BRILLIANT STUDENTS FORM 4 END TERM 1 SERIES 1 EXAMS *(ALL SUBJECTS TESTED)*

BRILLIANT STUDENTS FORM 4 END TERM 1 SERIES 1 EXAMS

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

FORM 4 AGRICULTURE PAPER 1

SECTION A (30 MARKS)

Answer all questions in this section

1. What is a production function? (½ mk)

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2. Name three types of production function. (1 ½ mk)

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3. Explain the following terms as used in Agricultural Economics.(2 mks)

a)Marginal Returns

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b) Gross Domestic Product (GDP);

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c) Opportunity cost;

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d) Per Capital Income;

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3. List four pieces of information found in a title deed; (2 mks)

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4. List four factors that lower the demand of a commodity. (2mks)

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5. List factors that determine the quality of compost manure. (2mks)

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6. Name any four types of financial books; (2 mks)

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7. Outline four methods of preparing seeds before planting; (2 mks)

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8. List five factors that determine the competitive ability of weeds; (2 ½ mks)

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10. Highlight four cultural measures of controlling maize streak disease. (2 mks)

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11. Name one crop that is propagated by each of the following; (2 mks)

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12. Mention four aspects of rainfall that influence agriculture. (2 mks)

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13. Give four ways in which land consolidation helps to promote sound farm management. (2 mks)

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14. In which two forms is Nitrogen absorbed by plants? (1 mk)

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15. Outline four pieces of information obtained in an invoice. (1mk)

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16. A farmer was advised to apply 300kg of CAN /ha to top dress the maize crop.CAN contains 21% N.Calculate the amount of Nitrogen applied per hectare. (2 mks)

17. Give four ways of improving labor productivity in the farm. (2 mks)

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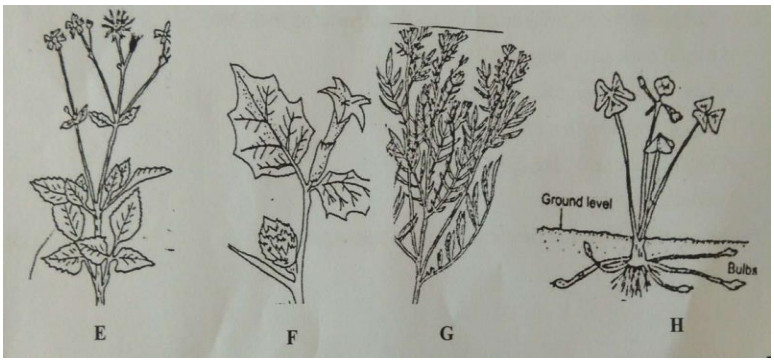
SECTION B (20 MARKS)

Answer all questions in this section in the spaces provided

18. The diagram below shows types of weeds. Study them and answer the questions that follow.



a) Identify the weeds E to H (4 mks)

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b) State one reason why it is difficult to control weed labeled H(1mk)

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c) Name any two known weeds with underground structures which are difficult to remove (2mks)

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d) state four harmful effects of weeds (2mks)

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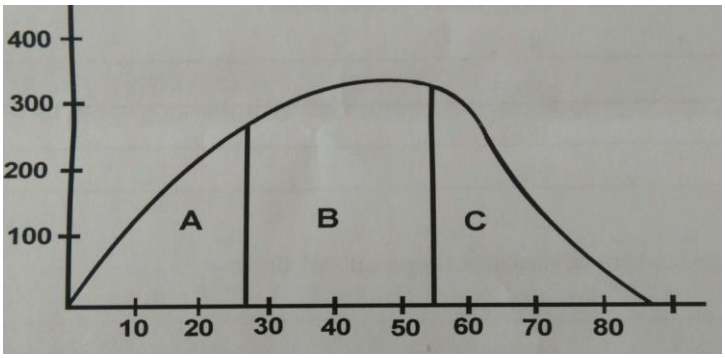
20. Maize requires 120kg/ha of phosphorus pentoxide (p_2O_5). How much of the compound fertilizer 20:20:10 would be applied to 0.4 hectare of land to achieve this rate. (2mks)

21. The diagram below shows a graphical representation of an economic law



a) Name the economic law depicted in the curve above (1mk)

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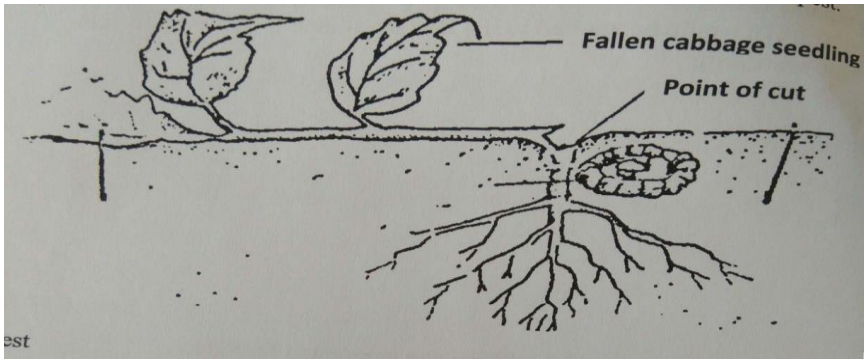
b) Explain what is happening in each of the zones A,B,C in relation to utilization of scarce resources (3mks)

22. The diagram below shows a cabbage seedling which has been attacked by a certain pest.



a) Identify the pest (1mk)

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b) State two methods of controlling the above pest (2mks)

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23 . Below is a diagram illustrates a training practice carried out on some crops. Study it carefully and use it to answer questions that follow.

a) Identify the field practice (1mk)

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b) State one condition that necessitate the practice (1mks)

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SECTION C (40marks)

Choose any two questions from this question

24. a) Outline five factors that determine the quality of hay (5mks)

b) Explain five objectives of land tenure reform in Kenya (5mks)

c) Describe ten factors that can influence soil erosion (10mks)

25. The following information was extracted from the farm records of Victory Farm as at 31/12/2017.

Sale of poultry……5000

Sale of milk…….6000

Telephone bill……..1000

Feed purchase…….. 2500

Purchase of calves …….3000

Purchase of lambs…….2800

Sale of goats ……5000

Closing Valuation …….150,000

Rent …….. 2000

Casual labour…… 2500

Sale of Cereal…… 12000

Opening Valuation……140,000

Depreciation of machinery……500

Interest on loan…….. 400

Sale of sukuma Wiki……500

Purchase of chicks…….800

a) Prepare profit and loss account for victory farm using the above information (10mks)
b) Distinguish between closing and opening valuation (2mks)
c) State five functions of a farm manager (5mks)
d) State four guiding questions that a farm manager may ask while preparing a partial budget (2mks)

26.a) Describe the advantages of using seeds as planting materials (5mks)

c) Describe the production of tomatoes under the following subheadings
i)Land preparation (4mks)
ii)Transplanting (6mks)

d) State five advantages of using herbicides (5mks)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

AGRICULTURE PAPER 2

SECTION A (30MKS)

Answer all questions in this section

1. Give four methods of administering vaccines in poultry (2mks)

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2. State four factors that influence that influencing the choice of poultry rearing system (2mks)

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3. Give four characteristics of a good calf pen (2mks)

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4. State two causes of egg eating in birds (2mks)

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5. State four factors influencing the amount of water consumed by an animal per day (2mks)

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6. Give four reasons for treating timber during construction of farm buildings (2mks)

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7. Give two reasons for flushing in sheep (1mk)

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8. Give two factors that a farmer should consider while grading eggs for marketing (1mk)

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9. Give two reasons for culling a breeding boar (1mk)

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10. List four methods of preserving fish (2mks)

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11. Give four reasons of breeding in cattle (2mks)

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12. State four signs of liver fluke infestation in cattle (2mks)

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13. Name any four products of milk (2mks)

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14. State three characteristics of clean and high quality milk (11/2 mks)

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15. Give three factors that may make birds lay eggs on the floor in a deep litter (1 1/2MKS)

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16. Give three factors that affect the quality of honey (1 1/2mks)

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17. State any four signs of furrowing observed in sows (2mks)

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18. Outline three ways of controlling ticks in livestock production (1 ½ mks)

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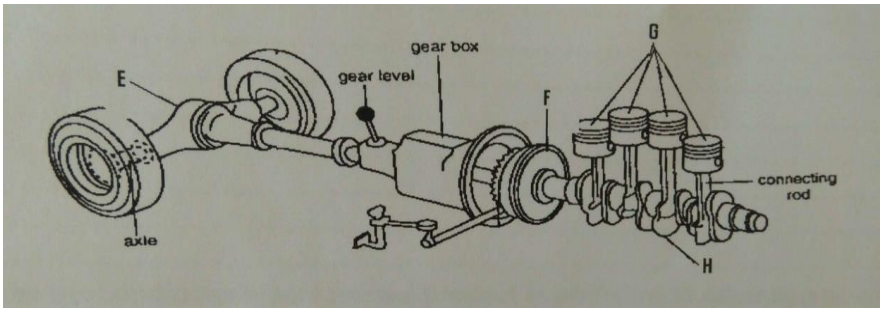
SECTION B (20 Marks)

Answer all questions in this section

19. Below is a diagram power transmission system of a tractor engine. Study it carefully and answer the questions that follow.



a) Name the Parts labeled E, F, G and H (2mks)

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b) State the functions of E and H (2mks)

