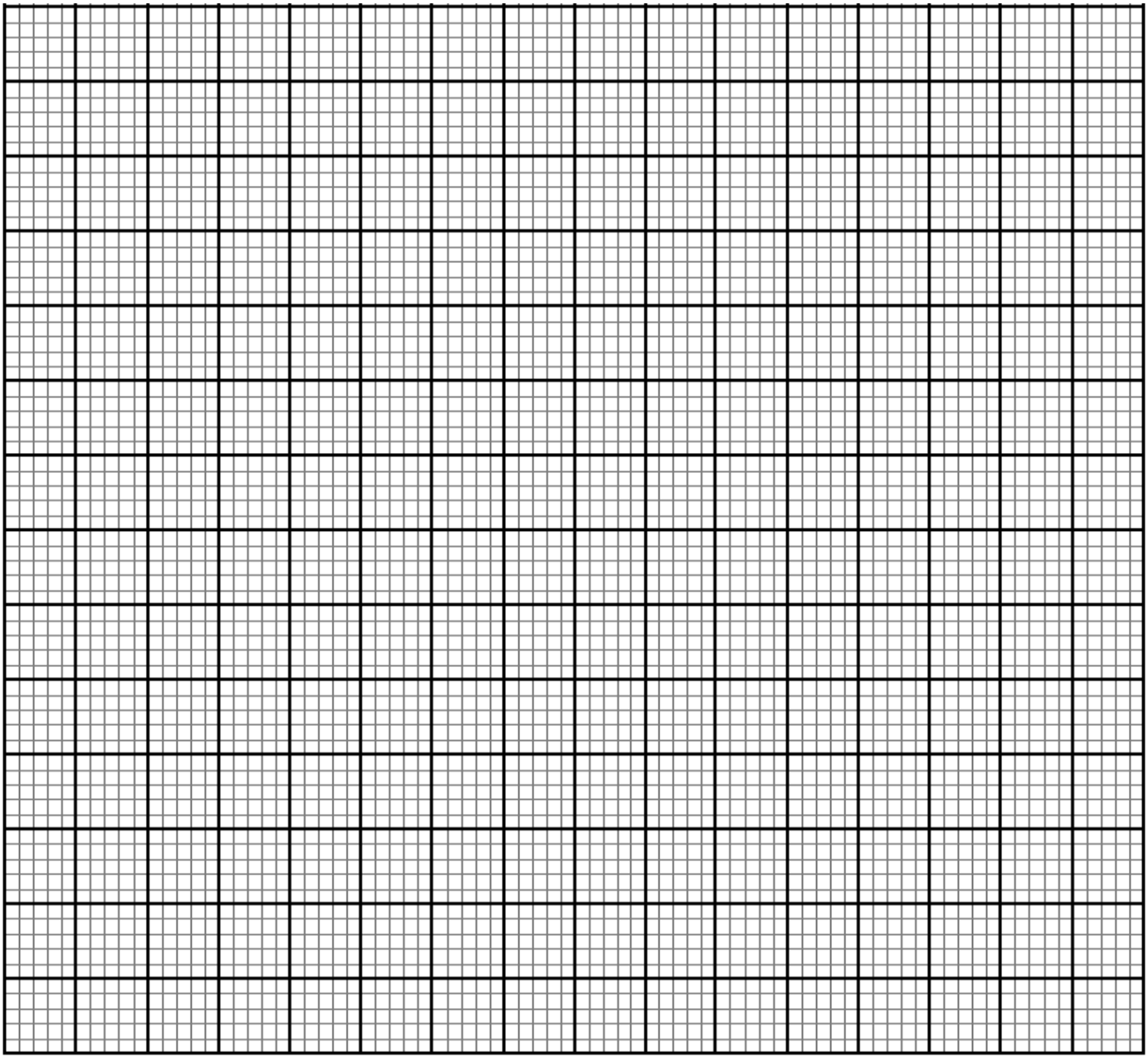


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SECTION II (50 MARKS)

Answer only five questions in this section in the spaces provided

17. (a)Draw the graph of the function $y=2x^2+4x-3$ on the graph paper provided for $-4 \leq x \leq 2$. **(5mks)**



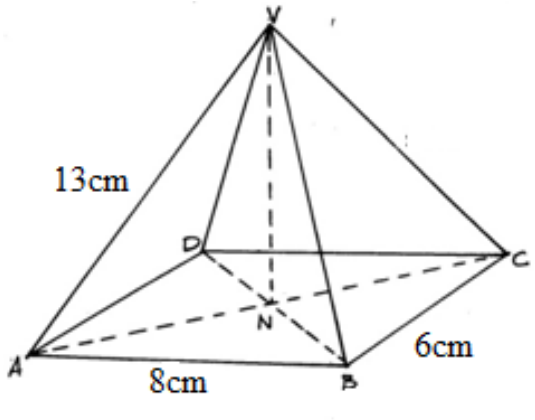
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(b)Use your graph to solve the equations

(i) $2x^2+4^x-3=0$ **(2mks)**

(ii) $2x^2+x-5=0$ **(3mks)**

18. The figure below represents a right pyramid on a rectangular base. AV=13cm,AB=8cm,BC=6cm



Calculate, correct to 1 decimal place.

(a) the length AC **(2mks)**

(b) the length VN **(2mks)**

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(c) the angle between line AV and the bale ABCD **(2mks)**

(d) the angle between plane VAD and the base ABCD **(2mks)**

(e) the angle between the plane VAB and the base ABCD **(2mks)**

19. The table below shows marks obtained by 100 Form four students in a school in Kakamega county

% Marks	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79
No of students	5	7	2x	10	19	4x	20	6	2	1

(a) Determine the value of x **(2mks)**

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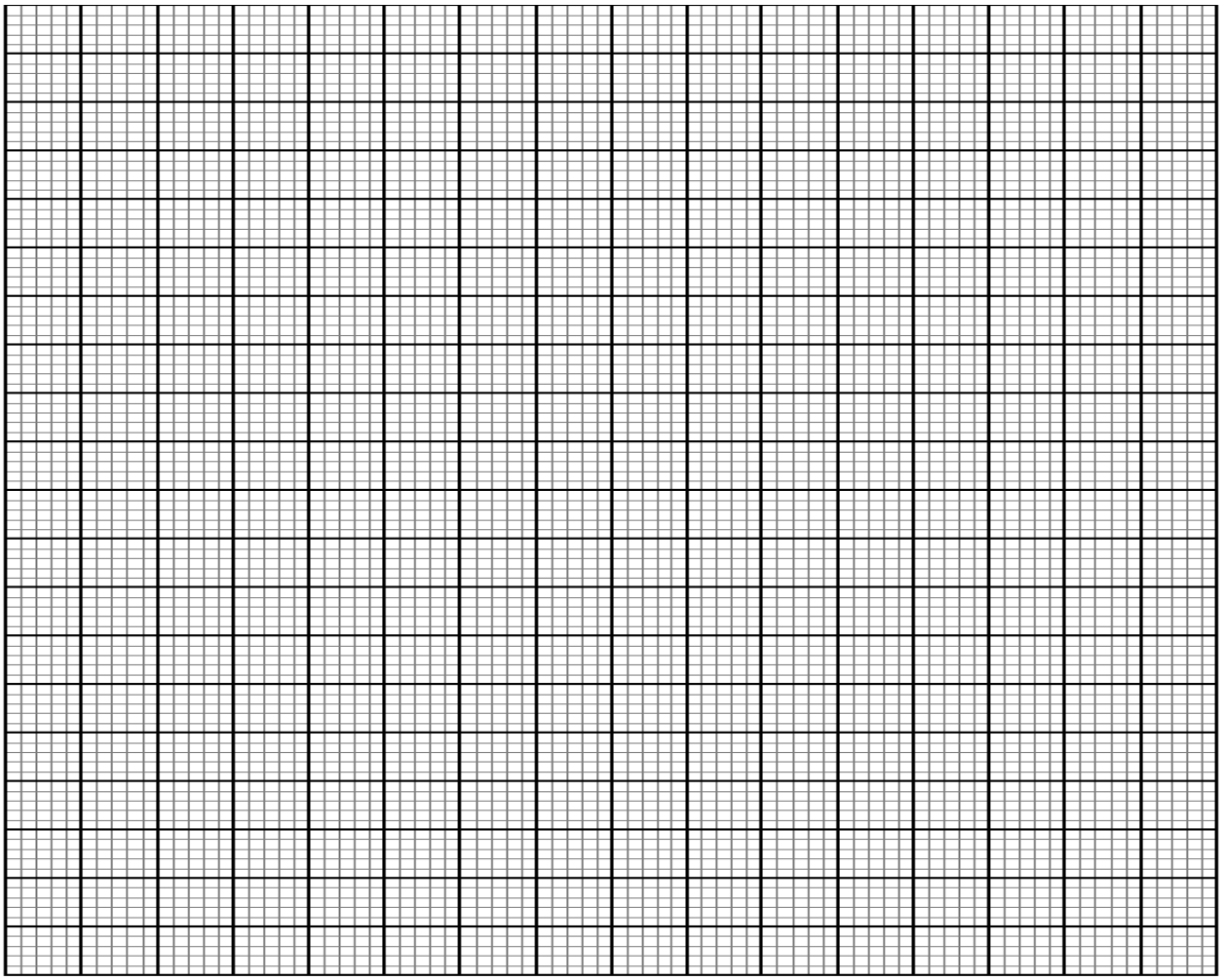
(b) Using an assumed mean of 52, calculate;

