BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2 EXAMS *(ALL SUBJECTS TESTED)*



BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2 EXAMS

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

443/1
AGRICULTURE
PAPER 1
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

a) Write your name and index No. in the spaces provided.
*b) This paper consists of **THREE SECTIONS A,B**, and **C.***
*c) Answer **ALL** questions in section A and B and **ANY TWO** in section **C**.*
d) All your answers must be written in the spaces provided.

FOR EXAMINERS USE ONLY

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCO
A	1-20	30	
B		20	
C		20	
		20	
	TOTAL	90	

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SECTION A (20 MARKS)

Answer all questions in this section

1.State three limitations of tissue culture. **1 ½ mks**

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2.Give two types of labour records. **1mk**

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3.Give three disadvantages of surface irrigation **1 ½ mks**

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4.State three conditions that ensure maximum utilization of herbicides **1 ½ mks**

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5.a) At what stage of beans should mechanical weed control be avoided? **½ mk**

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b) Name three examples of working capital in wheat production. **1 ½ mks**

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6.State four factors considered when identifying a farming system in an area. **2mks**

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7.Name any two types of micro-catchment used in the soil and water conservation. **1mk**

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8.List four benefits of draining a water-logged land. **2mks**

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9.State four symptoms of viral disease attack in crops. **2mks**

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10. Name three books of accounts used in book keeping. **1 ½ mks**

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11. Give three conditions that may lead to sub-division of land. **1 ½ mks**

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12. Name three reasons for carrying out primary cultivation. **1 ½ mks**

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13. Give three sources of capital in agriculture. **1 ½ mks**

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14. State three characteristics of a good rootstock for grafting. **1 ½ mks**

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15. State two benefits of a good soil structure in crop production. 1mk

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16. Differentiate between fertilizer grade and fertilizer ratio as used in fertilizer chemistry. **1mk**

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17. Give two functions of calcium in plant growth. 1mk

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18. State four factors that contribute to competitive ability of weeds. **2mks**

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19. Give two advantages of strip grazing. **1mk**

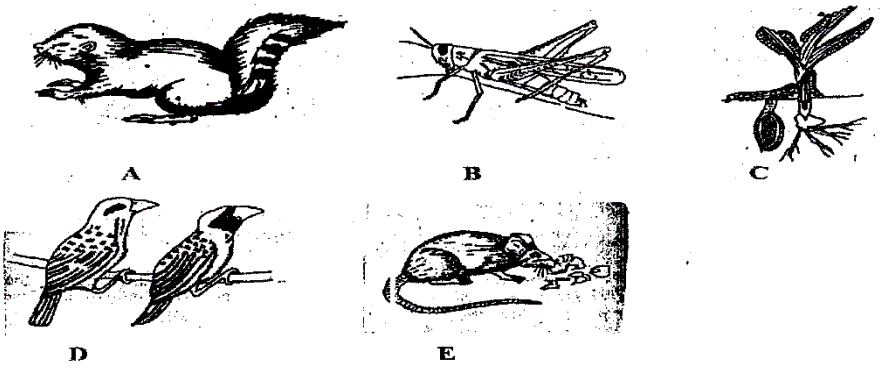
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20. State four factors that determine the nutrient content of hay. 2mks

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SECTION B (20MARKS)

21. Study the illustration given below representing crop pest and answer the questions that follow.



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i) Identify the pest represented by A,C,D and E.

A -……..

C – ……

D – …….

E – ……

ii) Name a crop disease that is spread by pest labeled B. 1mk

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iii) Name two damages caused by pest E. lmk

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iv) Give two control measures for the pest labelled D. **lmk**

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22. A farmer wishes to change her enterprise from vegetable and flower production to cattle rearing. The cost she incurred in growing vegetable and flower are:

Flower	Tomatoes
Weeding – 200/=	Weeding – 200/=
Harvesting – 300/=	Pruning – 300/=
Fertilizer – 500/=	Harvesting – 400/=
Seeds – 400/=	Chemical – 1,000/=
	Seeds – 150/=

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When she changes her enterprise to dairy cattle rearing, she incurs the following costs:

- Cost of buying cattle - 10,000/=

- Disease control - 2,000/

- Salary of milk person - 3,000/=

- Fencing - 1,500/

The revenue she gets when growing tomatoes is 10,000/= and flowers is 4,000/= ln dairy cattle production, the revenue from milk sales is 20,000/= and manure sale is 1,000/=.

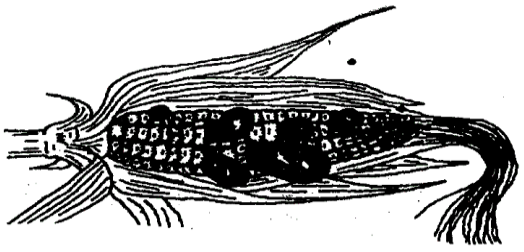
Prepare a partial budget **(4mks)**

Is it worthwhile to effect the change? (lmk)

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23. The following is a diagram of maize cob attacked by disease.



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i) Identify the disease. **1mk**

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ii) List down three control measures of the above disease. **1 ½ mk**

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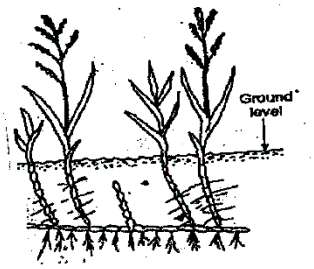
iii) Name one other crop attacked by similar disease. **½ mk**

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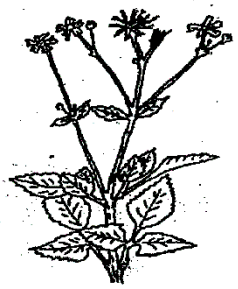
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24. The diagrams F,G and H show weeds.

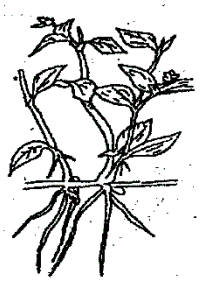
F



G



H



i) Identify the weeds labeled F,G and H

F - …… .½ mk

G - …… ½ mk

H – …… ½ mk

ii) Why is difficult to control weed labeled F. **2mks**

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25. The diagram below illustrates a field practice study it carefully and answer the questions that follow.



a) Name the practice. **½ mk**

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b) Give three reasons for carrying out the practices named in (a) above. 3mks

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SECTION C (40 MARKS)

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

26. a) Explain five factors considered in designing a crop rotational programme. **5mks**

b) Outline seven advantages of land consolidation in land tenure reforms. **7mks**

c) Describe the practices that a farmer should carry out to ensure uniform germination of seeds. **4mks**

d) Give four reasons why burning is not recommended as a method of land clearing. **4mks**

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27. a) List eight benefits of using organic matter for mulching. 8mks

i) Ecological requirements **4mks**

ii) Seed bed preparation. **3mks**

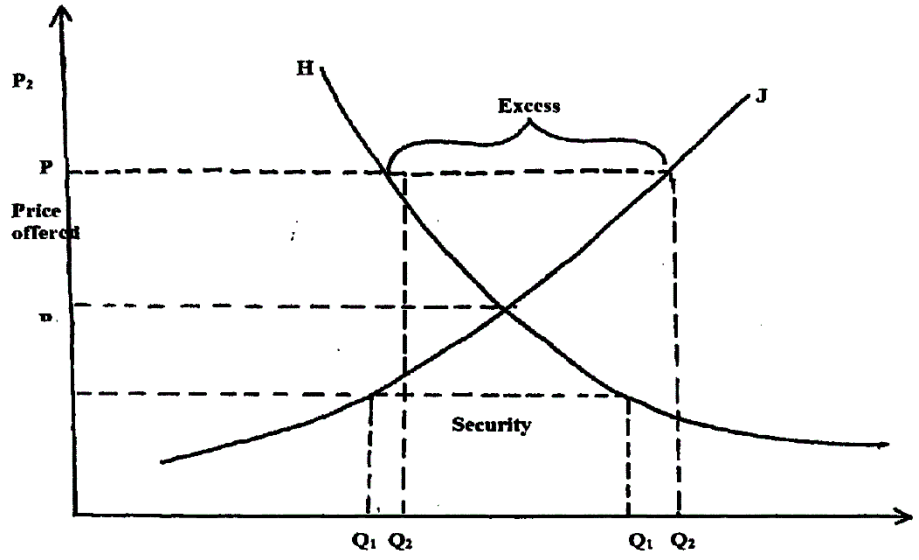
iii) Planting. **3mks**

iv) Field management. **2mks**

28. a) Explain ways in which a farmer can improve soil fertility. **10mks**

b) Discuss various methods which a farmer can use to prevent water pollution. **5mks**

c) Below is a graph showing the relationship between demand and supply in price determination.



i) Name the curve labelled H and J. **1mk**

ii) State the name given to the point where the two curves H and J intersect. **1rnk**

iii) Give two reasons why there is excess supply above P2. **1mk**

iv) If the price of millet in a market changes from 10/= to 12/= per kg resulting in a change of supply from 400kg to 600kg, Calculate the elasticity of supply. **2mks**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……...……

ADM NO: …….. SIGN: ……. DATE: ……..

443/2
AGRICULTURE
PAPER 2
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

1.Write your name and index no. in the spaces provided.

2.This paper consists of THREE SECTIONS A, B and C.

3.Answer all questions in section A and B and ANY TWO in section C.

4.All your answer MUST be written in the spaces provided.

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SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A		30	
B		20	
C		40	
TOTAL	90		

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SECTION A (30 MARKS)

Answer all the questions in this section in the spaces provided.

1.Name the exotic breed of sheep which is resistant to foot rot disease. **(1 ½ mks)**

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2.Define the term out-crossing as used in animals breeding. (1mk)

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3.State two limitations of using solar power on the farm. **(1mk)**

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4.Give three types of vaccines used to control livestock diseases. (1 ½ mks)

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5.Give one use of each of the following tools.

i. Stunning gun. **(½ mk)**

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ii. Rammer. **(½ mk)**

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6.List three qualities of good wool. **(1 ½ mks)**

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7.Give two disadvantages of embryo transplant. **(1mk)**

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8.Outline two characteristics of European bees. **(1mk)**

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9.Name two zoonotic diseases common in livestock production. **(1mk)**

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10. List two implements that are attached to tractor P.T.O. shaft. **(1mk)**

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11. Outline two functions of reticulum in ruminants. **(2rnks)**

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12. State two factors that should be considered when setting a bee hive. **(2mks)**

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13. Give the function of the following parts of a cattle dip.

i) Foot bath. **(1mk)**

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ii) Draining race. **(1mk)**

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14. Outline two factors that determine the amount of water required by animals. **(1mk)**

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15. State two advantages of tractor hire service to farmers. **(1mk)**

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16. State two causes of stress in a flock of layers. **(1mk)**

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17. What is breech birth in cattle production? **(1mk)**

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18. Give any one sign of ill health in each of the following physiological and morphological livestock body functions and conditions.

i) Defecation **(½ mk)**

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ii) Skign **(½ mk)**

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iii) Mucous membrane. **(½ mk)**

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19. Describe any three constructional requirements of a fish pond. **(2mks)**

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20. State four predisposing factors of mastitis in dairy cattle. **(2mks)**

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21. Give a reason for placing the following enterprise on the stated area of the farm.

i) Poultry house within the homestead. (1mk)

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ii) Homestead near the road. **(1mk)**

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SECTION B (20 MARKS)

Answer all the questions in this section in the spaces provided

22. Below is a diagram of a livestock structure used in the farm. Study it and answer the questions that follow



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i) Identify the structure. **(½ mk)**

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ii) State the advantage of the above structure. **(1mk)**

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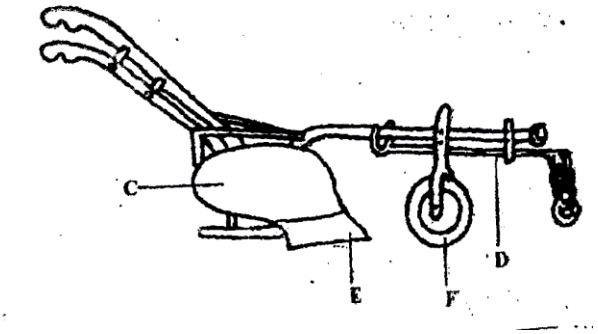
(b) State two reasons why communal calf pen not recommended. **(1mk)**

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(c) Below is a diagram of a farm implement study it carefully and answers the questions that follow.



(i) Identify the parts labeled C and D on the diagram. **(1mk)**

C……

D ……

(ii) State the uses of the part labeled E and F on the diagram. **(2mks)**

E……

F……

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(iii) Give two care and maintenances practices done to the implement above. **(2mk)**

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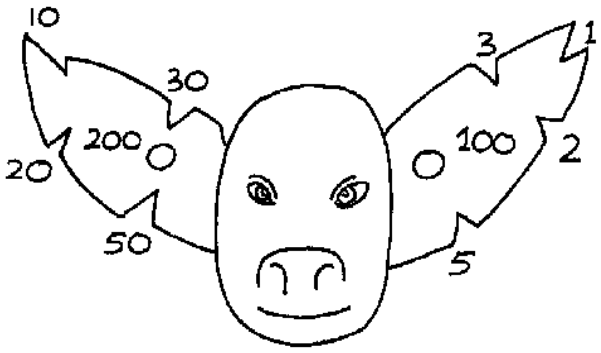
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23. The illustration G below shows a method of identifying pigs. Study the diagram and answer the questions that follow.

G



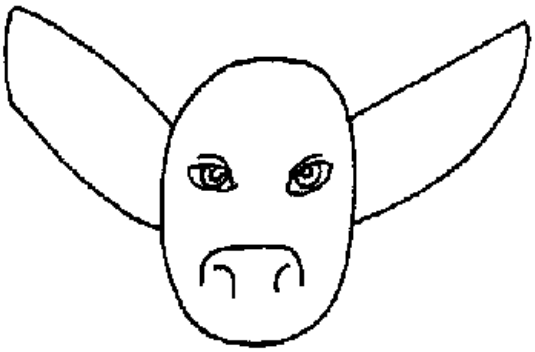
(i) Identify the number of the notch represented by the above pig. **(1mk)**

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(ii) On the diagram H below, draw the notch marks to indicate a pig number 157 using the value of notches used in diagram G above. **(1mk)**

H



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(iii) Name the tool used for the operation above. **(1mk)**

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(iv) What is the recommended stage of growth in pigs at which ear notching should be carried out? **(1mk)**

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(v) State two disadvantages of using ear notching in pigs. **(2mks)**

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24. If a ration containing 16% crude protein is to be made from maize grains and sunflower cake, given that maize contains 8% D.C.P and sun flower cake contains 28% D.C.P. Using Pearson's square method, calculate the quantity of maize and sunflower cake that should be mixed to make 100kg of the feed. Show your working.

(3mks)

b) Name two other methods of computing livestock rations. **(1mk)**

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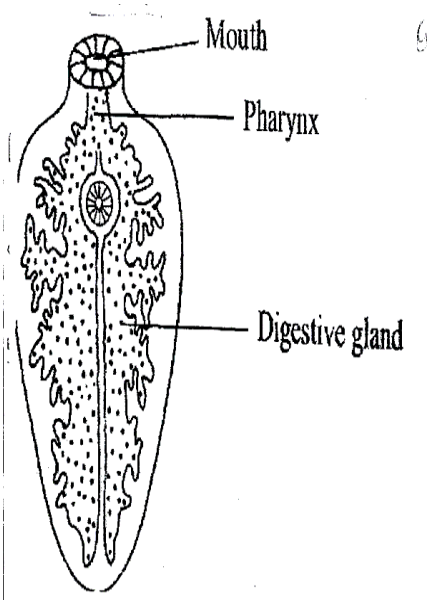
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25. Diagram J below shows a livestock parasite.



(i) Identify the parasite **(½ mk)**

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(ii)Name the organ of the livestock which the parasite infests. **(½ mk)**

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b) Give two control measures of the above parasite. **(2mks)**

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SECTION C (40 MARKS)

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

26. (a) Discuss Nagana disease under the following sub-headings.

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

ii) Symptoms of attach. **(6mks)**

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

(b) Describe management practices carried out on dairy calves from birth to weaning.**(10mks)**

27. (a) Discuss the structural and functional differences between petrol and diesel engines. **(8mks)**

(b) Explain the daily maintenance practices carried out on a tractor before the day's work. **(l2mks)**

28. (a) Describe the structural requirements of a deep litter house. **(8mks)**

(b) Discuss the importance of fences on the farm. **(l2mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

231/1
BIOLOGY
PAPER 1
TIME:2 HOURS
INSTRUCTIONS TO CANDIDATE

- ✓ Write your name and index number n the spaces provided above
- ✓ Sign and write the date of examination
- ✓ Answer **all** the questions in the spaces provided after every question

1.What is active transport? **(2mks)**

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2.Give 3 adaptations of animal dispersed fruits and seeds. **(3mks)**

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3. State three functions of hoigi apparatus. **(3mks)**

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4. (a) What is the difference between Darwinian and lamarckian theories of evolution? **(2mks)**

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(hi Distinguish between convergent and divergent evolution. **(2rnks)**

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5. State the characteristics that can separate the following organisms into respective classes; millipedes, tsetse fly and spider. **(3mks)**

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6. Name the blood vessel that transports blood from

(a) The heart to the lungs. **(lmk)**

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(b) Small intestines to the liver. **(1mk)**

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7. State three ways in which the tracheole system in insects is adapted for gaseous exchange. **(3mks)**

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8. State the rote of the following hormones in organisms

a) Auxin **(l mk)**

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b) Anti diuretic hormone **(lmk)**

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9. Name three types of gene mutations **(3mks)**

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10. Name the spore producing structures in:

(a) Bryophytes **(lmk)**

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(b) Pteridophytes **(lmk)**

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11. (a) During which phase of meiosis does crossing over occur? **(lmk)**

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b) How do identical and fraternal twins arise

i) Identical twins **(2mks)**

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ii) Fraternal twins **(2mks)**

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12. Which one of the cell organelles would be found in large numbers in:

(a) An enzyme-secreting cell **(lmk)**

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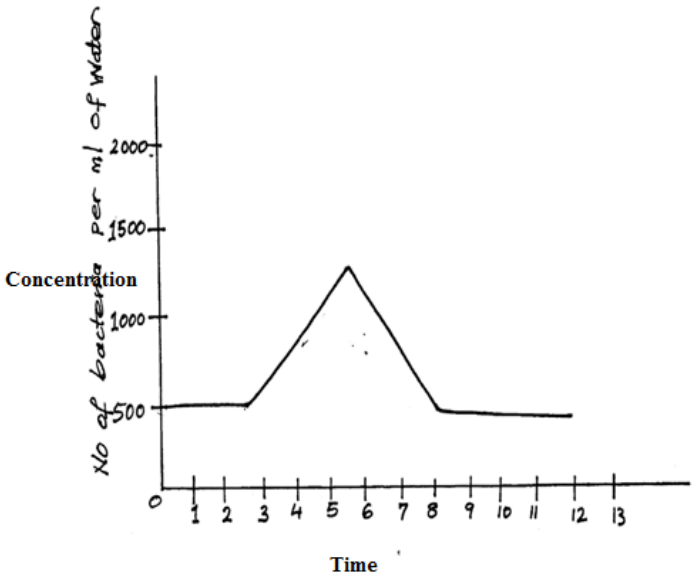
(b) A rapidly respiring cell in comparison to other cells in the same organism. **(lmk)**

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13. The graph below is of sewage on the population of a species of bacteria in a certain river.



(i) Account for the changes in population of bacteria between 2 and 10 kilometers down the river. **(2mks)**

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14. Differentiate between interspecific and intraspecific competition. **(2mks)**

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15. Other than energy, name the other products of anaerobic respiration in plants. **(2mks)**

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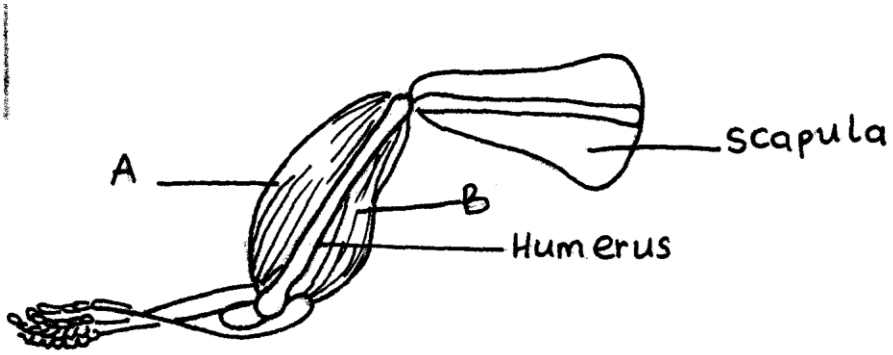
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16. Study the diagram below and answer the questions that follow.



(i) Name the muscles labeled A and B. **`(2mks)**

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(ii) What happens to each muscle as the arm is stretched? **(2mks)**

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17. In an accident, a victim suffered brain injury. Consequently he had loss of memory. Which part of the brain was damaged? (lmk)

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18. Name three membranes that surround the central nervous system. (3mks)

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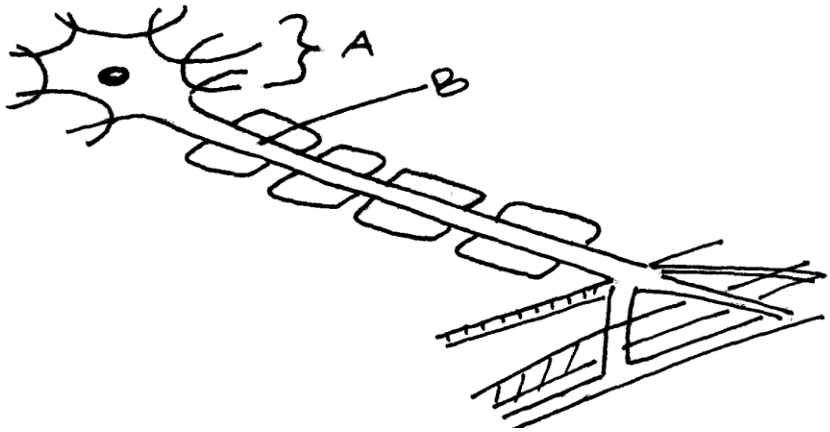
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19. The diagram below represents a neuron.



(i) Name the neuron **. (lmk)**

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

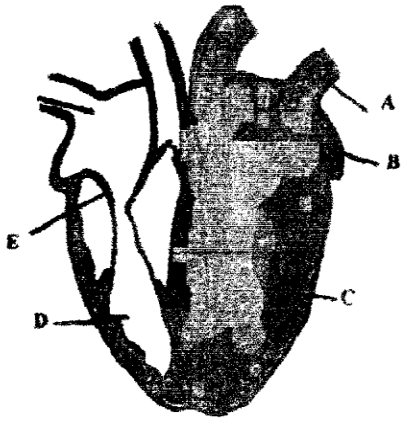
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(20) The diagram below shows a vertical section through a mammalian heart.



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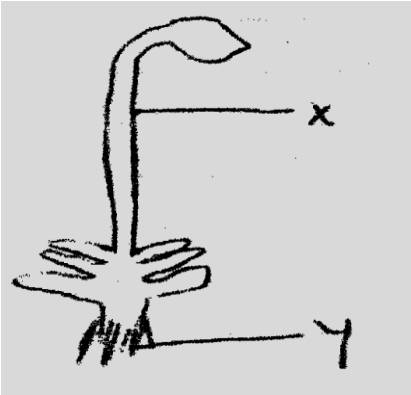
(a) Name the parts labeled A and E. **(2mks)**

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(b) Give a reason why the wall of chamber C is thicker than chamber D. **(2mks)**

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21. The diagram below represents a plant



(a) State the division in which the plant belongs. **(1mk)**

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(b) Label the parts X and V. **(2mks)**

X…….

Y……..

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22. State two ways in which xylem vessels are adapted to their functions. **(2mks)**

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23. (a) State two differences between simple reflex action and conditioned reflex action. **(2mks)**

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(c) State any two functions of cerebellum. **(2rnks)**

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24. (a) What is seed dormancy? **(lmk)**

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(b) Account for the following phases of a sigmoid curve of growth of an organism.

(i) Lag phase. **(1mk)**

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(ii) Plateau phase. **(lmk)**

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25. State two characteristics of aerenchyma tissue. **(2mks)**

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26. What is the significance of transpiration in plants? **(2mks)**

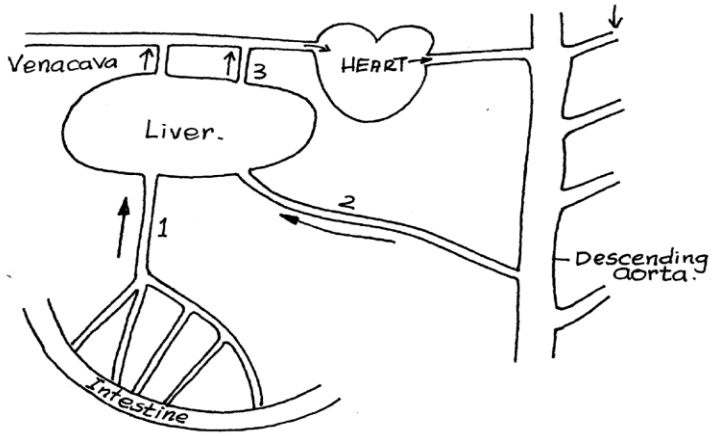
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27. The figure below illustrates the blood supply and drainage of the liver.



(a) In which of the blood vessels labeled 1,2 and 3 would you expect the highest concentration of glucose two hours after eating a starchy meal? Give a reason. **(2mks)**

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(b) Name the blood vessel labeled 2 **. (lmk)**

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28. (a) Name two classes of animals that excrete their nitrogenous waste products mainly in form of uric acid. **(2mks)**

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b) State how excretion is achieved in plants. **(2mks)**

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29. Part of one strand of DNA mo1ecue was found to have the following sequence.

G-C-C-T-A-G-A-T

(i) What is the sequence of the complimentary DNA strand? **(lmk)**

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(ii) What is the sequence of the MRNA strand copied from this DNA portion? (lmk)

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

23 1/ 2
BIOLOGY PAPER 2
(THEORY)
TIME: 2HRS

INSTRUCTIONS TO CANDIDATES

- ✓ Write your name and index number in the space provided
- ✓ Sign and write the date of the examination in the space provided.
- ✓ This paper consists of two sections A and B
- ✓ Answer **ALL**.the questions in section A in the space provided
- ✓ In section B answer question 6 (**COMPULSOR**Y) and **EITHER** question 7 or 8 in the space provided after question 8.

FOR EXAMINERS USE ONLY.

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

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SECTION A (4OMKS)

1.In an experiment to investigate a factor affecting photosynthesis, a leaf of a potted plant which had been kept in the dark overnight was covered with aluminium foil as shown in the diagram below.