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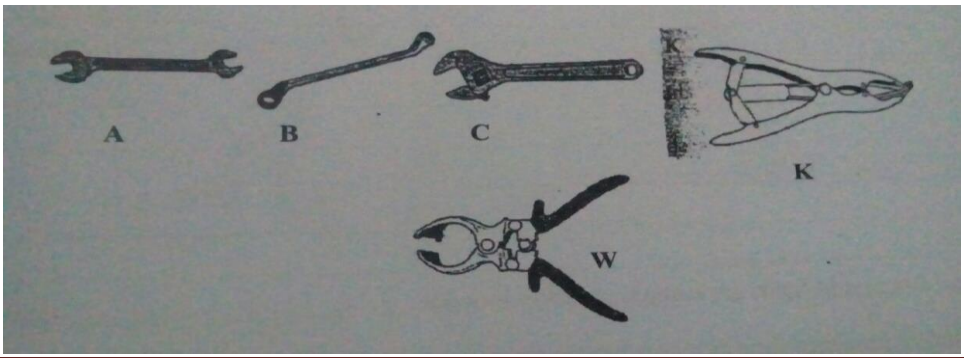
20. The diagrams below show some farm tools, study them and answer the questions that follow.



a) Name the tools (2MKS)

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b) State the functional differences between tools K and W (1mk)

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c) What advantage does C have over A and B (1mk)

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d) State one common maintenance practice carried out on tool C and W (1mk)

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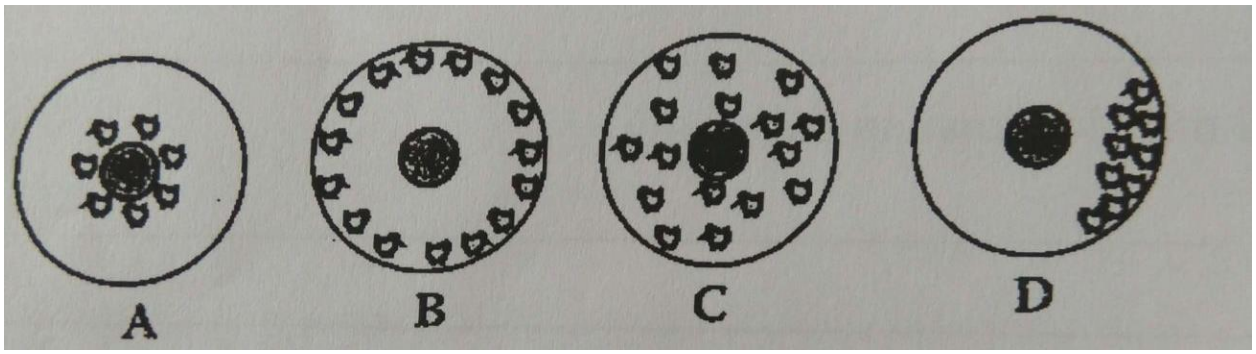
21. The illustrations below show the behavior of chicks at different temperatures in the brooder.



a) Explain the temperature conditions in each of the four diagrams A,B,C,D.(4mks)

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b) State any four requirements of a good brooder (2mks)

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c) Give reasons why dim or dull lights are recommended in brooder (1mk)

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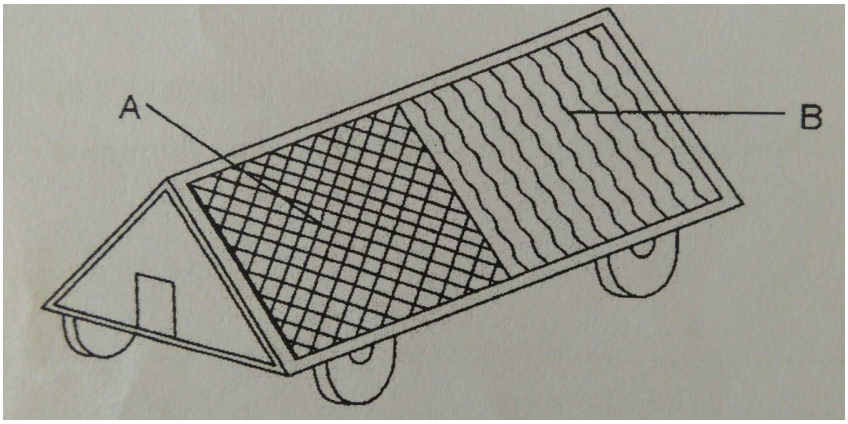
22. Below is a diagram representing a farm structure used in poultry production.



a) i)Identify the system represented by the above structure (1mk)

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ii) List down four demerits of the above system (2mks)

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iii) State the importance of the part labeled A and B (1MK)

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SECTION C (40MKS)

Answer any two questions from section

23. a) Describe the procedure in artificial or bucket feeding in rearing of calves (5mks)

b) Describe the components of a mould board plough (5mks)

c) Describe the essentials of clean milk production(5mks)

d) Explain the procedure in establishment of foundation in farm buildings (5mks)

24. a) State five reasons why bees swarm (5mks)

b) Describe five maintenance practices carried out on a tractor battery (5mks)

c) State signs shown by a cow on heat (5mks)

d) Explain five methods of tick control (5mks)

25. a) State five qualities of eggs for incubation (5mks)

b) Describe the management carried out in artificial egg incubator (5mks)

c) Describe the preparations you would make in brooder before the arrival of day old chicks and their care for the first two days (10 mks)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

231/1

BIOLOGY FORM FOUR

TERM ONE

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

- *Answer **ALL** the questions*
- *Answers should be written in the spaces provided*

1. Name the disease in humans that is caused by lack of vitamin C. (1mk)

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2. State **three** characteristics that cause cross- pollination to take place in flowering plants. (3mks)

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3. Name **two** structures used for gaseous exchange in plants. (2mks)

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4. When are two organisms considered to belong to the same species? (2mks)

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5. State the functions of the following cell organelles (2mks)

(a) Golgi apparatus

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(b) Ribosomes

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6. State **three** ways in which xylem vessels are adapted to their functions. (3mks

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7. A person who found to pass out large volumes of dilute urine frequently.
   a) Name the disease the person was suffering from (1mk)

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   b) Name the hormone that was deficient. (1mk)

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8. State any **three** pieces of evidence that support the theory of evolution. (3mks)

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9. Why are people with blood group O universal donors. (2mks)

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10. Which organelle would be abundant in
   (a) Skeletal muscle cell. ..... (1mk)

   (b) Palisade cell .....(1mk)

11. In an experiment, it was found that when maggots are exposed to light, they move to dark areas.

Name

a) The type of response exhibited by maggots**.....**(1mks)

b) The advantages of the response to the maggots**.....**(1mk)

12. State **two** ways by which the human immune deficiency (H.I.V) is transmitted other than through sexual intercourse. (2mks

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13. Suggest **three** reasons why green plants are included in a fish aquarium. (3mks)

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14. State **three** ways in which some fungi are beneficial to human. (3mks)

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15. Why is oxygen important in the process of active transport in cells. (2mks)

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16. State **two** disadvantages of metamorphosis to the life of insects. (2mks

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17. A person whose blood group is AB requires a blood transfusion. Name the blood groups of the donors. (1mk)

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18. State **two** functions of muscles found in the alimentary canal of mammals. (2mks)

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19. Name **three** types of chrosomal mutations. (3mks)

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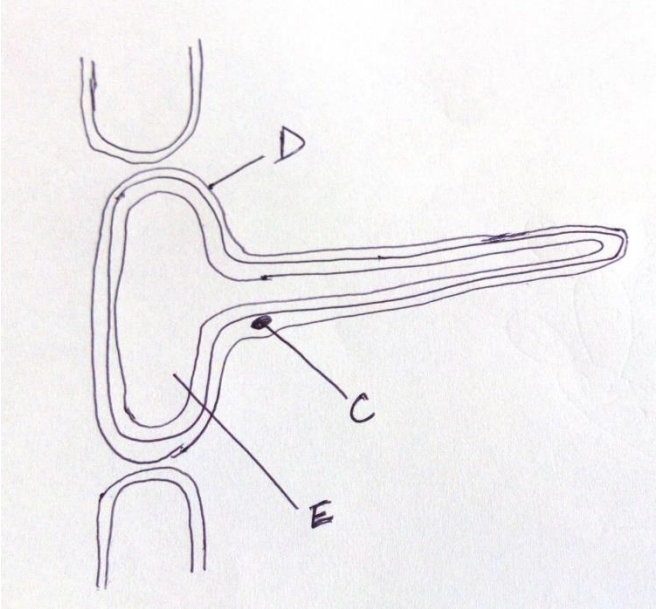
20. The diagram below shows a specialized plant cell.



a) Name the cell **.....** (1mk)

b) Name the parts labeled D and E. (2mks)

D **.....**

E **.....**

c) State the function of the part labeled C. (1mk)

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21. Distinguish between haemolysis and plasmolysis. (2mks)

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22. Explain why it is not advisable to be in poorly ventilated room with a burning charcoal stove. (3mks)

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23. What is the role of bile salts in digestion in human's. (2mks)

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24. (a) The following is the dental formula of a certain mammal.