i) the mean **(6mks)**

ii) the standard deviation **(2mks)**

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20. Triangle A (1,11)B(2,6)C(4,10) is mapped on to Triangle A1(10,4)B1(5,3) C1(9,1) by transformation M



(a) Plot triangles ABC and $A^1B^1C^1$ on the grid provided. **(2mks)**

(b) Describe transformation M fully. **(3mks)**

(c) Triangle $A^1B^1C^1$ is further transformed to $A^{11}B^{11}C^{11}$ by a transformation.

N= $\begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix}$

(a) Determine the co-ordinates of $A^{11}B^{11}C^{11}$ **(2mks)**

(b) Plot the triangle $A^{11}B^{11}C^{11}$ **(1mk)**

(c) Describe transformation N fully **(2mks)**

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21. The probability that Wanyama is selected to represent the school in Drama is $\frac{3}{5}$.If he is selected the probability of him going to Nairobi is $\frac{5}{7}$ otherwise if not, the probability of him going to Nairobi is $\frac{1}{6}$.

(a) Represent the above information on a tree diagram. **(2mks)**

(b) Find the probability that

(i) he is selected and goes to Nairobi **(2mks)**

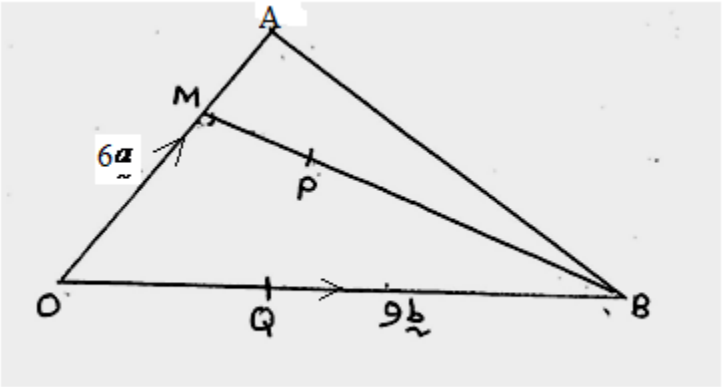
(ii) he is selected but does not go to Nairobi **(2mks)**

(iii) he is not selected but goes to Nairobi **(2mks)**

(iv) he goes to Nairobi **(2mks)**

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22. In triangle OAB, $\underset{\sim}{OA}=6\underset{\sim}{a}$ $\underset{\sim}{OB}=9\underset{\sim}{b}$, M is the mid –point of OA and P lies on MB such that MB=5MP.



(a) Express in terms of $\underset{\sim}{a}$ and $\underset{\sim}{b}$ the following vectors

(i) AB **(1mk)**

(ii) MB **(1mk)**

(iii) MP **(1mk)**

(iv) AP **(3mks)**

(b) Given that Q lies on OB such that $\underset{\sim}{OQ}=3\underset{\sim}{b}$ express $\underset{\sim}{AQ}$ in terms of $\underset{\sim}{a}$ and $\underset{\sim}{b}$. **(1mk)**

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(c) Hence show that A,P and Q are collinear **(3mks)**

23. The relationship between two variables S and T is given by the equation $S=KT^n$ where K and n are constant

T	2	3	4	5	6	7
S	12.8	28.8	51.2	80.8	115.2	156.8

(a) Write down the linear equation relating to S and T **(1mk)**

(b) Complete the table above for the linear equation relating to S and T(to one decimal place) **(2mks)**

(c) Draw a suitable straight line graph to represent the data **(3mks)**

(d) Use your graph to determine the value of K and n **(2mks)**

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(e) Find the value of S when T =3.5 **(2mks)**

24. A particle moves a long a straight line such that its displacement S metres from a given point is $S = t^3 - 5t^2 + 3^t + 4$ where t is time in seconds. Find:

(a) The displacement of the particle at t=5 **(2mks)**

(b) The velocity of the particle when t=5 **(3mks)**

(c) The value of t when the particle is momentarily at rest **(3mks)**

(d) The acceleration of the particle when t=2 (2mks)

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

232/1
PHYSICS
PAPER 1 (THEORY)
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

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

b) Sign and write the date of examination.

*c) This paper consists of two sections **A** and **B**.*

*d) Answer all questions in both section **A** and **B***

e) All workings must be clearly shown.

f) Silent non-programmable electronic calculators may be used.

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

h) Candidates should answer questions in English.

FOR EXAMINER'S USE ONLY

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1 - 11	25	
	12	13	
	13	09	
	14	12	
	15	11	
	16	10	
TOTAL SCORE		80	

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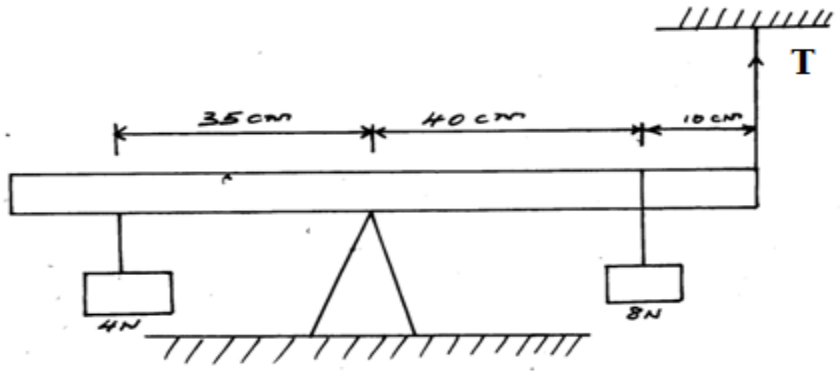
SECTION A (25MKS)

ANSWER ALL QUESTIONS IN THE SPACES PROVIDED

1. Draw a vernier scale to show a reading of 3.14cm. **(l mk)**

2. A solid weighs 16.5N on the surface of a planet. The force of gravity on the planet is I .7Nkg^{-}.
   Determine the mass of the solid**.** **(2mks)**

3. The figure below (figure 1) shows a uniform metal rod balanced at its centre by different forces.



Determine the value of T. **(3mks)**

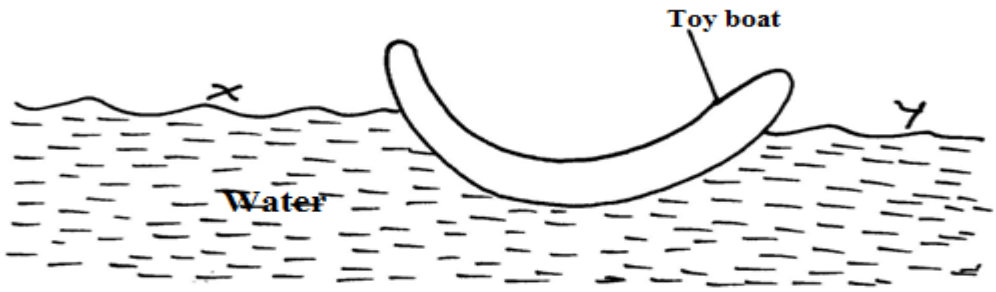
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4. An object of weight 40N attached at the end of a spring balance causes an extension of 0.5cm on the Spring.