The set up was kept in sunlight for three hours after which a food test was carried out on the leaf.

a) Which factor was being investigated in the experiment? **(lmk)**

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b) What food test was carried out? **(lmk)**

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c) (i)

d) State the results of the food test. **(lmk)**

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ii. Account for the results in c (i) above **(2rnks)**

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e) Why was it necessary to keep the plant in darkness before the experiment? **(lmk)**

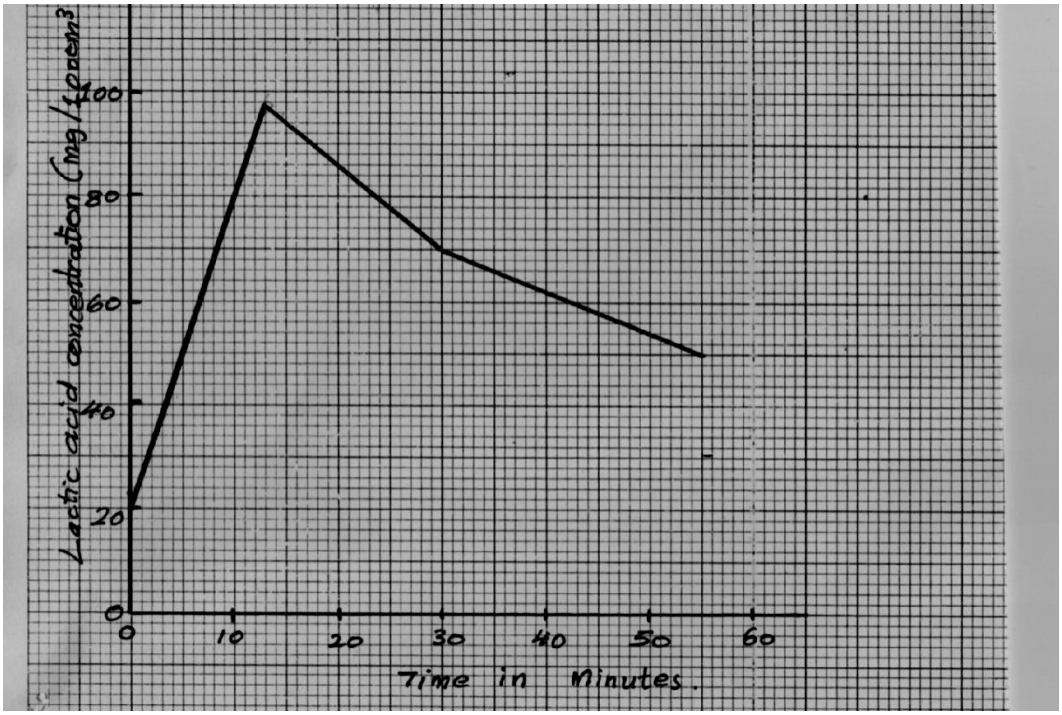
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2.The concentration of the lactic acid in the blood during and after an exercise was determined. The results are as shown in the graph below.



a)

(i) By how much did the lactic acid increase in the end of 13 minutes? **(lmk)**

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(ii) After how many minutes was the lactic acid concentration 71 mg/100cm^3? **(2mks)**

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iii. What would be the concentration of lactic acid at the 60th minute? **(2mks)**

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b) Give a reason for the high rate of production of lactic acid during the exercise. **`(lmk)**

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c) Give a reason for decrease in the concentration of lactic acid after exercise. **(lmk)**

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d) What is "oxygen debt"? **(lmk)**

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3. a) What is meant by the term biological control? **(lrnk)**

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ii.Give an example of biological control. **(lmk)**

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b) What is eutrophication? (3mks)

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ii. What are the effects of eutrophication ? **(2mks)**

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c) Name a substance that is responsible for acid rain. **(lrnk)**

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4. A cross between a red flowered plant and a white flowered plant produces plants with pink flowers. Using R to represent the gene for red colour and W for white colour;

a) What were the parental genotypes? **(1rnk)**

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

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c) Give the;

i, The phenotypic ratio of F2 plants. **(lmk)**

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(ii) Genotypic ratio of F2 plants. **(1mk**

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d) Name a characteristic in human which is controlled by multiple genes. **(lmk)**

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5.. State four characteristics of apical meristem cells. **(4rnks)**

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b) State three ways by which plants compensate for lack of ability to move from one place to another. **(1mk)**

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c) State one significance of wilting in young plants. **(lmk)**

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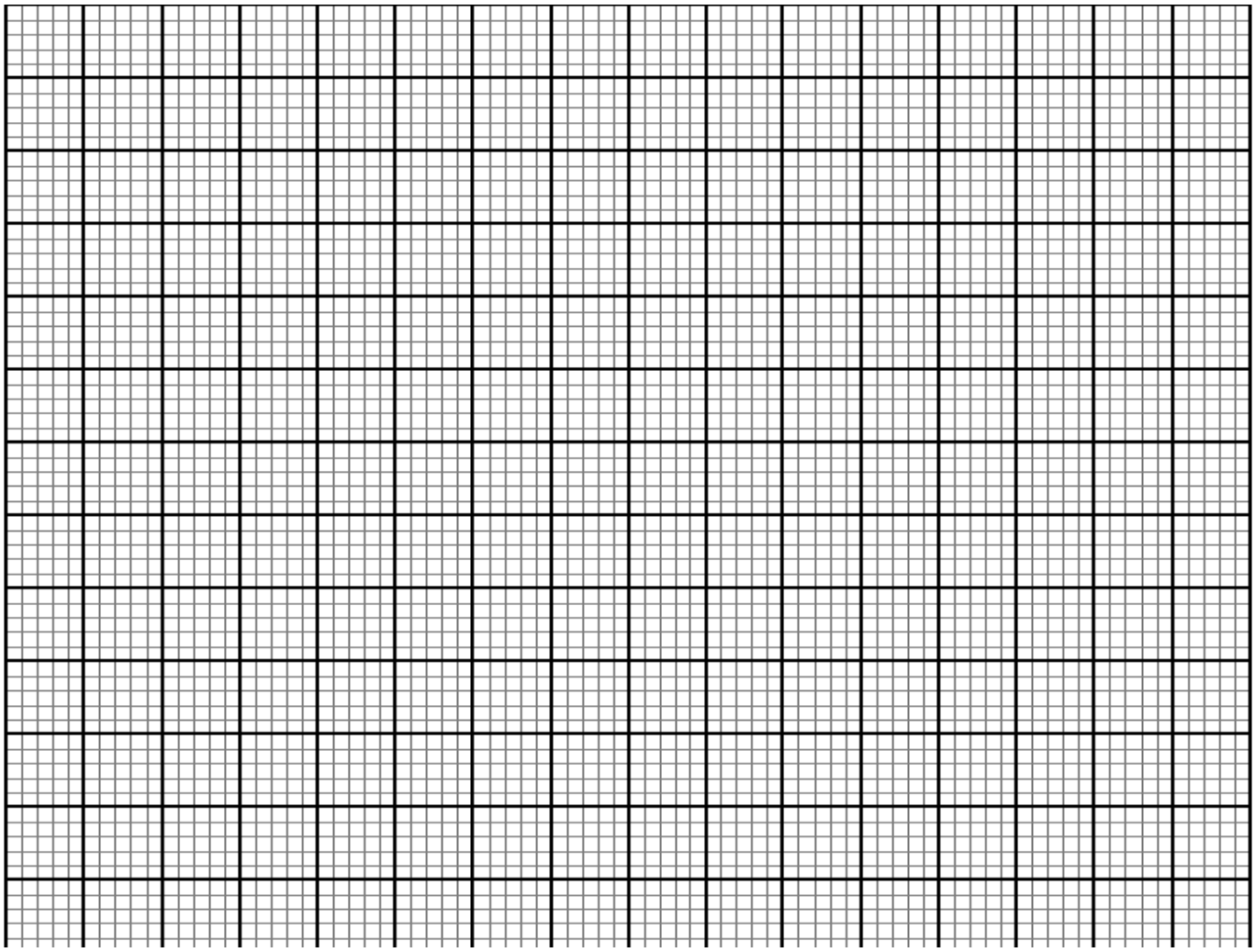
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SECTION B

6.. An experiment was carried out to investigate haemolysis of human red blood cells. The red blood cells were placed in different concentrations of sodium chloride solution. The percentage of haemolysed cells was determined. The results were as shown in the table below.

Salt concentration /g/100cm3/%	0.33	0.36	0.38	0.39	0.42	0.44	0.48
Red blood cells (haemolysed)%	100	91	82	69	30	15	0

a) (i)On the grid provided, plot a graph of haemolysed red blood cells against salt concentration. **(6mks)**



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ii). At what concentration of salt solution was the portion of haemolysed cells equal to non — haernolysed cells? **(lrnk)**

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iii). State the percentage of cells haernolysed at salt concentration of 0.45%. **(lrnk)**

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b) Account for the results obtained at:

(i) percent salt concentrion **(3mks)**

ii) 0.48 percent salt concentration. **(3rnks)**

c) What would happen to the red blood cells if they were placed in 030% salt concentration? **(3mks)**

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d) Explain what would happen to onion epidermal cells if they were placed in distilled water .(3rnks)

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7. Explain how mammalian eye is adapted to its function **(20 mks)**

8. Describe the role of hormones in the human menstrual cycle. **(20mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

231/3

Biology Paper 3
Practical
Time: $1\frac{3}{4}$ Hours

Instructions to Candidates

- Answer ALL the three questions in the spaces provided.
- Spend the first 15 minutes of the 1 hour & 45 minutes to read through the paper carefully before commencing your work.
- One may be penalized for recording irrelevant information and for incorrect spelling, particularly of *technical* terms.
- **Additional pages must not be inserted.**

For Examiner's Use Only

QUESTION	Maximum Score	Candidate's Score
1	18	
2	12	
3	10	
	40	

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1.You are provided with a piece of Irish potato tuber, sodium hydroxide solution, a scalpel, a test tube, hydrochloric acid, iodine solution, hydrogen peroxide and a measuring cylinder.

(a) Using the scalpel provided, peel the potato and cut five equal cubes each 1cm^3. Label them C1, C2, C3, C4 and C5.

(i) Cut C1 into many tiny pieces and put them into a test tube. Add 2ml of iodine solution. Observe and record your observations. **(1 mark)**

Observations**.....**

(ii) Allow the set-up to stand for 30 minutes. Observe and record your observations. **(1 mark)**

Observations**.....**

(iii) Account for your observations in (i) and (ii) above. (2 marks)

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(b) (i) Put 5ml of hydrogen peroxide solution into the measuring cylinder provided. Put cube C2 into the measuring cylinder and record the volume of foam produced after two minutes.

Volume **.....** cm^3 **(1 mark)**

(ii) Empty the measuring cylinder and clean it. Cut C3 into smaller pieces and put them into a fresh 5ml hydrogen peroxide solution in the measuring cylinder. Record the volume of foam produced after two minutes. **(1 mark)**

Volume **.....** cm3

(iii) Account for the difference in volume of foam produced by cube C3 and cube C2 above. **(4 marks)**

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(c) (i) Put 5ml hydrogen peroxide solution into a clean measuring cylinder. Add 1ml of the hydrochloric acid provided into the measuring cylinder and place cube C4 inside.

Record your observations after two minutes. **(1 mark)**

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(ii) Empty the measuring cylinder and clean it. Put 5ml hydrogen peroxide solution into the measuring cylinder and add 1ml of sodium hydroxide solution provided. Place cube C5 inside and record your observations after two minutes. **(1mark)**

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(iii)Account for the difference in observations made in (c)(i) and (ii) above. (4 marks)

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(d) Explain the importance of the enzyme responsible for the observations above in the tissues of living organisms. **(2 marks)**

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2.You are provided with specimens **H** and **K**. Observe the specimens keenly.

(a) State two functions of specimen **K**. **(2 marks)**

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(b) Name the division and class to which specimen **H** belongs.

Division**……(1 mark)**

Reason **(1 mark)**

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Class **……(1 mark)**

Reasons **(2 marks)**

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(c) State **three** adaptations of specimen **K** for maximum photosynthesis. **(3marks)**

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(d) Explain **two** ways in which specimen **H** is adapted for survival in its habitat. **(2 marks)**

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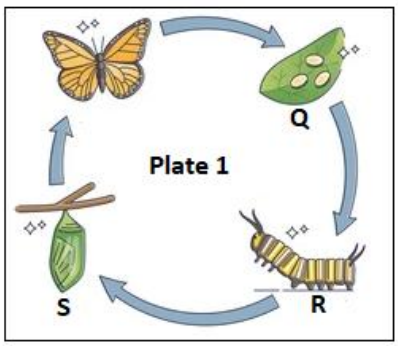
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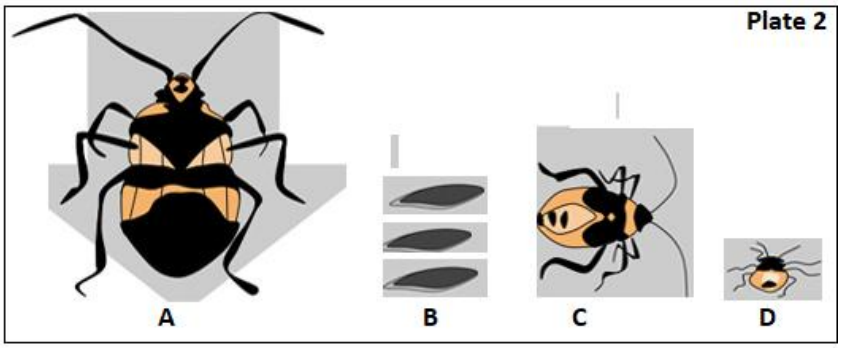
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3.Study the photographs below representing certain processes in insects. Use them to answer the questions that follow.





(a) With reasons, name the type of the process represented by plates 1 and 2. (2 marks)

Plate	Name	Reason
1		
2		

(b) Name stages Q, R and D. (3 marks)

Q …….

R ……

D ……..

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(c) Give an advantage of the process in plate 1 over the process in plate 2. **(1 mark)**

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(d) Arrange stages A, B, C and D in their correct sequence. **(1 mark)**

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(e) State **two** differences in the biological activities between the developmental sages R and S. **(2 marks)**

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(f) Insects are the most populous and widespread in phylum Arthropoda. Give a reason to explain this observation. (1 mark)

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

565/1.
BUSINESS STUDIES.
PAPER 1.
2 ½ HOURS.

Instructions to candidates

(a)Write your name and Adm. Number in the spaces provided above
(b) Answer all the questions
(c) All answers must be written in the spaces provided.
(d) Candidates should check the questions paper to ascertain that all the pages are printed as indicated and no questions are missing.
(e) This paper consists of 8 printed pages.
(f Candidates should check the questions paper to ascertain that all the pages are printed as indicated and that no questions are missing.
(g) Candidates should answer all the questions in English.

For examiners use only

Questions marks	1	2	3	4	5	6	7	8	9	10	11	12
Questions marks	13	14	15	16	17	18	19	20	21	22	23	24

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1. Highlight **fou**r reasons why people engage in business activities **(4mks)**

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2. Outline **four** types of resources that are important in Business. **(4mks)**

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3. State **four** functions of an entrepreneur in the production of goods and services. (4mks)

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4. Identify the machine used to perform the following tasks. (4mks)

Statement	The machine
(a) To count coins and notes	
(b) To trim papers into required size and shapes	
(c) to fold documents,place them in envelopes and seal the envelope	
(d)To print postage impression on envelope	

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5. Outline **fou**r differences between chain stores and departmental store **(4mks)**

Chain store	Department store
(i)	
(ii)	
(iii)	
(iv)	

6. State **four** statistics that are associated with the measurement of National income.(4mks)

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7. Prepare Sunshine Traders Balance sheet from the following list of balances extracted from his books as 31st December 2013. **(4mks)**

Capital	357.000
Stock	40.000
Machines	150,000
Furniture	7,000
Motor vehicles	200.000
Bank	20,000
Creditors	25.000
Cash	5.000
Debtors	60,000
Loan from KCB	100.000

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8. Outline **four** characteristics of a good filing system. **(4mks)**

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9 Highlight **four** methods that government uses to protect consumers. **(4mks)**

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10. State four factors that a manager should bear in mind to ensure that he/she effectively communicate with the employees **(4mks)**

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11. State the meaning of the following principles of insurance.

a) Subrogation……

b) Contribution……

c) Insurable interest……

d) Indemnity……..

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12. High light four characteristics of underdevelopment. **(4mks**

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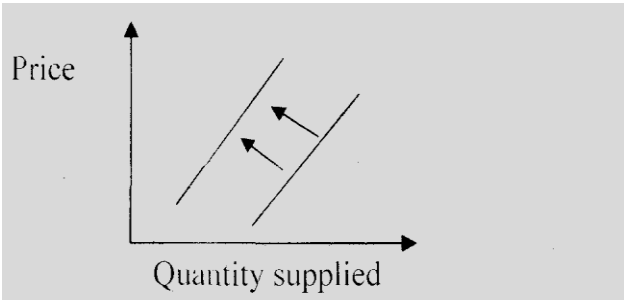
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13.



State **fou**r factors that may have caused the changes shown in the diagram above

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14. Highlight **four** causes of unemployment in Kenya **(4mks)**

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15. Outline **four** circumstances under which Mr. Ondieki (a farmer) may distribute his products directly to his customers **(4mks)**

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16. Triple S Wholesalers had the following information as at 31 December 2013

Closing 70. 00

Total expenses 5.000

Drawings of goods 6.000

Total incomes 3.000

Calculate the capital at the beginning of the year.

17. Highlight **four** advantages of localization of firms. **(4mks)**

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18. State **four** characteristics of good money. **(4rnks)**

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19. Identify the day book associated with the following source documents given below. **(4mks)**

Source document	Day book
Invoice received	
Credit note received	
Receipt issued	
Debit not received	

20. Highlight four purposes of public finance. **(4mks)**

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21. The following balances were extracted from the books of Okinda wholesalers on 3 l December. **(4mks)**

	Sh
Capital	800,000
Sale	250,000
Debtors	70,000
Purchases	1 60,000
Creditors	45,000
Opening stock (I . I .2006)	40,000
Closing stock (31.12.2006)	20,000
General expenses	50,000
5 years bank loan	200,000
Insurance expenses	20,000
22. Salaries and wages	80,000

Required, calculate

i) Mark up **(lrnk)**

ii) Current ratio **(1 rnk)**

iii) Rate of stock turnover **(lmk)**

iv) Rate of return on capital **(lrnk)**

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23. Highlight four uses of a proforma invoice. (4mks)

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24. State four factors that affect the productivity of an office worker. (4msk)

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25. In each of the following cases, state the types of inflation described. **(4mks)**

(a) The unrest in Libya has resulted to an increase in the price of oil	
(b)The price of bread has gone up to sh.60 due to increase in the price of wheat	
(c)A lot of money in circulation has led to the general increase of price	
(e)A rise in price due to uneven growth in some sectors of the economy.	

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

565/2.
BUSINESS STUDIES.
PAPER 2.
2 ½ HOURS.

Instructions to candidates

(a)Write your name and Adm. Number in the spaces provided above

(b) Answer all the questions

(c) All answers must be written in the spaces provided.

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

This paper consists of 4 printed pages. Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing

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SECTION A

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

b) Discuss **five** measures that can he used to reduce unemployment in Kenya. **(l0rnks)**

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

b) Explain **five** roles played by insurance industry in promoting the Development of Kenya economy **(10mks)**

3. a) Highlight **four** roles of Nairobi stock exchange as a market for securities. **(l0mks)**

b) During a trader s workshop, a speaker presented a speech on ethical issues in business. Highlight some ethical issues that he may have raised affecting business **(l0mks)**

4. a) Discuss **five** benefit of filing office document to an organization. **(l0mks)**

b) Explain **five** benefits that a country derives from transporting oil through pipeline. **(l0rnks)**

5. a) Savings and credit cooperative have been registering an increasing number of members Explain **five** reasons for such a development. **(10mks)**

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b) The following Trial balance was extracted from NDOLO'S STOPES on 31st Dec 2009.

	Dr	Cr.
Capita		250.000
Stock	25,000	
Machinery	250,000	
Motor vehicles	87, 000	
Sale		6 00.000
Returns inwards	40,000	
Returns outwards		20,000
Discount received		5,000
Carriage inwards	2,000	
Carriage outwards	3000	
Bad debts (written off)	80,000	
General expenses	88,000	
Debtors	1 8,000	
Creditors		49,000
Rent	1,000	
	954,000	954,000

Additional information:

Closing stock was value at sh. 22.000

Prepare NDOLOs STORES: trading. Profit and loss account for ending 3 1/12/2009.

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6. a) The income approach in one of the methods used to measure the national income of the Country.

Explain four types of income in included the approach. **(8mks)**

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

June: 2 sales (cash sh. 50,000

3. Paid salaries sh 101,5000 by cheque.

6. Received a cheque for sh .76, 800 from Mwelu after allowing her cash discount of 4%

I 2, Bought office furniture by cheque sh. 85,000

16. Settled Musau's account of shs 40.000 in cash, having deducted sh 8000 cash discount.

1 8. Received a cheque for shs 150. 000 in respect of cash sales.

2 1. Paid wages shs 24.000 in cash.

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

25. Withdrew shs 5,000 cash for private use.

28. Received khs k16500 cash f rom Kasiva in settlement of her account less shs 660 cash discount.

June 30, deposited all the money into bank except shs 25,000

Prepare a three column cash book and balance it off. **(l2rnks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

233/1

CHEMISTRY

PAPER 1

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

1. Write your name and index N./Adm.No. in the spaces provided.

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

3. Answer all the questions in the spaces provided.

4. All working must be clearly shown where necessary.

FOR EXAMINER USE ONLY

Questions	Maximum score	Candidate's score

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1. Study the reactions shown below

I. $NH_4CI(S) \longrightarrow NH_3(g)+HCI(g)$

II. $I_2(g) \longrightarrow I_2(s)$

- What name is used to refer equation?

I……. (1mk)

II…….(1mk)

2.You're given the following list of gases;

Nitrogen (IV) oxide

Ammonia

Hydrogen

Sulphur (IV) oxide

a) Draw a diagram to show how dry sample of nitrogen (IV) oxide is collected**.** **(1mk)**

b) Name a suitable drying agent for ammonia gas. **(½ mk)**

……

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c) Write a balanced chemical equation for oxidation of sulphur (IV) oxide in air. **(1mk)**

……

……

d) Choose the lightest gas **(½mk)**

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3. State the method that can be used to separate

i) Sulphur and Iron powder **(1mk)**

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ii) Iron (II) sulphide and Iron (II) sulphate. **(1mk)**

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4. Generally molecular substances have low melting point and boiling point. Explain why this is so. **(2mks)**

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5. The atomic number of an element X is 14.

a) In which period of the periodic table is element X? Explain**.** **(2mks)**

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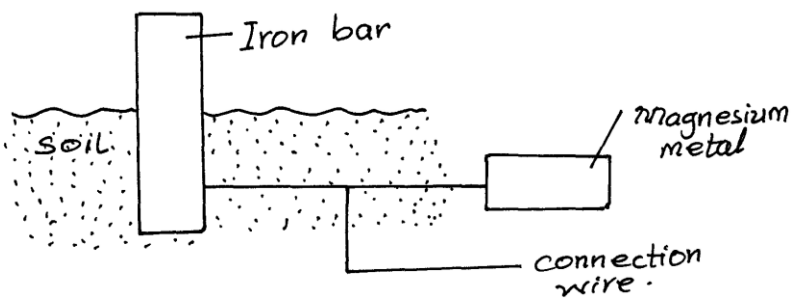
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b) Write the electron arrangement of element X**.** **(1mk)**

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6.The diagram below shows an iron bar which supports a bridge. The iron bar is connected to a piece of magnesium metal.



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Explain why it's necessary to connect the piece of magnesium to the iron bar**.** **(2mks)**

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7. When gas x was passed over heated copper metal the metal changed its colour to black. Identify

i) Gas x **(1mk)**

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ii) Name the black substance formed **(1mk)**

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8. Explain why;

i) Aluminium has a high melting point compared to magnesium **(2mks)**

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ii) Aluminium has a higher electrical conductivity compared to magnesium**.** **(1mk)**

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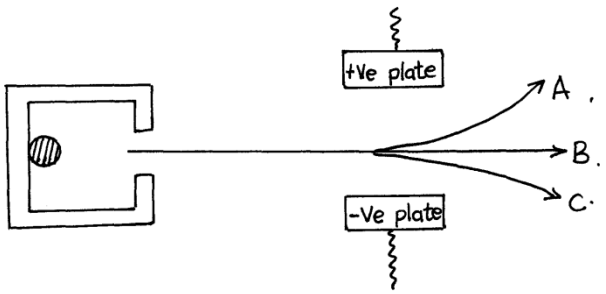
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9. Study the diagram below and answer the questions that follow



a) Name particles A and B **(2mks)**

A……..

B…….

10. Study the equation below and answer the questions that follow

$2\ NO_2\ (g) \longrightarrow N_20_4(g)$ H = -ye

Brown yellow

a) State and explain the observation made when a mixture at equilibrium is heated**.** **(2mks)**

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b) If pressure is exerted at the mixture at equilibrium, what observation will be made? **(1mk)**

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11.A student dipped an iron nail into a solution of 0.5M copper (II) sulphate solution and allowed to remain in the solution for 5 minutes

i) What observation was made on the iron nail? Explain **(2mks)**

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ii) Write an ionic equation for the reaction that occurred**.** **(1mk)**

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12. Below are standard enthalpies. Use them to answer the question below

$C_2H_2 + O_2 \longrightarrow 2CO_2 + H_2O$ $\Delta Hc = -1300KJ\ Mol^{-1}$

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

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

Calculate enthalpy formation of ethyne from its constituent elements. **(2mks)**

13. Iron (II) chloride can be prepared in the laboratory by passing dry chlorine gas over hot steel wool.

a) Name the above method of preparing salts**.** **(1mk)**

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b) Why should we prepare the salt in a dry environment**?** **(1mk)**

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c) A solution of Iron (III) chloride in water changes a blue litmus paper to red. Explain. (1mk)

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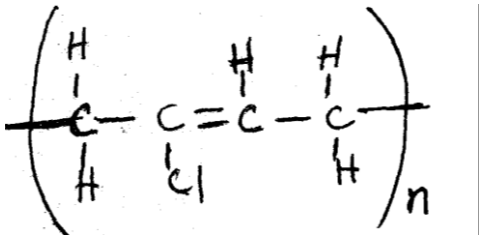
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14. The structure of a synthetic rubber is shown below



a) i) Determine the relative molecular mass of the monomer**.** **(1mk)**

ii.) Determine mass of a polymer that is made when 250 monomers polumerise**.** **(1mk)**

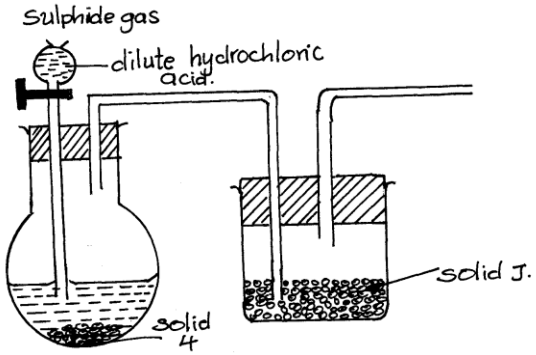
b) Give one advantage of natural polymers over synthetic ones**.** **(1mk)**

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15. The setup below was used to prepare dry sample or hydrogen sulphide gas.



a) Complete the diagram to show how the gas was collected**.** **(1mk)**

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b) Identify the following solids;

i) H **(1mk)**

……

ii) J **(1mk)**

……

16. The table below shows the observations made when an aqueous salt P was reacted with ammonia

Test	**Observation**
P^+ A few drops of aqueous Ammonia	Blue precipitate forms
P^+ Excess aqueous ammonia	Blue precipitate dissolves to form a deep blue solution

a) Identify the cation present in aqueous salt P. (1mk)

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b) Write the formula of the ion formed when the blue precipitate dissolves in excess aqueous ammonia**.** **(1mk)**

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c) Explain why aqueous ammonia is said to be a weak base. (1mk)

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17. Ethene gas can be manufactured industrially starting with a certain hydrocarbon CH as shown below

$C_xH_y \longrightarrow C_2H_4 + C_4H_{10} + H_2$

(Ethene)

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

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b) Name the hydrocarbon which is used to manufacture ethane in the reaction shown above **(½mk)**

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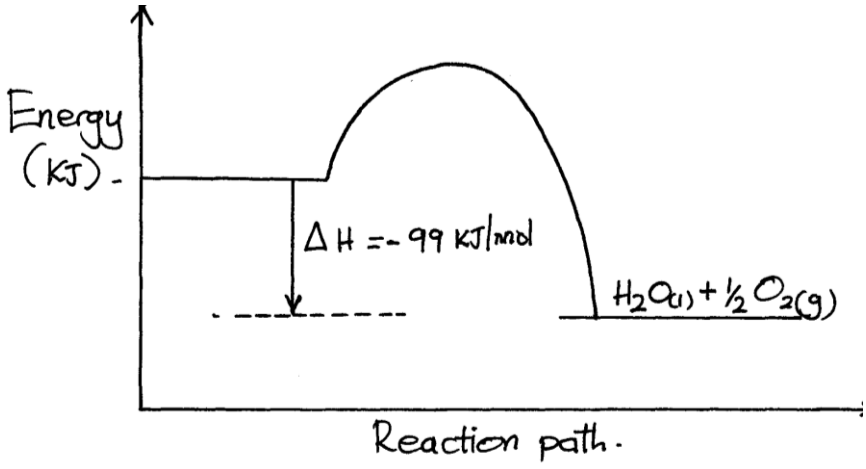
c) Give one industrial use of ethene **(½mk)**

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18. The axis below shows an energy level diagram for the reaction producing oxygen gas from hydrogen peroxide.



a)Using a dotted line, sketch the curve of the reaction if manganese (IV) oxide was added. Explain the shape of your sketch. **(2mks)**

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b) The reaction between Zinc powder and hydrochloric acid evolves hydrogen gas faster than when zinc granules are used. Explain. (2mks)

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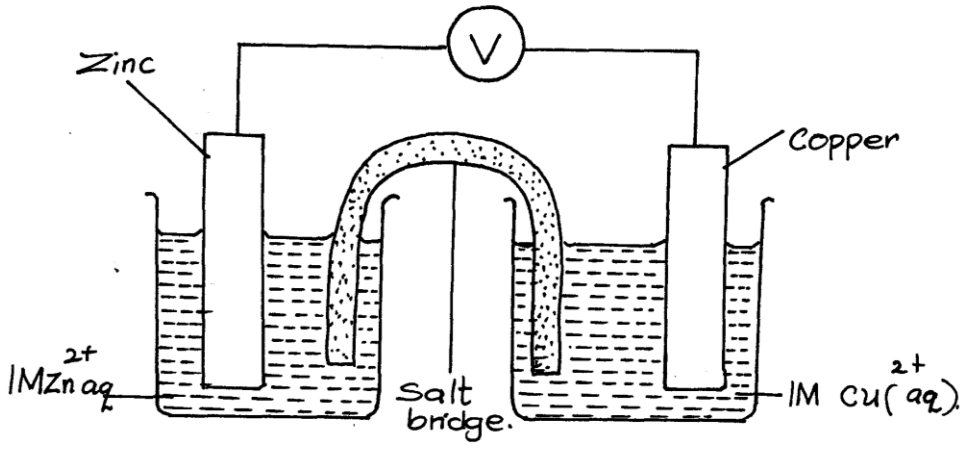
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19. a) What is the maximum mass of a gas that would be produced when 0.36g of magnesium reacted with excess hydrochloric acid.(Mg=24; H=1) **(2mks)**

b) What volume would the gas in (a) above occupy at room temperature and pressure. (r.t.p) (1 mole of a gas at r.t.p occupies 24 litres**)** **(1mk)**

20. Study the following electrochemical cell, then answer the questions that follow.



a) Write down the half-cell equation for reactions occurring at each electrode. **(2mks)**

b) Show on the diagram the direction of flow of electrons**.** **(1mk)**

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21. Using equations explain the effect of heat on the following;

a) Sodium nitrate **(1mk)**

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b) Lead (ii) hydroxide **(1mk)**

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c) Ammonium carbonate **(1mk)**

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22. A certain mass of sulphur (IV) oxide occupied 400cm^3 at 30°c and 750mmHg pressure. Calculatethe volume occupied by the same gas if pressure is lowered to 300mmHg and temperature raised to 60°c. **(2mks)**

23. The table below shows atomic and ionic radii of some elements by letters U, V,W and X not the actual symbols) Study it and answer the questions that follow.

Element	Atomic Radius (nm)	Ionic radius (nm)
U	0.174	0.099
V	0.203	0.133
W	0.099	0.181
X	0.136	0.065

a) Classify X as a metal or non-metal. Explain **(1mk)**

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b) Identify the element which is the strongest reducing agent. **(1mk)**

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c) Which element forms an anion? **(1mk)**

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24. Ethanol has important uses in our daily lives. For each use, state the property that makes ethanol suitable as;

a) Fuel **(1mk)**

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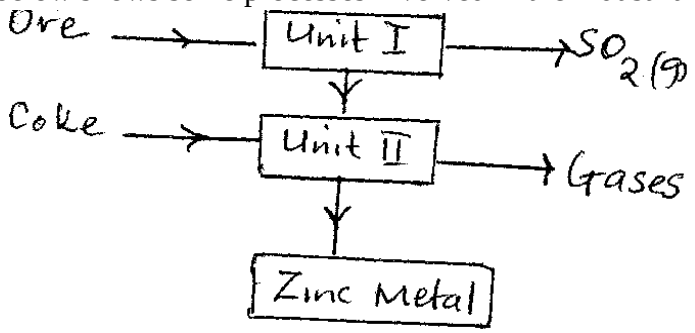
b) Solvent **(1mk)**

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c) Draw the structural formula of ethanol **(1mk)**

25. The flow chart below shows some processes involved in the industrial extraction of zinc metal.



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a) Name one ore from which zinc is extracted. **(1mk)**

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b) Write equation for the reaction taking place in unit II**.** **(1mk)**

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c) State two uses of Zinc**.** **(1mk)**

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26. In a water purification plant, aluminium sulphate is added to coagulate small suspended particles

a) State the reason for chlorinating and adding lime in water purification plant (2mks)

Chlorinating

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Adding lime

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b) Name the compounds responsible for temporary hardness in water **(1mk)**

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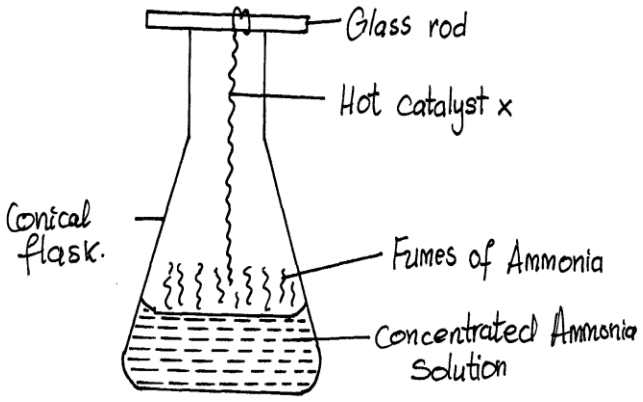
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27. Commercial sulphuric (VI) acid has a density of 1.8gcm^3

a) Calculate the molarity of the acid**.** **(2mks)**

b) Determine the volume of the commercial acid in (a) above that can be used to prepare 500cm^3 of 0.2M sulphuric (VI) acid solution. **(2mks)**

28. Study the diagram below and answer the question given below.



a) The reaction between ammonia and oxygen in the presence of a catalyst continue without further heating. Explain **(2mks)**

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b) Name catalyst X **(1mk)**

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29. Coloured flowers placed in a gas jar containing moist gas P immediately turned colourless, A solution of gas P formed a white precipitate with lead (ii) nitrate solution. On warming gently, the white precipitate dissolved.

a) What is the identity of gas P**?** **(1mk)**

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b) Name and write the chemical formula of the compound responsible for the decolourisation of the flowers

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

233/2
CHEMISTRY
PAPER 2
TIME: 2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

1. Write your name and index N./Adm.No. in the spaces provided
2. Sign and write the date of the examination in the spaces provided
3. Answer all the questions in the spaces provided
4. All working must be clearly shown where necessary.