$i\frac{0}{3}\ c\frac{0}{1}\ pm\frac{3}{3}\ m\frac{3}{3}$

(i) State the likely mode of feeding for the mammal.**.....**.(1mk)

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

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(c) State the changes that occur in arterioles in the human skin during thermoregulation (2mks)

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(d) Name the site of anaerobic respiration in a cell **.....** (1mk)

25. (a) What is meant by convergent evolution? (1mk)

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(c) State **two** limitations of fossils as an evidence of evolution. (2mks)

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(d) Apart from the lungs, name two gaseous exchange surfaces in a frog. (2mks)

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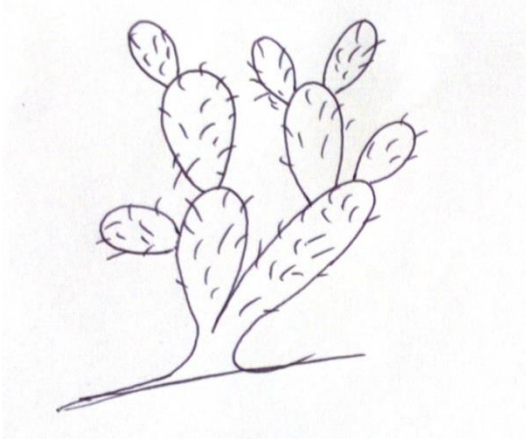
26. (a) The diagram below represents a certain plant.



(i) What is the likely habitat for the plant. (1mk)

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(ii) Give **two** reasons for your answer in (a) above (2mks)

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(b) What would be the expected results from a test cross. (2mks)

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27. (a) State one economic importance of each of the following plant excretory products. (3mks)

(i) Tannin

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(ii) Quinine.

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(iii) Caffeine

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(b) Name three salivary glands in humans. (3mks)

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(c) Name **two** dental diseases (2mks)

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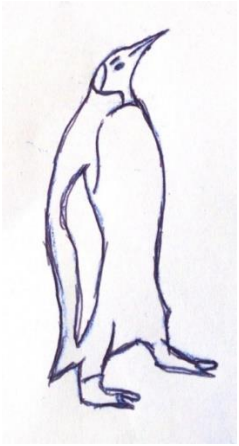
28. The diagram below represents a certain organism



State the phylum and class to which it belongs (2mks)

Phylum .....

Class .....

29. What is meant by the flowing terms. (2mks)

(a) Ecology

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(b) Carrying capacity

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

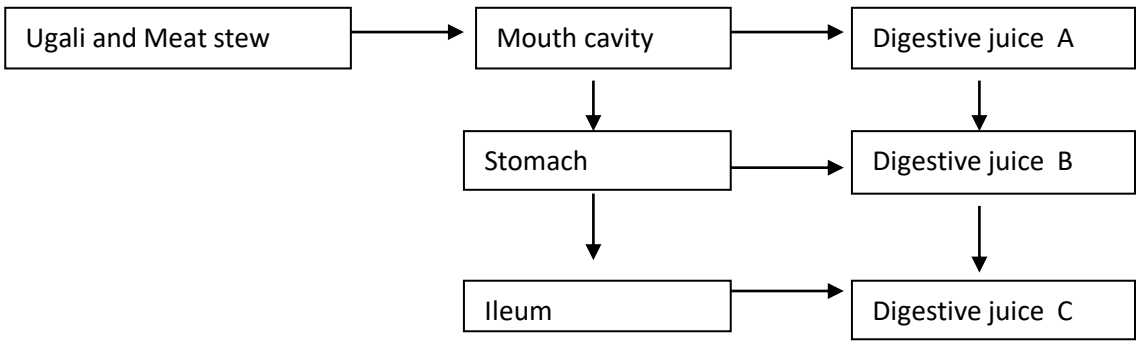
Kenya Certificate of Secondary Education (K.C.S.E.)

231/2
BIOLOGY FORM FOUR
END OF TERM ONE
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

- *Answer **ALL** the questions*
- *Answers should be written in the spaces provided*

1. The flow diagram below represents passage of a meal through the human digestive system. Study the diagram and answer the questions that follow.



(a) Name the physical process that will occur in mouth cavity (1mk)

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(b) Name the digestive juices **B** and **C** (2mks)

B. ……

C …….

(c) Explain **two** ways in which the digestive system is protected from corrosive effects of digestive juices. (2mks)

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(d) Name the hormone that stimulate secretion of juice **B**. (1mk)

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(e) Identify **two** contents of digestive juice **A** (2mks)

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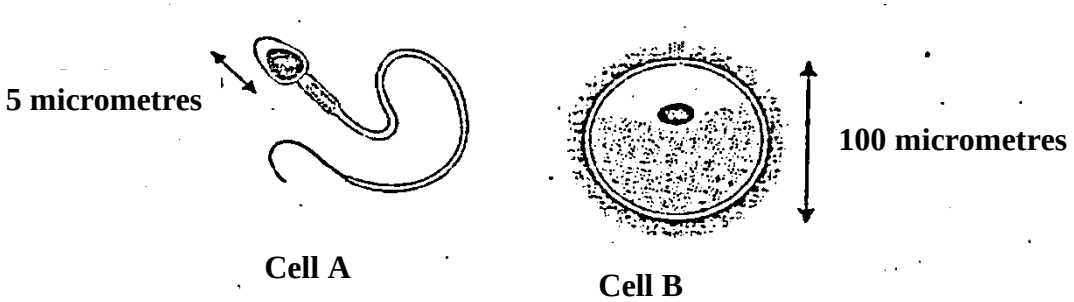
2. a)The following diagrams represent human sex cells.



Cell A **Cell B**

i) Name the cell B (1mk)

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ii) Give **one** feature of cell A which makes it different from cell B. (1mk)

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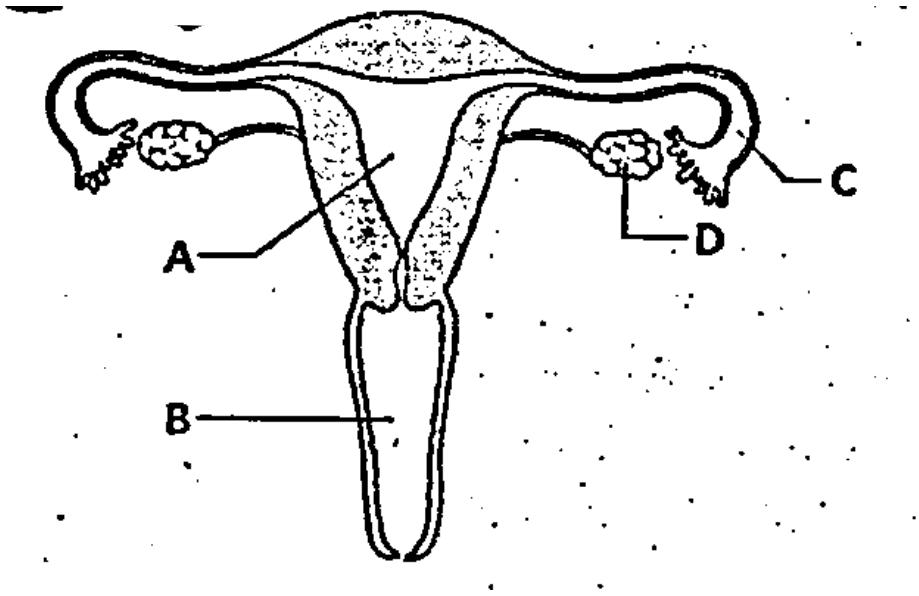
b) The diagram below represents the female reproductive system



i) Name the part marked **A** ..... (1mk)

ii) State the role of the part marked **D.** ..... (1mk)

c) State **two** functions of amniotic fluid. (2mks)

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d) i) Name the organism that causes syphilis.....(1mk)

ii) State **one** symptom of primary syphilis (1mk)

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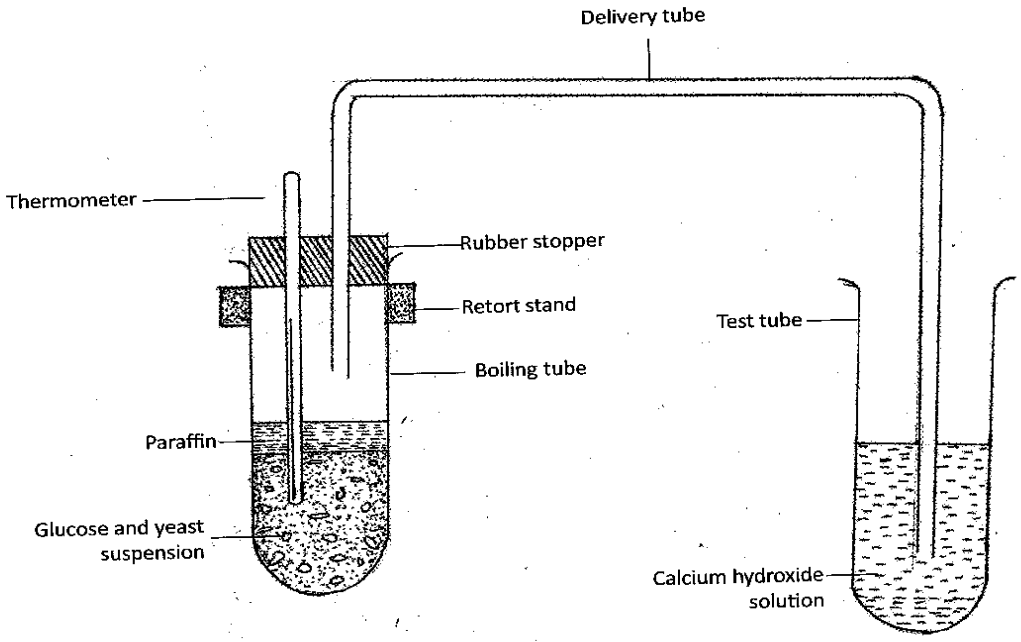
3. The set up below illustrates an experiment to demonstrate a certain biological process, before the addition of the yeast suspension the glucose solution was first boiled and then cooled at 40°C.