(a) Determine the force per unit length. **(2mks)**

(b) Calculate the energy stored in the spring. **(2mks)**

5. Figure 2 shows a small toy boat floating on water in a basin X and Y are two points near the toy.



When a hot metal rod is dipped into the water at point X the toy is observed to move towards Y. Explain this observation. **(2mks)**

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6. Two identical tubes, A and B, held horizontally contain air and water respectively. A small quantity of coloured water is introduced at one end of A while at the same time, a small quantity of coloured water is introduced at one end of B. State with reasons the tube in which the colour will reach the other end faster. (2mks)

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7. Analo kicks a ball mass 0.6kg initially at rest using a force of 720N. If the foot was in contact with the ball for 0.1 seconds, what was the take off speed of the ball? **(2mks)**

8. a) A car starting from rest accelerates uniformly for 5 minutes to reach $30ms^{-}$. It continues at this speed for the next 20 minutes and then decelerates uniformly to come to a stop in 10 minutes. Sketch a velocity time(s) graph for the above motion**.** **(1mk)**

(b) Determine the distance travelled when the car was decelerating. (**2mks)**

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9. Give two reasons why the efficiency of a pulley system is always less than 100% . **(2mks)**

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10. Mechanics is one of the branches of physics. State what it deals with**.** **(1 mk)**

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11. A faulty thermometer reads 22°c when dipped in to pure melting ice and 97°c when in steam. Find the thermometer reading when in a liquid at 60°c **.** **(3mks)**

SECTION B (55MKS)

(A*nswer all the questions in this section in the spaces provided*)

12. a) An object is released to fall vertically from a height of 100m. At the same time, another object is projected vertically upwards with a velocity of $40ms^{-1}$.

(i) Calculate the time taken before the objects meet. **(3mks)**

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(ii) At what height do they meet**?** **(2mks)**

b) A stone is projected horizontally at a speed of 40m from a cliff 60m high. Calculate the time it takes to strike the ground. **(2mks)**

c) A string of negligible mass has a bucket tied at its end. The string is 60cm long and the bucket has a mass of 45g. The bucket is swung horizontally making 6 revolutions per second. Calculate:

(i) the angular velocity **(1 mk)**

ii) Angular acceleration **(2mks)**

(iii) The tension in the string **(2mks)**

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(iv) The linear velocity **(lmk)**

13. a) Define the term efficiency of a machine**.** **(l mk)**

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b) Figure 3 shows a drum of mass 90kg being rolled up a plane inclined at 25° with the horizontal. The force F applied is 420N and the distance moved by the drum along the plane is 5.2m.

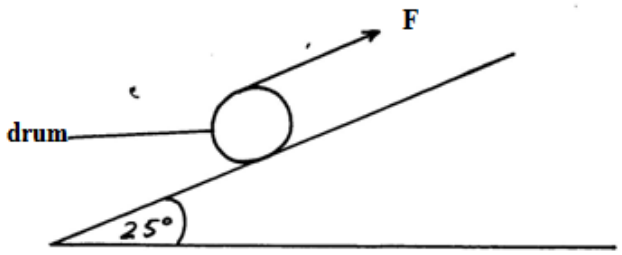


Figure 3

(a) Determine:

(i) The work done by the effort **(3mks)**

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(ii) The work done in raising the drum**.** **(3mks)**

(iii) The efficiency of the inclined plane. **(2mks)**

14. a) Define specific latent heat of fusion of a substance**.** **(l mk)**

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b) Water of mass 200g at a temperature of 60°c is put in a well lagged copper calorimeter of mass 80g. A piece of ice at 00 and mass 20g is placed in the calorimeter and the mixture stirred gently until all the ice melts. The final temperature x, of the mixture is then measured.

Take lf=334000Jkg^{-1}, s.h.c (water = 4200Jkg-lk-l and s.h.c for copper =900Jkg^{-}1 k-1. Determine:

(i) the heat observed by the melting ice at 0°. **(2mks)**

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ii) the heat absorbed by the melted ice (water) to raise the temperature to x. (answer may be given in terms of x. **(2mks)**

iii) the heat lost by the warm water and the calorimeter. (answer may be given in terms of x). (answer may be given in terms of x**).** **(2mks)**

iv) the final temperature x of the mixture. **(4mks)**

v) State any assumption you made in (iv) above**.** **(l mk)**

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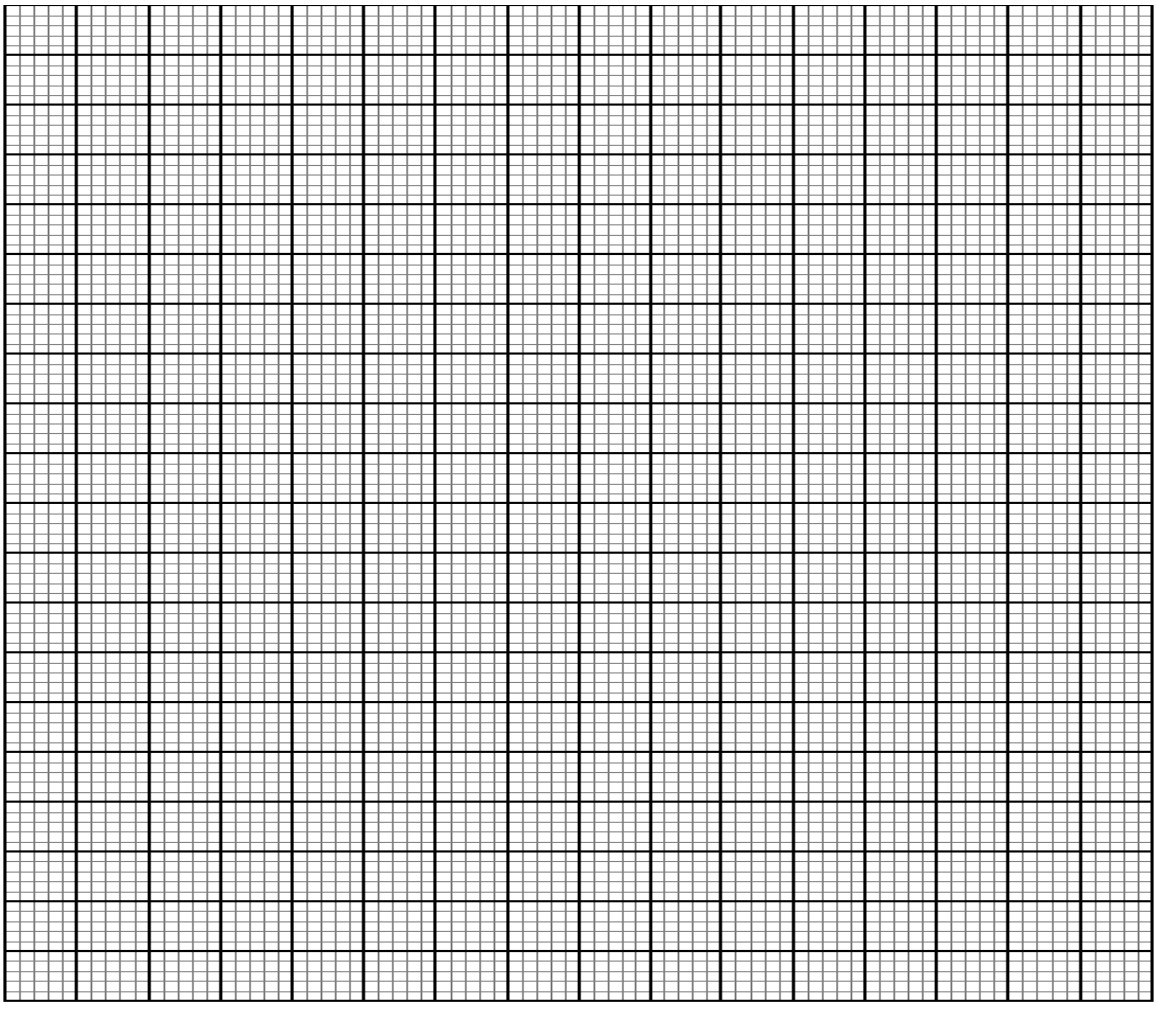
15. a) State what is meant by an ideal gas.