FOR EXAMINER'S USE ONLY

QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
1 - 7		

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1.a) The table below gives information about the major constituents of crude oil. Study it and answer the questions that follow.

Constituents	**Boiling point (^{0}C)**
Gases	Below 40
Petrol	40 – 175
Kerosine	175 – 250
Diesesl oil	200 – 300
Lubricating oil	350 – 400
Bitumen	Above 400

i) Which one of the constituents of crude oil has molecules with the highest number of carbon atoms? **(1mk)**

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ii) Name the process you would use to separate a mixture of petrol and diesel. Explain how the separation takes place**.** **(2mks)**

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iii) State why it is possible to separate the constituents of crude oil. **(1mk)**

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iv) Name one gas that is likely to be a constituent of crude and write its formula**.** **(1mk)**

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b) i) What condition could cause a poisonous gas to be formed when Kerosene is burnt? Explain. **(2mks)**

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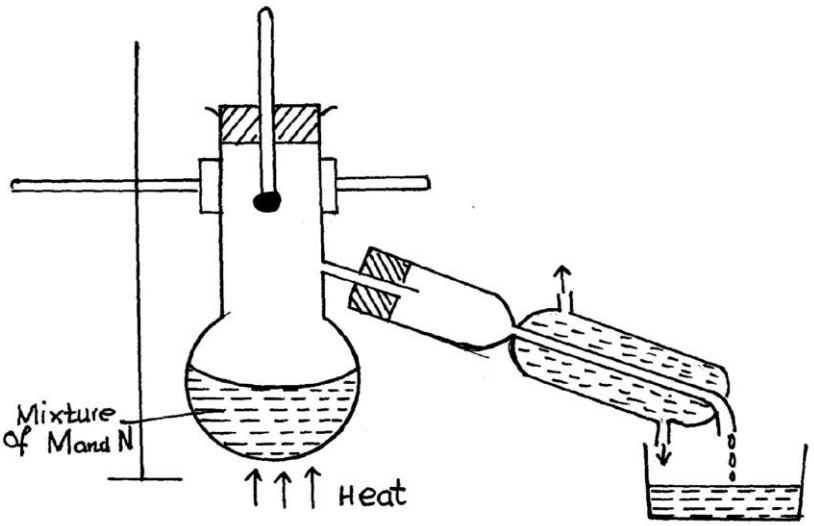
ii) Give one use of bitumen. (1mk)

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c) In an experiment to separate a mixture of two organic liquids, liquid M (b.p 56°c) and N liquid (b.p 118°c), a student set up the apparatus shown below.



d) Identify two mistakes in the set-up. **(2mks)**

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e) What method would the student use to test the purity of the distillates obtained? **(1mk)**

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2.a) The elements nitrogen, phosphorous and potassium are essential for plant growth.

i) Potassium in fertilizers may be in the form of potassium nitrate.

Describe how a sample of afertilizer may be tested to find out if it contained nitrate ions. **(2mks)**

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ii) Calculate the mass of nitrogen present if a 25kg bag contained pure ammonium phosphate, $(NH_4)_2HPO_4$.(N=14.0, H=1.0, P=31.0, O=16.0) **(2mks)**

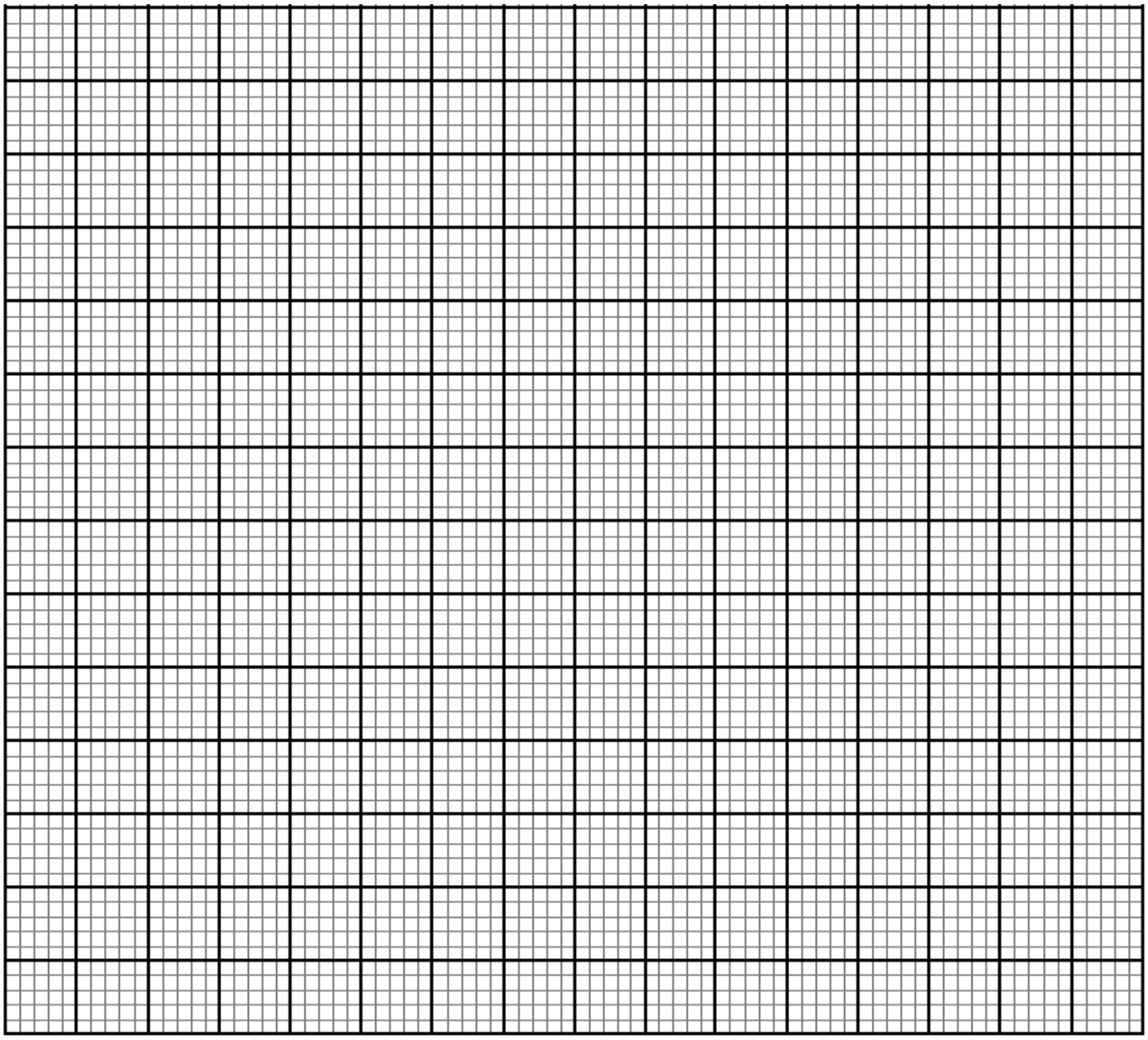
b) The table below shows the solubility of ammonium phosphate in water at different temperatures.

Temperature (^{0}C)	**Solubility of ammonium phosphate in g/100g water**
10	63.0
20	69.0
30	75.0
40	82.0
50	89.0
60	97.0

i) On the grid provided, draw the solubility curve of ammonium phosphate.

(Temperature on x- axis) **(3mks)**

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ii) Using the graph, determine the solubility of ammonium phosphate at 25°c**.** **(1mk)**

ii) 100g of a saturated solution of ammonium phosphate was prepared at 25°c.

I. What is meant by a saturated solution**?** **(1mk)**

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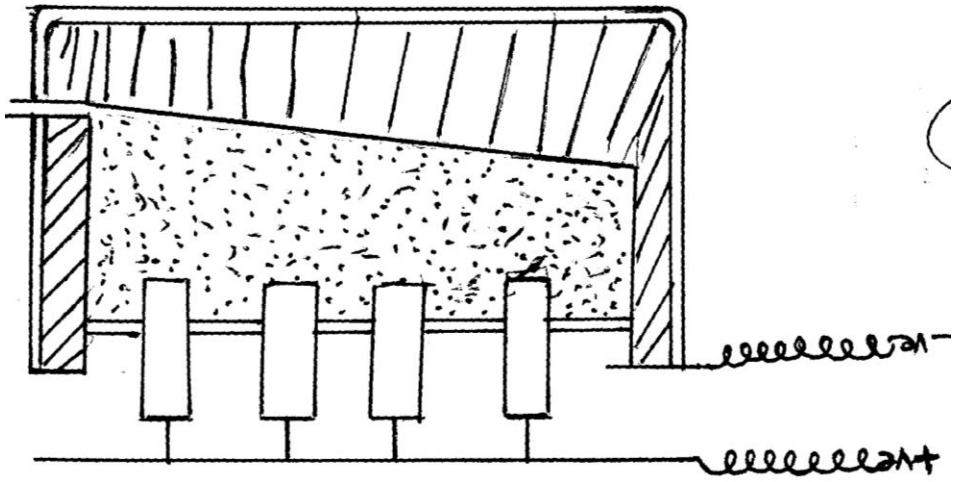
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II. Calculate the mass of ammonium phosphate which was used to prepare the saturated solution. **(2mks)**

3. The extraction of aluminium from its ore takes place in two stages, purification state and electrolysis stage. The diagram below shows the set-up for the electrolysis stage.



a) i) Name the ore from which aluminium is extracted**.** **(1mk)**

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……

ii) Name one impunity, which is removed at the purification stage**.** **(1mk)**

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b) I) Label on the diagram each of the following

i) Anode **(1mk)**

ii) Cathode **(1mk)**

iii) Region containing the electrolyte. **(1mk)**

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II) The melting point of aluminium oxide is 2054°c, but electrolysis is carried out between 800-900°c.

i. Why is the electrolysis not carried out at 2054^0c? **(1mk)**

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ii. What is done to lower the temperatures? **(1mk)**

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iii. The aluminium which is produced is tapped off as a liquid, what does this suggest about its melting point? **(1mk)**

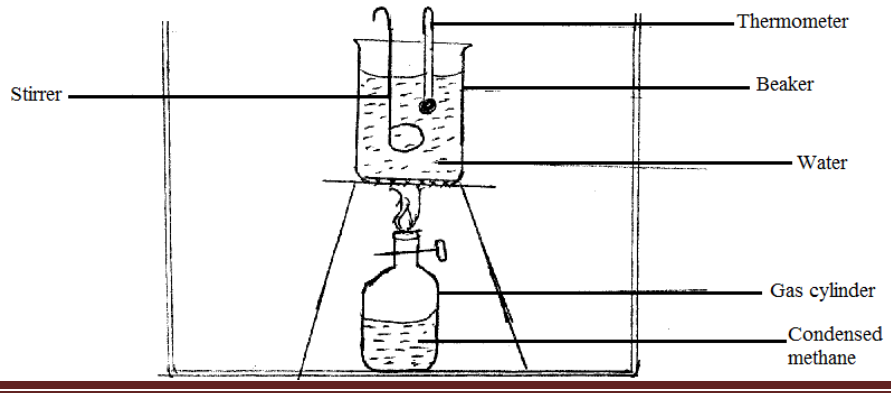
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c) A typical electrolysis cell uses current of 40,000 amperes. Calculate the mass (in kilograms) of aluminium produced in one hour. **(3mks)**

4.a) The apparatus set up shown above was used to determine molar heat of combustion of methane gas.



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Results given below were obtained;

Mass of water in the beaker = 100g

Initial temperature of water = 20.7°c

Initial temperature of water = 51.1 ^{0}C

Initial mass of burner + methane = 27.16g

Initial mass of burner + methane = 26.92g

Given: Specific heat capacity of water = 4200J $Kg^{-1}K^{-1}$

a)

i) What is the mass of methane burnt**?** **(1mk)**

ii) What is the rise in temperature**.** **(1mk)**

iii) Calculate the amount of heat produced in KJ. **(2mks)**

iv) Calculate the heat of combustion of one mole of methane, CH_4. **(2mks)**

v) Write the equation for the combustion of methane showing the enthalpy changes. (2mks)

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vi) How would the value obtained in this experiment compared with theoretical values obtained in the data hook? Explain. **(2mks)**

b) The table below shows heat of combustion of some alkanes.

Alkane	H combustion KJ/Mol
C_2H_6	-1560
C_3H_8	-2220
C_4H_{10}	-2877
C_5H_{12}	-3520
C_6H_{14}	

i) Predict Δcombustion (KJ/Mol.) for C_6H_{14}**.** **(1mk)**

ii) Explain the trend. **(1mk)**

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c) Enthalpy of neutralization is -57.3KJ/mol. Explain why the value obtained by reacting hydrochloric acid and ammonium hydroxide is always less than -57.3 KJ/mol. **(1mk)**

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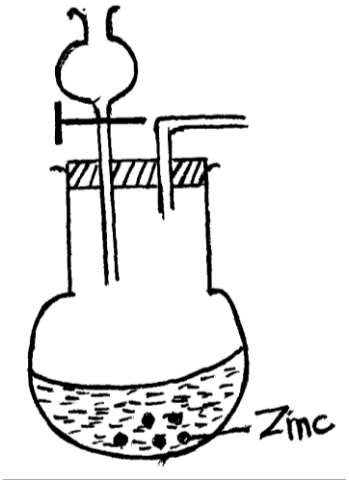
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5. The diagram below represents an incomplete set up of apparatus used by a form one student in an attempt to prepare and collect dry hydrogen gas.



i) Complete the diagram for collection of a sample of dry hydrogen gas. **(3mks)**

ii) Write an ionic equation for the production of hydrogen gas. **(1mk)**

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iii) In the preparation of hydrogen gas, if concentrated nitric (V) acid was used with zinc as reactants, no hydrogen gas is liberated. Explain why no hydrogen is liberated. **(2mks)**

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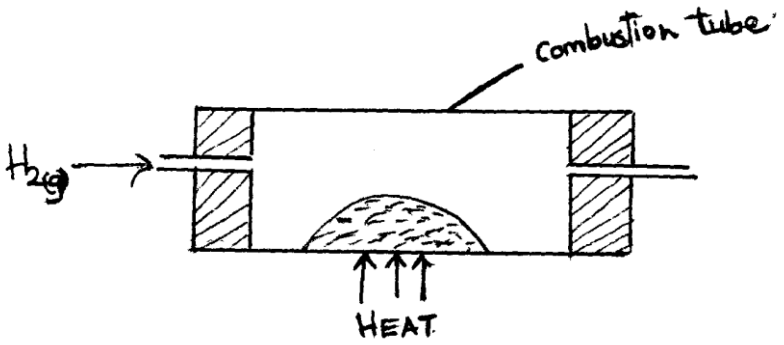
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b) Hydrogen gas is passed over heated copper (II) oxide as shown on the diagram.



i) Show the observations made in the combustion tube. **(2mks)**

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

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……

c) 4g of N-13 decays by emitting a beta particle. The half life of N-13 is ten minutes

i) What is meant by half life? **(1mk)**

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ii) How many grams of the isotope will remain after the fourth half life? **(2mks)**

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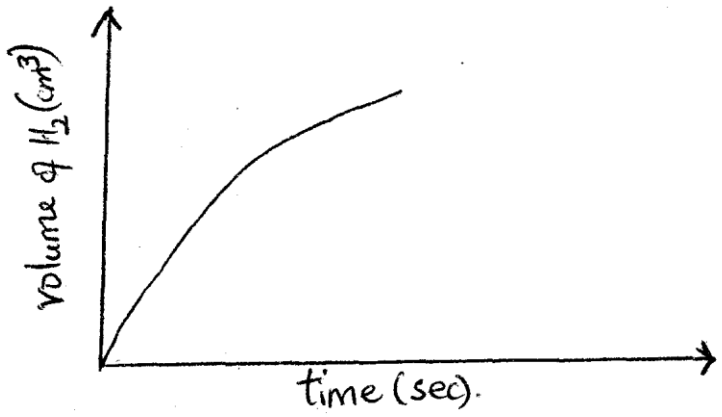
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iii.) State two differences between nuclear and chemical reaction. (2mks)

Nuclear reaction	**Chemical reaction**

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6. The sketch graph below shows volume of carbon (IV) oxide evolved in a reaction between marble chips and dilute hydrochloric acid against time.



i) On the same grid sketch the curve for volume of carbon (IV) oxide, if powdered calcium carbonate was used instead of marble chips. **(1mk)**

ii) Why is dilute sulphuric acid not used instead or dilute hydrochloric acid. **(1mk)**

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iii) Explain why carbon (IV) oxide is more suitable in extinguishing petrol flame than water. **(1mk)**

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b) X grams of anhydrous sodium carbonate, $Na2C_{03}(s)$ reacted completely with $30cm^3$ of dilute hydrochloric acid to produce $672cm^3$ of carbon (IV) oxide as at. s.t.p (1 mole of gas occupies $22400cm^3$ at s.t.p.)

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

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ii) Calculate the concentration of the acid in moles per litre. **(2mks)**

iii.) Calculate the value of X. **(2mks)**

c) Rain water falling and running over calcium salt rocks become hard.

i) What is hardness of water? **(1mk)**

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ii.) Explain how sodium carbonate can be used to soften water. (Use ionic equation) **(1mk)**

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7. The table below shows the atomic numbers and boiling points of elements U,V,W,X and Y (not their actual symbols). Study it and answer the questions that follow.

Element	**Atomic number**	**Boiling point (^{0}C)**
U	3	1330
V	13	2470
W	16	445
X	18	-186
Y	19	774

a) Select the elements which belong to the same

i) Group **(1mk)**

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ii) Period **(1mk)**

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b) Which elements;

i) Is gaseous at room temperature? Explain. (room temperature = 298K) **(2mks)**

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ii) Does not form an oxide **(1mk)**

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c) Write the

i) Formula of the sulphate of element V. **(1mk)**

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ii) Equation for the reaction between Y and W **(1mk)**

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d) What type of bond exists in the compound formed between U and W? Give a reason for your answer. (2mks)

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

CHEMISTRY Paper 3
Time: 2¼ Hours
FORM 4

CHEMISTRY PRACTICAL

INSTRUCTIONS

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

For Examiner's Use Only

Question	Maximum score	Candidate's score
1	21	
2	10	
3	9	
Total score	**40**	

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QUESTION 1

You are provided with:

- 6.0g of an alkanoic acid labelled **solid P** in a boiling tube.
- 2M sodium hydroxide solution labelled **solution Q**.

You are required to:

(a) Determine the solubility of **solid P** at different temperatures.
(b) Determine the number of moles of water of crystallization in **solid P**.
(c) Find the molar mass of the alkanoic acid.

Procedure I

i) Using a burette add 10cm^3 of distilled water to the **solid P** in the boiling tube. Heat the mixture while stirring with a thermometer to about 70^oC. When the entire solid has dissolved allow the solution to cool while stirring with the thermometer. Note the temperature at which crystals of **solid P** first appear. Record this temperature in the Table 1 below.

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

iii) Repeat the procedure (ii) two more times and record the temperatures in Table I. **Retain the contents of the boiling tube for use in procedure II.**

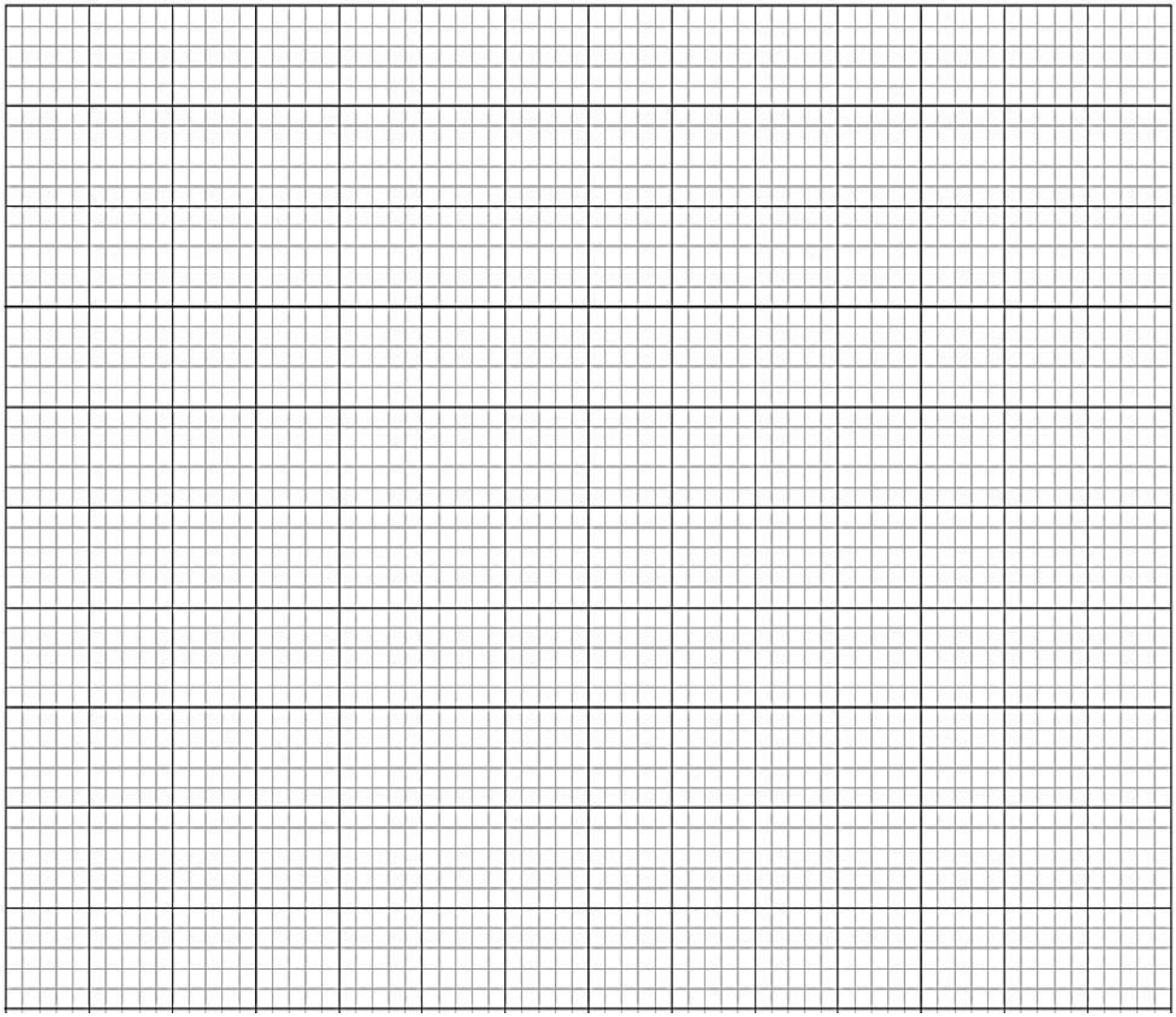
TABLE I

Volume of water in the boiling tube (cm^3)	**Temperature at which crystals of solid P first appear (^oC)**	**Solubility of Solid P (g/100gH_2O)**

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a) i) Complete **Table 1** by calculating the solubility of **solid P** at different temperatures **(6 mks)**

ii) On the grid provided, plot a graph of the solubility of solid P (vertical axis) against temperature. **(3 mks)**



iii) Using the graph determine the temperature at which 55g of solid P would dissolve in 100cm^3 of water. **(1 mk)**

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Procedure II

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

ii) Using a measuring cylinder place 25.0 cm^3 of solution Q into a 250 ml volumetric flask. Add about 200cm^3 of distilled water. Shake well. Add more distilled water to the make up to the mark. Label this **solution T.**

iii) Fill a burette with **solution R**. Using a pipette and pipette filler, place 25 cm^3 of **solution T** into a 250 ml conical flask. Add 2-3 drops of phenolphthalein indicator and titrate with **solution R**. Record your results in table II. Repeat the titration two more times and complete the table.

TABLE II

Titre	**1**	**2**	**3**
Final burette reading (cm^3)			
Initial burette reading (cm^3)			
Volume of solution **R** used (cm^3)			

(4 marks)

DETERMINE:

a) The average volume of **solution R** used **(1 mk)**

b) The concentration of **solution T** in moles per litre. **(1 mk)**

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c) The concentration of alkanoic acid **solution R** in moles per litre (1 mole of acid reacts with 2 moles of the base) **(2 mks)**

d) The relative formula mass of the alkanoic acid, **solid P (2 mks)**

e) The formula of **P** has the form **M.xH$_2$O**. Determine the value of ***x*** in the formula. (The relative formula mass of M is 90; O=16;H = 1) **(1mk)**

QUESTION 2

You are provided with **solid Y**. Use it to carry out the tests indicated below and record your observations and inferences in the spaces provided.

a) Put half a spatula of **solid Y** in a boiling tube. Add about 5 cm^3 of distilled water and shake.

Divide the resultant mixture into four portions of 1 cm^3 each.

ervations	**rences**
(1 mk)	(1 mk)

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i) To the first portion add aqueous sodium hydroxide dropwise till in excess.

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

ii) to the second portion add aqueous ammonia dropwise till in excess

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

iii) To the third portion add lead (II) nitrate solution and warm.

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

iv) To the fourth portion add dilute nitric (V) acid followed by Barium nitrate solution.

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

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QUESTION 3

You are provided with **solid M** and **solid F**.

Carry out the tests below and write the observations and inference in the spaces below:

a) Using a metallic spatula, ignite about one half of **solid M** in a Bunsen burner flame.

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

b) Place the other half of **solid M** in a boiling tube. Add $15cm^3$ of distilled water and shake well.

Label this **solution M**. Use this solution for the following tests.

i) Place $2cm^3$ of **solution M** in test tube and determine pH.

Observations	**Inferences**
(½ mk)	(½ mk)

ii) To about 2 cm^3 of the **solution M** obtained in (b) above add 3 drops of acidified potassium manganate (VII)

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

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iii) To about 2 cm^3 of the **solution M** obtained in (b) above add 2 drops of bromine water.

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

iv) To the remaining **solution M** in the boiling tube, add half of **solid N**

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

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

451/1 - COMPUTER STUDIES - PAPER 1
(THEORY) – FORM FOUR
- 2 ½ HOURS

Instructions to candidates

a) Write your Name, Adm No., Stream, Index No., Date and Sign in the spaces provided above

b) The paper consists of two Sections A and B

c) Answer **ALL** questions in **Section A**.

d) Answer Question 16 **(COMPULSORY)** and any other three questions in **Section B**

e) All answers must be written in English

f) The paper consists of 14 printed pages

g) Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing

For examiner's use only

Section	Question	Maximum Score	Candidate's Score
	5	40	
B	16	15	
	17	15	
	18	15	
	19	15	
	20	15	
TOTAL SCORE			

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Section A (40 marks)

Answer all questions in this section on the spaces provided.

1 Why must food and beverages be kept out of the computer lab? ***[2 marks]***

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2 State two key technological developments that occurred during the third generation of computers ***[2 marks]***

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3 What are toggle keys in relation to keyboards? ***[1 marks]***

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a) What type of keyboard would you prefer for the following and why? ***[4 marks]***

i) Visually impaired users

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ii) Busy restaurant

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4 State two differences between buffers and registers ***[4 marks]***

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5 As a computer expert, you were approached by certain organization to help them secure some computers they require. You were keen at certain considerations based on the knowledge you have in computing. What would the following considerations imply?***[3 marks]***

i) Software Authenticity

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ii) Multi-media capability

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iii) Software portability

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6 During class discussion, a Form One student was asked to present his findings on what Operating Systems perform in a computer. Explain four key points he will address. ***[4 marks]***

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7 a Differentiate between formula and function as used with spreadsheets. ***[2 marks]***

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8 aWhen working with database, one required to create relationship among the table structures. What is relationship in database?***[2 marks]***

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b State **three** purpose of establishing relationship among tables. ***[3 marks]***

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9 Most spreadsheets usually accept certain type of data to be entered into the worksheets. Outline four types of these data.***[2 marks]***

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10 a Outline four benefits of using word processors over manual typewriters ***[2 marks]***

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b Differentiate between the following

Merging and splitting cells in word processor table ***[2 marks]***

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Data source and main document in mail merge ***[2 marks]***

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11 Why are system analysts referred to as change agents in an organization? ***1 marks]***

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12 Why would one defragment his storage media? ***[1 marks]***

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13What is the meaning of the phrase 'syntax error' as used with computer programming? ***[1 marks]***

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14Why are repeaters necessary when setting up a large network? ***[1 marks]***

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15 State one major reason why organizations are opting for telecommuting . ***[1 marks]***

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Section B (60 marks)

16

a State **two** distinct differences between compilers and interpreters. ***[2 marks]***

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(i) Outline three demerits of using low level programming languages ***[3 marks]***

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(ii) Differentiate between monolithic and modular programs ***[2 marks]***

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c Study the following statements and answer the questions that follow ***[7 marks]***

Start

Initialize x to 3 and y to 4

Count = 1

While Count <=10

Increment x by 1

Multiply y by 2 and subtract ½

Add x to y to attain z

Increase the value of Count by 2

Endwhile

Print the values for x, y and z

Stop

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i) What does the above statements represents? ***[1 mark]***

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ii) What is the value for y and z ***[1 mark]***

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ii) Implement the above statements using a program flowchart ***[6 marks]***

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17 a Outline three ways +4 denary can be represented in a computer ***[3 marks]***

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b Use one's compliment to represent -6_{10} in 8-bits formation. ***[2 marks]***

c Briefly explain how data are represented on a floppy disk ***[2 marks]***

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d Differentiate between wavelength and frequency of a signal ***[2 marks]***

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e Describe each of the following computer terminologies as used in data representation ***[4 marks]***

i. Word

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ii. Bit

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iii. Byte

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iv. Nibble

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f Convert 9.625_{10} to binary ***[2 marks]***

18 i A school intends to network its computers in the computer laboratory. Outline three benefits that this would bring to the lab users***[3 marks]***

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ii What is signal attenuation?***[1 mark]***

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State **three** advantages unbounded media ***[3 marks]***

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iii Network servers run a special type of operating system. State four key functions that this kind of operating system perform ***[4 marks]***

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iv International Organization for Standardization, ISO developed Open System Interconnection, OSI reference model to help in developing network protocols. State the first four layers of this model.***[4 marks]***

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19 Otieno was tasked with entering marks for a certain exam that was done by an entire class.

a State two types of errors he is likely to encounter during this exercise ***[2 marks]***

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b How can the above identified errors be avoided? ***[1 mark]***

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c Other than the errors identified above, list two other errors that can be encountered during data processing***[1mark]***

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i. d A certain research institution had his staff collect data from the field. The collected data are then surrendered to the central location where they are processed as a unit over a period of term. What processing mode is being used?