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

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b) What observations would you make in the tubes a few minutes after the experiment begun (2mks)

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c) Explain the observations made in (b) above (2mks)

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d) Why was glucose solution boiled before cooling at 40^{o}C (1mk)

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e) How can you set up a control experiment for the above (1mk)

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4. a) What is meant by the term linked genes? (1mk)

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b). Haemophilia is a genetic condition transmitted through a recessive gene linked to **X** chromosome. The normal gene may be represented by $\mathbf{X^H}$**.**

i) What is the genotype of a haemophilic female**?.....(**1mk)

ii) A woman who is a carrier for the haemophilia gene marries a normal man. Work out the phenotypic ratio for their offspring. (4mks)

iii) Haemophilia is more common in males than in females. Explain this phenomenon. (2mks)

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5. a) What is meant by the following terms. Give an example in each case.

i. Homologous structures (1mk)

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Example**.....**

ii. Analogous structures (1mk)

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Example**.....**

iii. Vestigial structures (1mk)

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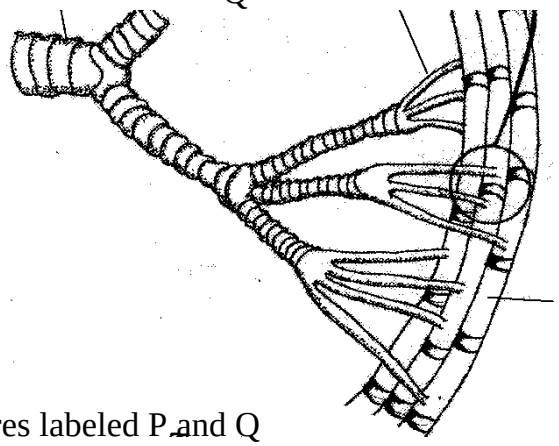
Example**.....**

b) The diagram below represents part of a gaseous system in a grasshopper.

P Q



a) Name the structures labeled P and Q

P…….....……..**(**1mk)

Q …….....….**(**1mk)

b) State the function of the structure labeled P (1mk)

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c) Describe the path taken by carbon (IV) oxide from the tissues of the insect the atmosphere (3mks)

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d) How is the structure labeled Q adapted to its functions (2mks)

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SECTION B

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

6. During germination and growth of a cereal, the dry weight of endosperm, the embryo and the total dry weight were determined at two day intervals. The results are shown in the table below:

Time after planting (days)	**Dry weight of endosp (mg)**	**Dry weight of emb (mg)**	**Total dry weigh (mg)**
0	43	2	45
2	40	2	42
4	33	7	40
6	20	17	37
8	10	25	35
10	6	33	39

a) Using the same axes, draw graphs of dry weight of endosperm, embryo and the total dry weight against time. (7mks)

(PROVIDE A GRAPH PPER)

b) What was the total dry weight on day 5 (1mk)

c) Account for

i. Decrease in dry weight of endosperm from 0 to 10 (2mks)

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ii. Increase in dry weight of embryo from day 0 to day 10 (2mks)

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iii. Decrease in total dry weight from day 0 to day 8 (1mk)

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iv. Increase in total dry weight after day 8 (1mk)

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d) State **two** factors within the seed and two outside the seed that cause dormancy

i. Within the seed. (2mks)

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ii. Outside the seed (2mks)

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e) Give **two** characteristics of meristematic cells (2mks)

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7. (a) Define:

(i) Transpiration

(2mks)

(ii) Translocation

(2mks)

b) Identify and explain **five** structural factors that affects the rate of transpiration in plants. (16mks)

8. Discuss evidences that support organic evolution. (20mks)

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NAME: ……..……

SCHOOL: ……

INDEX NO: …… SIGN: …… DATE: ……

BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

231/3

BIOLOGY FORM FOUR

END OF TERM ONE

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

- *Answer **ALL** the questions*
- *Answers should be written in the spaces provided*

1. You are provided with the following:

    - 25ml Bromothymol blue.
    - Solution X.
    - A drinking straw.
    - 2 test tubes.
    - 10ml measuring cylinder.
    - A boiling tube.
    - Dilute hydrochloric acid.
    - Dilute sodium hydroxide.

(a) Place 2ml of Bromothymol Blue (B.T.B) in a clean test tube. Add dilute hydrochloric acid drop by drop and shake after each drop till there is a permanent colour change.

i) State the resulting colour. (1mk)

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(ii) To the mixture obtained above, now add sodium hydroxide solution drop by drop until there is a colour change. Record your observation. (1mk)

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(iii) From your observations in (a)(i) and (a)(ii) above what is the nature of Bromothymol blue. (1mk)

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(b) Place 10ml of fresh Bromothymol blue in a boiling tube. Using the drinking straw, bubble air through the bromothymol blue until there occur colour change.

(i) Record your observation. (1mk)

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(ii) What does the colour obtained in (b)(i) above suggest about the nature of the gas breathed out? (1mk)

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(c) Rinse the measuring cylinder and use it to place 2ml of solution X in a clean test tube. Rinse the drinking straw used in (b) above and use it to bubble air through solution X.

(i) Record your observation. (1 mark)

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(ii) Suggest the identity of solution X. (1 mark)

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(iii) Suggest the identity of the gas that gave rise to the observation above. (1 mark)

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(d) (i) Name the physiological process in cells that leads to formation of the gas named in c(iii) above. (1 mark)

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(ii) Write down a word equation for the process named in d(i) above. (2 marks)

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(iii) What is the importance of the identified process in cells of living organisms? (1 mark)

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2. Study the photographs and answer the following questions.

PLATE 5

PLATE 6

PLATE 7

(I) The photograph in Plate **5** shows the germination process in a species of legume.

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

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(ii) Give a reason for your answer. (1 mark)

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(b) Other than germination the seedling have shown some responses.

(i) Name **two** responses shown in the photograph. (2 marks)

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(ii) State **one** survival value of each of the response named above. (1 mark)

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(II) Examine the photograph in Plate **6** and Plate **7** which show different essential parts of a flower of a species on two different plants.

(a) Name the flower parts shown in Plate **6** and Plate **7**. (2 marks)

Plate **6**.....

Plate **7** .....

(b) (i) Name the phenomenon described in the statement above. (1 mark)

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(ii) Explain the significance of the phenomena stated in (a)(i) above. (1 mark)

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(c) (i) State the mode of pollination of the flower shown in the photograph. (1 mark)

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(ii) Give a reason for your answer. (1 mark)

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(d) (i) State the type of pollination of the flower shown in the photograph. (1 mark)

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(ii) Give **two** reasons for your answer. (2 marks)

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3. The photographs in Plate **J**, **K** and **L** shows the anterior part of two different animals, Plate **L** shows the longitudinal dissection of Plate **K**. Examine the photographs and answer the questions below.

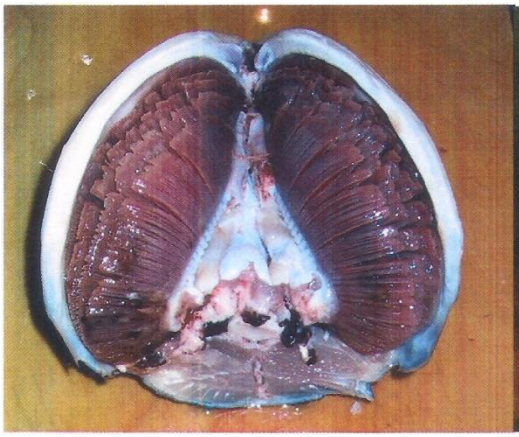

PLATE J

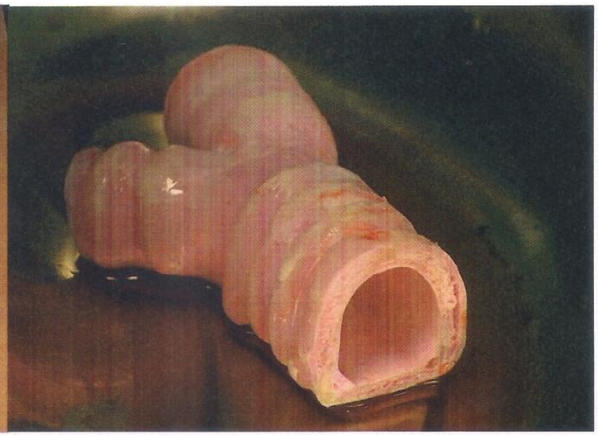

PLATE K

PLATE L

(a) (i) State the class to which the animal organ in Plate **J** belongs. (1 mark)

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(ii) State the habitat of the animal. (1 mark)

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(iii) Give a reason for your answer in (ii) above. (1 mark)

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(b) (i) Name the organ shown in the photograph in Plate **J**. (1 mark)

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(ii) State the function of the organ named above (i). (1 mark)

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(iii) Name the structure that protects the organ named in (b(i) above from mechanical damage. (1 mark)

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(iv) From observable features only explain three adaptation of the organ to its function. (3 marks)

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(c) (i) Identify the structure in the photograph Plate **K** and **L**. (1 mark)

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(ii) Give a reason for your answer. (1 mark)

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(iii) Using observable features only state three adaptations of the structure to its functions. (3 marks)

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NAME: ……..……

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

565/1- Business Studies- Paper- 1

Time -2 Hours

INSTRUCTIONS TO CANDIDATES

- **a)** Write your name and Index number in the spaces provided above.
- **b)** Write the date of examination in the spaces provided above.
- **c)** Answer **ALL** the questions.
- **d)** **ALL** answers must be written in the spaces provided in this booklet.
- **e)** Do not remove any pages from this booklet.
- **f)** This paper consists of **8** printed pages.
- **g)** Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

FOR EXAMINER'S USE ONLY

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

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

TOTAL SCORE	

1. Outline **four** elements that comprise the internal environment of a business. (4 marks)

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2. Highlight **four** ways in which the nature of goods influences the choice of the method of transport (4 marks)

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3. Outline **four** factors that may positively influence the level of national income in Kenya.(4 marks)

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4. Identify **four** characteristics of a country that maybe undergoing a persistent rise in general price levels.(4marks)

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5. Identify **four** ways that an office can be used in an organization (4marks)

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6. The following balances were extracted from the books of Penuel Traders for the month ended 31 December 2011.