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b. The pressure acting on a gas in a container was changed steadily while the temperature of the gas was maintained constant. The value of volume V of the gas was measured for various values of pressure P and the reciprocal of volume $\frac{1}{v}$.



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(i) suggest two ways on how temperature of the gas could be kept constant**.** **(2mks)**

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(ii) Given that the relation between the pressure P and the volume V of the gas is given by PV=K, where K is a constant, use of the graph to determine the value of K. **(4mks)**

(iii) What physical quantity does K represent? **(1mk)**

(iv) State one precaution you would take when performing such an experiment. (1mk)

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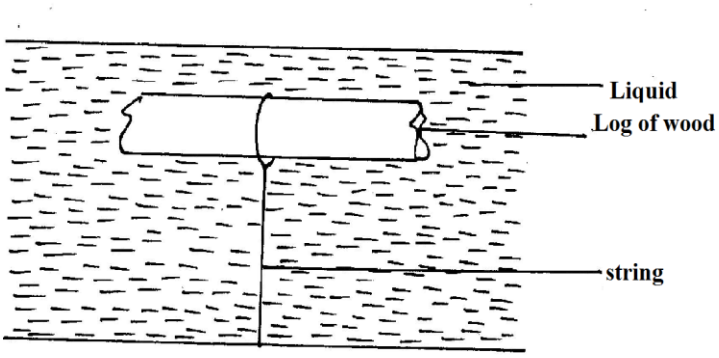
(c) $0.02m^3$ of gas at 27°c is heated at pressure until the volume is $0.03m^3$. Calculate the final temperature of the gas in ^{0}c**.** **(2mks)**

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16. a) Figure 4 below shows a log of wood of mass 20kg submerged in a liquid of density $1gcm^{-3}$ and held in position by a string fixed to the bottom of a pond.

Given that the density of wood is 800kgm-3 determine:

(i) The volume of the log **(3mks)**



(ii) The up thrust on the log **(2mks)**

(iii) Tension in the string **(2mks)**

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c) Figure5 (drawn to scale) shows a section of a tape after passing through a ticker time operated at a frequency of 50HZ-. The tape is attached to a trolley moving in the direction shown.

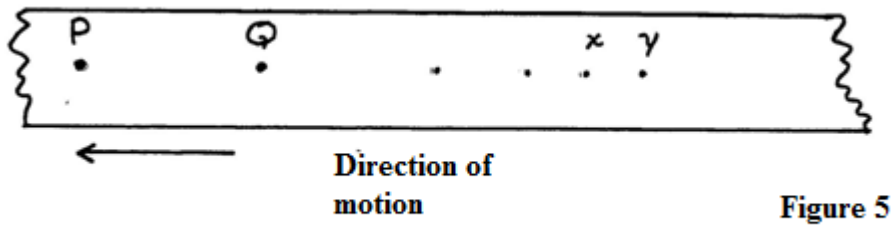


Figure 5

Determine the velocity between P and Q. **(3mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

231/2
PHYSICS (THEORY)
PAPER 2
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

1. Write your name, school, admission number and index number is the spaces provided above.

2. Sign and write the date of examination in the spaces above.

*3. Answer **ALL** the questions in section A and B in the spaces provided.*

*4. All working **MUST** be clearly shown.*

5. Non-programmable silent electronic calculators and KNEC mathematical tables may be used.

6. This paper consists of 15 pages.

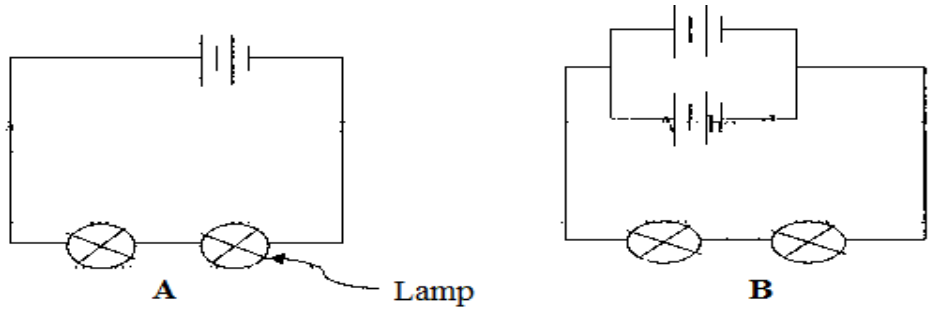
7. Candidates should check the question paper to ascertain that ALL the pages are printed and that no questions are missing.

This paper consists of 12 printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.

SECTION A (25MKS)

(Answer ALL questions in this section)

1. In the figure below the lamps in the two circuits, A and B are identical and the cells have the same electromotive force.



Explain why the lamps in B may glow brighter than those in A when the circuits are closed at the same time. **(2 marks)**

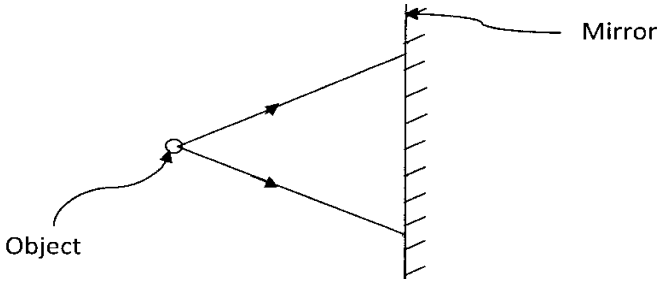
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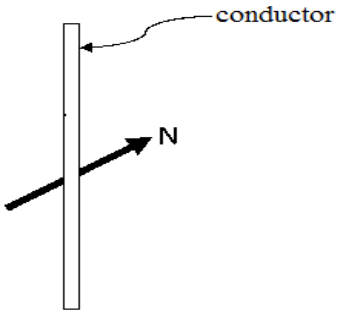
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2. The figure below shows two rays drawn from an object on to the mirror.



Complete the ray diagram to show the position of the image. **(2 mks)**

3. (a) A compass needle is placed below a current carrying conductor as shown below.



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Indicate on the diagram the direction of the current. **(1 mark)**

(b) State the difference between a soft magnetic material and a hard magnetic material. **(1 mark)**

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4. (a) Define diffraction with respect to waves. **(1 mark)**

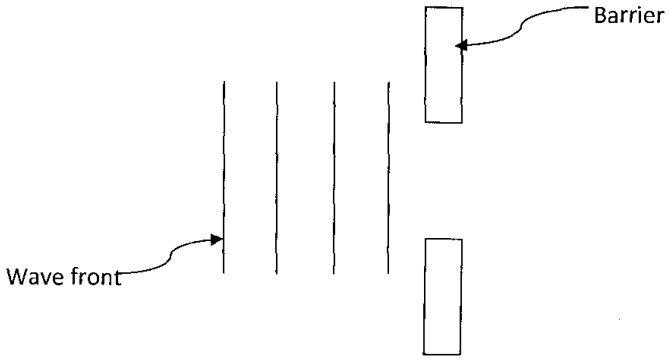
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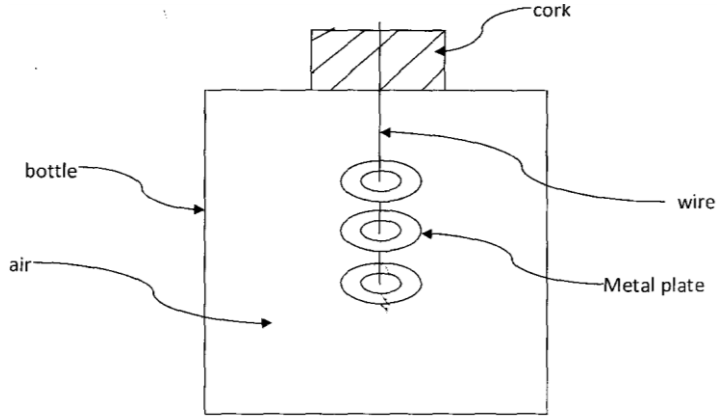
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(b) In the diagram below the size of the aperture at the barrier is 10cm while the distance between two consecutive wave fronts is 3cm. If the waves are moving towards the barrier, draw the wave fronts as they appear after passing through the aperture. **(2 marks)**