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ii. State one merit of this mode. ***[1 mark]***

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e Describe data integrity. ***[1 mark]***

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f There are so many ways that can be used to reduce threat to data integrity. Mention any two***[2 mark]***

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g Give the best file organization employed by Magnetic tapes and SD Cards.***[2 mark]***

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

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ii. List **two** advantages of using fibre optic cable in networking ***[2 marks]***

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iData flows in the school's LAN in a duplex manner. List **two** other modes of data transmission in a network***[1mark]***

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20 a Outline **three** threats to data stored in a computer***[3 mark]***

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i. Database design can take several forms depending on the user's needs. Explain two models that one can use***[2marks]***

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b The following is a spreadsheet relating to a retailer.

	A	B	C	D	E	F
1	Item	Quantity	Unit Price	Total	Tax	Gross Total
2	Suga	50	120			
3	Bread	41	75			
4	Margarine	39	250			
5	Diapers	103	25			
6						
7	Tax Rate	15%				

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If the Tax Rate is applicable to all items listed, write a formula that can be entered in cell E2 and can be copied along the column to get the tax for other items ***[2 marks]***

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i. c Study the passage below

Raila Amolo Odinga (born 7 January 1945) is a Kenyan politician who served as the Prime Minister of Kenya from 2008 to 2013. He is assumed as the Leader of Opposition in Kenya since 2013 as the New Constitution of Kenya does not prescribe for such a position. He was the Member of Parliament (MP) for Langata from 1992 to 2007. Raila Odinga served in the Cabinet of Kenya as Minister for Energy from 2001 to 2002, and as the Minister for Roads, ~~Public Works and Housing~~ from 2003 to 2005. Odinga was appointed High Representative for Infrastructure Development at the African Union Commission in 2018.

Outline four formatting styles that have been applied to the passage ***[2 marks]***

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d List **three** career opportunities in the field of ICT. ***[3 marks]***

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e Outline **three** services offered on the internet. ***[3 marks]***

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

KENYA CERTIFICATE OF SECONDARY EDUCATION
COMPUTER STUDIES
451/2
PAPER 2
(PRACTICAL)
TIME: 2 ½ HRS
2022

INSTRUCTIONS TO CANDIDATES

(a) Indicate your name and index number at the top right corner of each printout.
(b) Write your name and index number on the CD / Removable storage medium provided
(c) Write the name and version of software used for each question attempted in the answer sheet provided.
(d) Answer all the questions
(e) All questions carry equal marks
(f) Passwords should not be used while saving in the CD/Removable storage medium.
(g) All answers must be saved in your CD/Removable storage medium used.
(h) Make a printout of the answers on the answer sheet.
(i) Arrange your printouts and tie / staple them together.
(j) Hand in all the printouts and the CD/Removable storage medium used
(k) This paper consist of 4 printed pages
(l) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
(m) Candidates should answer the questions in English

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QUESTION ONE

a.Type the document below as it appears using a word processing package and save it as Article **(30 mks)**

INTRODUCTION TO COMPUTING

What makes human being different from animals is the ability to invent tools. Tools assisted man in building shelters, making clothes and hunting food.

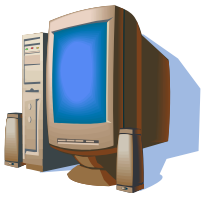
Machines were then invented to help the thinking skills of man. It started with adding machines, computers then came calculators. Now computers help the thinking skills of a man.

Computers have undoubtedly come to stay. They are part of our day to day lives.

Infact, it is not possible to escape contact with computers. We use the term "computer" quite easily let us see what the definition of the term "Computer" is.

A COMPUTER

A computer is a high-speed electronic device capable performing arithmetic and logical operations and of sorting and executing a set of instructions which will enable it to perform a series of such operations without manual interventions.



Were huge machines, they were very costly, only companies Thirty years ago computers Organizations could afford the luxury of using computers. In and Government microprocessor revolution changed the entire world of the last ten years the capacities are available now. computers. Computers of any

From super computers to micro computers there is a wide variety of computers available today. Now personal computers are available at affordable prices.

b. Format the headings, bold, font type Times New Roman, size 14, double underline and Centre alignment **(4mks)**

c. Put a **header** and footer**.** The footer should read "News letter you can rely on" while header should read ":Vision update" **(2mks)**

d. Insert page numbers N of M on the footer and should be at the right bottom of the document. **(2mks)**

e. Search for the word computer throughout the Article and replace with "PC" **(2mks)**

f. Spell check the document **(1 mk)**

g. Change the first paragraph to double line spacing **(2mks)**

h. Apply a character space expanded, 30 points to the headline computer. **(2mks)**

i. Insert a caption for the graphic in the article and name it computer. Place the caption below the graphic **(2mks)**

j. Save the entire document as Article 1 **(1 mk)**

k. Print the document Article 1 and Article **(2mks)**

Question two

The following data was extracted from the IEBC registration book. Use it to answer the questions given.

a.Enter the data shown below in a spreadsheet and save it as Election 2022 **(10 mks)**

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	A	B	C	D	E	F	G	H
1	IEBC II DATA AS AT 6TH FEB 2022							
2	REGISTRATION OF VOTERS PER CONSTITUENCY							
3	County	Const Code	Constituency Name	2nd Registration	Voters Transferred	Total Registered	Updated Registration	
4	Kajiado	183	Kajiado North	3510	380			
5	Kajiado	184	Kajiado Central	3454	611			
6	Kajiado	185	Kajiado East	4368	1233			
7	Kericho	188	Kipkelion East	2666	518			
8	Kericho	189	Kipkelion West	5761	4534			
9	Kericho	190	Ainamoi	3575	3169			
10	Bomet	195	Chapalungu	4023	1030			
11	Bomet	196	Bomet East	3327	407			
12	Bomet	197	Bomet Central	1977	584			
13	Kakamega	204	Mumias West	4797	1182			
14	Kakamega	205	Mumias East	4495	849			
15	Kakamega	206	Matungu	4093	1080			
16	Vihiga	212	Sabatia	2714	44			
17	Vihiga	213	Hamisi	4259	1523			
18	Vihiga	214	Luanda	2220	0			
19								
20								
21								

b. Rename the sheet as Registration **(1 mk)**

c. Copy the work into sheet 2 and rename it as Registration1 **(1 mk)**

d. Sort the worksheet in ascending order of their county (1 mk)

e. Get the totals of voters 2nd registration for each county **(3 mks)**

f. Copy details on registration sheet and paste it in sheet three. Rename it as registration2 **(1 mk)**

g. Given that the 1ST Registration was less than the 2nd Registration in all constituency by 12%:

i. Enter the label % increment in cell A20 and the value 12 in B20. **(1 mk)**

ii. Insert a column between constituency name and 2nd registration and label it first registration. Use absolute cell reference to calculate the 1st Registration. **(4 mks)**

iii. Get the totals for the 1st Registration and the 2nd Registration in cell F4. Copy the formula to the rest of the cells. **(2 mks)**

iv. Some voters transferred from their stations to new stations. Using the total registered column and the voters transferred column. Calculate the new values in cell G4. Copy the formula down to other cells. **(3 mks)**

h. Using the total registered column, determine

i. The lowest registered voters in cell G21 **(2 mks)**

ii. The average number for all registered voters in all constituencies in cell H19 (Use updated registration column) **(2 mks)**

i. Create a column graph on a new sheet. Name it votes. That compares the constituency name against 1st Registration and 2Nd Registration. Label the following **(7 mks)**

- Chart title VOTER REGISTRATION 2022
- X – Axis: constituency name
- Y – Axis: Registered voters
- Legend Right

j. Print registration and votes (graphs) sheets **(2 mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

313/1.
CHRISTIAN RELIGIOUS EDUCATION.
PAPER 1.
2 ½ HOURS.

Instructions to candidates

(a)Write your name and Adm. Number in the spaces provided above

(b) Answer ANY FIVE questions in the answers booklet provided

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

Prefer Calling Amobi Group Of Examiners @ 0743 333 000 or 0706 851 439 for Marking Schemes

1.State how the teaching of CR.E promotes National Unity **(7mks)**

(b) Identify **six** Deutero-cannonical books found in the catholic bible **(7mks)**

(c)Outline **ways** in which the bible is misused in Kenya today **(6mks**)

2.(a)Describe how God prepared the Israelites for the making of the covenant at Mt.Sinai **(8mks)**

(b) Explain **seven** reasons why the Israelites broke the Sinai covenant **(6mks)**

(c)State **five** lessons Christians learnt about the nature of God from the Exodus experience **(6mks)**

3.(a)How did Samuel promote the worship of Yahweh in Israel? **(7mks)**

(b) Mention any **seven** characteristics of the local Canaanites religion **(7mks)**

(c)State **six** ways in which false religion is manifested in Kenya today **(6mks)**

4.(a)Describe **four** ways in which prophetic messages were written **(8mks)**

(b)Explain the teachings of prophet Amos on the remnant and restoration of the Israelites **(6mks)**

(c)Mention **six** ways in which Christians play their prophetic role. **(6mks)**

5.(a) Give reasons why prophet Jeremiah condemned human sacrifice in Israelites **(8mks)**

(b)Outline Nehemiah's reforms on observing the Sabbath **(6mks)**

(c) Suggest **ways** in which Christians should respond to those who oppose them during their work **(6mks)**

6.(a)Outline **seven** teachings on the meaning of life and its wholeness in the traditional African society **(7mks)**

(a)Outline **seven** roles of elders in Traditional African society **(7mks)**

(b)Write down **five** reasons why disputes over land were rare in traditional African communities **(6mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

313/2.
CHRISTIAN RELIGIOUS EDUCATION.
PAPER 2.
2 ½ HOURS.

Instructions to candidates

(a)Write your name and Adm. Number in the spaces provided above

(b) This paper consists of six questions

(c) Answer ANY FIVE questions in the answers booklet provided

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

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1.(a) Outline Nathan's prophecy about the Messiah.2 Samuel 7:3-17 **(6mks)**

(b) Explain **four** differences between the work of john the Baptist and that of Jesus **(8mks)**

(c) Give reasons why children should be dedicated to God **(6mks)**

2.a) Describe the Incident when Jesus healed a man possessed by a demon in a Synagogue at Capernaum (Luke 4: 31-37) **(7mks)**

b) State what Jesus said to the crowd concerning John the Baptist In (Luke 7: 24-36)**(7mks)**

c) Give **six** ways in which the church is winning people to the Kingdom of God **(6mks)**

3. a) Describe the instructions Jesus gave his disciples concerning preparations for the last super (Luke 22:8-14) **(6mks)**

b) Identify **four** teachings about the kingdom of God from the parable of the yeast and mustard seed (Luke 13:18-20) **(8mks)**

c) List down **six** reasons why Christians take part in the Lord 's Supper. **(6mks)**

4. a) Explain Peters teaching about Jesus on the day of Pentecost. **(7mks)**

b) Explain the teachings of Jesus about the unity of believers from time vine and the branches.(John 5: 1-10) **(7mks)**

c) Outline **six** leadership qualities demonstrated by Peter on the day of Pentecost **(6mks)**

5. a) Outline the Traditional African altitude to work. **(7mks)**

b) Outline the Christian criteria for evaluating the use of leisure. **(7mks)**

c) Identify **ways** in which Christians can overcome the temptation of drug abuse. **(6mks**)

6. a) Explain the Christian view on plastic surgery in Kenya today. **(6mks)**

b) Outline ways in which modern Science and Technology undermine Christian teaching on respect of human life. **(7mks)**

c) Give **ways** in which science and technology has promoted immorality in the society today. **(7mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

101/1
ENGLISH
PAPER 1
(FUNCTIONAL SKILLS)
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

a)Answer all the question paper

b) All your answers must be written in the spaces provided in the question paper.

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QUESTION	MAXIMUM	SCORE
1	20	
2	10	
3	30	
TOTAL	60	

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1. Functional writing

James is your school mate and a friend. He has a sister in the school who is also well known to you. Over the school holiday, you learn that he has lost his sister through a grisly road accident. Write a condolence note to him and send it through e-mail. **(20mks)**

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2. Cloze Test

Fill in each of the blank spaces in the passage below with the most appropriate word.

This September, the United Nations General Assembly will bring together world leaders to (1)_____ one of the leading challenges of our time: responding to large

movement of (2) _____ and migrants.

War, human rights violations, underdevelopment, climate change and (3) _____ disasters are leading more people to leave their homes (4) _____ at any time since we have had reliable data. More than 60 million people - half of them children- have fled violence or persecution and are now refugees and (5) _____ displaced persons . In additional 225 millions are migrants (6) _____ have left their countries in search better opportunities (7) _____ simply for survival. But this is not a crisis of numbers: it is a crisis of solidarity. Almost 90 percent (8**)** _____ the world's refugees are (9**)** _____ in developing countries. Eight countries host more than half (10) _____ worlds refugees.

3. ORAL SKILLS (30MKS)

A) Read the following poem and answer the questions that follow:

Strew on her roses. Rises,

And never a spray of few

In quiet she response:

Ah' would that I did too:

Her mirth the world requires:

She bathed it in smiles of glee

But her heart was tired, tired.

And now they let her be.

Her life was turning, turning,

In mazes of heat and sound.

But for peace her sound was yearning,

And now peace laps her round.

Her cabirid, spirit,

It fluttered and frail'd for breath.

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To- night it doth inherit

The vasty hail of death.

i) Write out the rhyme scheme of the poem and comment on it **(2mks)**

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ii) Highlight and illustrate two sound devices that the poet has used to create rhythm in the poem **(4mks)**

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iii) What intonation would be appropriate for the recitation of line 8 of the poem? Explain? **(2mks)**

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ii) What word would you stress in the last line of the poem and why? **(2mks)**

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b) Study the following set of words and group them according to the underlined sound. (4mks)

Chore, chef, chaos, scene, fracas, chip, cell shell

/ S/ / K / / S / / tS/

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C) You have a friend from a neighboring country; they have never been to you home and would like to pay you a visit during the fourth coming August holiday. You decide to write them directions to your home. What four factors would you consider in writing the directions? **(4mks)**

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d) Underline the stressed syllables in the following words ***(4mks)***

i. Photographically

ii. Overflow (n)

iii. Reply (n)

iv. Reply(v)

e) Read the following conversation and answer the questions that follow: (8mks)

Chairman: The next item on the agenda is the issue of bursaries. As we all know.

Every year we get Ksh. 100,000 to give to needy students in the district. We will therefore discuss the allocation of these funds.

Mr. Othiambo : What is there to be discusses about bursaries? It shouldn't even be in the Agenda.

It is a total waste of time.

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Chairman: I thought that we could discuss what amount each school should get possibly...

Mr. Kimani: That is not necessary at all. The poor schools should get a lot of while rich Schools get very little simple that is the way it should be done.

Mr. Owour: Mr. Chairman, I think all schools have needy students, there are no poor and rich schools. We therefore can't operate on assumptions.

Mr. Othiambo: You can't be serious, Owuor.

Mr. Katana: For heaven's sake. Mr. Othiambo, be sensible. We resolved that issues last year.

i) Identify and explain two negotiation skills that portray the chairman as a good listener.

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ii) Cite and explain two shortcomings in negotiation skills evident in the conversation.

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

ENGLISH
101/2
COMPREHENSION, LITERARY APPRECIATION AND GRAMMAR
TIME: 2 ½ Hours

INSTRUCTIONS TO CANDIDATES

- Write your **Name**, **Admission number** and **class** in the spaces provided above.
- **Sign** and write the **date** of examination in the spaces provided above.
- Answer **all** questions in this paper.

FOR EXAMINERS USE ONLY.

QUESTION	MAXIMUM SCOR	CANDIDATE'S SCORE
1	20	
2	25	
3	20	
4	15	
TOTAL SCORE	**80**	

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

A lot of students think that learning is only in class. If students use two extra steps, most students will not forget what they learned in class. To achieve effective learning, students needed to follow two extra steps in the three strategic learning processes.

The key to success is by following these three strategies. Review is essential to student success. Unless content is reviewed by students shortly after It is learned, it will soon be forgotten. To avoid forgetting what you learned, it is recommended to review daily. It is also recommended to reduce large volumes of notes into point form and to paraphrase what you have learned. Other helpful tips include creating concept maps and diagrams; creating fact, concept or vocabulary cards and using visualization to better connect to what you learned. These are all important tools to helping students better understand and memorize lesson content.

The key to achieving academic success cannot be directly correlated to one specific area. Rather it requires students to be overall rounded in many different aspects. This includes attending class regularly to keep pace with the class. Falling behind in studies or homework can be **detrimental** to academic success and can induce stress on to students. Participating

In class activities and discussions are also vital parts of learning and applying concepts learned. On the other hand, taking good, concise notes will always helping the long run when reviewing for tests and exams. To sum it all up, strategic learning is the password for many academic achievements.

Being exposed to knowledge is the first step in the journey, the fact that young scholars can learn and be a part of history is a phenomenal step in furthering their search to success. Reviewing notes, in the way the young individual wishes, by him/herself, or with a good friend, this will help him/her to understand what has been learned in a way he understands. Lastly practice is a great way to memorise what has been learned, when practice achieves its full potential, the individual won't only been titled for a good mark, but also away to view, under and think of things. Those three attributes will help scholars become more successful, but it's important to one as it is to the other, and each and every person should find the learning strategies effectual for him/herself, and in extremely exceptional occasions even invent innovate new strategies.

Questions

(a)What does the writer faults in the students thinking according to the first paragraph? **(2marks)**

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(b)Explain the three strategies that are key to success. **(6marks)**

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(c)Unless content is reviewed by students shortly after it is learned, it will soon be forgotten.. (1mark)

Begin if…….

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(d)The key to achieving academic success cannot be directly correlated to one specific area.

Rewrite the sentence adding a question tag

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(e)Discuss the tone of the passage. **(3marks)**

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(f) According to the passage, identify attributes that help a student become a successful learner? **(3marks)**

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(g)Explain the meaning of the following words and phrases as used in the passage.(4marks)

i) Detrimental

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ii)Correlated

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iii)Effectual

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iv)Exceptional

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2. **Samaritan Excerpts**

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

Nicole: Your Worship, it is very clear from our talk that members of the Municipal Executive Council have failed you.

Mossi: Of course! They have failed me big time!

Nicole: And don't you think The Samaritan is a blessing for you? I mean as a platform through which the people can demand the corrupt leaders' removal from once and prosecution?

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Mossi: (Turning suddenly to face Nicole, like one suddenly jolted back to reality) Should I take that to mean this thing is a political weapon? (Pointing at Nicole, with a tremor in his voice) Are you by any chance being used to destroy my political career?

Nicole: I do not play politics, Sir.

Mossi: (Pacing about in anger) And what did you say? It is now very clear to me that you are playing politics. In fact, I now realise the real culprit behind all the problems in our society is the teaching profession!

Nicole: Teaching profession? How?

Mossi: (Pointing ta Nicole) You cannot teach the right things. All the people creating the mess in our society are products of the school system. They all pass through the teachers' hands!

Nicole: Your Worship, we are trying our best to mould the character of our learners here at Sagrada Secondary School. We teach them to uphold the moral and civic virtues without which our society can never prosper, be fair, just, and peaceful. We teach them the virtues of honesty, truthfulness, generosity, integrity and transparency, (She pauses, then resumes) It is the lack of virtue that is ruining our society.

Mossi: How can you tell children that in future the police can be replaced with a software or was it an intelligent robot? Is that teaching virtue/ what attitude do you want them to have towards police officers? Do you think they can ever obey the police?

Nicole: We are seeking to develop virtuous creative thinkers and innovators. And we may not only replace police officers with intelligent robots but also develop software that will eventually replace the politician. **Mossi:** (Menacingly) I now know why you insist on an innovation that cannot solve any problem. It is all political! And you want us to believe that those young kids are capable of developing something like The Samaritan App.

Nicole: Yes, they are, they were introduced to coding at a very tender age.

QUESTIONS

a) What happens just before this excerpt? **(3mks)**

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b) Do you think lack of virtue ruins the society? Explain your answer. **(3mks)**

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c) Describe the character of Nicole and Mayor Mossi in this excerpt. **(4mks)**

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d) You cannot teach the right thing. Rewrite adding a question tag, **(1mk)**

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e) Identify and illustrate one style used in the excerpt **(1mk)**

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f) Explain two themes addressed in this excerpt**.** **(4mks)**

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g) Explain the meaning of the following words and phrases as used in the excerpt. **(4mks)**

Onslaught

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Play politics

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Virtuous

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Coding

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h) Describe Nicole's attitude towards politicians**.** **(3mks)**

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i) What happens immediately after this excerpt**?** **(2mks)**

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3.**Read the poem below carefully and answer the questions that follow**.

WHAT'S IMPORTANT IN LIFE?

The Years have passed by,
In the blink of an eye,
Moments of sadness,
And joy have flown by.

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People I loved,
Have come and have gone,
But the world never stopped,
And we all carried on.

Life wasn't easy,
And the struggles were there,
Filled with times that it mattered,
Times I just didn't care.

I stood on my own,
And I still found my way,
Through some nights filled with tears,
And the dawn of new days.

And now with old age,
It's become very clear,
Things I once found important,
Were not why I was here.

And how many things,
That I managed to buy,
Were never what made me,
Feel better inside.

And the worries and fears,
That plagued me each day,
In the end of it all,
Would just fade away.

But how much I reached out,
To others when needed,
Would be the true measure,
Of how I succeeded.

And how much I shared,
Of my soul and my heart,
Would ultimately be,
What set me apart.

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And what's really important
Is my opinion of me,
And whether or not,
I'm the best I can be.

And how much more kindness,
And love I can show,
Before the Lord tells me,
It's my time to go.

By Pat Fleming

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

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2.What subject matter is addressed in the poem? **(3 marks)**

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3.Give evidence from the poem suggesting that time has elapsed so quickly. **(3 marks)**

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4.Paraphrase verse 6 of the poem. **(2 marks)**

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5.Describe the attitude of the persona toward the subject matter. **(3 marks)**

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6.Identify and explain the stylistic device employed in the last verse of the poem. **(2 marks)**

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7.With old age, it's become very clear. Rewrite ending with: old age) (1 mark)

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

i) Plagued

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ii) I stood on my own, through some nights filled with tears

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iii) True measure

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GRAMMAR 15 MARKS

A. Fill in with the most suitable prepositions

1. They acquainted Jean_____ Italian prepositions.

2. It was naive _____ you to ignore the doctor's prescription.

3. This team is good _____ its everyday work.

B.

C. Punctuate accordingly

1.she was young beautiful kind and intelligent.

2.china one of the most powerful nations on earth has a huge population.

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D. Rewrite according to instructions in brackets

1.I met my friend while walking from home to school. (Begin with: Walking)

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2.Who taught you Physics? (Rewrite in the passive)

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3.I didn't give the money to my sister. I gave the money to my cousin.

(Rewrite using 'rather')

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E. Having persevered, he bore fruits. (Rewrite using "**perseverance**")

F. Use the most appropriate form of the verb in brackets

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1.What _____ the children doing when you last saw them? (to be)

2.I _____ appreciate his jokes. They were not funny. (to do)

G. Rewrite the sentences using the words in brackets

1.He said nothing useful. (anything)

2.Can anyone answer this question? (no one)

H. Fill with most appropriate collective noun

1. A _____ of soldiers received medals from the president.

2. A _____ of islands was submerged in the ocean when the cyclone occurred.

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

103/3
English Paper 3
FORM 4
TIME: 2 ½ Hours

INSTRUCTIONS TO THE CANDIDATES

a) Answer three questions only.
b) Questions 1 and 2 are compulsory
c) In question 1, choose either (a) or (b)
d) In question 3, choose only one of the optional text you have prepared on.
e) Where a candidate presents work on more than one optional text, the first one to appear will be marked.
f) Each of your essays must not exceed **450** words (2 pages).
g) All answers must be written in the answer booklet provided.
h) This paper consists of 2 printed pages.
i) Candidate should ascertain that both pages are printed as indicated and that no question is missing.

For Examiner's Use Only

Question	Maximum score	Candidate's Score
1	20	
2	20	
3	20	
Total Score		

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

Either

(a) Write a composition beginning:
As I walked along the lonely path that evening, it was evident that I will reach home late**...**

OR

(b) Write a composition that explains the saying:
"Pride comes before a fall." (20marks)

2. **The compulsory set text** (20 marks)

The Greed exposed in various sectors in today's society is the same as one seen in the **Fathers of Nations** by **Paul Vitta.** Discuss. **(20mks)**

3. **The Optional Set Texts**

Either

(a**) The Short Story**

A silent song and other stories Godwin Siundu (Ed.)

Failure to listen and heed good advice by people around us can result in suffering. Drawing your illustrations from Stanley Gazemba's "Talking Money," justify this assertion. (20 marks)

OR

(b) **Drama**

Adipo Sidang' Parliament of Owls

"Women and people from minority groups can rise against all odds to bring change without necessarily using violence." Basing your argument on Adipo Sidang's *Parliament of Owls,* write an essay to support this statement.

Or

(c) **The Novel**

Kazoo Ishuguro, An Artist of the Floating World

War has a way of affecting property and people's lives. Drawing examples from the life of Masuji Ono in Ishiguro's. *An Artist of the Floating World,* write an essay to show the truth of this statement.

BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

312/1
GEOGRAPHY
PAPER I
TIME: 2 ¾ HOURS

INSTRUCTIONS TO CANDIDATES:

(a) This paper has **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) All answers must be written in the answer booklet provided.

For examiner's use only

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

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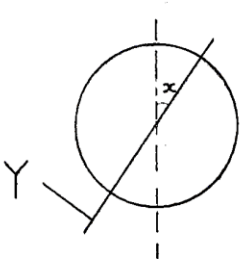
SECTION A

Answer all the questions in this section

1. a) State two ways in which Geography is related to Agriculture. **2mks**

b) Give three importance of studying Geography. **3rnks**

2. a) The diagram below represents planet earth.



i) Name line Y. **1mk**

ii) Give the measurement of angle X. **1mk**

b) Give three reasons why the interior of the earth is still hot. **3mks**

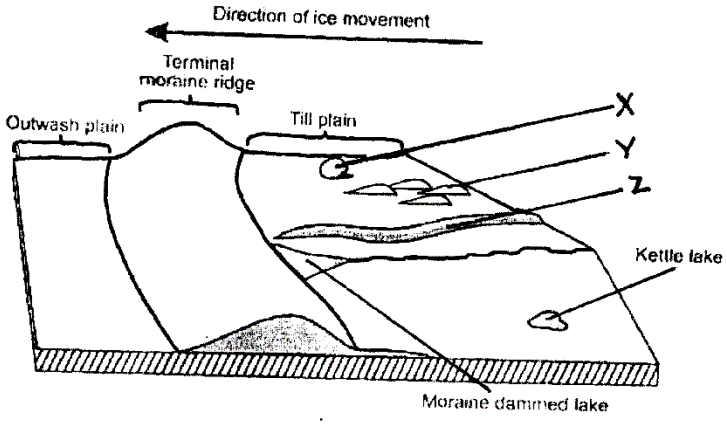
3. a) State two conditions necessary for the formation of dew. **2mks**

b) Give three characteristics of a Stevenson screen. **3mks**

4. a) Define the term climate. **2mks**

b) State three characteristics of the hot desert climate. **3mks**

5. The diagram below shows features associated with glaciation in lowland areas.



a) Name the features X, Y and Z. **3mks**

b) Give two economic importance of an outwash plain. **2mks**

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SECTION B

Answer question six and any other two questions from this section

6. Study the map of Busia 1:50,000 (sheet 101/1) provided and answer the following questions.

a. i) Give the direction of Nambuku school from Odiado hill. **1mk**

ii) Give the bearing of Mundika market from Bumunji school. **2mks**

iii) Give the approximate height of Burende hills. **2mks**

b. Measure the distance of the regional boundary from top of Odiado hills to the Eastern margin of the map. **2mks**

c. Give the six figure grid reference of the chief's house near Funyula market. **2mks**

d. Name two methods that have been used to represent relief in the area covered by the map. **2mks**

e. Calculate the area to the West of the international boundary. **2mks**

f. Explain three factors that have influenced settlement in the area covered by the map. **6mks**

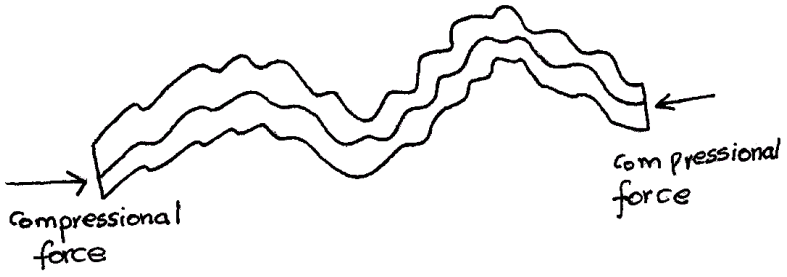
g. Draw a rectangle measuring 14cm by 12cm to represent the area enclosed by the following grid references: 3028, 3728, 3034 and 3734. **2mks**

On the rectangle mark the following features:

- Regional boundary. **1mk**
- Bumala market. **1mk**
- Ndanyi hills. **1mk**
- Ukwala and Siranga murram road. **1mk**

7. a. i) What is earth movement? **2mks**

ii) Identify the type of fold illustrated by the diagram below. **1mk**



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iii) Describe the formation of the above fold. **3mks**

b. Name three theories of fold mountain formation. **3mks**

c. Describe the continental Drift theory. **5rnks**

d. i) Differentiate between seismic focus and epicenter. **2mks**

ii) Name three effects of seismic waves. **3mks**

e. Explain how the following factors cause earthquakes:

i) Human activities. **2mks**

ii) Isostatic adjustment. **2rnks**

iii) Vulcanicity. **2mks**

8. a) Differentiate between a watershed and a water catchment. **2rnks**

b) State three types of river erosion. **3mks**

c) Explain three factors that influence the rate of river erosion. **6mks**

d) With the aid of a well labeled diagram, explain the formation of an ox-bow lake. **6mks**

e) i) Name two types of lakes. **2mks**

ii) Explain three significance of lakes. **6mks**

9. a) Differentiate between soil profile and soil catena. **2mks**

b) Explain how the following factors influence soil formation:

i) Parent material. **2mks**

ii) Climate. **2mks**

iii)Topography. **2mks**

c) What is soil erosion? **2mks**

d) Outline five components of soil. **5rnks**

e) Define soil degeneration. **2mks**

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f) Explain four causes of soil erosion. **8rnks**

10. a) Differentiate between natural and derived vegetation. **2mks**

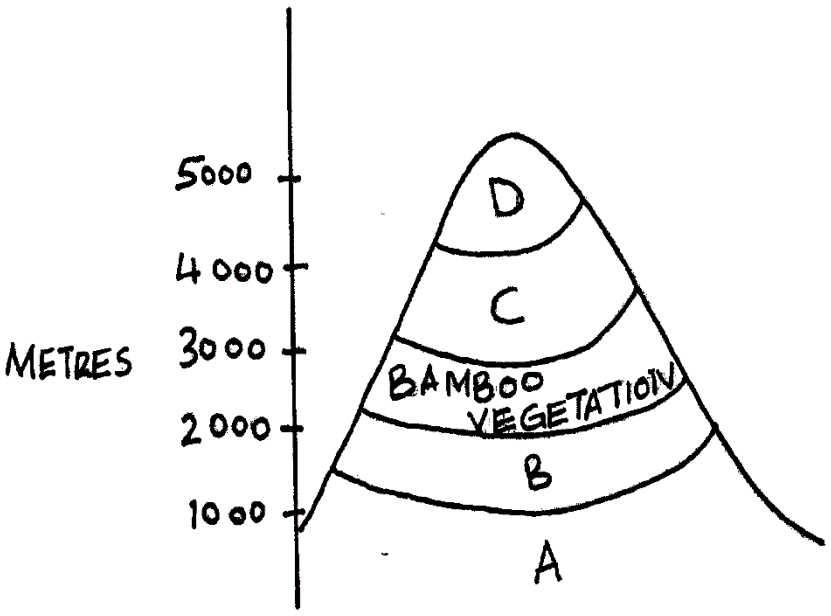
b) Explain how the following factors influence the distribution of vegetation:

i. Climate. **2mks**

ii. Edaphic **2mks**

iii. Biotic **2mks**

c) State five characteristics of coniferous forests. **5mks**



d) The diagram below represents zones of natural vegetation on a mountain.

i) Name the vegetation A,B,C and D. **4mks**

ii) Explain four significance of vegetation. **8rnks**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

312/2
GEOGRAPHY
PAPER 2
TIME: 2 ¾ HOURS

INSTRUCTIONS TO CANDIDATES:

(a) This paper has **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) All answers must be written in the answer booklet provided.