	Shs
Sales	**210,000**
Purchases	**120,000**
Capital	**220,000**
Motor van	**150,000**
Expenses	**80,000**
Equipment	**60,000**
Debtors	**40,000**
Creditors	**20,000**

Prepare trial balance of Penuel Traders for the month ended 31 December 2011. [4marks]

7. Highlight **four** benefits that could accrue to a customer who buys goods from Nakumatt Stores (4 marks)

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8. State **four** reasons why one would prefer an email to a telephone conversation to send a message. **(4marks)**

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9. Highlight four roles of entrepreneurship to an economy. (4marks)

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10. Outline **four** strategies that a small- scale firm would adopt to expand so as to benefit from economies of scale. (4marks)

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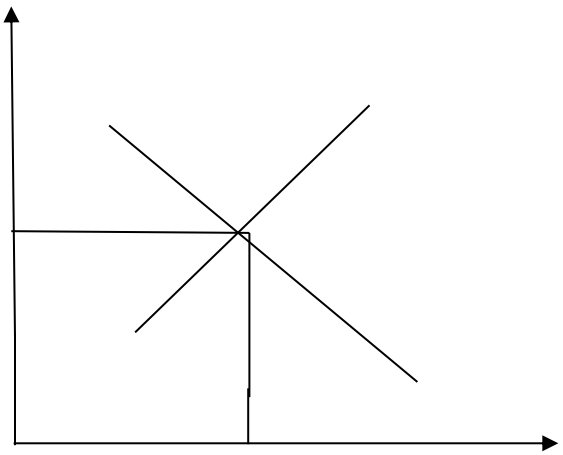
11. The following are descriptions of accounts available to customers in the Kenyan banking industry. Give the account that corresponds to each of the descriptions given below.
[3marks]

	Description	**Type of account**
(a)	Account holders require depositing a specific initial amount as well as maintaining a minimum balance.	
(b)	Account holder may deposit and withdraw money whenever they want without maintaining a minimum balance.	
(c)	Banks pay interest on deposit at comparatively higher rates.	

12. On the diagram below show the effect of a decrease in the cost of production (4marks)



13. The following information relates to Wanjau enterprises as at 31st December 2011. (4marks)

	SHS
Closing capital	**700,000**
Net loss	**90,000**
Additional investment	**90,000**
Drawings	**30,000**

Calculate Wanjau's initial capital.

14. Outline **four** circumstances under which rail transport may be preferable to road transport. (4marks) ……

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15. For each of the following transactions in the table below, indicate in the spaces provided, the source document from which the transaction would be recorded [4marks]

No.	Transaction	Source document
	Sales of goods on credit	
	Correction of undercharges	
	Goods returned	
	Credit purchases.	

16. Give **four** factors affecting birth rate in a country (4marks)

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17. List **four** principles that do not relate to life insurance.

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18. Highlight **four** assumptions of monopolistic competition. (4marks)

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19. Outline **four** benefits that may accrue to a multi-national business that uses video-conferencing meetings over the traditional ways of holding meetings among managers (4 marks)

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20. Highlight **four** statutes that the government has enacted in order to protect consumers. (4 marks)

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21. Outline **four** advantages of setting up a franchise. (4marks)

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22 Pox's books of accounts had the following balances on 31st July 2010.

	Shs
Cash in hand	20,000
Debtors'	40,000
Bank overdraft	140,000

The following transactions took place in the months of September:

September 2: Cash sales of Shs. 300, 000 of which Shs. 200, 000 was paid by cheque.

6: Received a cheque of Shs. 180,000 from Omollo after allowing him a 10% Cash discount

14: Juma a debtor, settled his account of Shs. 60, 00 by cheque less 5% cash discount.

26: Paid insurance cost of Shs. 20, 000 by cheque.

29: Took all cash to the bank leaving a balance of Shs. 20,000.

Required:

Extract a **three** column cashbook and balance it off. (5marks)

23.The following balances were extracted from the books Ongwete retailers for the year ended 31 March 2011.

	Shs	
Sales		1,000,000
Purchases	640,000	
Opening stock (1.1.2011)	160,000	
Closing stock (31.12.2011)		80,000
Debtors	280,000	
Creditors	180,000	

Calculate

(a) Margin

(b) Current ratio

(c) Rate of stock turnover [4marks]

24.Highlight the **four** major stages of a commercial transaction. (4marks)

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25. Outline **four** advantages of drilling oil in Kenya. (4marks)

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NAME: ……..……

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

565/2- Business Studies- Paper- 2
Time -2 Hours

INSTRUCTIONS TO CANDIDATES

- **h)** Write your name and Index number in the spaces provided above.
- **i)** Write the date of examination in the spaces provided above.
- **j)** This paper consist of 6 questions
- **k)** Answer **ANY FIVE** questions.
- **l)** **ALL** answers must be written in the spaces provided in this booklet.
- **m)** Do not remove any pages from this booklet.
- **n)** This paper consists of **8** printed pages.
- **o)** **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**

For examiner's use only

Questions	Maximum score	Candidates' score
	20	
	20	
	20	
	20	
	20	

1 a) Explain **fiv**e cannons of effective government expenditure. (10marks)

b) Uzima juice enterprises are considering marketing their imported goods direct to consumers. Outline five reasons that may be influencing them to make this decision. (10marks)

2 a) Explain four features of direct production. (8marks)

b) Record the following transactions in the books of original entry of Tumaini traders as at 15th June 2010 and post to the relevant ledger accounts and balance them off.

- *Bought an office printer for shs. 200,000 from Seals Stationary shop on credit.*
- *Sales returns by Ouma traders worth 5,000 Credit note number cr.56 issued.*
- *Sold goods on credit sh. 500,00 to Sargar Traders invoice no. 78*
- *Sold goods shs. 900,000 cash to Mugo receipt no. 210 was issued*
- *Paid salaries sh. 50,000 by cheque no. 589*

(12marks

3 a) Explain the procedure that is used in personal selling. (10marks)

b) With the aid of suitable diagrams explain the difference between a movement and a shift in the demand curve.
(10marks)

4 a) Explain five limitations of a trial balance as a tool of locating bookkeeping errors (10marks)

b) Explain five factors that could hasten economic development in Kenya (10marks)

5 a) Explain five differences between a public warehouse and a private warehouse (10marks)

b) The trial balance given below relates to Crown Enterprises

CROWN ENTERPRISES
TRIAL BALANCE
ON 31ST DECEMBER 2011

	Dr	Cr
Capital		**900,000**
Buildings	**450,000**	
Debtors	**536,000**	
Creditors		**600,000**
Bank	**200,000**	
Cash	**80,000**	
Purchases	**1,000,000**	
Sales		**1,500,000**
Stock (1/1/2011)	**550,000**	
Returns inwards	**20,000**	
Carriage inwards	**8,500**	
Discount allowed	**50,500**	
Salaries and Wages	**285,000**	
Commission income		**150,000**
Returns outwards		**30,000**
	3,180,000	**3,180,000**

Stock on 31st December 2011 was valued at Sh. 350,000

Required: Crown Enterprises Trading Profit and Loss account (10 marks)

6. (a) Explain **SIX** measures that the Government of Kenya may take to control her persistent Balance of payment deficit. (12 marks)

(b) Outline **FOUR** differences between endowment policy and whole life policy. (8 marks)

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NAME: ……..……

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

CHEMISTRY PAPER 1
FORM FOUR
TIME:

Answer All questions in the spaces provided.

1. (a) Hydrogen gas is one of the lightest gases known. Explain why it is not preferred in weather balloons. (1mk)

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(b) Give any two large scale uses of hydrogen gas. (2mks)

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2. A compound with a general formula $X(OH)_3$ reacts as shown by the equations below.