5. The figure below shows a set up used to study sound waves.



It is observed that when the bottle is shaken sound from the metal plates is heard. **State and explain** the observation that would be made if a little hot water is poured into the bottle then the cork is tightly replaced and the bottle shaken. **(2 marks)**

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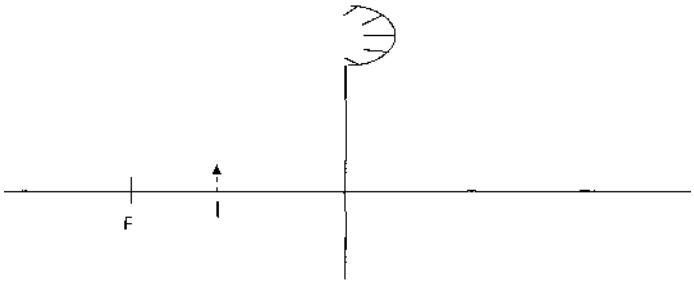
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6. The figure below (drawn to scale) shows the image I, formed by a convex mirror. F is the virtual principal focus of the mirror.

Using ray diagrams locate the position of the object and draw the object**.** **(3 marks)**



7. State and explain two factors affecting the strength of an electromagnet**.** **(2mks)**

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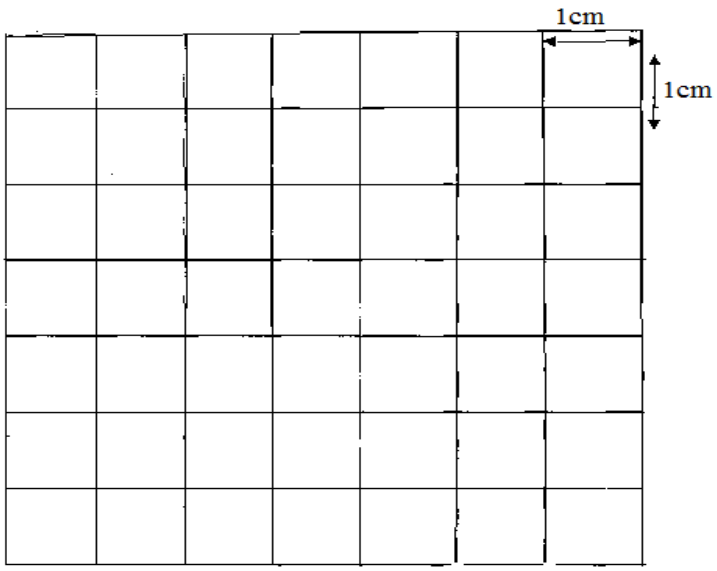
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8. An alternating voltage of peak value 15v and frequency 25Hz is applied to the terminals of a Cathode ray oscilloscope. The Y-gain is set at 5 v/cm and the time base at 10 ms/cm. Draw the trace observed on the screen**.** **(2 marks)**



9. Name all the radiations of the electromagnetic spectrum which have higher wavelengths than the visible light. **(1 mark)**

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(b) State the radiation that is detected using a blackened bulb of a thermometer**.** **(1 mark)**

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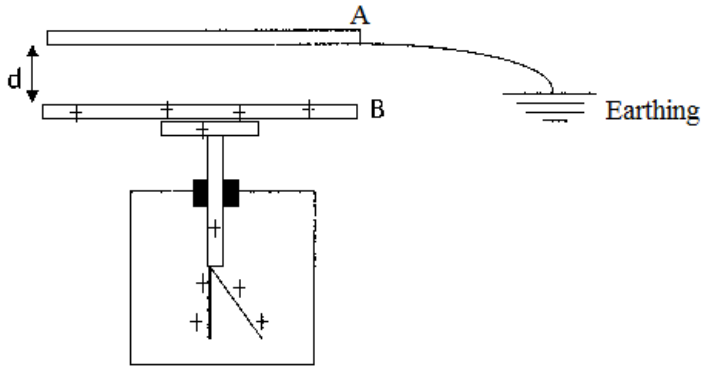
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10. Your house is supplied with 240 v from a power source which is fitted with a 13 A safe fuse. What is the maximum number of 60w bulbs that can be fitted in the house? **(2mks)**

11. A resistance wire is 2m long and has a cross-sectional area of 0.50 mm^2. If its resistance is 2.60 Ω , calculate its resistivity. **(3 marks)**

SECTION II

12. (a) The figure below shows a charged electroscope and two aluminum plates A and B arranged as shown.



State and explain the observations made on the leaf divergence when plate A is moved closer to B. **(2 marks)**

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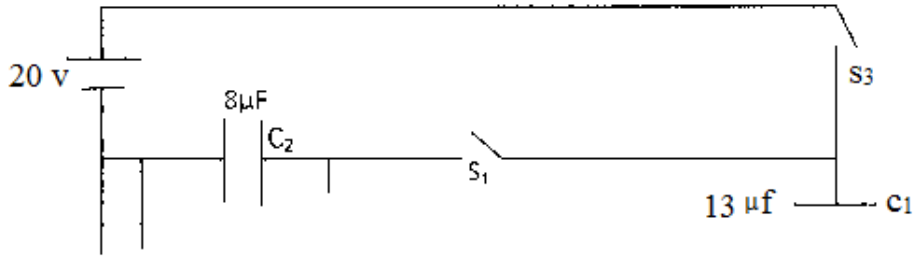
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(b) The figure below shows a circuit having the following components: a 20 v p.d. source, a voltmeter, three switches S_I, S_2 and S_3 and two capacitors C_1 and C_2 of capacitances l3μF and 8μF respectively.



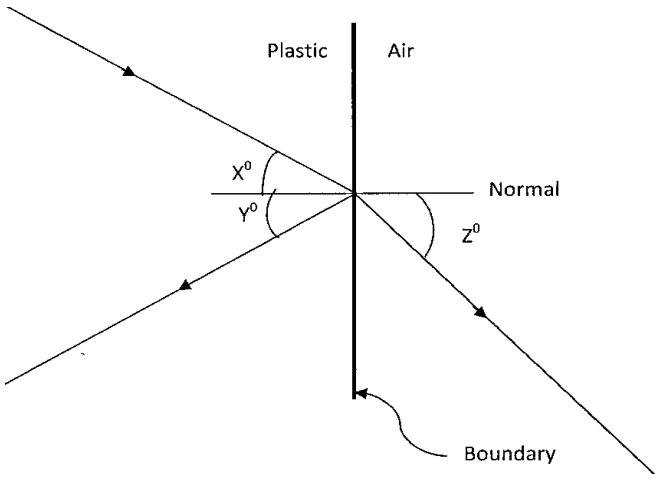
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(i) Determine the charge on C_1 when switches S_2 and S_3 are closed while s_1 is open. **(2 marks)**

(ii) After some time S_3 is opened and both s1 and S_2 Are closed. Find the maximum voltage,V, recorded by the voltmeter**.** **(2 marks)**

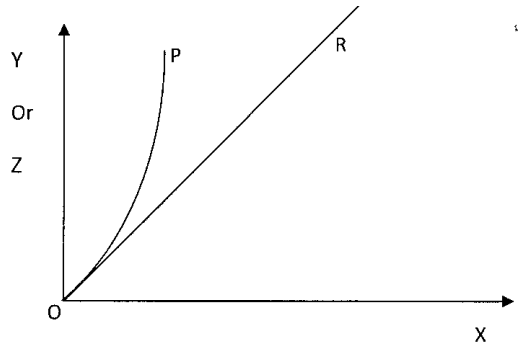
(iii) Calculate the energy stored in C_2. **(2 marks)**

13. (a) The diagram below (drawn to scale) shows a ray of light incident on the boundary between air and a transparent plastic block. At the boundary the ray can take either of the two directions indicated on the diagram.