For examiner's use only

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

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SECTION A

Answer all the questions in this section

1. a) Name two international airports in Kenya. **2mks**

b) Give three advantages of using mobile phones. **3mks**

2. a) Name any three modern fishing methods. **3mks**

b) List two main types of fish. **2mks**

3. a) Identify three factors that have led to the growth of Thika town. **3mks**

b) State two causes of urban-rural migration. **2mks**

4. a) Name three types of settlement patterns. **3mks**

b) State two causes of dispersed settlement pattern. **2mks**

5. a) Define ecotourism. **2mks**

b) Give three reasons why the Kenyan Government is promoting domestic tourism. **3mks**

SECTION B

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

6. The data below represents minerals mined in Kenya in the year 2007 in metric tonnes. Use it to answer the following questions.

MINERAL	**AMOUNT IN METRIC TONNES**
Flouspar	242,180
Soda ash	190,260
Diatomite	120,340
Salt	27,440
Total	**580,220**

a.i) Draw a simple divided rectangle measuring 10cm long to represent minerals production in Kenya in the year 2007. **7rnks**

ii) State two advantages of using divided rectangle. **2mks**

iii) Name two other statistical methods that could have been used to represent the data above. **2mks**

b) State two negative effects of open cast mining. **2mks**

c) Explain three factors influencing the exploitation of minerals. **6mks**

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d) Name any three oil producing countries in the Middle East. **3mks**

e) Describe panning as a method of mining. **3mks**

7. a) Differentiate between forest and forestry. **2mks**

b) Give three examples of indigenous hardwood species found in Kenya. **3mks**

c) Explain three factors that influence the distribution of natural forests in Kenya. **6mks**

d) Describe the stages of lumbering in Canada. **4mks**

e) Explain five factors favouring forestry in Canada. **l0mks**

8. a) Name three types of beef cattle reared in Argentina. **3mks**

b) State four characteristics of cattle ranching. **4mks**

c) Explain four factors that favour beef farming in Argentina. **8mks**

d) Explain five challenges hindering the development of beef farming in Kenya. **l0mks**

9. a. i) Differentiate between processing and manufacturing. **2mks**

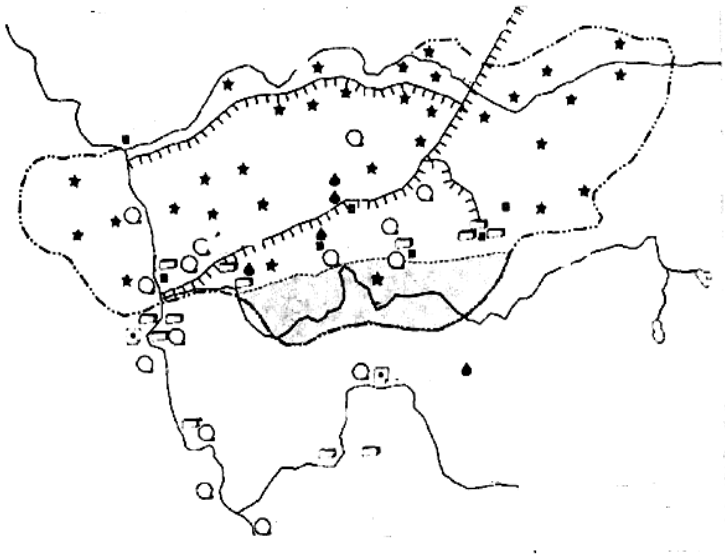
ii) Give three types of industries. **3mks**

iii) State four significance of industrialization to the Kenyan economy. 4mks

b. i) Outline four characteristics of cottage industries. **4mks**

ii) Explain three factors that have led to development of cottage industries in India. **6mks**

c. Use the sketch map of Ruhr industrial region below to answer questions that follow.



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i) Name:

- Canal marked A ……. **1mk**
- Town marked B ……. **1mk**
- River marked C …….. **1mk**

d) State three factors favouring development of iron and steel industry in Ruhr Industrial Region. **3mks**

10. a i) Give two sources of non renewable energy. **2mks**

ii) Define renewable sources of energy. **2mks**

iii) Give three sources of Biomass source of energy. **3mks**

b. Outline three advantages of solar energy. **3mks**

c. What has led to the decline of the use of coal as a source of energy? **3mks**

d. Explain four reasons why the Kenya Government is exploring on different sources of energy. **8mks**

e. State four impacts of energy crisis in the world. **4mks**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

311/1.
HISTORY AND GOVERNMENT.
PAPER 1.
2 ½ HOURS.

INSTUCTIONS TO STUDENTS

- This paper consists of three sections A, B, C.
- Answer all the questions in section A, Three questions from section B and Two from section C.
- Answers to all questions must be written on the answer sheet provided.
- This paper consists of 3 printed pages, candidates should ensure that all pages are printed as indicated and no question is missing.

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.

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SECTION A (25 MARKS)

1) Identify the branch of history that deals with study of man's past cultural activities **(1 mark)**
2) State **two** ways in which archeologists obtain information on History and Government. **(2marks)**
3) State **two** functions of the Kambi among Mijikenda **(2 marks)**
4) State **two** contributions of Ludwig Kraf in spread of Christianity in Kenya**. (2 marks)**
5) Identify **one** reason which led to the decline of the long distance trade **(1 mark)**
6) State the **main** constitutional amendment that was made in 2010 **(1 mark)**
7) State **two** factors conducive for realization of democracy **(2 marks)**
8) Who was the founder member of the Green Belt Movement in Kenya **(1 mark)**
9) State **one** operational fort established by the British to enhance political control in central Kenya **(1 mark)**
10) Give **one** main reason that led to the construction of Uganda railway **.(1 mark)**
11) Identify **one** symbol of national unity that was introduced under constitution 2010 **(1 mark)**
12) Under what circumstances can one's life be taken away **(2marks)**
13) Name **two** educational commissions established in Kenya during colonial period(2 marks)
14) State **two** reasons that can make a Kenyan president to be impeached **(2marks)**
15) State the main challenge faced by the primary and secondary education **(1 mark)**
16) Who is the head of county government in Kenya **(1 mark)**
17) Name **two** ex-officio members of parliament In Kenya. **(2 marks)**

SECTION B (45 MARKS)

Answer any three questions from this section in the answer booklet provided.

18) A) Give **THREE** reasons which led to the migration of the Cushites from their original homeland into Kenya during pre-colonial period. **(3 marks)**

B) Describe the political organization of Somali during pre-colonial period. **(12 marks)**

19) A)State **five** reasons that led to the formation of political parties after 1945. **(5 marks)**

B) Explain **five** results of the first Lancaster house conference in 1960. **(10 Marks)**

20. A) State **three** characteristics of independent churches in Kenya during colonial period**. (3 marks)**

B) Explain **SIX** effects of mau mau uprising in Kenya during pre-colonial period. **(12 marks)**

21. A) State **five** roles of cultures in the Kenyan society. **(5 marks)**

B) Discuss the challenges that are facing multi-party democracy in Kenya. **(10 marks)**

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SECTRION C (30 MARKS)

Answer any two questions in the answer booklet provided.

22) A) Give ways in which education promotes unity in Kenya **(3 marks)**

B) Explain **six** methods of conflict resolution applied in the Kenyan society today **(12 marks)**

23) A) Identify **three** divisions of the defense forces in Kenya **(3 marks)**

B) Describe the function of the defense forces in Kenya **(12 marks)**

24) A) Give **three** circumstance under which a governor may be removed from office. **(3 marks)**

B) Explain **six** objectives of the devolution government of Kenya. **(12 marks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

311/2.
HISTORY AND GOVERNMENT.
PAPER 2.
2 ½ HOURS.

Instructions to candidates

a) This paper consists of three Section: A, B and C.

b) Answer all the questions in sections A, three questions from section B and two questions from section C.

c) Answers to all the questions must be written in the answer booklet provided.

d) This paper consists of 3 printed pages.

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

f) Candidates should answer the questions in English.

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.

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SECTION A (25 MARKS)

Answer all the questions in this section

1. Identify **two** aspects of Oral traditions as a source of information on History and Government.
2. State **two** ways in which the early man obtained food. **(2mks)**
3. Give **one** evidence that man developed religious practices during the late Stone Age. **(lmk)**
4. Name **two** types of picture writing developed in Mesopotamia and Egypt respectively **2mks)**
5. Identify the greatest contributor of Michael Faraday in the field of science **(lmk)**
6. Give **one** limitation of using gold to make tools and weapons (lmk)
7. State **two** advantages of petroleum as a source of energy. **(2mks)**
8. State **two** economic effects of the industrial revolution in Europe. **(2mks)**
9. Give **two** reasons why early urban centers in ancient Egypt developed in the Nile Valley.(**2mks)**
10. State **two** functions of Katikiro among the Buganda **(2mks)**
11. Name **one** chartered company that ruled on behalf of Britain in West African region **(lmk)**
12. State **two** political parties that were involved in liberation struggle in Ghana. **(2mks)**
13. State the main reason why the League of Nations was formed. (lmk)
14. Write **one** function of the Monarch in Britain **(lmks)**
15. Write **one** achievement of pan African movement between 1945 and 1963. **(1 mk)**
16. What was the immediate cause of the Second World War **(lmk)**
17 Identify the main economic challenge in Africa since independence. **(lmk)**

SECTION B (45 MARKS)

Answer any three questions from this section

18a) Write **three** stages in the evolution of Man before Homo Erectus. **(3mks)**

b) Describe **six** ways in which the discovery of fire by early man improved his way of life**.(l2mks)**

I 9) a) mention **five** characteristics of local trade **(5mks)**

b) Explain **five** factors that led to the decline of Trans — Atlantic trade **(10mks)**

20. Mention **five** terms of Berlin conference of 1884 - 1885? **(5mks)**

b) Explain **five** consequences of partition of Africa on Africans **(l0rnks)**

21a) State **five** causes of Nationalism in Ghana **(5mks)**

b) Explain **five** methods used by African nationalists in the struggle for Independence in South Africa. **10mks)**

SECTION C (3OMKS)

Answer any two questions from this section

22a) List **three** European countries from this section the Triple entente before the outbreak of the First World War. **(3mks)**

b) Explain **six** reasons why the Allied forces defeated the Axis power during the Second World War. **(l2mks)**

23a) State **five** characteristics of commonwealth member states **(5mks)**

b) Discuss **five** achievement of pan- African movement **(l0mks)**

24. State **three** ways in which a person can become a member of House of Lords in Britain **(3mks)**

b) Describe **six** duties of the USA presidents **(l2mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

Kenya Certificate of Secondary Education

441/1 – HOMESCIENCE – Paper 1

(THEORY)

INSTRUCTIONS TO CANDIDATES:

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

This paper consists of ***three*** Sections: ***A***, ***B*** and ***C***

Answer all the questions in Sections ***A*** and ***B.***

Answer ***anytwo*** questions from Section ***C***

All answers must be written in ENGLISH

FOR EXAMINER'S USE ONLY

Section	*Question*	*Maximum*	*Score*
A		40	
B	22	20	
C	23	20	
	24	20	
	25	20	
	Total score	100	

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SECTION A – 40 MARKS

INSTRUCTIONS: Answer ALL the questions in the spaces provided

1.Outline three ways in which a cook can infect food with germs. **3mks**

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2.State two points to note when using paraffin as a fuel. **2mks**

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3.Mention two ways of providing variety in meal planning and management. 2mks

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4. Analyze two effect of heat on vitamin C. **2mks**

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4.Identify two ways of controlling bed bugs in a home. **1mk**

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5.Differentiate between active immunizations and passive immunization. **2mks**

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6.State two factors that determine the type of media to use when advertising. 2mks

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7.List any two ways of finishing wood **2mks**

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8.Name two stain removal agents used in removing a banana sap stain from your t-shirt **2mks**

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9.Mention two possible causes of stitches looping when sewing with a sewing machine **2mks**

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10. Give two examples of stitches used to neaten raw edges **1mk**

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11. Suggest two ways of managing foreign body in the ear **2mks**

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12. Mention two dangers that arise from misuse of cosmetics 2mks

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13. Mention two disadvantages of steaming food **2mks**

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14. Mention two points on prevention and control of round worms **2mks**

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15. Define the term consumer Education 1mk

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16. State two factors that affect a budget **2mks**

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17. Mention two points to observe when using disinfectants during laundry. **2mks**

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18. Fasteners are mainly functional on garments. Give two examples **1mk**

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19. State two qualities of a well-made seam **2mks**

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21 State three disadvantages of cash buying **3mks**

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SECTION B – 20 MARKS

INSTRUCTIONS: This question is compulsory. Write your answers in the spaces provided after the question

22. Your parents are recovering from an attack of covid 19 and you are assisting them with house chores

(a) Explain the procedure for thorough cleaning a neglected and blocked stainless steel kitchen sink. **8mks**

b) Outline the method you will use to clean a white washable cotton mask you had used the previous day. **7mks**

c) Describe the procedure of cleaning a kitchen counter made of plain wood **5mks**

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SECTION C– 40 MARKS

INSTRUCTIONS: Answer any TWO questions from this section. Write your answers in the spaces provided after the questions

23. a) Discuss five reasons for sufficient ventilation in a sickroom **10mks**

b) Give four uses of eggs in cookery **4mks**

c) Briefly explain six points to consider when choosing an ironing board. **6mks**

24. a) Explain three ways of avoiding food wastage in the kitchen. **6mks**

b) State four ways of preventing cholera outbreak **4mks**

c) Explain four ways of fulfilling the physical needs of an expectant mothers **8mks**

d) Differentiate between print and electronic media advertising **2mks**

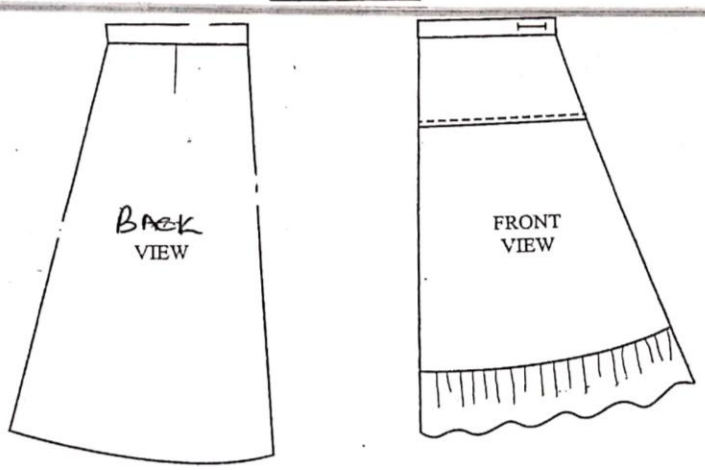
25. a) Briefly explain five points to consider when planning and serving meals for children **5mks**

b) Explain the procedure of working gathers by hand on the waist of a skirt. Use well labelled diagrams to illustrate. **10mks**

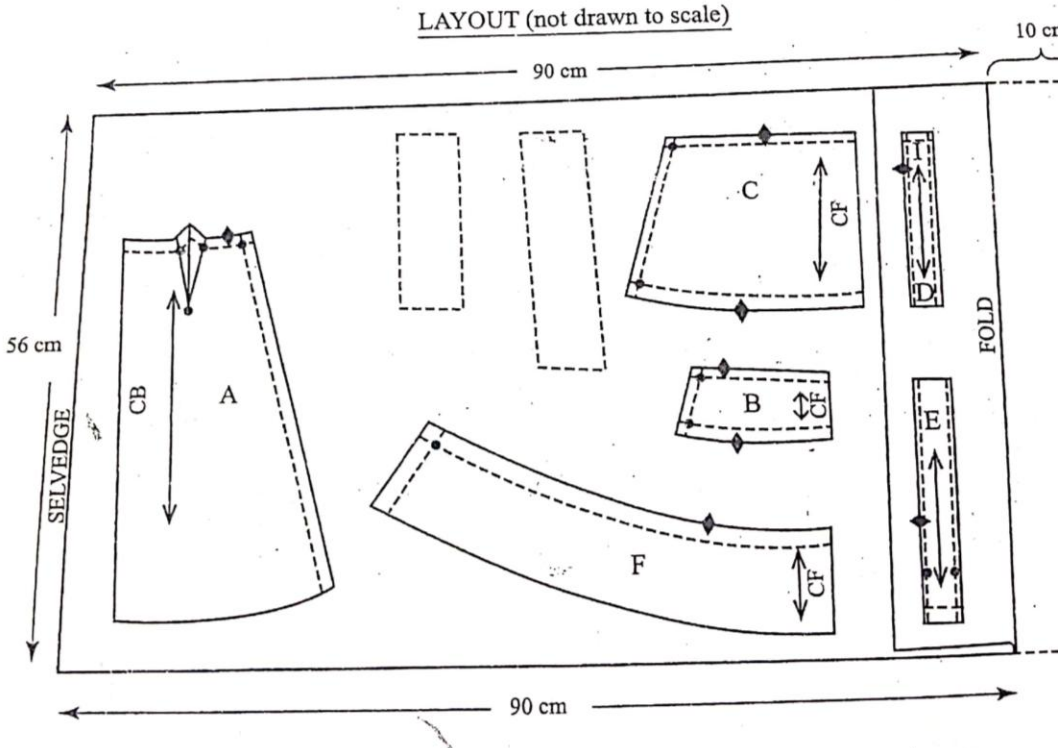
c)) Briefly explain five reasons for using soft furnishings in the home **5mks**

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SKIRT VIEWS



LAYOUT (not drawn to scale)



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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

Kenya Certificate of Secondary Education

441/2 – HOMESCIENCE PRACTICAL – Paper 2

(CLOTHING CONSTRUCTION)

INSTRUCTIONS TO CANDIDATES

a)This paper consists of 3 printed pages

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

c)Candidates must use machine stitches appropriately in the construction of the garment

d) **Hand stitches** used instead of machine stitches will not be marked

e)**Hand stitches** will only be allowed for the making of **hemming** and **tacking stitches**.

f) Candidates should answer the questions in English.

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GIRL'S SKIRT

A pattern of a girl's skirt is provided. You are required to study the sketches, instructions and layout carefully before you begin the test.

MATERIALS PROVIDED

1. Pattern pieces

A. – Skirt back
B. – Yoke (front)
C. – Lower skirt (front)
D. - Front waistband
E. – back waistband
F. - frill

2. Plain lightweight cotton fabric 56cm long by 90cm wide.
3. Sewing thread to match the fabric.
4. One large envelope.

THE TEST

Using the materials provided, cut out and make the **left half** of the girl's skirt to show the following processes:

a) Cutting out **(14mks)**

b) Making of the dart at the back skirt **(6 ½ mks)**

c) Joining of the yoke front to the lower skirt front using an overlaid seam. **Do not trim. Neaten half the seam using loop stitches.** (12mks)

d) Attaching of the frill to the lower skirt front using a plain seam. Leave the gathering stitches and do not trim the seam allowance. **(11mks)**

e) Making of the skirt side seam from the yoke to the hemline using an open seam. **(7mks)**

f) Attaching of the front and back waistbands and holding them in place using tacking stitches. **(21mks)**

g) Making of the worked buttonhole. **(12mks)**

OMIT

The management of the skirt hem.
Overall presentation (**6 ½ mks)**

At the end of the examination, firmly sew onto your work, on a single fabric, a label bearing your name and index number. Remove the needle, pins and loose threads from your work. Fold your work neatly and place it in the envelope provided**. Do not put scraps of fabric in the Envelope**. **Do not seal the envelope.**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

Kenya Certificate of Secondary Education

441/3 – HOMESCIENCE – Paper 3

(FOOD AND NUTRITION)

Time: 1 Hour 45 Minutes
PLANNING SESSION: 30 Minutes
PRACTICAL TEST SESSION: 1HR 15Min

INSTRUCTIONS TO CANDIDATES

1.Read the test carefully
2.Write your name and index number on every sheet of paper used
3.Text books and recipes may be used during planning sessions as reference materials
4.You will be expected to keep to your order of during the practical session
5.You are only allowed to take your reference materials at the end of the planning session
6.You are not allowed to bring additional notes to the practical session

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THE TEST

Your classmate will be coming to spend the night at your place over the weekend. Using the ingredients listed below, prepare, cook and serve a one course meal for both of you. Include a refreshing drink.

Ingredients

- Green grams/ chicken / liver / beans
- Tomatoes
- Carrots
- Fruits in season
- Red / yellow /green pepper
- Arrow roots / wheat flour / green bananas
- Fat/oil
- Sugar
- Onion
- Salt

spices

Planning session

For each task listed below, use separate sheets of paper and make duplicate copies using carbon paper then proceed as follows:

1.Identify the dishes and write down the recipes
2.Make a list of equipment and materials you will require
3.Write down your order of work.

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

JINA: ……

SHULE: ……..……

NAMBARI YA USAJILI: …… SAHIHI: ……. TAREHE: ……

102/1
KISWAHILI
Karatasi ya 1
INSHA
Muda: Saa 1 ¾

MAAGIZO

a) Andika insha mbili. Insha ya kwanza ni ya **LAZIMA.**
b) Kasha chagua insha nyingine moja kati ya hizo tatu zilizobakia.
c) Kila insha isipungue maneno 400.
d) Kila insha ina alama 20.

1. Lazima

Wewe ni katibu wa Kamati ya Elimu katika gatuzi lako.

Mmeandaa mkutano uliolenga kutatua matatizo yanayokumba shule za eneo hilo.

Andika kumbukumbu za mkutano huo.

2. Utandawazi una faida na hasara zake.

Jadili mada hii kikamilifu.

3. Siku ya kufa nyani miti yote huteleza.

4. Andika insha itakayomalizika hivi:

'Tokea siku hiyo maisha yangu yakachukua mkondo mpya'

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

JINA: …….

SHULE: ……..……

NAMBARI YA USAJILI: …… SAHIHI: ……. TAREHE: ……

102/2
KISWAHILI
Karatasi ya 2
LUGHA
Muda: Saa 2 ½

MAAGIZO

e) Andika jina lako na nambari yako ya usajili katika nafasi ulizoachiwa hapo juu.

f) Jibu maswali yote.

g) Majibu yote yaandikwe katika nafasi ulizoachiwa katika kijitabu hiki cha maswali.

KWA MATUMIZI YA MTAHINI PEKEE

SWALI	UPEO	ALAMA
1	15	
2	15	
3	40	
4	10	
JUMLA	80	

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1.UFAHAMU (ALAMA 15)

Soma taarifa ifuatayo kisha ujibu Maswali.

Changamoto kubwa inayowakabili watu wengi katika mataifa yanayoendelea ni suala la chakula. Suala hili linaweza kuanga1iva katika sawia mbili tofauti. Kuna tatizo linalofungamana na uhaha wa chakula chenyewe. Uhaba huu unaweza kutokana na utegemezi mkubwa kwa zaraa kama nyenzo kuu ya uzalishaji wa chakula.

Zaraa katika mataifa mengi hususan yanayoendelea, hutegemea mvua. Kupatikana kwa mvua huathiriwa na mabadiliko ya tabianchi ulimwenguni. Matendo na amali za watu kama ukataji va miti na uchafuzi wa mazingira huwa na athari hasi kwenye tabianchi hiyo. Mabadiliko ya tabianchi huweza kuvyaza ukame kutokana na **ngambi ya mvua**.

Kibi ni methali hutokea wakati mafuriko yanapotokea na labda kuyasomba mazao mashambani na kusababisha baa la njaa. Mali hizi mbili husababisha matatizo makubwa ya chakula na kuathiri pakubwa suala zirna la usalama wa chakula. Ili kuzuia uwezekano wa kuwepo kwa shida hii, pana haja ya kuwepo kwa mikakati na sera za kuhakikisha kuna usalama wa chakula. Kwa mfano, pana kukuza kilimo cha umwagiliaji ih kuepuka **adha** inayosababishwa na ukosefu wa mvua. Kwa upande mwingine, sharti zichukuliwe hatua mufidi za kuzuia na kupambana na athari za gharika.

Changarnoto nyingine inahusiana na usalarna wa chakula chenyewe, Chakula kilichosibikwa na vijasumu au kwa njia nyingine ile huweza kumdhuru anayehusika. Msibiko wa chakula unatokana na vyanzo tofauti. Mathalan, uandalizi wa chakula kilichochafuliwa na choo, kutozingatia mbeko za usafi, uandaaji wa chakula na kukiweka katika hali ya uvuguvugu kabla ya kukipakua — hali inayochochea ukuaji wa viini na ulaji wa chakula kisichoandaliwa vyema.

Ili kuepuka uwezekano wa kuadhirika, pana haja ya kuzingatia usafi wa chakula na uandalizi unaofaa. Fauka ya hayo, vyombo vya uandalizi viwe safi, kanuni za usafi zifuatwe, upikaji nu uandaaji uwe kamilifu. Hali hii isipozingatiwa. siha za raia wenyewe zitaathirika pakubwa.

Maswali

a) Taja aina mbili za kuangalia suala la chakula katika mataifa yanayoendelea. **(alama 2)**

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b) Taja hatua mbili zinazoweza kuchukuliwa kupambana na tatizo la chakula (alama 2)

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c) Eleza jinsi nne tofauti namna chakula kinavyoweza kuwa si salama. **(alama 4)**

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d) Kwa nini ina halisi kukipakua chakula baada ya kukiandaa tu? **(alama 1)**

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e) Ni mapendekezo gani anayotoa mwandishi kuhakikisha kuwa chakula kinafaa?

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f) Eleza rnaana ya maneno haya j insi yalivyotumiwa **(alama 2)**

i. Ngambi ya mvua

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ii. Adha

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2.UFUPISHO (ALAMA 15)

Uwazaji tunduizi ni tendo ambalo huhusisha matumizi ya akili. Uwazaji huu umekitwa kwenye matumizi ya michakato karna makini, upangiliaji, uteuzi na tathmini. Hata hivyo, uwazaji huu si rnchakato rnwepesi bali ni mchakato changamano.

Mchakato wa uwazaji tunduizi unahusisha stadi na mikabala tofauti. Mathalan, kuweza kutamhua na kubainisha misimamo ya watu wengine, hoja wanazozua na uamuzi waliofikia, kutathmini au kupima ushahidi uliopo ili kubainisha mitazamo tofauti. Vile vile, uwazaji tunduizi hushirikisha kupima hoja za upinzani na ushahidi uliopo kwa njia ya haki pamoja na kutambua yaliyofichwa au ukweli uliofunikwa na taswira ya juu juu.

Hali kadhalika, uwazaji tunduizi hujumuisha kutambua mbinu zinazotumiwa kufikia misimamo fulani kwa rnvuto zaidi na kwa matumizi ya rnbinu za kishawishi. Aidha, uwazaji huu huhitaji kutathmini masuala kwa rntindo ulio wazi. Zaidi ya hayo, uwazaji tunduizi unahusisha kuwasilisha mtazamo kwa njia yenye uwazaji rnzuri na inyoshawishi.

Uwazaji tunduizi una manufaa anuwai. Mosi, unasaidia kujenga makini ya utendaji, pili hupevusha uwezo wa usomaji kwa kuufanya usomaji huo uwe na malengo wazi. Fauka ya hayo, unamsaidia rntumiaji kutambua hoja kuu katika matini au ujumbe fulani bila ya kuzongwazongwa na hoja duni za pembeni. Uwazaji huu unasaidia kuuchonga uwezo wa kuikabili au kuiitikia hali Fulani na kukuza stadi za uchanganuzi.

Mwanadamu huwa mtu tofauti na bora anapoujenga na kuuimarisha uwazaji tunduizi wake.