$X(OH)_{3(s)} + OH^-_{(aq)} \rightarrow [X(OH)_4]\text{-}(aq)$

$X(OH)_{3(s)} + 3H^+_{(aq)} \rightarrow X^{3+}_{(aq)} + 3H_2O_{(l)}$

a) What name is given to compounds which react like X $(OH)_3$? (1mk)

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b) State any two elements whose hydroxides behave like that of X. (1mk)

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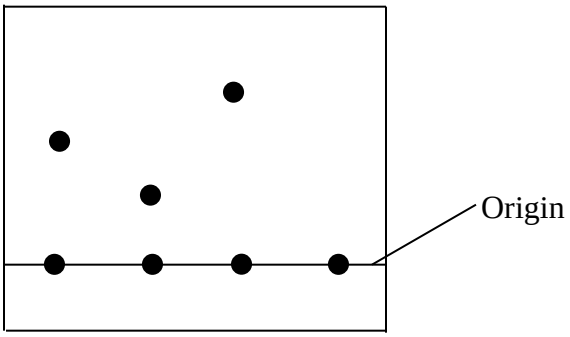
3. The diagram below represents a paper chromatogram of pure substances R, P and Q. A mixture S contains R and Q only. Indicate on the diagram the chromatogram of S.
(2mks)



4. (a) State Graham's Law of diffusion. (1mk)

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(b) 100cm^3 of Carbon (IV) oxide diffuses through a porous plate in 30 seconds. How long will it take 150cm^3 of nitrogen (IV) oxide to diffuse across the same plate under similar conditions? (C=12, N=14, O=16) (3mks)

5. Starting with solid Zinc oxide, describe how a pure sample of zinc carbonate can be prepared. (3mks)

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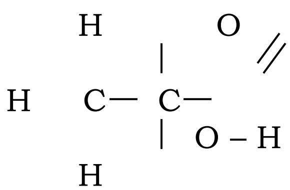
6. (a) The structure of ethanoic acid is;



State the number of electrons used in bonding in a molecule of ethanoic acid. (1mk)

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(b) Give the name of the following organic compounds. (2mks)

i) $CH_3 - CH - CH - CH_2 - CH_3$
with CH_3 branches on the second and third carbons:

$$\begin{array}{l} CH_3 - \underset{\displaystyle CH_3}{\underset{|}{CH}} - \underset{\displaystyle CH_3}{\underset{|}{CH}} - CH_2 - CH_3 \end{array}$$

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ii) $CH_3C(CH_3)(Br)\ CH_2CH_3$

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7. A current of 0.5A was passed for 64.33 minutes to deposit 1.2g of metal Q. Calcualte the number of Faradays required to deposit one mole of Q. (RAM of Q=120, 1F=96,500C) (3mks)

8. (a) Name the type of artificial radioactivity represented by each of the following nuclear equations.
(2mks)

i) $^{235}_{95}U + ^{1}_{0}n \rightarrow ^{141}_{56}Ba + ^{92}_{36}K + 3^{1}_{0}n + Energy$

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ii) $^{3}_{1}H + ^{2}_{1}H \rightarrow ^{4}_{2}He + ^{1}_{0}n + Energy$

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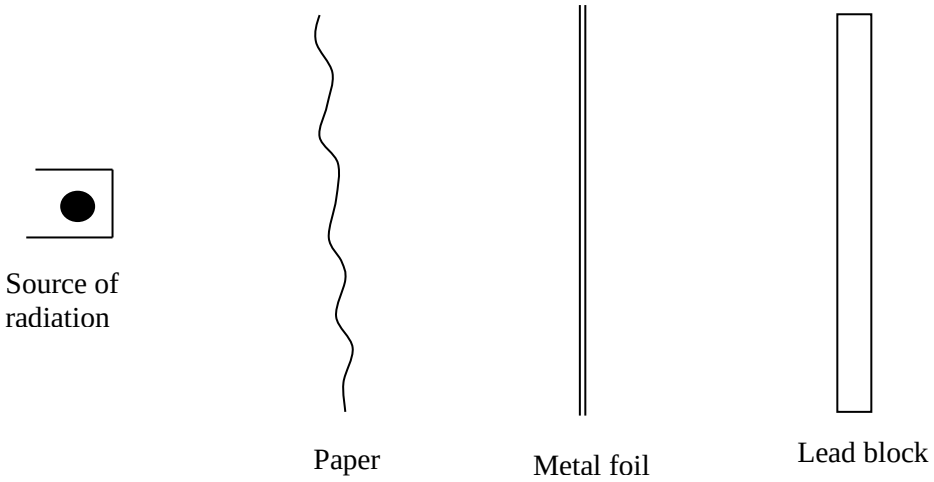
(b) Complete the diagram below to show how alpha particles and gamma rays can be distinguished. (2mks)



9. (a)A white solid M was heated. It produced a brown gas A and a colourless gas B. The residue left was yellow after cooling.

i) Name gases A and B. 2mks)

A –.....

B –.....

ii) Write a balanced chemical equation for the decomposition of solid M.(1mk)

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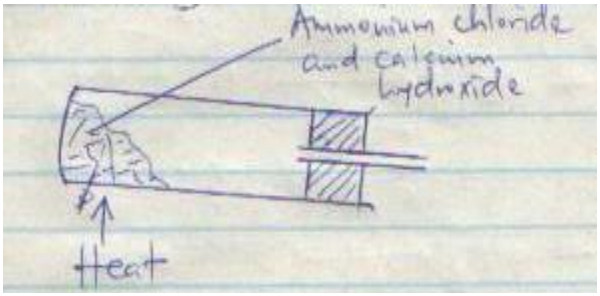
10. Below is a set-up for laboratory preparation of ammonia gas.



a) Complete the set-up to show how a sample of dry ammonia gas can be collected. (2mks)

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

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11. Elements X and Y have atomic numbers of 12 and 16 respectively. Using dots (.) and crosses (x), show how bonding takes place. (2mks)

12. Aqueous ammonia solution is passed through a colourless solution Y. A white precipitate which dissolves in excess ammonia to form a colourless P solution is formed.

a) Identify the cation present. (1mk)

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b) Write down the formula of;

i) White precipitate. (1mk)

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ii) Complex ion in solution P.)1mk)

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13. The table below shows pH values of solutions A, B, C and D. The solutions tested were sodium chloride, soap solution, potassium hydroxide and aluminium chloride. Complete the table by identifying the solution tested. (2mks)

Solution	pH	Name of solution
A	8.5	
B	3.0	
C	7.0	
D	13.0	

14. When 0.6g of element M was completely burned in oxygen, all the heat evolved was used to heat 500cm^3 of water, the temperature of the water rose from 23.0^{o}C to 32^{o}C. Calculate the relative atomic mass of element M given that the specific heat capacity of water is 4.2Jg^{-1}K^{-1}, density of water is 1.0gcm^{-3} and molar heat of combustion of M is 380KJ/mol. (3mks)

15. (a) What is an electrolyte? (1mk)

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(b) State how the following substances conduct electricity.

i) Molten sodium chloride. (1mk)

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ii) Copper metal. (1mk)

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16. Hydrogen and bromine react according to the equation.

$H_{2(g)} + Br_{2(g)} \rightarrow 2HBr_{(g)}$

Use the bond energies given below to calculate the heat of formation of hydrogen bromide. (3mks)

Bond	**Energy (KJ/mol)**
H – H	436
Br – Br	192
H – Br	368

17. Solid A forms a mixture with liquid B. State two properties of substance A that would make decantation the method of choice for separating the mixture. (2mks)

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18. Sulphur (IV) oxide gas was bubbled through a solution of water and litmus solution.

i) State what was observed. (1mk)

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ii) Write an equation for the reaction. (1mk)

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19. (a) What causes water hardness? (1mk)

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(b) State two methods that can be used to remove permanent hardness in water. (2mks)

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(c) State one advantage of drinking hard water. (1mk)

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20. Graphite is one of the allotropes of carbon.

a) Name one other element which exhibits allotropy. (1mk)

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b) Explain why graphite is used to make pencil leads. (2mks)

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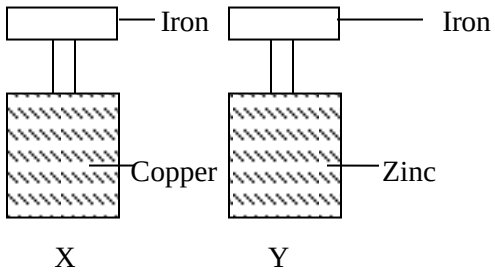
21. A form four student in an attempt to prevent rusting, put copper and zinc in contact with iron as shown below.



i) State what would happen in set up X and Y after one week. (2mks)

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ii) Explain your answer in diagram Y. (1mk)

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iii) What name is given to the above method? (1mk)

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22. Urea, $(NH_2)_2CO$, is prepared by the reaction between ammonia and carbon (IV) oxide.