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The two graphs below represent the variations of angles Z and Y for different sizes of incident angle, X.



(i) What process is represented by:

(I) Line OR…….. **(1 mark**

(II) Curve OP…… **(1 mark)**

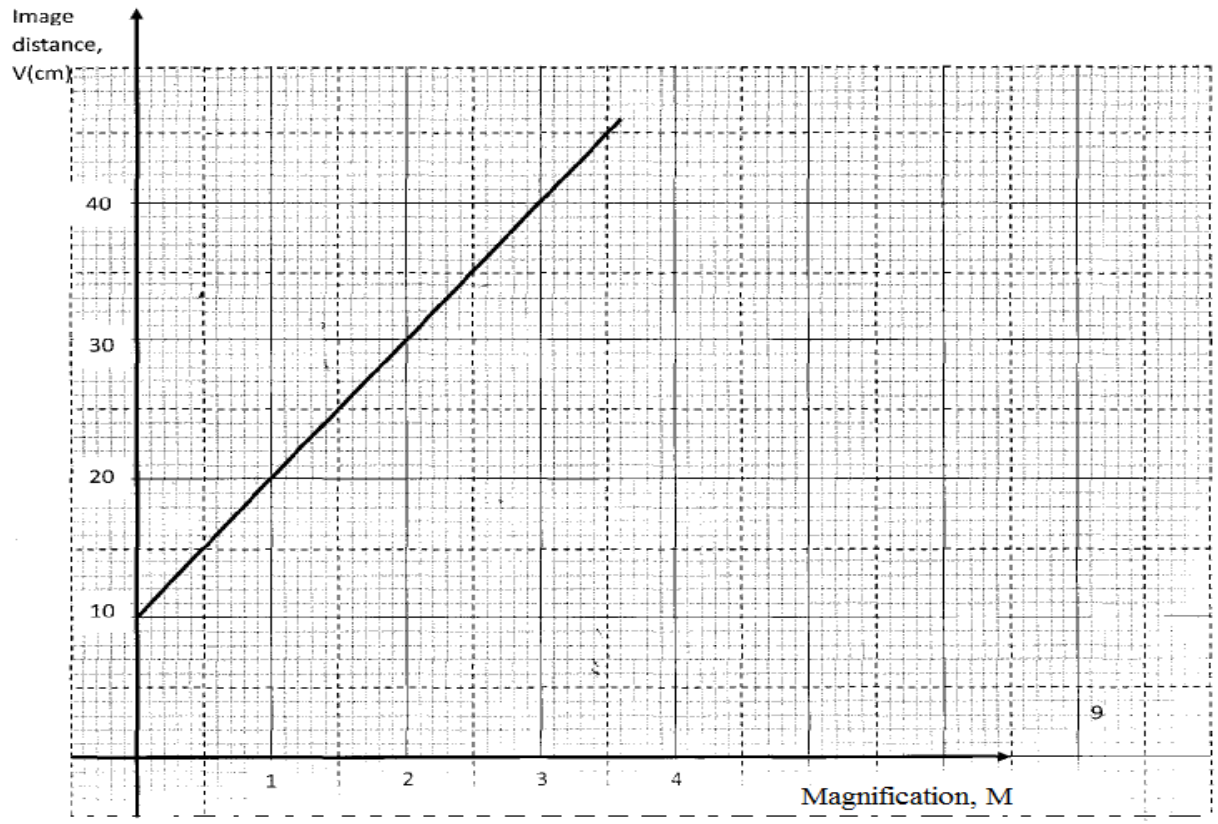
(ii) For the plastic material, determine:

(I) The refractive index **(2mks)**

(II) The critical angle **(2mks)**

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b. The following graph shows the variation of image distance, v, with magnification, m, for a converging lens.



0 Using the graph and the equation $\frac{v}{f}$ = M + 1 to determine:

(i) The object position when the image position is 45cm. **(2 marks)**

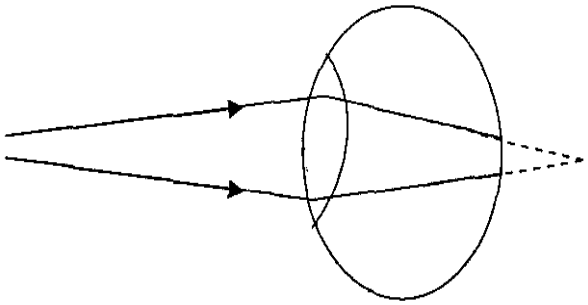
(ii) The focal length of the lens. **(2 marks)**

(iii) The power of the lens. **(2 marks)**

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c) The following figure 4 shows an eye defect. **(2marks)**

Fig 4



Name the defect and illustrate on the same diagram how the defect could be corrected. **(3mks)**

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14. a) What do you understand by the term mutual induction? (1 mark)

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b) State **two** factors that determine magnitude of e.m.f induced in a coil**.** **(2 marks)**

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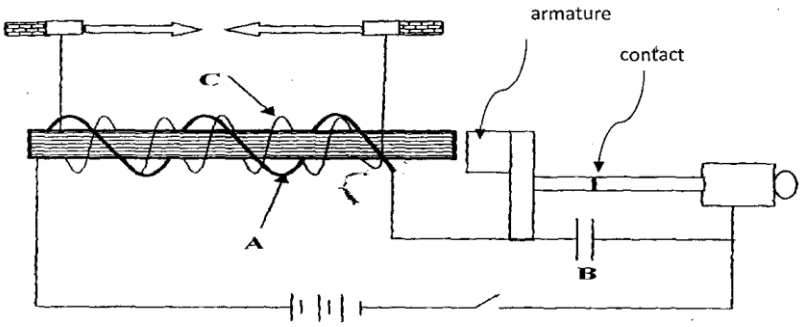
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c) The diagram below shows an induction coil used to produce sparks.



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(i) Name parts labeled A and B. **(2 marks)**

A……

B……

(ii) Briefly explain how the induction coil works.

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d) A transformer is used on a 240V a.c supply to deliver 12A at 120V to a heating coil. If 20% of energy taken from the supply is dissipated in the transformer. Calculate the current in the primary coil. **(2 marks)**

(e) (i) Define doping **(1 mark)**

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(ii) With the help of a diagram, describe how a p-type semiconductor is made. **(3 marks)**

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(iii) Explain what happens to the depletion layer when a diode is forward biased. **(2 marks)**

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ii) Threshold frequency. (1mk)

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(b) Figure 11 shows Ultra-violet light striking a polished Zinc plate placed on a positively charged gold-leaf electroscope.

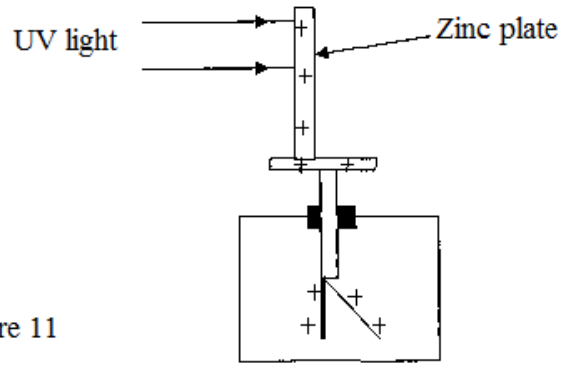


figure 11

(i) Explain the observations that the leaf did not fall.