Maswali

a) Bila kubadilisha maana aliyokusudia mwandishi, fupisha aya mbili za mwanzo.
(Maneno 70-80)

Matayarisho

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b) Andika kwa muhtasari mambo muhimu katika aya ya tatu. (Maneno 35-40)

Matayarisho

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3.MATUMIZI YA LUGHA (ALAMA 4)

1.Taja tofauti kuu kati ya sauti irabu na sauti konsonanti (alama 2)

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2.Eleza namna ya kutamka sauti zifuatazo za Kiswahili (alama 2)

i. / o/

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ii. / p/

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3.Tunga sentensi moja yenve kivumishi kisitizi cha umbali wa wastani **(alama 1)**

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4.Geuza kitenzi kifuatacho katika kauli ya kutendesha kisha ukitungie sentensi **(alama 2)**

Mithili

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5.Kanusha kwa wingi **(alama 2)**

Ukiniita nitaitika.

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6.Toa maana mbili ya sentensi ifuatayo **(alama 2)**

Baba alimnunulia bibiye gari.

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7.Andika kwa usemi wa taarifa **(alama 4)**

Mwalimu akaonya, “Leo umenikosea, lakini nitakusamehe;

Ukinichezea tena kesho na siku nyingine nitakuadhibu.”

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8.Andika kwa kinyume **(alama 2)**

Baba aliwasha moto na kuukunja mkeka.

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9.Tumia kihusishi cha wakati kutunga sentensi **(alama 2)**

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10. Tarnbua yambwa katika sentensi ifuatayo **(alarna 3)**

Ghulamu huyo alimbebea ajuza kuni kwa baiskeli.

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11. Changanua sentensi ifuatayo kwa matawi. **(alama 4)**

Mwanafunzi aliyenunuliwa novella amerudi leo.

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12. Taja matumizi matatu ya "na" **(alama 3)**

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13. Unda nomino dhahania kutokana na kitenzi "pima" na uitungie sentensi **(alama 2)**

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14. Taja mifumo yoyote miwili ya sauti konsonanti za Kiswahili na uitolee mfano mmoja mmoja **(alama 2)**

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15. Andika wingi wa neno 'riziki' na utungie sentensi **(alama 2)**

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16. Viambishi kwenye sentensi ifuatayo vimetekeleza majukumu yapi (alama 4)
Atakaowaarnrisha

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17. Eleza rnaana ya 'kiarifa' (alama 1)

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4.ISIMU JAMII (ALAMA 10)

1.Eleza sifa tatu za lugha ya taifa **(alama 3)**

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2.Wewe ni katibu wa kamati iliyoteuliwa kutafiti kuhusu changamoto zinazoikabili lugha ya Kiswahili nchini Kenya. Jadili hizi changamoto. (alama 5)

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3.Eleza maana ya istilahi zifuatazo (alama 2)

i. Lahaja

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ii. Lafudhi

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

JINA: ……

SHULE: ……..……

NAMBARI YA USAJILI: …… SAHIHI: ……. TAREHE: ……

CHETI CHA KUHITIMU ELIMU YA SEKONDARI

KISWAHILI KIDATO CHA NNE

KARATASI YA TATU

MUDAL SAA 2½

MAAGIZO

- ✓ Jibu maswali manne.
- ✓ Swali la kwanza ni la lazima
- ✓ Chagua maswali mengine matatu kutoka kwa sehemu zilizosalia:

Riwaya, Tamthilia, Hadithifupi na Ushairi.

- ✓ Usijibu maswali mawili kutoka sehemu moja.

Sehemu hii imehifadhiwa kwa matumizi ya mtahini pekee.

SWALI	1	2	3	4	5	6	7	8
UPEO	20	20	20	20	20	20	20	20
ALAMA								

JUMLA

UPEO	**80**
ALAMA ZA MTAHINIWA	

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SEHEMU A:

FASIHI SIMULIZI

LAZIMA

1. Soma utungo ufuatao kisha ujibu maswali

Mimi ni Olichilamgwara
Olichilamgwara mwana mbee wa Ojilong
Ojilong wa Marukatipe
Wazee waliposhindwa
Nilivuka misitu milima na mito
Ni mimi jabali
Kipande cha jifya la mama
Nilipokuwa nalisha mifugo
Nilisikia baragumu inalia
Baragumu ya wito
Mifugo wa mtemi wamechukuliwa
Nikachukua mkuki wangu
Wenye kigumba cha mti
Nikachukua upanga wangu
Wenye makali kama mmweso wa radi
Upanga uliopasua pembe za nyati kwa dhoruba moja
Ndipo nilipofyatuka kasi kama umeme
Kufumba kufumbua nikawakaribia nduli
Kusikia vishindi vyangu wakaanza kubabaika
Kuona kifua changu cha manyoya ya kanga wakatetemeka
Macho yangu makali kama kaa la moto yalipowatazama wakakimbia
Mkuki wangu ulipaa kama umeme
Wote wakalala
Mifugo wakanifuata…
Mko wapi vijana
Mmekuwa kama majivu baada ya moto kuzimika?

Maswali

a) Tambua kipera ulichokisoma na udhibitishe jibu lako **(al. 2)**

b) Tambua sifa za jamii zinazosawiriwa katika utungo huu **(al. 2)**

c) Kwa kutoa mifano bainisha vipengele vine vya kimtindo vilivyotumiwa na nafsinenial. 4)

d) Fafanua sifa nne za kipera hiki **(al. 4)**

e) Eleza mambo manne ambayo mtendaji wa kipera hiki anaweza kufanya ili kufanikisha utendaji wake. **(al. 4)**

f) Fafanua mikakati ambayo jamii inaweza kutumia ili kuzuia tungo kama hizi kufifia **(al. 4)**

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SEHEMU YA B: USHAIRI

Jibu swali la 2 au 3

2. **Soma shairi lifuatalo kisha ujibu maswali:**

Binadamu hatosheki, ni kiumbe chenye zani, kweli mja hapendeki,
Kwa kweli haaminiki, hila ameficha ndani, la wazi ni unafiki
Ukweliwe haafiki, njama zake zi moyoni, usimwone ni rafiki
Mtu kuwa na tamaa, akitaka kiso chake, ni hatari kama nyoka.

Wengine watakuua, wakiona una pesa, hata zikiwa kidogo,
Hizo kwao ni maua, hupupiwa zikatesa, wakazifuata nyago,
Hadi kwenye wao ua, pasipo hata kupesa, wala kukupa kisogo,
Mtu kuwa na tamaa, akitaka kiso chake, ni hatari kama nyoka

Pindi kinunua kitu, hafurai Shaitani, bali tajawa chukizo,
Mtu kiwa mtukutu, tanunua mtimani, kwalo lako tekelezo,
Tamko lake 'Subutu', kuondoa tumaini, na kukuulia wazo,
Mtu kuwa na tamaa, akitaka kiso chake, ni hatari kama nyoka,

Aliye na taraghani, taabu kuishi naye, kazi yake kujidai,
Takusema faraghani, asosema kiwa naye, kupendeza maadui,
Hana faida nyumbani, ni mtu akuchimbaye, mradi usitumai,
Mtu kuwa na tamaa, akitaka kiso chake, ni hatari kama nyoka,

Kwa hakika ni balaa, kumkirimu mchawi, aliejaa uchoyo,
Bahati ina hadaa, kukupa alo sadawi, aibatili rohoyo
Mipangoyo kwake jaa, na nia ya ustawi, huwiza vunja kaniyo,
Mtu kuwa na tamaa, akitaka kiso chake, ni hatari kama nyoka

Ninacho change killo, ninalia sanasana, kinyesi nimetupiwa,
Ningetoa azimio, lakini uwezo sina, kwa matatizo kuambiwa,
Ama nitumie mbio, fuadi ninanena, akilini nazuiwa,
Mtu kuwa na tamaa, akitaka kiso chake, ni hatari kama nyoka.

MASWALI:

a) Lipe shairi hili anwani mwafaka. **(alm1)**

b) Fafanua mambo **matatu** ambayo nafsineni analalamikia. **(alm3)**

c) Ainisha shairi hili kwa kuzingatia vigezo vifuatavyo. **(alm3)**

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(i) Idadi ya vipande katika kila mshororo

(ii) Mpangilio wa vina katika kila ubeti

(iii) Idadi ya mishororo katika kila ubeti

d) Andika ubeti **wa nne** katika lugha nathari. **(alm4)**

e) Bainisha tamathali mbili za usemi zilizotumiwa katika shairi hili. **(alm2)**

f) Huku ukitoa mifano, onyesha mbinu mbili alizotumia mshairi kutosheleza mahitaji ya kiarudhi. **(alm2)**

g) Andika aina mbili za urudiaji zilizotumiwa katika shairi hili. **(alm2)**

h) Fafanua muundo wa ubeti **wa tano**. **(alm3)**

3. Soma shairi lifuatalo kisha ujibu maswali

Ee mpwa wangu,
Kwetu hakuna muoga,
Uoga ukikufikia, huenda ni wa akina mamayo,
Fahali tilichinja ili uwe mwanamume,
Eewe mpwa wangu, kisu kikali ajabu!
Iwapo utatingisa kichwa,
Uhamie kwa wasiotahiri.

Wanaume wa mbari yetu,
Si waoga wa kisu,
Wao hukatwa kuanzia macheo hadi machweo,
Wewe ndiye wa kwanza,
Iwapo utashindwa,
Wasichana wote,
Watakucheka,
Ubaki msununu,
Simama jiwe liwe juu
Ndege zote ziangamie.

Simu nimeipokea,
Ngariba alilala jikoni,
Visu ametia makali,
Wewe ndiye wangojewa,
Hadharani utasimama,
Macho yote yawe kwako,
Iwapo haustahimili kisu,
Jiuzulu sasa mpwa wangu,
Hakika sasa mpwa wangu,
Hakika tutakusamehe, mwaka kesho unakuja.

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Asubuhi ndio hiii,
Mama mtoto aamushwe,
Upweke ni uvundo,
Iwapo utatikisa kichwa.
Iwapo wewe ni mme,
Kabiliana na kisu kikali,
Hakika ni kikali!

Kweli ni kikali!
Wengi wasema ni kikali!
Fika huko uone ukali!
Mbuzi utapata,
Na hata shamba la mahindi,
Simama imara,
Usiende kwa wasiotahiri.

Maswali

a) Hili ni shairi la aina gani? Thibitisha **(al. 2)**

b) Tambua anayeimba na anayeimbiwa shairi hili **(al. 2)**

c) Toa ithibati kwenye shairi hili kuthibitisha kuwa msimulizi ana taasubi za kiume **(al. 2)**

d) Taja kwa kutolea mifano mbinu zozote nne za uandishi katika shairi hili **(al. 4)**

e) Taja shughuli zozote mbili za kiuchumi za jamii inayorejelewa katika shairi hili **(al. 2)**

f) Eleza mbinu alizotumia mshairi kutosheleza mahitaji ya kiuarudhi **(al. 4)**

g) Msamiati ufuatao umetumika kwa maana gani katika shairi hili? **(al. 4)**

i) Mbari

ii) Msununu

iii) Ngariba

iv) Uvundo

SEHEMU C: TAMTHILIA; BEMBEA YA MAISHA – TIMOTHY M. AREGE

Jibu Swali la 4 au 5.

4. **"Huku ndiko kuvumilia hasa. Tazama faraja ilivyoalika sasa"**

a) Weka dondoo hili katika muktadha. **(alm4)**

b) Eleza sifa za msemaji katika dondoo. **(alm6)**

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c) Onyesha jinsi faraja ilivyoalika katika maisha ya msemewa kwa kurejelea tamthilia ya: Bembea ya Maisha.

(alm10)

AU

5.

(a) Changanua mtindo katika kifungu kifuatacho. **(alm10)**

Maskini mke wangu! Kumbe ugonjwa haukumsaza mwaka baada ya mwaka. Umemla bila huruma. Awali niliona kama mchezo. Kumbe ilikuwa kweli! Kauli yake ninaona imesimama. Ni mwele hakika. Laiti ningejua, jana ningeishi tofauti. Silesi zetu za maisha tungezila zilivyokuja kwa furaha. (*Kimya*). Siku hazigandiwala jana hairudi. Sasa jana imebaki kuwa kumbukizi baada ya kusombwa na wakati mfano wa mafuriko msimu wa masika. (*Kimya*). Kwa bahati nzuri bado tupo. Ninaweza kuiachia dunia tabasamu iwe silesi kwa vizazi vijavyo na kila mwenye nia njema. (*Kimya*). Siwezi kuendelea kuishi hivi. Sasa nimekata shauri. Lazima niache njia ya zamani na kuifuata mpya. Maisha mapya. Pombe! *(kama anayeisemea pombe).* Umenichezesha kama mwanasesere kwa muda mrefu. Umeninyima fursa ya kuielewa familia yangu. Hapana! Siku zangu za uzeeni lazima nizitumie kumwangalia mke wangu mgonjwa. Lazima nimshukuru kwa vitendo kwa jinsi alivyojitolea kuijenga familia yetu. *(anapunga mkono.)* Kwaheri pombe. Buriani.

b) Bainisha toni ya dondoo hili. **(alm2)**

c) Fafanua umuhimu wa msemaji wa maneno haya katika kuijenga tamthilia nzima **.** **(alm8)**

SEHEMU D: HADITHI FUPI

Jibu swali la 6 au 7

6. Harubu ya maisha *Paul Nganga Mutua*

"Naja. Nakamilisha shughuli ndogo hapa kisha nianze safari…"

(a) Weka dondoo hili katika muktadha wake **(al. 4)**

(b) Eleza sifa sita za msemaji wa kauli hii **(al. 6)**

(c) Jadili changamoto wanazokumbana nazo waajiriwa kwa kurejelea hadithi hii **(al. 10)**

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7. **D.W .LUTOMIA : *Msiba wa kujitakia***

Wetu ni wetu ,hata akiwa mbaya …ni wetu.hatuna budi kuchagua yeye .lisilobudi hubidi.

(a)Eleza muktadha wa dondoo hili. (**alm4)**

(b)Fafanua vipengele vya kimtindo katika dondoo hii. (**alm4**)

(c)Hiari ya maamuzi ya wahusika mbalimbali yamewaletea madhila anuwai.jadili. (**alm12**)

SEHEMU YA E: RIWAYA- NGUU ZA JADI

8. Hivyo,alitaka kubadili hali hata kama ilimaanisha kukitia kichwa chake kinywani mwa samba. Alitaka kuliokoa jahazi lililokuwa likielekea mwambani kwa kasi. Lakini angeliweza vipi kupambana na utandu wa mahasisi hao?.

(a) Eleza mbinu nne za mimtindozinazojitokeza katika dondoo **(al 4)**

(b) Eleza sababu za msemaji kutaka kufaulisha kauli iloyopigiwa mstari **(al 10)**

(c) Eleza umuhimu wa msemaji katika kujenga ploti ya riwaya hii **(al 6)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

121/1
MATHEMATICS
PAPER 1
TIME: 2 ½ 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 space provided above.
3. The paper contain two sections: Section I and section II
4. Answer All the questions in section I and strictly any five questions from section II.
5. All answers and working must be written in the question paper in the spaces provided below each question.
6. Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.
7. Non-programmable silent electronic calculators and KNEC mathematical tables may be used, except where stated otherwise.

FOR EXAMINERS USE ONLY

SECTION 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	TOTAL

SECTION II

17	18	19	20	21	22	23	24	TOTAL

Grand Total

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SECTION I

1.Make h the subject of the formula. **(2mks)**

$q = \frac{1+rh}{1-ht}$

2.Find x if $3^{2x+3} + 1 = 28$ **(2mks)**

3.Simplify $\frac{5}{\sqrt{7}-3} + \frac{4}{\sqrt{7}+3}$ leaving your answer in the form a = $\sqrt[b]{c}$ where a,b and c are rational numbers.

(3mks)

4.Given that $\sin(x+60)^0 = \cos(2x)^0$, find $\tan(x+60)^0$ **(3mks)**

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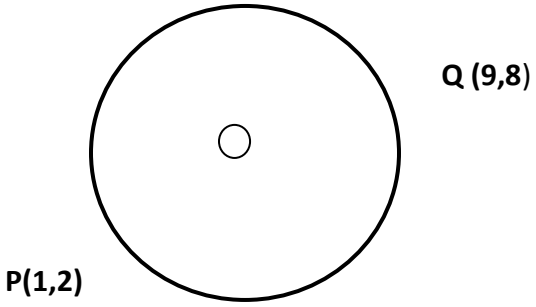
5.The gradient function of a given curve is $12x^2$- 6x + 2.

If this curve passes through $(1,4)$ find its equation **(3mks)**

6.Find the value of x that satisfies the equation **(3mks)**

$\text{Log}_2\ (2x - 11)$ - 3 = $\log_2 3 + \log_2 x$

7.P and Q are the points on the ends of the diameter of the circle below.



Write down in terms of x and y the equation of the circle in the form:

$ax^2 + by^2 + x + y + c = 0$ **(3mks)**

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8.The angle of elevation of the top of a tree from a point A on the horizontal ground is 33.5^0. From another point B three metres nearer to the base of the tree, the angle of elevation of the top of the tree is 48.6^0

Calculate the height of the tree. **(3mks)**

9.The difference between the eighth term and the fourth term of an arithmetic progression is 24. The first term exceeds the common difference by 2. Find the sum of the first ten terms of the series. **(3mks)**

10. A motorist took 2 hours to travel from Nairobi to Kutus and 1 hour 40 minutes to travel back. Calculate the percentage change in the speed of the motorist. **(3mks)**

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11. Given that a rectangle has a length and width of 4.2cm and 2.2cm respectively, find the percentage error in its area. **(3mks)**

12. Two planes start from an airport at the same time. One plane flies due West at 400km/hr while the other flies at 500km per hour. On bearing of 040^0 what is the shortest distance between the two planes after 15 minutes. **(4mks)**

13. The matrix $\begin{bmatrix} K & -3 \\ 2 & 1 \end{bmatrix}$ has its determinant as 2. Find the value of K , hence determine the inverse of the matrix. **(3mks)**

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14. Two companies sell similar cylindrical tanks. Kentainer sells a tank whose radius is 10 metres in diameter and holds 12000 litres liquid. What is the radius of a similar tank from Roto if it holds 1500 litres of water.

(3mks)

15. Find the value of x if det $\begin{bmatrix} 1 & 3 \\ -2 & x \end{bmatrix}$ = det$\begin{bmatrix} x^2 & 4 \\ 1 & 3 \end{bmatrix}$ Hence write two possible matrices that satisfy these values.

(4mks)

16. Given that Y = $\frac{1}{0.1748}$ + $(1.523)^3$. Find the value of $\frac{2}{y}$. Using reciprocal tables and cubes. **(4mks)**

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SECTION II (Answer any five questions in this section)

17. The displacement, s metres of a moving particle after t seconds is given by:

S = $2t^3$ - $5t^2$ + 4t + 2

Determine :

a) The velocity of the particle when t = 3 seconds **(3mks)**

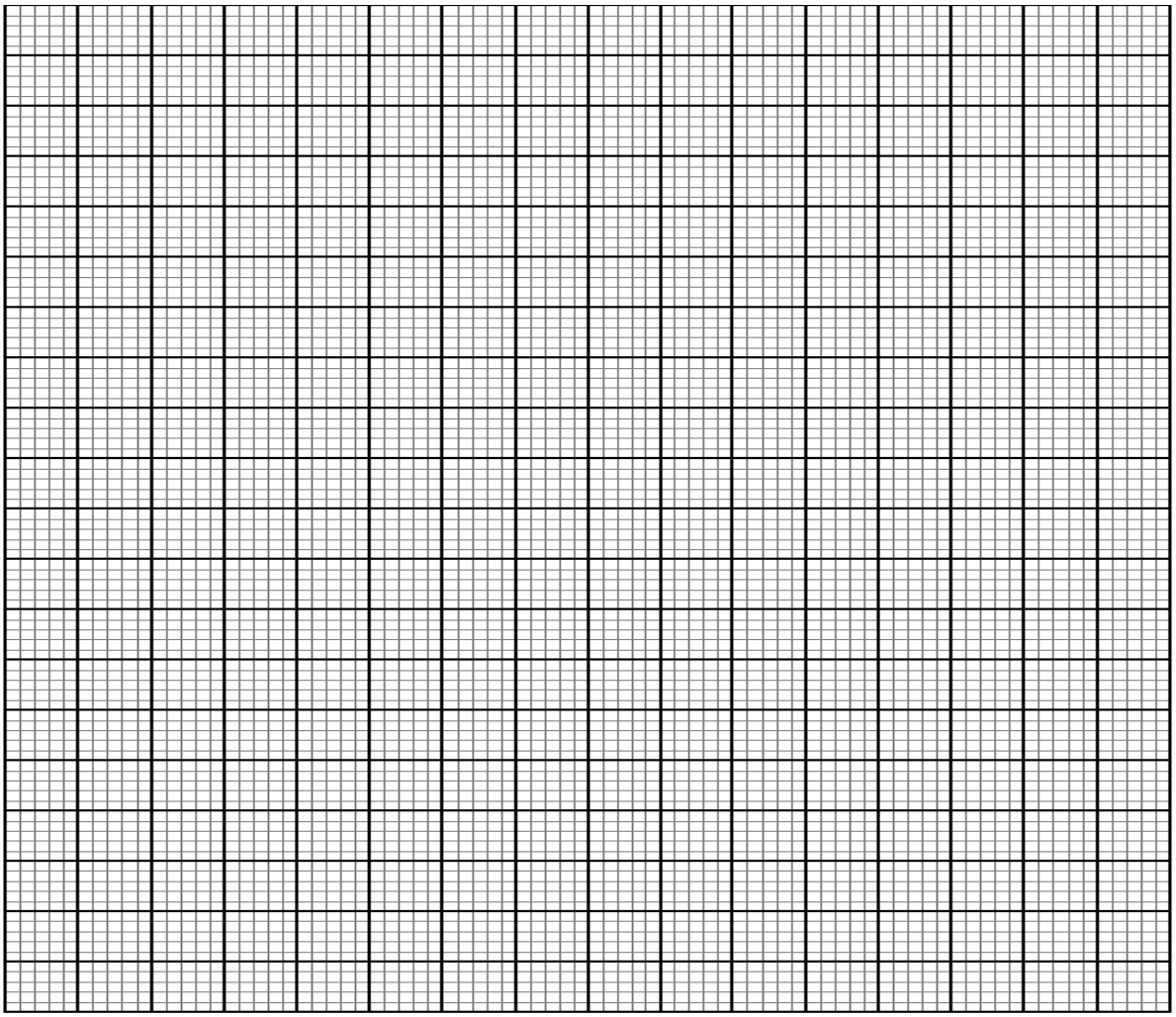
b) The value of t when the particle is momentarily at rest **(3mks)**

c) The acceleration of the particle when t = 3 seconds **(2mks)**

d) The acceleration of the particle when t = 3 seconds **(2mks)**

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18. i) Draw the graph of the function y = $2x^2$ + 5x – 3 on the grid provided below **(3mks)**



ii) State the equation of the line of symmetry **(1mk)**

iii) Using the graph solve the equations:

a) $2x^2$ + 5x – 3 = 0 **(1mk)**

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b) $2x^2 + 5x + 2 = 0$ **(2mks)**

iv) State the range of values for x in which **(1mk)**

$2x^2 + 5x < 3$

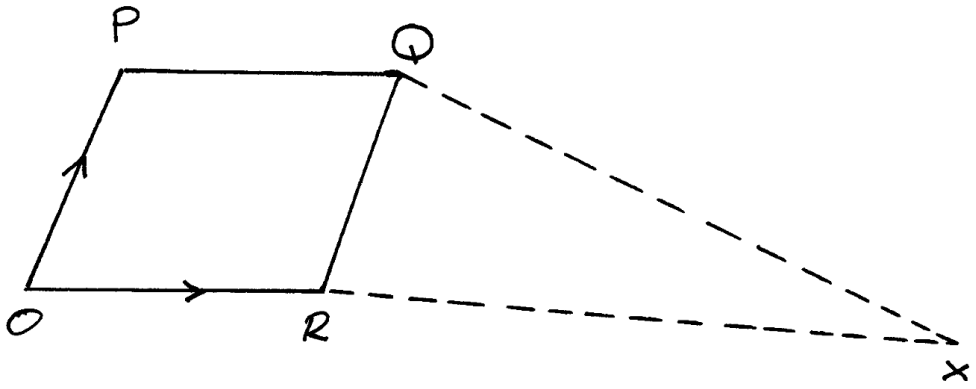
19. a) Given that $\overrightarrow{OR}$ = 5a OP = 5b and PQ = 2a – b. Express as simply as possible in terms of a and b

i. $\overrightarrow{OQ}$ **(2mks)**

ii. $\overrightarrow{RQ}$ **(2mks)**

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b) Given that line PQ produced meet at X and that Px = $\underset{\text{kPQ}}{\longrightarrow}$ = $\underset{\text{Ox}}{\rightarrow}$ = $\underset{\text{mOR}}{\longrightarrow}$. Form an equation connecting k, m, a and b. Hence deduce the values of K and m. **(6mks)**



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20. Two dice are thrown and the results on the top faces recorded.

a) Draw a table to show all the expected out comes **(2mks)**

b) Use the table to find the probability of:

i. Getting the same score on both dice **(2mks)**

ii. Scoring a total 9 or more on both dice **(2mks)**

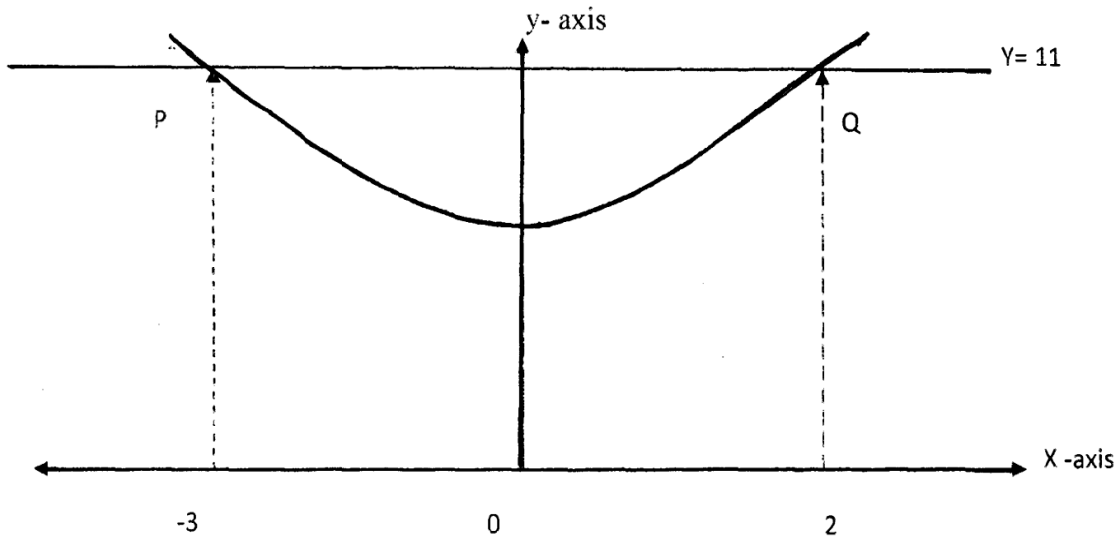
c) The probability that it will rain is $^2/_5$. The probability that Jane carries an umbrella and it rains is $^2/_7$. The probability that Jane carries an umbrella and it does not rain is $^3/_7$ find the probability that;

i. Jane does not carry an umbrella and it rains **(2mks)**

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ii. Jane carries an umbrella **(2mks)**

21. The figure below is a sketch of the curve whose equation is $y = x^2 + x + 5$. It cuts the line $y = 11$ at points P and Q



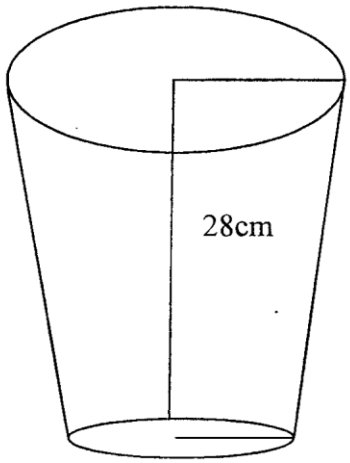
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a) Find the area bounded by the curve $y = x^2 + x + 5$ and the line $y = 11$. Using the trapezium rule with 5 strips. **(5mks)**

b) Calculate the difference in the area if the mid-ordinate rule with 5 ordinates was used instead of the trapezium rule. **(5mks)**

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22. The diagram below shows a bucket with top diameter 30m and bottom diameter 20cm. the height of the bucket is 28cm.



Find ;

a) The capacity of the bucket in litres **(5mks)**

b) The area of the metal sheet required to make 100 such buckets, taking 10% extra overlapping and wastage **(5mks)**

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23. Matrix P is given by $\begin{bmatrix} 4 & 7 \\ 5 & 8 \end{bmatrix}$

a) Find P^{-1} **(2mks)**

b) Two school, Utaati Secondary and Ngosini secondary school purchased beans at Ksh. B per bag and maize at Ksh. M per bag. Utaati purchased 8 bags of beans and 14 bags of maize for Ksh. 99,600. Ngosini purchases 10 bags of beans and 16 bags of maize at Ksh. 12,000.

i. From a matrix equation to represent the above information. **(2mks)**

ii. Using P^{-1} in (a) above, determine the cost of a bag of beans and a bag of maize **(3mks)**

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c) The price of beans later went up by 5% and that of maize remained constant. Utaati bought the same quantity of beans but spent the same total amount of money as before on the two items. State the new ratio of beans to maize. **(3mks)**

24. The table below shows income tax rates

Monthly taxable pay K£	**Rate of tax Ksh in K£**
1 – 435	2
436 – 870	3
871 – 1305	4
1306 – 1740	5
Excess over 1740	6

4 company employees earns a monthly basic salary of Ksh.30,000 and is also given taxable allowances amounting to Ksh. 10,480

a) Calculate the total income tax **(5mks)**

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b) The employee is entitled to a personal tax relief of Ksh. 800 per month. Determine the net tax **(2mks)**

c) If the employee received a 50% increase in his total income, calculate the corresponding percentage increase on the income tax. **(3mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

121/2
MATHEMATICS
PAPER 2
TIME: 2 ½ 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 space provided above.
3. The paper contain two sections: Section I and section II
4. Answer All the questions in section I and strictly any five questions from section II.
5. All answers and working must be written in the question paper in the spaces provided below each question.
6. Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.
7. Non-programmable silent electronic calculators and KNEC mathematical tables may be used, except where stated otherwise.

FOR EXAMINERS USE ONLY
SECTION 1

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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This paper consists of 16 printed pages. Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing.