$2NH_{3(g)} + CO_{2(g)} \rightarrow (NH_2)_2CO_{(aq)} + H_2O_{(l)}$

In one process, 680kg of ammonia were reacted with excess carbon (IV) oxide. Calculate the mass of urea that was formed. (H=1.0, C=12.0, N=14.0, O=16.0 and R.M.M of ammonia = 17) (3mks)

23. Aqueous hydrogen chloride reacts with potassium manganate (VII) to produce chlorine gas, while a solution of hydrogen chloride in methylbenzene has no effect on potassium manganate (VII). Explain this observation. (2mks)

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24. Explain the following:
    a) Aluminium carbonate does not exist. (2mks)

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b) Hydrochloric acid is not used to acidify potassium manganate(VII) (2mks)

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25. Naturally occurring magnesium consists of three isotopes: 78.6% ^{24}Mg, 10% ^{25}Mg and ^{26}Mg. calculate to one decimal place, the relative atomic mass of magnesium. (3mks)

26. Under certain conditions, carbon (IV) oxide reacts with water to form methanol (CH3OH) and oxygen as shown below

$2CO_{2(g)} + 4H_2O_{(l)} \rightleftharpoons 2CH_3OH_{(l)} + 3O_{2(g)}$ $\Delta H=+1452KJ$

What would be effect on the yield of methanol if the temperature of the reaction mixture is increased? Explain. (2mks)

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27. Use the cell representation below to answer the questions that follow.
$Cr_{(s)} \mid Cr^{3+}_{(aq)} \mid\mid Fe^{2+}_{(aq)} \mid Fe_{(s)}$

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

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b) If the e.m.f of the cell is 0.30volts and the E^{θ} value for $Fe^{2+}(aq) \mid Fe(s)$ is -0.44 volts, calculate the E^{θ} value for $Cr^{3+}_{(aq)} \mid Cr_{(s)}$. (2mks)

28. Explain why the boiling point of ethanol is higher than that of hexane. (Relative molecular mass of ethanol is 46 while that of hexane is 86) (2mks)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

CHEMISTRY PAPER 2
FORM FOUR
TIME:

Answer All questions in the spaces provided.

1. (a) Name the following organic compounds.

i) $CH_3CH_2CH(Br)\ C(Cl)(Br)\ CH_3$ (1mk)

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ii) $CH_3 - CH_2 - CH_2 - CH_2 - C(=O)OH$

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iii) $CH_2CHCH_2CH(Br)\ CH_3$. (1mk)

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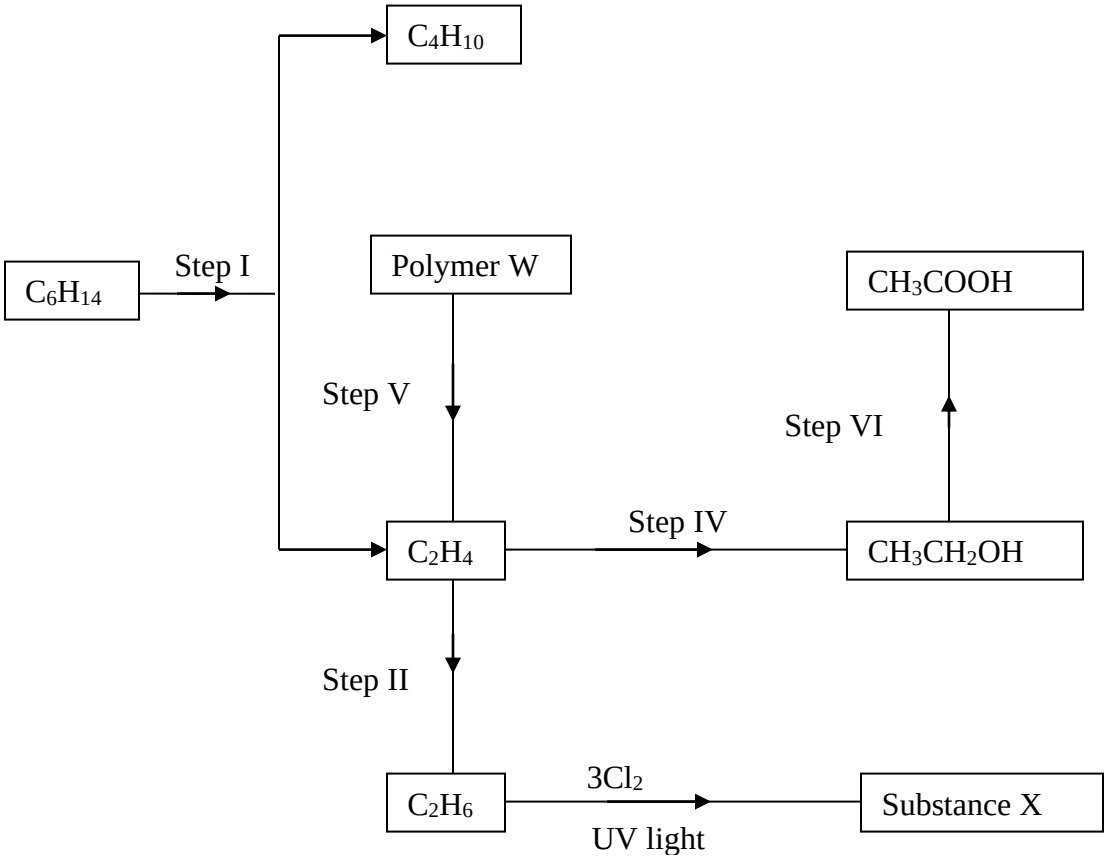
(b) Study the flow chart below and answer the questions that follow.



I. Name;

i) The processes that occur in steps marked I, IV and VI. (1 ½ mks)

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ii) The reagent and conditions in step II. (1 ½ mks)

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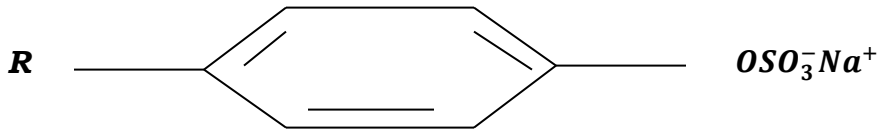
II. Draw the structural formula of substance X, givethe name of the substance. (2mks)

(c) The diagram below shows a structure of a cleansing agent.



i) Name the cleansing agent above. (1mk)

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ii) State the type of cleansing agent above. (1mk)

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iii) Name the material added to the cleansing agent in order to improve its cleaning property. (1mk)

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2. (a) The table below shows some properties of substances V, W, X and Z. Study them and answer the questions that follow. Letters do not represent the actual symbols of the substances.

Elements	*Solubility in u*	*Boiling point*	*Electrical conductivity*	
			Solid	*Molten*
V	Insoluble	2955	Good	Good
W	Soluble	1413	Poor	Good
X	Insoluble	-90	Poor	Poor
Z	Insoluble	4827	Poor	Poor

i) Which of the substances is likely, to have giant atomic structure? Explain. (2mks)

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ii) Identify the particles responsible for conduction of electricity in V in solid and in molten states.

Solid state ;…… (1mk)

Molten state : ……

iii) Which substance has electrovalent bond? Explain. (2mks)

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iv) Which substance is a gas at room temperature? (1mk)

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(b) The table below shows some properties of halogens. Use is to answer the questions that follow.

Halogen	*Atomic radius (nM)*	*Appearance*	*Boiling point*
Fluorine	0.064	Pale-yellow gas	-188
Chlorine	0.094	Greenish-yellow gas	-35
Bromine	0.114	Brown liquid	59
Iodine	0.133	Shiny dark solid	184

i) State and explain the trend in boiling points down the group. (2mks)

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ii) State what would be observed when bromine water is added to potassium iodide solution. (1mk)

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iii) Give a reason why iodine sublimes. (1mk)

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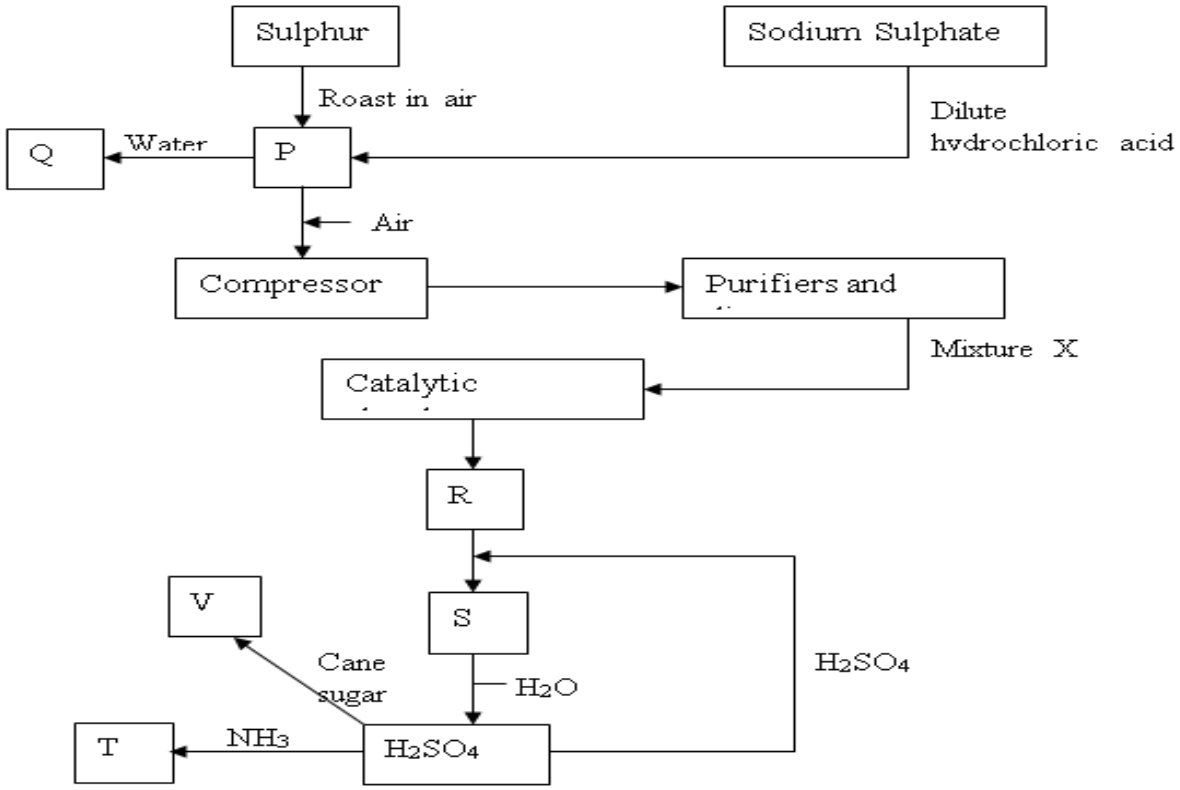
3. Below is a simplified diagram for the manufacture of sulphuric (VI) acid in large scale.



a) Name the substances P, Q, R, S, T and V. 3mks)

P – .....