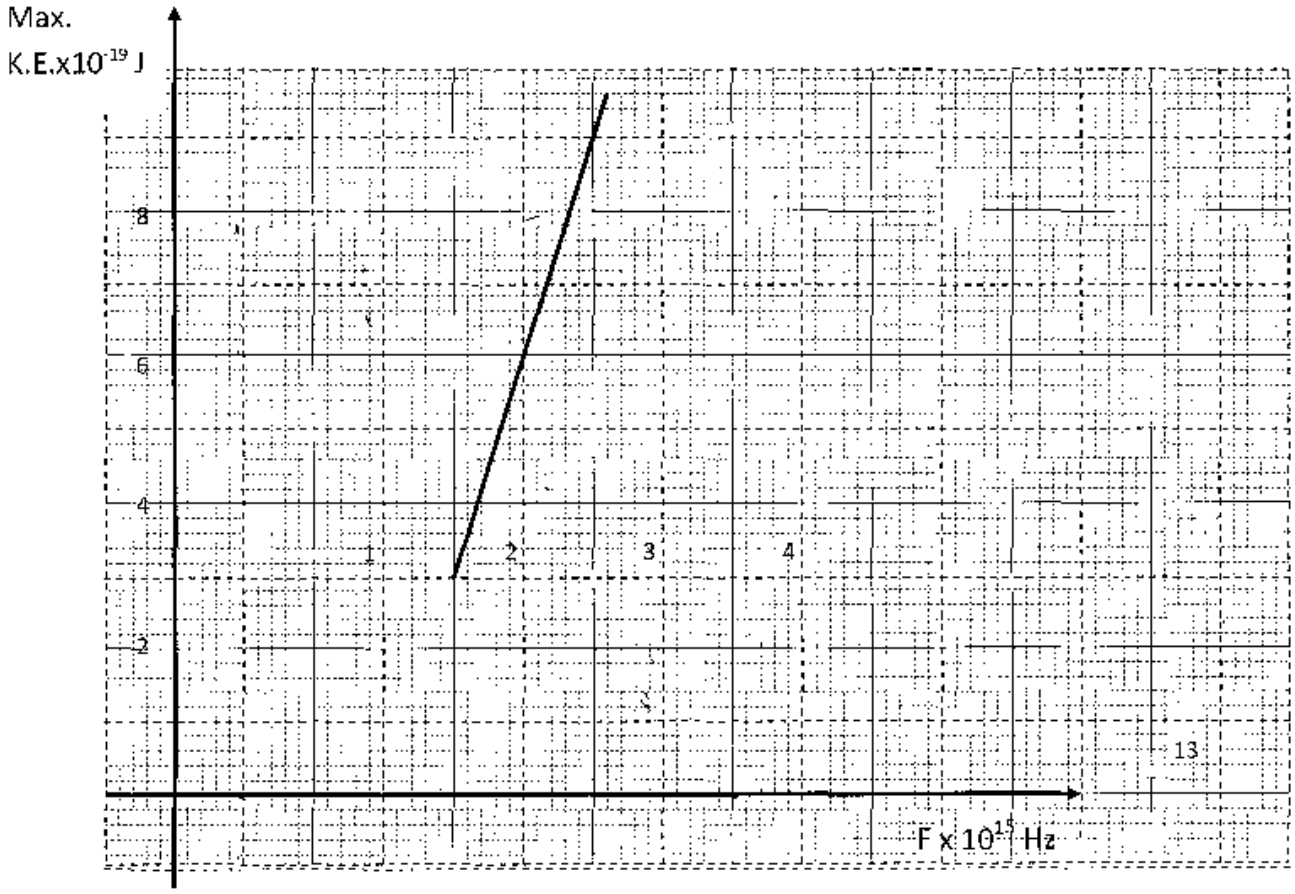
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ii) In an experiment using a photocell, U.V light of varying frequency but constant intensity was made to strike a metal surface. The maximum kinetic energy (KE_{Max}) of photoelectrons for each frequency, f, was measured. The graph shows how KE_{Max} varies with f.

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Given that $KE_{Max}=hf - \emptyset$, determine the values:

(I) Constant h **(2 marks)**

II) Constant ∅ **(2marks)**

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16. (a) A G.M tube may register some effect in the absence of a radioactive source. Explain this observation and state one cause. **(2 marks)**

……

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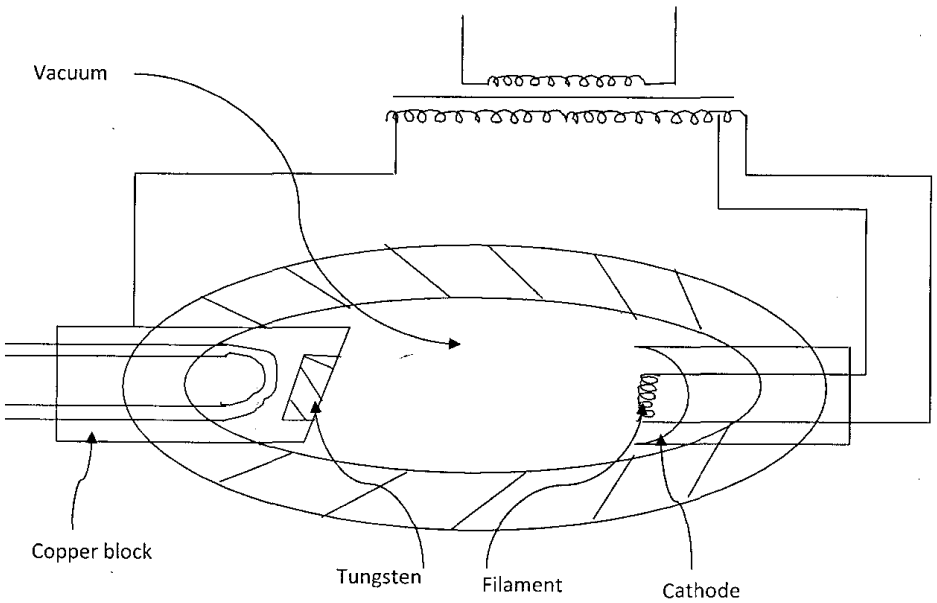
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(b) A radioactive element A of half life 31 days decays to element B. A sample of A of mass 32g is kept in a container. Assuming B is stable, calculate the mass of B that will be in the container after 124 days. (3 marks)

(c) The figure below shows the features of an x-ray tube.



(i) Why is a thick copper block used at the 0KOanode**?** **(1 mark)**

……

……

……

……

(ii) State how the strength of the X-rays can be increased. **(1 mark)**

……

……

……

(iii) X-ray tube operates at 1000KV between the cathode and the anode. Calculate the maximum energy of the X-ray photons produced. (charge of an electron, e = 1.6×10^{-19} C**).** **(2 marks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 4

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

232/3
PHYSICS PRACTICAL
PAPER 3
2½ HRS
INSTRUCTIONS TO CANDIDATES

(a) Write your name and admission number in the spaces provided above.
(b) Sign and write the date of examination in the spaces provided above.
(c) Answer ALL the questions in the spaces provided in the question paper.
(d) You are supposed to spend the first 15 minutes of the 2½ hours allowed for this paper reading in the whole paper carefully before commencing your work.
(e) Marks are given for a clear record of the observations actually made, their suitability, accuracy and the use made of them.
(f) Candidates are advised to record their observations as soon as they are made.
(g) Non-programmable silent electronic calculators may be used.
(h) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
(i) Candidates should answer the questions in English.

For Examiner's Use Only

Question 1

	i	**ii**	**iii**	**iv**	**v**	**vi**
Maximum Score	8	5	3	2	1	1
Candidate's Score						

Question 2

	b	d	e	f	h	I	j	k	l
Maximum Score	1	3	5	1	2	2	1	3	2
Candidate's Score									

Total

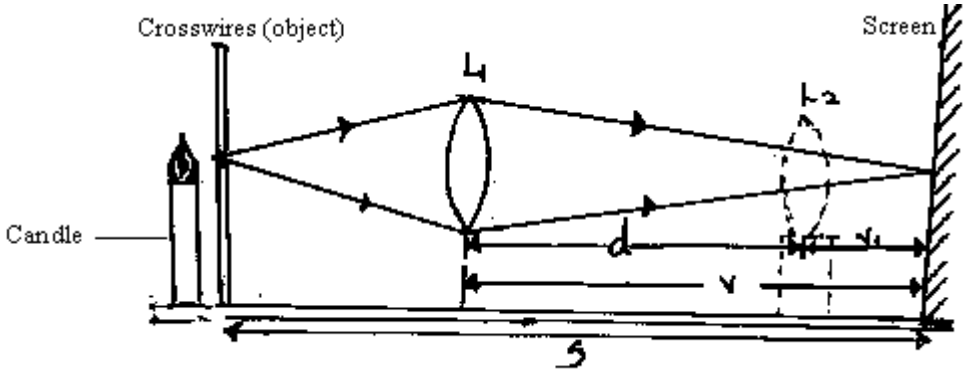
GRAND TOTAL

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Question One

. 1 You are provided with the following apparatus;

– A candle (source of light illuminating cross wires mounted on a circular hole)
– A convex lens
– A lens holder
– One meter rule
– A whole screen
Set the apparatus as shown in the diagram below



Illuminate the object cross wires using the candle provided when the distance between crosswires and screen S = 60cm.