1. Use logarithms correct to 4 decimal places. **(4mks)**

Evaluate: $\dfrac{(0.528)^{2/3}}{3.25\ x\ \log 4.8}$

2. Factorise $2x^2y^2 - 5xy - 12$ **(2mks)**

3. a) Expand and simplify the expression **(2mks)**

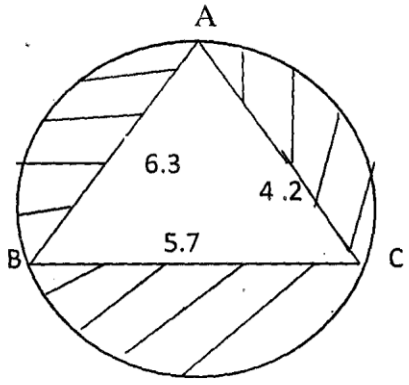
$$\left[10 + \frac{2}{x}\right]^5$$

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b) Use the expansion in (a) above to find the value 14^5 **(2mks)**

4. The straight line through the points D (6,3) and E (3, -2) meets the Y-axis at point F. find the co-ordinates of F. **(3mks)**

5. The circle below whose area is $18.05cm^2$ circumscribes a triangle ABC where AB = 6.3cm, BC = 5.7cm and AC = 4.8cm. Find the area of the shaded region. **(4mks)**

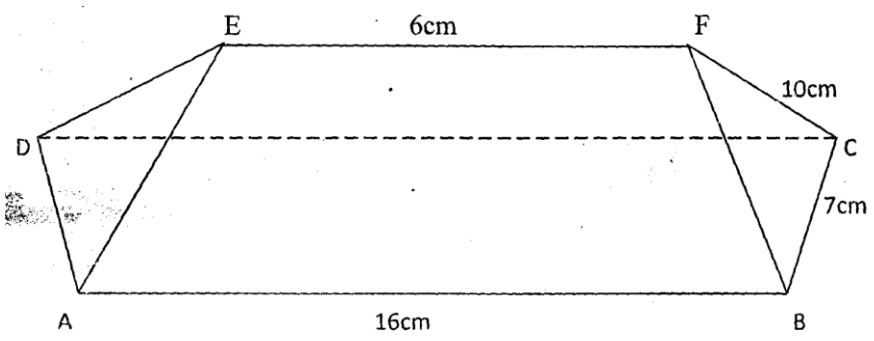


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6. Using a pair of compasses and ruler only construct a quadrilateral ABCD in which AB = 4cm, BC=6cm, AD = 3cm and angle ABC= 135^0 and angle DAB= 60^0. Measure the size of angle BCD **(4mks)**

7. Find the interquartile range of the following numbers 2,4,3,1,2,4,14,6,9,6,1. **(2mks)**

8. The figure below shows a model of the roof with a rectangular base ABCD. AB = 16cm BC= 7cm and EF = 6cm. The ridge EF is parallel to the base and centrally placed. The edges AE, BF and CF and DE are each 10cm long. Calculate the angles between the planes ABFE and ABCD. Give your answer to 1 d.p.



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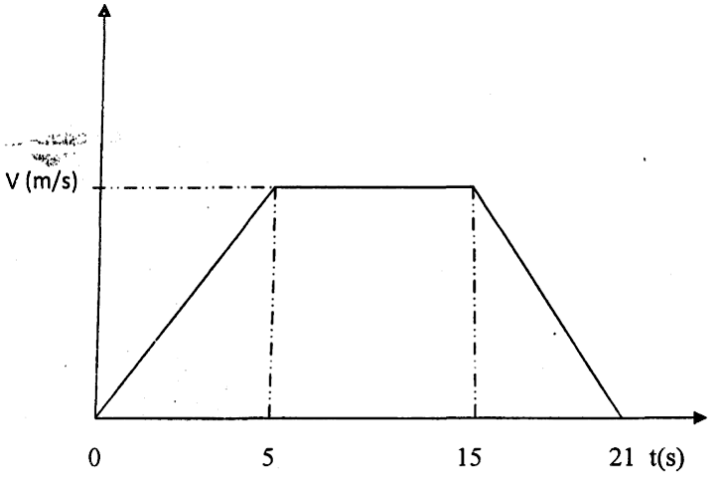
9. Type A of tea costing sh.36 per satchet is mixed with type B of tea costing sh.44 per satchet. In what ratio should the two brands be mixed so as to cost sh.42 per satchet. **(3mks)**

10. Tap A can fill a tank with water in 2 hours. Tap B can fill it in 5 hours and tap C can fill it in 4 hours. Tap D can empty the tank in 10 hours and Tap E can empty it in 3 hours. All taps are opened and the tank is filled. How many hours are used to fill the tank when all pipes are working. **(3mks)**

11. The velocity time graph drawn below shows the distance travelled by a particle is 620m.
Calculate ;
a) The velocity V.

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b) The deceleration of the particle.



12. When A is obtuse, Sin A = $^4/_5$ find the value of Cos A – tan A **(4mks)**

13. If a = I – 2j + 3k, b = -2i + 3j – k, c = 3i – j – 4k and p = 3a – 2b + c
Find to one decimal place the length of vector p **(3mks)**

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14. Without using calculator evaluate: **(3mks)**

$$\frac{2\,{}^{1}/_{5} + {}^{2}/_{5}\ of\ 3\,{}^{3}/_{4} - 4\,{}^{1}/_{6}}{1\,{}^{1}/_{4} - 2\,{}^{2}/_{5} \div 1\,{}^{1}/_{3} + 3\,{}^{3}/_{4}}$$

15. The diagonal of a rectangular garden measures $11\,{}^{1}/_{4}$ while its width measures $6\,{}^{3}/_{4}$. Calculate the perimeter of the garden.

16. An aeroplane flies at an average speed of 500 knots due East from a point P$(53.4^0N, 40^0E)$ To another point Q. It takes $2\,{}^{1}/_{4}$ hours to reach point Q.

Calculate;

i. The distance in nautical miles it travelled **(1mk)**

ii. The longitude of point Q to 2 d.p

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SECTION B

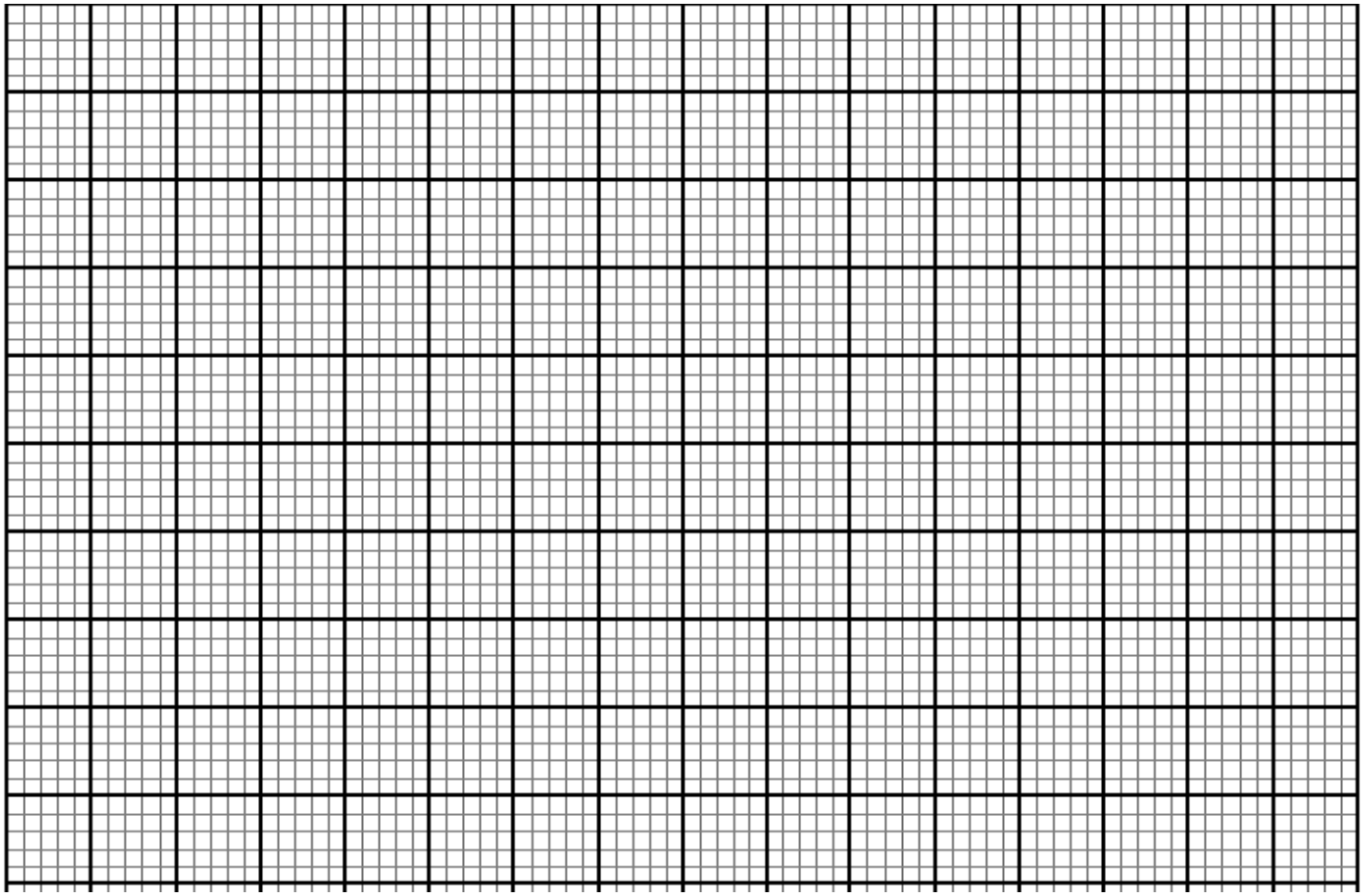
17. Two variables X and Y are related by the formula Y = Ka^x where a and k are constants. The values x and y are given in the table below.

X	0	2	4	5	7	9	12
y	256	286	316	339	385	437	525
Log y		2.46			2.59		

a) Compare the table above for all values of y correcting each value to 2 d.p **(2mks)**

b) Given that the relation between values of x and log y approximate to a linear form Log y =x log a + log k where a and k are constants.

i) Use the axis on the grid provided to draw the line of best fit for the graph of log y against x **(4mks)**

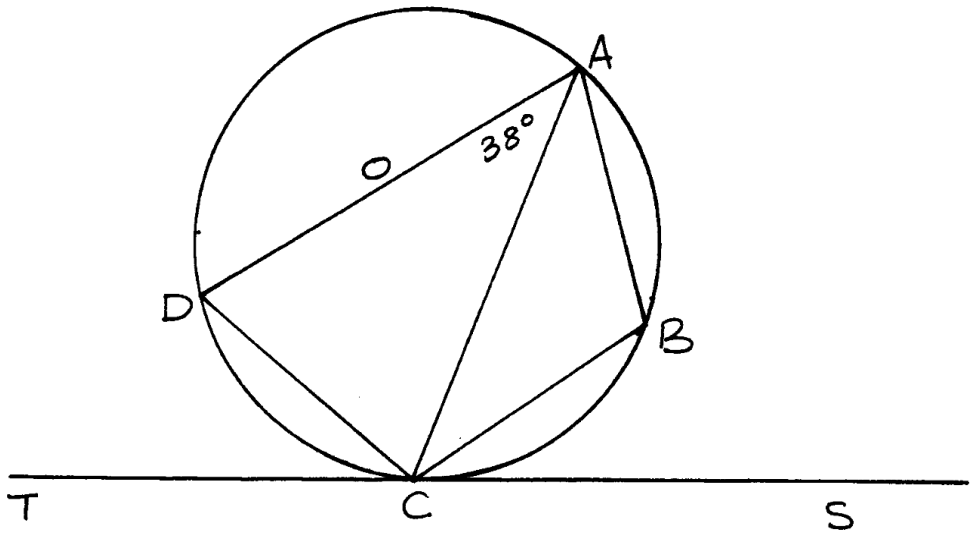


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ii) Use the graph to estimate the values of a and k.

iii) Write down the relationship between x and y

18. In the figure below OA is a diameter of the circle ABCD centre O, radius 10cm. TCS is a tangent to the circle at C. AB = BC and angle DAC = 38^0



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a) Find the size of the angle **(2mks)**

i. ACS

ii. BCA **(2mks)**

b) Calculate the length of (i) AC

ii) AB

19. Complete the table below giving the values correct to 2 d.p **(2mks)**

X	0	30	60	90	120	150	180	210	240	270	300	330	360
Sin 2x	0		0.87		-0.87		0	0.87	0.87				0
3 cos x – 2	1	0.60		-2	-3.5			-4.6			-0.5		1

b) On the grid provided draw the graphs of Y = sin 2X and Y = 3cos x-2 for $0^0 \leq x \leq 360^0$

On the same axes. Use a scale of 1cm to represent 30^0 on the X- axis and 2cm to represent 1 unit on the Y axis.

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c) Use the graph in (6) above to solve the equation $3\cos x - \sin 2x = 2$

20. Three quantities R,S and T are such that R varies directly as S and inversely as the square of T.

a) Given that R = 480 when S = 150 and T = 5, write down an equation connecting R, S and T **(4mks)**

b) Find the value of R when s = 360 and T = 1.5 **(2mks)**

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21. Find the % change in R if S increases by 5% and T decreases by 20% **(4mks)**

22. The triangle ABC has vertices A(1,2) B (2,1) and C (2,3). A,B,C is the image of ABC under the transformation given by the matrix $\begin{bmatrix} 2 & 0 \\ 0 & 3 \end{bmatrix}$

a) What are the co-ordinates of A_1 B_1 C_1? Plot ABC and A_1 B_1 C_1 on the same axis **(3mks)**

b) State the ratio of the areas of the two triangles and use the area of ABC to calculate the area of $A_1B_1C_1$

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c) If A_2 B_2 C_2 is the image ABC under the transformation given by the matrix $\begin{bmatrix}1 & -2\\0 & 1\end{bmatrix}$

Find the co-ordinates of A_2 B_2 C_2. Plot A_2 B_2 C_2 and describe the transformation fully.

23. The following shows the distribution of marks in a C.A.T in a form four class.

Marks	31-40	41-50	51-60	61-70	71-80	81-90
No of students	2	5	14	12	6	1

a) i) On the grid provide draw a cumulative frequency curve for this data. **(3mks)**

ii) Using the graph, estimate the median mark **(1mk)**

b) Taking 55.5 as the assumed mean, calculate

i. The mean mark **(3mks)**

ii. The standard deviation **(3mks)**

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24. Four towns P,Q,R and S are such that Q is 1500km due East of town P. Town R is 1080km due North of town Q. Town S is on a bearing of 300^0 from R

a) Use a ruler a pair of compasses and show the positions of town P,Q,R and S. (Take a scale of 1cm = 3000km) **(5mks)**

b) i) Determine the distance of PS in km **(2mks)**

ii) Determine the distance RS in km **(2mks)**

iii) Determine the bearing of town S and Q **(1mk)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

232/1
PHYSICS
PAPER 1(THEORY)
TIME:2 HOURS

INSTRUCTIONS TO THE CANDIDATES:

- Write your name, school and index number in the spaces provided above.
- Answer all the questions both in section A and B in the spaces provided below each question
- All workings must be clearly shown; marks may be awarded for correct steps even f the answers are wrong.
- Non-programmable silent electronic calculators and KNEC Mathematical tables may be used except where stated otherwise.
- Answer all questions in English
- This paper consists of 9 Pages. Candidates should check the question paper to ascertain that all pages are printed as indicated and that no question is missing

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QUESTION	MAXIMUM SCORE	STUDENT'S SCORE
1-13	25	
14	8	
15	13	
16	11	
17	13	
16	10	
TOTAL	80	

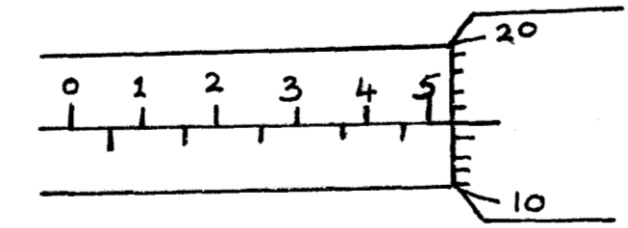
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ANSWER ALL QUESTIONS IN THIS SECTION

SECTION A (25MKS)

1. State the reading on the micrometer gauge shown below

Fig 1 **(1 mk)**



2. An oil drop forms a circular patch of area $5x10^{-3}m^2$. If the oil drop has a volume $9 \times 10^{-12}M^2$. Calculate the thickness of the oil molecule. **(2mks)**

3. Name one non contact force **(1mk)**

……

……

4. A crane just lifts 9940N when an effort of 11 6N is applied. Find its velocity ratio if the crane has an efficiency of 72% **(3mks)**

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5. A vessel weighs 90g and has a specific heat capacity of 420J/Kg/K. Calculate its heat capacity **(2mks)**

6. Explain why a high jumper flexes his knees when landing on the ground **(2mks)**

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7. Two tennis balls are suspended from support by a thin string and air blown between them.

Explain the consequent motion of the balls (2mks)

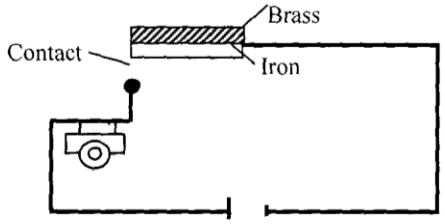
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8. Give a reason why heat transfer by radiation is faster than heat transfer by conduction **(1 mk)**

……
……
……

9. The fig below shows a fire alarm circuit. Explain how the alarm works **(2mks)**

Figure 2



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10. Two liquids of density 1100kg/rn^3 and 850kg/rn^3 are mixed in equal volumes. The mixture fills a tank of 300cmx 40cm x 50cm to the bring calculate the mass of each liquid **(3mks)**

11.In Brownian motion experiment, smoke particles are observed to move randomly. Explain how this motion is caused **(2mks)**

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12. Give a reason why the weight of a body vary from place to place on the earth's surface (lmk)

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13. The pressure in a moving fluid varies with speed of the fluid. Explain **(2mks)**

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SECTION B (55 MKS)

14.a) Distinguish between velocity ratio and mechanical advantage **(1mk)**

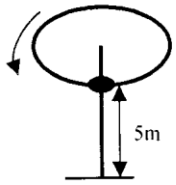
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The diagram in the figure below shows a mass (m), which is rotated in a vertical circle. The speed of the mass is gradually increased until the string breaks. The string breaks when the mass is at its lowest point A at a speed of 30m/s. point A is 5m above the ground.

Fig 3



I. Show on the diagram:

ii. The initial direction of the mass at the point the string breaks **(lmk)**

iii.The path of the mass from A until it strikes the ground at point B **(1mk)**

11 calculate

i. The time the mass takes to reach the ground after breaking off **(3mks)**

ii the horizontal distance the mass travels before it strikes the ground (2mks)

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15. a) State the law of flotation **(1mk)**

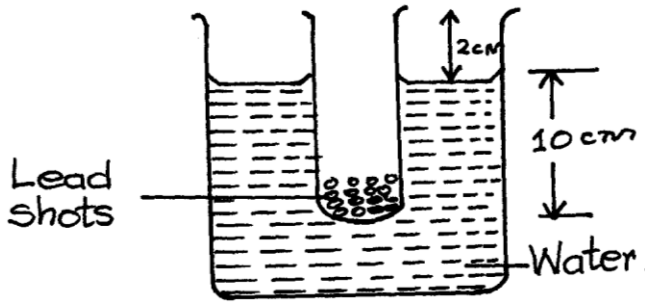
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b) A body weighs 40N in air, 30N in water and 35N when in liquid X. Find the relative density of liquid X **(3 mks)**

c) A Simple hydrometer is set up with a test tube of mass 10g and length 12cm with a flat base and partly filled with lead shots. The test tube has a uniform cross section area 2.0cm2 and 10cm of its length is under water as shown in the figure below



b) Name a device that is used to convert sound energy to electrical energy **(1 mk)**

……

……

c)A bullet of mass 20g travelling at 400m/s is strapped by a concrete wall.Calculate the amount of energy tranfered to the wall **(2mks)**

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d) A spring with a spring constant of 68N/M stretches by O.22m when a force is applied on

it. Determine the energy stored in the stretched spring **(3mk)**

e) A pulley system having a velocity ratio of 4 is used to raise a load of 80N through a height of O.6m at constant speed using an effort of 20N in a time of 15 seconds. Calculate the power developed by the effort **(3mk)**

1 6a) (a)Give a reason why it is possible to whirl a bucket full of water in a vertical plane

without the content pouring **(1 mk)**

……

……

……

b)A body of mass 5kg is attached to the end of a string of length 50cm and whirled continuously in a horizontal circle. If the tension in the string is 81N determine the angular velocity of the body **(3 mks)**

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On what principle does a speed governor work (1mk)

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(i) Taking the density of water as 1000kg/rn^3 calculate the mass of the lead shots in the tube **(3 mks)**

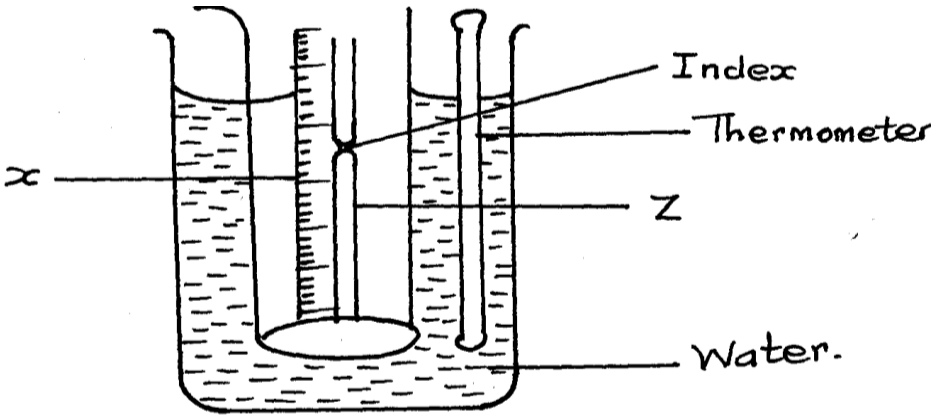
(ii) The mass of the lead shots to be added if it has to displace an equal volume of a liquid of

density 1 .25g/cm^3 **(3mks)**

17. (a)Two identical containers A and B are placed on a bench, container A is filled with oxygen gas and B with hydrogen gas such that the two gases have equal masses. If the containers are maintained at the same temperature, state with a reason the container which pressure is higher. **(2 mks)**

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b) The fig below shows a set-up of an experiment used to investigate Charles's law



(i) Name the parts labeled X and Z **(2rnks)**

……

……

……

(ii) State the measurements to be taken in this experiment **(2mks)**

……

……

……

……

……

(iii) Explain how the readings taken in (ii) above may be used to investigate Charles law **(2mks)**

……

……

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(iv) State two purposes of mercury index (2mks)

……

……

……

……

v) A constant mass of hydrogen gas occupies a volume of $4.0cm^3$ at a pressure of $2.4x\ 10^5$ Pa and temperature of 288k. Find its volume at a pressure of $1.6xl0^5$ Pa when the temperature is 293K **(3mks)**

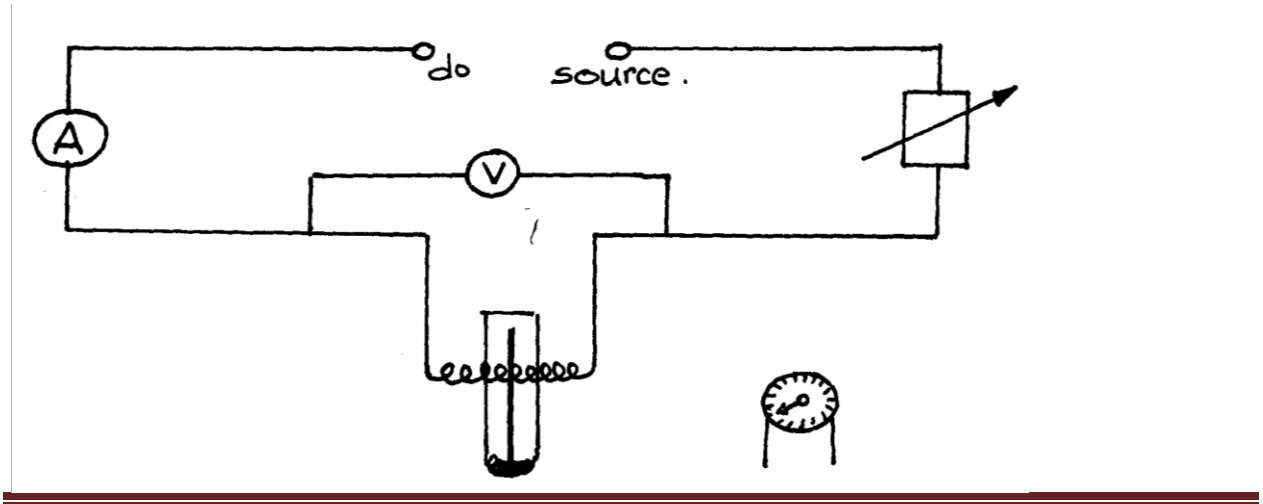
18. (a) Define specific latent heat of vaporization (1 mk)

……

……

……

(b) The figure below is used to produce a measured rise in temperature of a liquid using electrical energy



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Explain why:

i. the liquid will tend to be warmer at the top of the container than at the bottom (lmk)

……

……

……

ii. The temperature will eventually stop rising even though the current is still passing through the heating coil **(lmk)**

ii. If the apparatus is used to determine the specific heat capacity of the liquid. The accuracy of the experiment will be increased if the liquid is first cooled to about 5°c below room temperature and the current passed until is about 5°c above room temperature. Explain how heat losses are minimized **(2mks)**

c) A 50W heating coil is totally immersed in 1 00g of water contained in an insulated flask of negligible heat capacity the initial temperature of water in the flask is 20°C

i. Determine how long it takes for the water to boil at 100°c when the heater is switched on **(2mks)**

ii After the water has been boiling for 15 minutes, it is found that the mass of water in the flask has decreased .Assuming no external heat losses ,calculate a value for the specificlatent heat of vaporization of water **(3 mks)**

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

232/2
PHYSICS
PAPER 2(THEORY)
TIME:2 HOURS

INSTRUCTIONS TO THE CANDIDATES:

- *Write your **name**, **school** and **index number** in the spaces provided above.*
- *Answer **all** the questions both in section A and B in the spaces provided below each question*
- *All workings **must** be clearly shown; marks may be awarded for correct steps even if the answers are wrong.*
- *Non-programmable silent electronic calculators and KNEC Mathematical tables may be used except where stated otherwise.*
- *Answer all questions in English*
- *This paper consists of **12** Pages. Candidates should check the question paper to ascertain that all pages are printed as indicated and that no question is missing*

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QUESTIONS	MAXIMUM SC	STUDENT'S SCORE
1-12	25	
13	13	
14	15	
15	13	
16	14	
TOTAL	80	

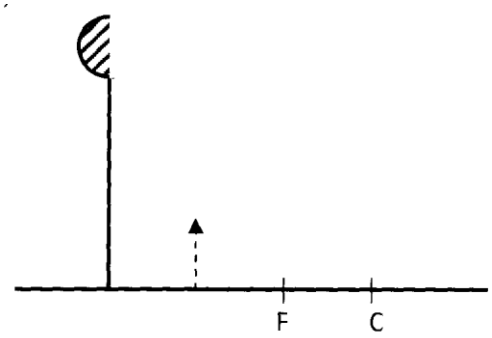
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Answer all questions in this section

SECTION A (25 MARKS)

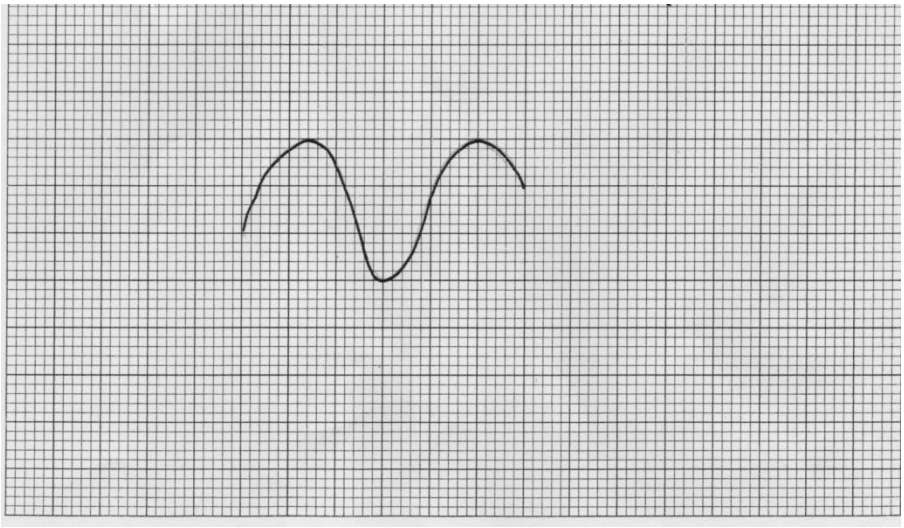
1. The diagram below shows the image formed by a convex mirror. Complete the diagram to show the position of the object. **(2marks)**

Figure 1



2. The figure below shows the trace of a signal on CR0.

Figure 2



Given that the time base is set at l00ms/div. Determine the frequency of the signal. **(2mks)**

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3. Explain why sound cannot be heard from far when one shouts in a forest. **(1mk)**

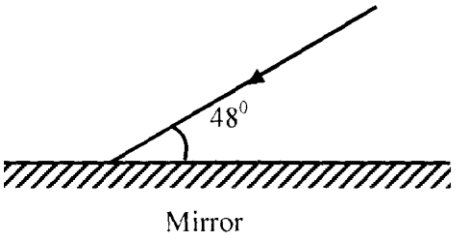
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4. The figure 3 shows a ray of light incident on a mirror.

Fig.3



Determine the angle of reflection when the mirror is rotated 10° anticlockwise. **(2mks)**

5. The chart below shows an arrangement of different parts of the electromagnetic spectrum.

Radio	A	Visible	Ultra-violet	X-Rays	Gamma rays

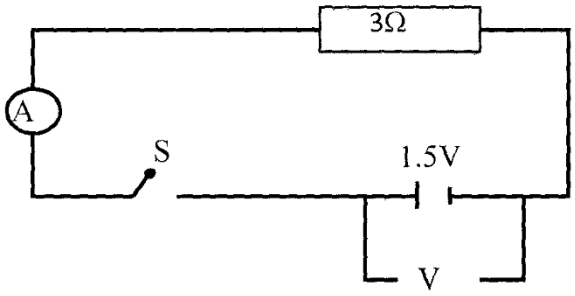
Name the radiation represented by A. **(1mk)**

……

……

6. In figure 4, the internal resistance of the cell is 0.5Q. Determine the ammeter reading when the switch S is closed. **(3mks)**

Fig.4



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7. A Bunsen burner flame brought near to the cap of a charged electroscope causes the divergence of the leaf to decrease. Explain these observations. **(1mk)**

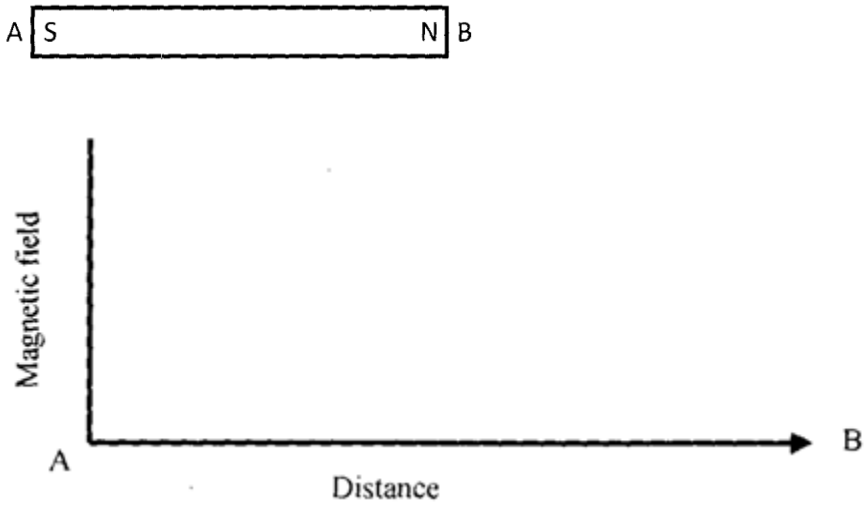
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8. The figure 5 shows a magnet. Point A and B are in front of the magnet. (1mk)

Fig.5



On the axes provided sketch a graph showing how the magnet field strength changes from A to B **(2mks)**

9. The following equation represents a decay series.

$$^{210}_{83}X \xrightarrow{^{210}_{84}\alpha} \xrightarrow{^{a}_{b}Q}$$

Identify the radiation X and determine the values of a and b. **(3mks)**

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10. Describe how a P-type semiconductor is formed. **(3mks)**

……

……

……

11. A student designed an a.c. generator which produces a current of 10A at a p.d. of 340V.
State two ways in which he can improve his generator to increase the p.d. output**.** **(2mks)**

……

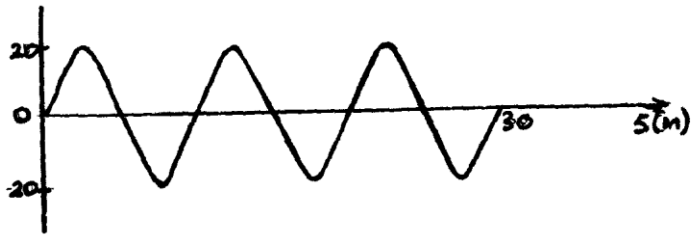
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12. The diagram below shows part of a wave form. The numbers on the diagram show scales in metres; if the speed of the wave is 20ms^{-}, determine the frequency and wavelength of the wave. **(3 marks)**

Fig. 6



SECTION B: (55 MARKS)

Answer ALL questions in this section

13. (a) Define capacitance. (1 mark)

……

……

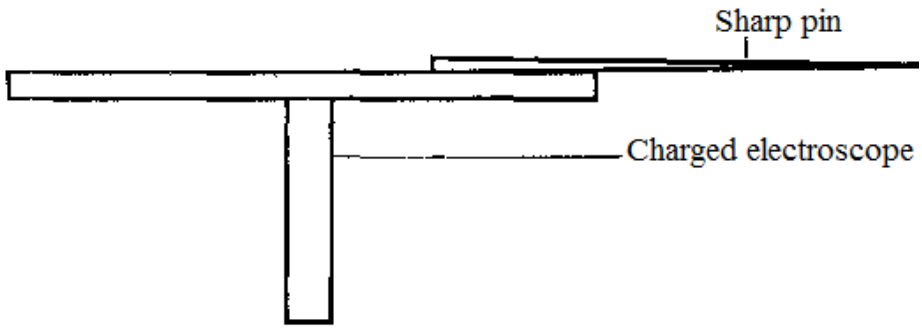
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(b) In figure 7 below, a sharp pin is fixed on a cap of a leaf of electroscope. The electroscope is highly charged and then left for some time.

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Fig. 7

State and explain the observation made after sometime**.** **(2 marks)**



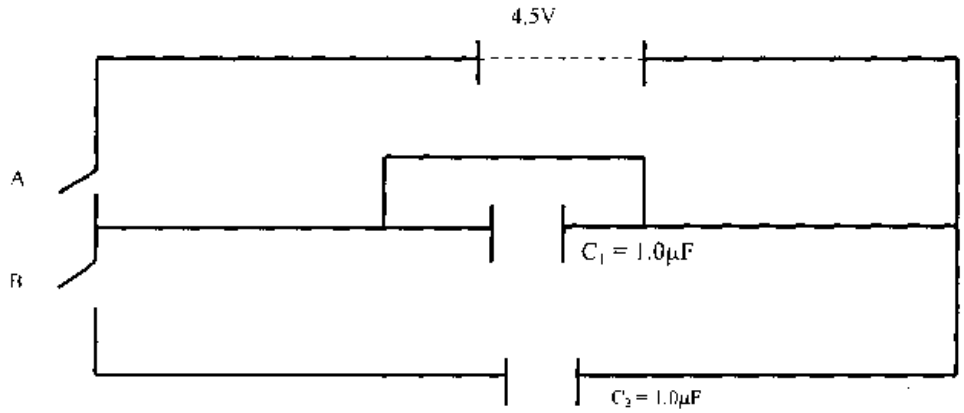
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(c) Figure 8 below shows a circuit where a battery of e.m.f 4.5V, switches A and B, two capacitors C_1= 0.6μF and C_2 = 1.0μF and voltmeter are connected.



i) Determine the charge on **C_1** when switch **A** is closed and switch **B** is open**.** **(2mks)**

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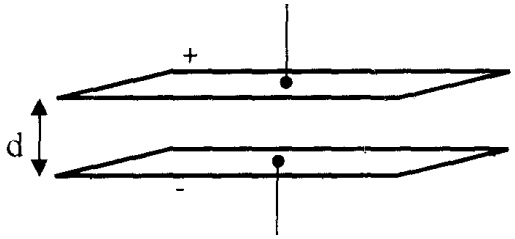
ii) What is the effective capacitance **C**, when both switches **A** and **B** are closed? **(2mks)**

iii) State and explain what is observed on the voltmeter when **(2mks)**

I. Switch **A** is closed and switch **B** is open.

II. Switch **A** is closed and opened and then **B** is closed.

(d).Figure 9 below shows a pair of parallel plates of capacitors connected to a battery. The upper plate is displaced slightly to the left.



Suggest **two** adjustments that can be made so as to reduce the effective capacitance. (2mks)

……

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14. (a) Long distance transmission of power is done at a very high voltage. Explain. **(2mks)**

……

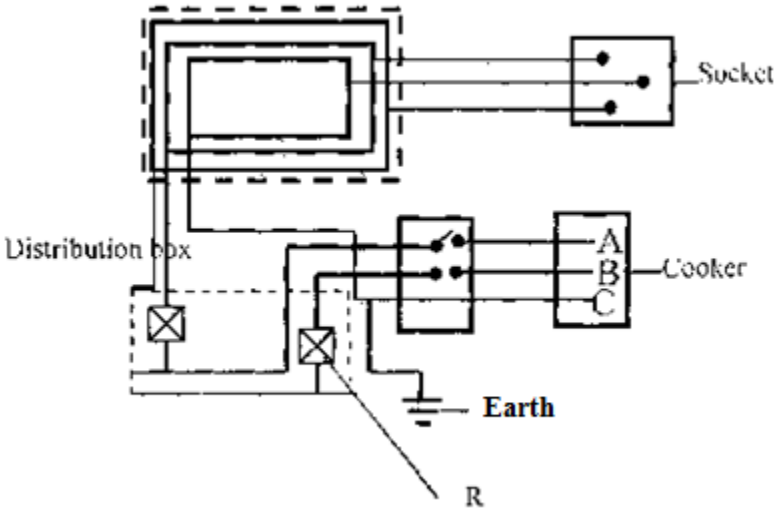
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(b) Figure 10 below shows a section of a house wiring system

Fig. 10



i) Name:

I. The circuit labeled **F**.

……

II. The terminals **A** and **B**. **(2marks)**

……

……

……

iii) Give a reason why **R** is connected to **B** and not **A**. **(1mk)**

……

……

iv) What is **R?** **(1mk)**

……

……

……

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v) Why is earthing necessary in such a circuit? **(1mark)**

……

……

……

(c) 54kg of water in a metallic cylinder of heat capacity 9000JK^{-} is heated from 10°C to 80°C using an immersion heater rated 1800W, 240V. Assuming that no heat is lost to the surrounding and the immersion heater works at its correct voltage. Find

i) The current flowing through the water. **(2marks)**

ii) The cost of heating the same mass of water from 10°C to 80°C, every day for 30 days, if electricity cost sh.6.70 per unit. **(4mks)**

15. (a) State Snell's law. (1mk)

……

……

……

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b) A coin is placed beneath a transparent block of thickness 10cm and refractive index 1.56.
Calculate the vertical displacement of the coin. **(3mks)**

(c) The speed of green light in a prism is 1.94×10^8m/s.

(i) Determine the refractive index of the prism material.
(Speed of light in air 3.0×10^8m/s**).** **(2mks)**

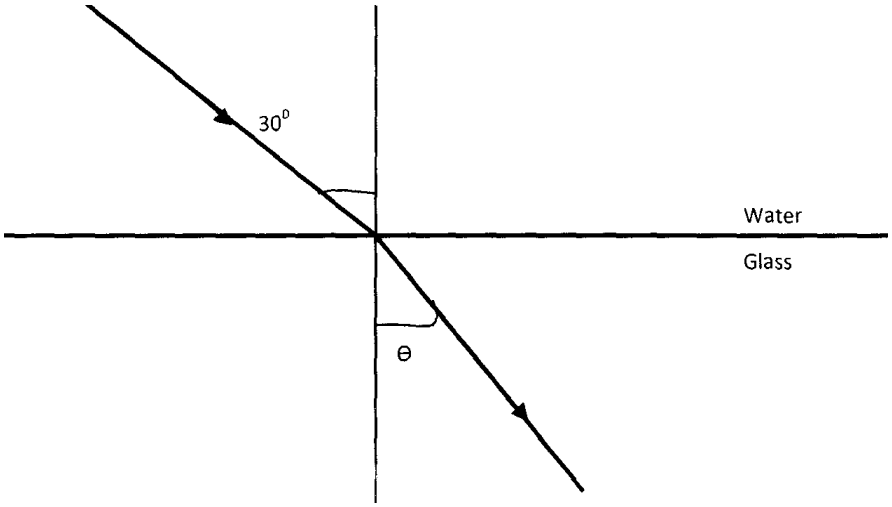
(i) Determine the critical angle of the prism material. **(2mks)**

(d) State **two** advantages of using optical fibre in communication. **(2mks)**

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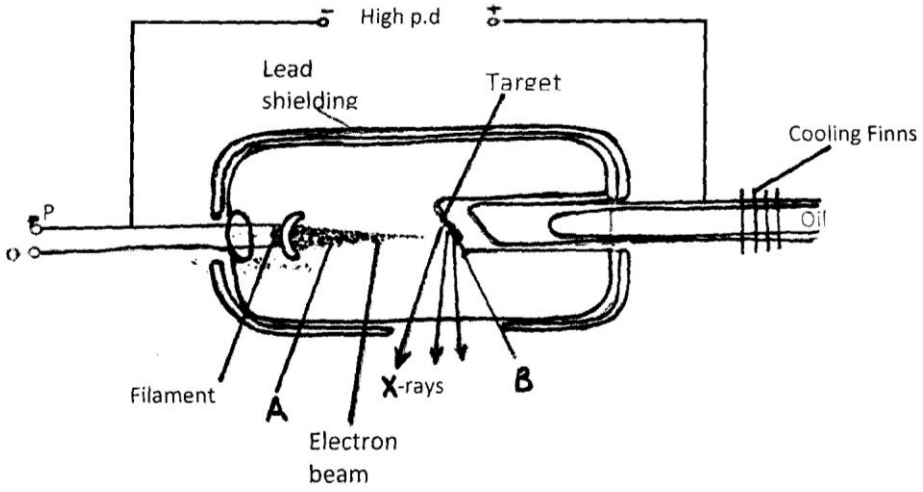
(e) The refractive indices of water and glass are $\frac{3}{2}$ and $\frac{4}{3}$ respectively. Find the value θ in the figure below. **(3mks)**

Fig.11



16. (a) Figure 12 shows the features of an X-ray tube.

Fig.12



(i) Name the parts labelled **A** and **B**.

A ……

B……

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(ii) Explain how a change in the potential across **P** changes the intensity of the X-rays produced in the tube. **(2mks)**

……

……

……

……

(iii)During the operation of the tube, the target becomes very hot. Explain how this heat is caused**.** **(2mks)**

……

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(iv) What property of lead makes it suitable for use as shielding material? **(2mks)**

……

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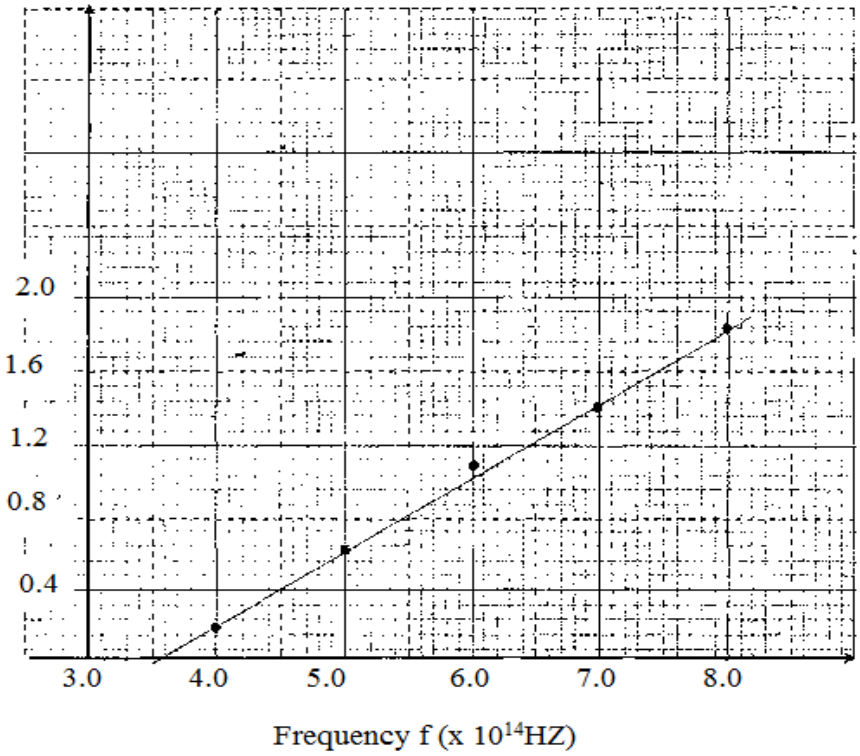
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(b)(i) In a certain X-ray tube, the electrons are accelerated by a p.d. of 12000V. Assuming all the energy goes to produce X-rays, determine the frequency of the X-rays produced. (Plank's constant h = 6.62 x 10^{-34}Js and charge on an electron**,** **(3marks)**

e = 1.6 x 1019C).

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(c) The graph below shows stopping potential V against frequency for a photocell.



From the graph determine:

(i)The threshold wavelength**.** **(2mks)**

(ii)Plank's constant**.** **(2mks)**

(ii) Work function of the metal. **(2mks)**

(Take C = 3.0 x 10^{8}m/s, e = 1.6 x 10^{-19}C).

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BRILLIANT STUDENTS TOP EXAMINERS MOCK SERIES 2

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

232/3

PHYSICS PRACTICAL

Paper 3 **$2\frac{1}{2}$ hours**

Instructions to Candidates

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

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

*(c) Answer **all** questions on the question paper.*

(d) You are supposed to spend the first 15 minutes allowed for this paper reading the whole paper carefully before commencing your work and confirming your apparatus.

(e) Marks are given for a clear record of the observations actually made, their suitability, accuracy and for the use made of them.)

(f) Candidates are advised to record observations as soon as they are made

(g) Mathematical tables and Electronic calculators may be used

(h) Candidates should answer the questions in English

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Question	Maximum	Candidates Score
1	20	
2	20	
Total		

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Question 1

You are provided with the following:

- a voltmeter
- two new dry cells and a cell holder
- a switch
- a resistor labeled R (4Ω)
- a wire mounted on a mm scale and labeled G.
- a micrometer screw gauge (to be shared)
- six connecting wires with six crocodile clips

Proceed as follows

a.i) Record the length L_0 of the wire labeled G

L_0 = …… (1 mk)

ii) Use the micrometer screw gauge provided to measure the diameter of the wire labeled G at two different points and determine the average diameter, d.

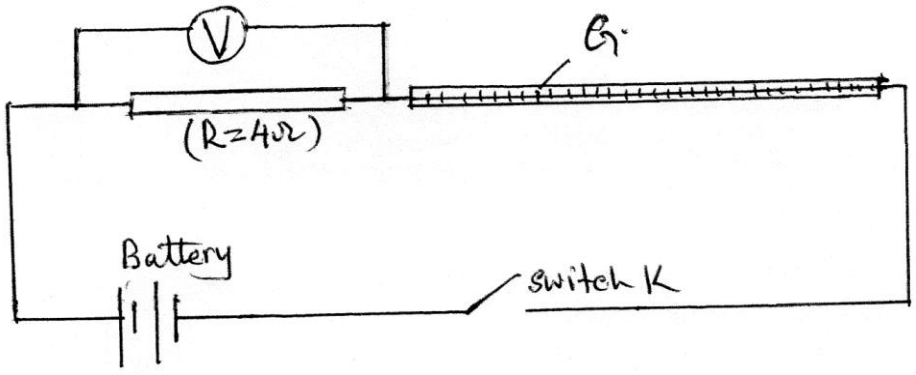
The diameter d_1 = ……mm, d_2 = ……mm (1mk)

Average diameter d = …….. mm **(1mk)**

iii) Determine the radius r of the wire in metres.

Radius r = ……. m **(1mk)**

b. Set up the apparatus as shown in the circuit diagram in the figure below.



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i. Use the voltmeter provided to measure the p.d V_R across R and the p.d, V_G across G when the switch is closed.

V_R = **……** Volts **(1/2 mk)**

V_G = **……** Volts **(1/2 mk)**

Open the switch

ii. Use the value of R provided and the value of V_R in b (i) above to determine the current I flowing through R when the switch was closed.

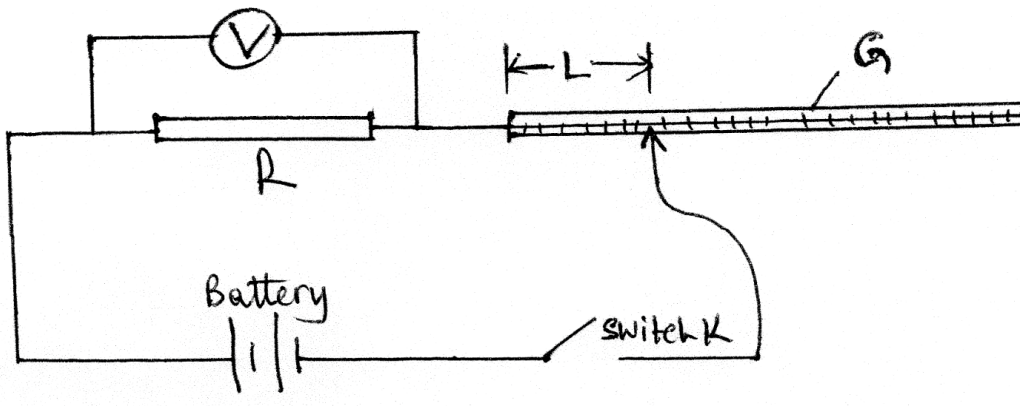
I = **……**Amperes **(1mk)**

iii. Determine the constant H given that

$$H = \frac{100V_G}{IxL_0}$$

H = **……** Ωm^{-1} (1mk)

c. Connect the voltmeter across R as shown in the figure below.



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Adjust the position of one crocodile clip on the wire G to a point such that the length

L of the wire in the circuit is 5cm (see the figure above). Close the switch.

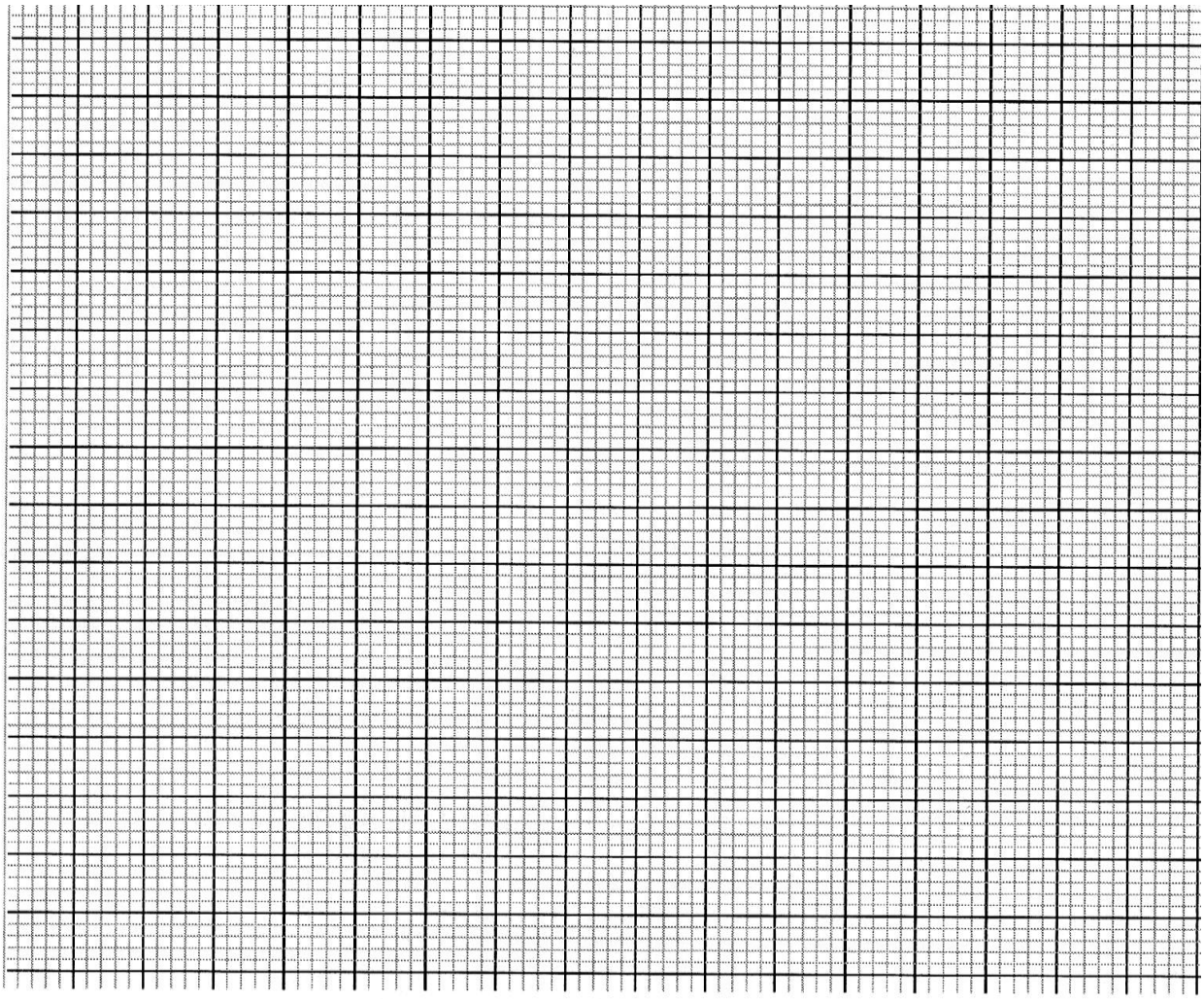
Read and record in the table 2 the value for the p.d across R. Open the switch.

d. Repeat the procedure in (c) above for the other values of L shown in table 2. **(3mks)**

Table 2

Distance L (cm)	0	5	10	20	30	40	60	70
p.d V across R (V)								

e i. On the grid provided plot the graph of V (y-axis) against L **(5mks)**



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(ii) From the graph determine L_1, the value of L when $V = V_0$ where $\frac{V_0}{2}$ is the p.d

when L = 0 **(1mk)**

f. Determine the constant D for the wire given that **(2mks)**

$$D = \frac{R}{L_1} \times \frac{300}{V_0}$$

g. Determine the constant p given that

$p = \frac{\pi r^2}{2}(D + H)$ where **r** is the radius of the wire in metres. **(2 mks)**

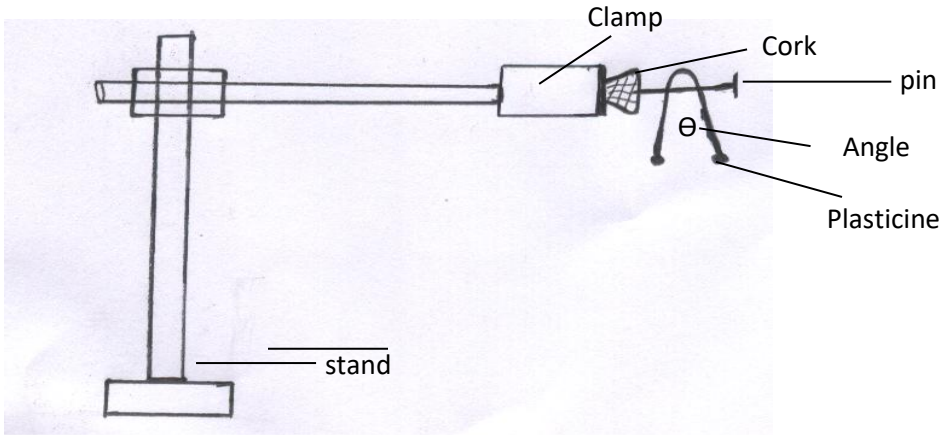
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QUESTION 2

You are provided with the following apparatus:

- clamp
- boss
- stand
- optical pin
- copper wire (15 cm long)
- protractor
- two pieces of plasticine of about 0.5cm diameter
- cork

(a) Set up the apparatus as shown in the diagram below



(b) Bend the wire in the middle so as to make an angle of 50^0. Attach the two small pieces of plasticine at both ends of the bent wire as shown in the diagram.

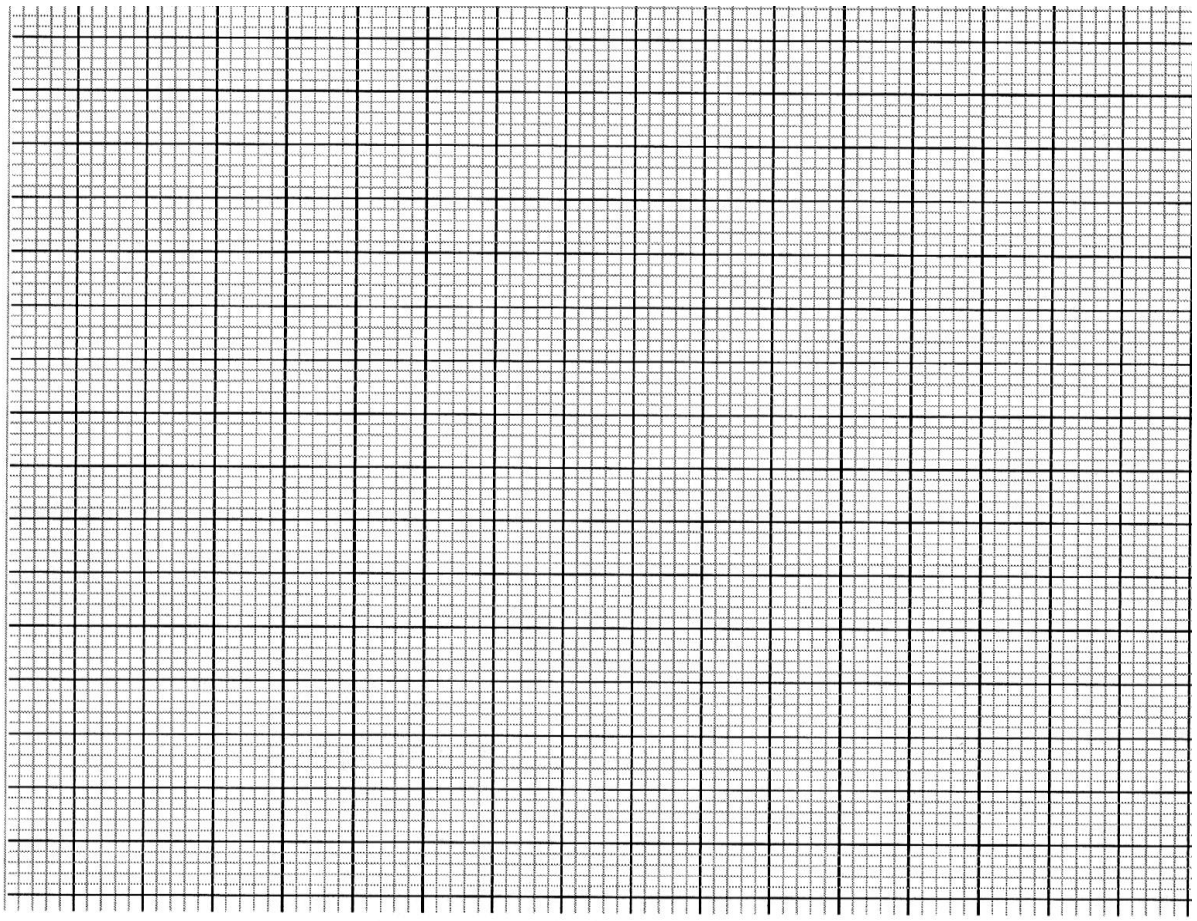
(c)Place the bent wire on the optical pin and give a small horizontal displacement. Take the time for 10 complete oscillations and record in the table below.

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(d) Repeat the procedure above for other values of θ and complete the table below. **(9mks)**

Angle θ^0	Time't'for10oscillations (s)	Period T (s)	Frequency f (Hz)	f^2 $(Hz)^2$	Cos $\left(\frac{\theta}{2}\right)$
50					
60					
70					
80					
90					
100					

(i) On the graph paper provided, pot a graph of f^2 (y-axis) against cos $\frac{\theta}{2}$ **(5mks)**



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Determine the gradient 'S' of the graph **(3 mks)**

(ii) The equation for the oscillation of the wire is given by the formula:

$$f^2 = \frac{150}{4\prod^2 L} Z \cos\left(\frac{\theta}{2}\right)$$

Given that L = 0.15m, use the gradient of the graph to determine the value of Z. **(3mks)**

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