By moving the lens away from the crosswires obtain a focused clear image of the object (crosswires) on the screen. Measure and record the distance V, between the lens position L_1 and the clear image on the screen.

Keeping the distance S fixed i.e. S = 60cm move the lens further away from the object until another sharp image but diminished image of the cross wires is obtained on the screen. Measure and record the distance between the new lens position L_2 and the sharp diminished image. Record this as V_1. Repeat the procedure for other values of S shown in the table.

i) Complete the table (8marks)

S (cm)	60	65	70	75	80	85	90
V (cm)							
V_1 (cm)							
d = V - V1(cm)							
S^2 (cm^2)							
d^2 (cm^2)							
$S^2 - d^2$(cm^2)							

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ii) Plot a graph of $s^2 - d^2$ against S **(5marks)**

iiii) Determine the gradient (k) of the graph **(3marks)**

iv) Given that K =4f where f is the focal length of the lens used, determine the value for f.

(2marks)

v) State the advantage the method used above to determine the focal length of a lens has over the other methods.

(1mark)

vi) Focus the window frame or any distant object and obtain a rough estimate of the focal length of the lens.

(1mark)

Question 2

This question consists of two parts, A and B. Attempt both parts.

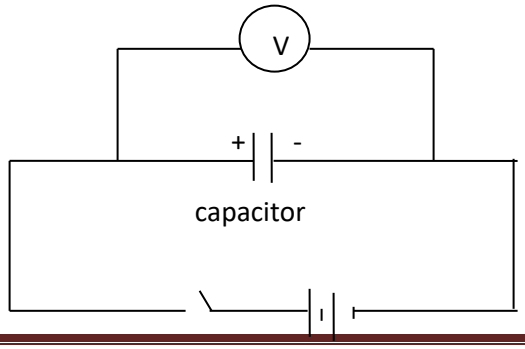
Part A

You are provided with the following

- ✓ A voltmeter
- ✓ A capacitor
- ✓ A switch
- ✓ A stopwatch
- ✓ Five connecting wires
- ✓ Two cells and a cell holder

Proceed as follows;

a) Connect the circuit as shown in the figure below.



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Ensure the terminals of the capacitor and those of the battery are correctly connected. (*Positive to positive and negative to negative)*

b) Close the switch, read and record the maximum voltage V_o across the capacitor.

V_o = _____ volts. **[1 mark]**

c) While the voltmeter shows the maximum voltage V_o open the switch and start the stopwatch simultaneously. Stop the stopwatch when the voltage has dropped from V_o to 2.5V. Read and record in the table 2 the time taken.

d) Reset the stopwatch and close the switch. Repeat the procedure in (c) to measure and record the time taken for the voltage to drop from V_o to each of the other values shown in table 2.

(3marks)

Table 2

Voltage (V)	2.5	2.25	2.0	1.75	1.50	1.25
Time, t(s)						

e)i)On the grid provided, plot a graph of voltage, V (y-axis) against time, t. **[4 marks]**

ii) Use the graph to determine the time, t at which V = $Vo/_2$

t= _____ seconds **[1 mark]**

f) Determine the resistance R of the voltmeter given that t = 0.693 CR where C is the capacitance of the capacitor. **[1 mark]**

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Part B

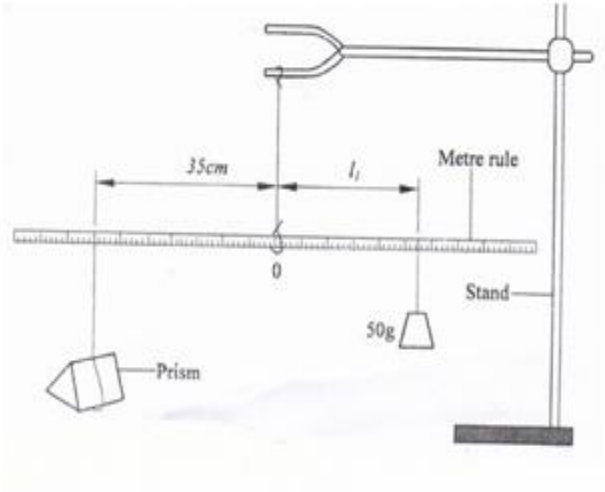
You are provided with the following;

- ✓ A triangular glass prism
- ✓ A metre rule
- ✓ A 50g mass
- ✓ Some hot water
- ✓ Some cold water
- ✓ Some thread
- ✓ A thermometer
- ✓ One stand, one boss and one clamp
- ✓ A beaker

Proceed as follows;

g) Using a piece of thread suspend the metre rule from the clamp on the stand and adjust the position of the thread until the metre rule balances horizontally. Note this position, O of the thread. (*This position of the thread must be maintained throughout the experiment*).

h) Using another piece of thread suspend the glass prism from the metre rule at a point 35cm from O. Suspend the 50g mass on the opposite side of O using another piece of thread. Adjust the position of the thread attached to the 50g mass until the metre rule balances once more.



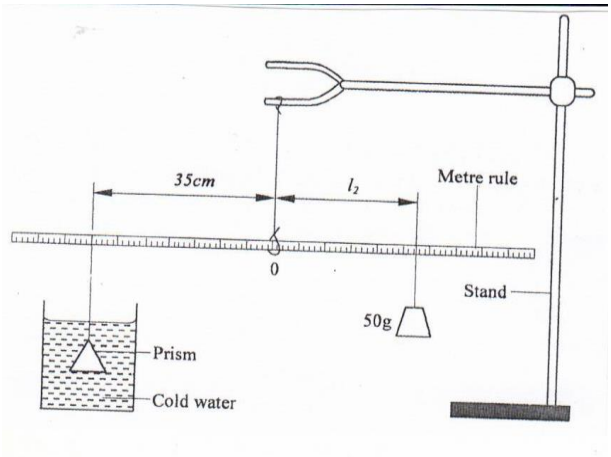
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i) Determine the distance L_1, between O and the point of support of the 50g mass.

$L_1 =$ _____ cm **[1 mark]**

ii) Use the principle of moments to determine the weight W_1 of the prism in air.
(Take g = 10N/kg)**[1 mark]**

iii) Put cold water into the beaker (approximately $^3/_4$). With the prism at 35 cm from O, determine the distance L_2 of the 50g mass at which the rule balances when the prism is fully submerged in cold water.



(I) $L_2 =$ _____ cm **[1 mark]**

(II) Determine the weight W_2 of the prism in cold water. **[1 mark]**

j) Measure and record the temperature T, of the cold water when the system is balanced.
$T_1 =$ _____ ^oC. **[1 mark]**

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k) Now pour out the cold water and replace with hot water. Balance the metre rule with the prism fully submerged in hot water. (*Ensure that the prism is still supported at 35 cm from O)*

i) Determine the distance L_3 of the point of support of the 50g mass when the prism is submerged in hot water.

$L_{3=}$ _____ cm **[1 mark]**

ii) Measure and record the temperature of the hot water.
T_2 = _____ ^oC. **[1 mark]**

iii) Determine the weight W_3 of the prism in hot water. **[1 mark]**

l) Determine the constant k for the water given that **[2 marks]**

$$K = \frac{(W_1 - W_2) - (W_1 - W_3)}{(W_1 - W_3)(T_2 - T_1)}$$

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