Q –.....

R –.....

S –.....

T –.....

V –.....

b) (i) What is the use of the compressor? (1mk)

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(ii) What is removed in the purification chamber? (1mk)

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c) (i) State any two specific conditions for the formation of R. (1mk)

(ii) Write the chemical formula of the catalyst used in the catalytic chamber. (1mk)

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(iii) Write an equation for the formation of gas R in the catalytic chamber. (1mk)

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d) Describe a chemical test to confirm the presence of P. (1mk)

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e) One of the uses of sulphuric (VI) acid is 'pickling' metals. What does the trm 'pickling' mean? (1mk)

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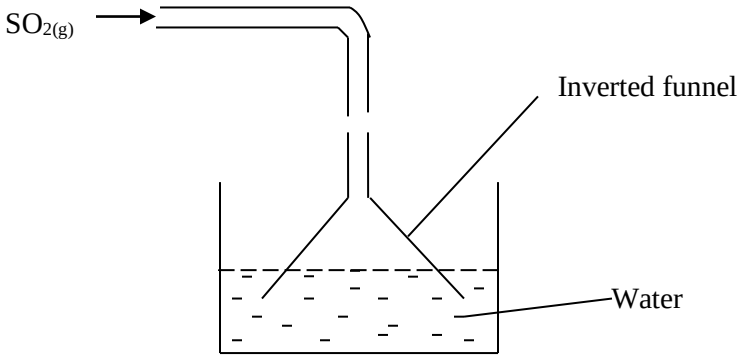
f) The following diagram represents the method of preparing sulphur (IV) oxide solution.



i) Why is an inverted funnel used? (1mk)

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ii) Explain the observation made when sulphur (IV) oxide gas is mixed with universal indicator. (1mk)

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g) State and explain what would be observed if conc. H_2SO_4 is added to cane sugar leading to formation of substance U. (1mk)

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h) How can the pollution of the atmosphere be minimized in contact process? (1mk)

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4. A form four student wanted to find the proportion by volume of one of the main constitution of air. A sample of air was passed through two wash bottles, the first containing aqueous sodium hydroxide and the second containing concentrated sulphuric (VI) acid and was then collected in a gas syringe.

a) Why was the air passed through:

i. Aqueous sodium hydroxide. ½ mk)

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ii. Concentrated sulphuric (VI) acid. ½ mk

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b) The volume of the air collected in the syringe was 90cm^3. This was passed several times over hot copper powder until no further contraction of volume took place. After cooling to the original temperature, the volume was found to have reduced to 73.2 cm^3.

i. State and explain the observation made at the end of the experiment. (2mks)

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ii. Calculate the percentage of the gas used up in the process. (2mks)

c) (i) Name the main gas remaining in the syringe. (1mk)

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(ii) is the main gas named in (i) above pure or not? Explain. (2mks)

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d) In another different experiment, the following results were obtained in a direct weighing.

Mass of flask + fittings = 184.257g

Mass of flask + fittings + gas P = 188.942g

Mass of flask + fittings + water = 988.560g

The volumes were measured at 23.0oC and 733mmHg pressure. Calculate the relative molecular mass of gas P. (Molar gas volume = 22.4 litres) (5mks)

5. (a) Use the standard electrode potentials given below to answer the questions that follow.

Reaction		**E^{θ} value**
$Ag^{+}_{(aq)} + e^{-}$	$Ag_{(s)}$	+0.80V
$Cu^{2+}_{(aq)} + 2e^{-}$	$Cu_{(s)}$	+0.34V
$Pb^{2+}_{(aq)} + 2e^{-}$	$Pb_{(s)}$	-0.13V
$Zn^{2+}_{(aq)} + 2e^{-}$	$Zn_{(s)}$	-0.76V

i. Select two half-cells which when combined give the largest workable cell. (1mk)

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ii. With a reason, select the strongest oxidizing agent. (1mk)

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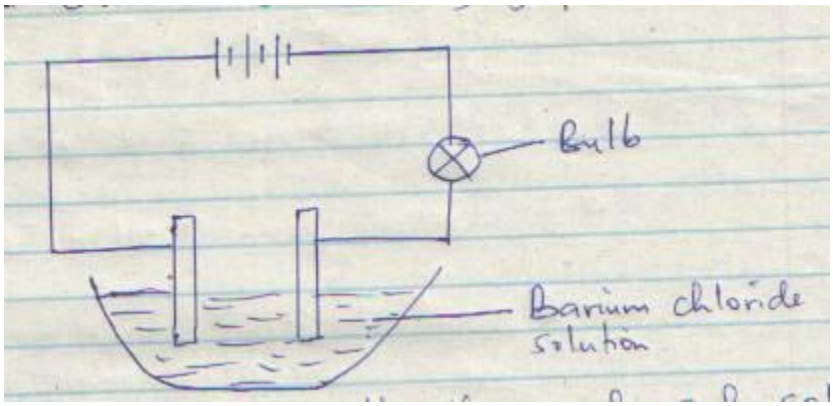
iii. Draw a well labeled diagram for the electrochemical cell formed by combining copper and silver half cells. (3mks)

iv. Calculate the e.m.f of the cell formed when copper half-cell and lead half-cell are combined. (2mks)

(b) The following set-up was used to electrolyze copper (II) chloride solution using graphite electrodes.



i. On the diagram, label the anode and cathode. (1mk)

ii. State the observation made in the solution as the experiment progresses. Explain. (2mks)

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iii. Write the ionic equation for the reaction at the anode. (1mk)

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6. The grid below represents part of the periodic table. Study it and answer the questions that follow. (The letters are not actual symbols of the elements)

Q		M				T		
R	S		Y	P				U
X				V			W	

i. Select an element in period 3 which has the shortest atomic radius. Give a reason for your answer. (2mks)

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ii. An element Z has the electronic structure 2.8.6. On the grid above, indicate the position of element Z. (1mk)

iii. What name is given to elements that belong to:

I. Group I. ..... (1mk)

II. Region M. ..... (1mk)

iv. Write an equation for the reaction of element Y with oxygen gas. (1mk)

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……

v. Elements S and W react to form a compound. In what forms will the compound formed conduct electricity? (1mk)

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vi. Explain the following:

I. Atomic radius of R is greater than that of Q. (1mk)

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II. The melting and boiling points of an oxide of Q are higher than those of oxide of T. (2mks)

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vii. When 3 litres of chlorine gas were completely reacted with element S, 11.875g of the product were formed. Determine the relative atomic mass of element S. (R.A.M of Cl=35.5, molar gas volume = 24litres) (3mks)

7. An experiment was carried out to determine the solubility of potassium nitrate and the following results were obtained.

Temperature	0	10	15	30	40	50	60
Mass in 100g of water	10	20	25	45	63	58	106

a) Plot a graph of mass of potassium nitrate against temperature. (3mks)

(PROVIDE A GRAPH PAPER)

b) From the graph work out the mass of KNO_3 that would crystallize if a solution containing 70g of KNO_3 per 100g of water was cooled from 45°C to 25°C. (2mks)

c) Explain what would happen if 100g of KNO_3 was put in cold water and heated to 50°C. (2mks)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

CHEMISTRY PAPER 3
FORM FOUR

INSTRUCTIONS.
Answer all the questions in the spaces provided.

1. You are provided with:

Solution M 0.5M Hydrochloric acid.

Solution F containing 15.3g/litre of basic compound G_2X.

You are required to determine the relative atomic mass of G.

Procedure.

Place solution M in a burette, pipette 25cm^3 of solution F into a 250cm^3 conical flask. Add two drops of melthy/orange indicator and titrate. Record your results in the table below. Repeat the procedure two more times and complete table 1.

(4mks)

	I	II	III
Final burette reading			
Initial burette reading			
Volume of solution M used			

a. What is the average volume of solution M? (1mk)

b. Given that one mole of F reacts with 2 moles of M; calculate the:

i. Number of moles basic compound G_2X in the volume of solution F used. (1mk)

ii. Concentration of solution F in moles per litre. (1mk)

iii. Relative formula mass of the basic compound, G_2X. (1mk)

iv. Relative atomic mass of G. (relative formula mass of X=60, atomic mass of H=1.0, O=16.0)

2. You are provided with;

1.89g solid P, solid P is a dibasic acid H_2X.

0.5M solution of the dibasic acid, H_2X, solution V

Sodium hydroxide, solution K.

You are required to determine:

a. The molar heat of solution of solid P.

The heat of reaction of one mole of the dibasic acid with sodium hydroxide.

b. Calculate the heat of reaction of solid H_2X with aqueous sodium hydroxide.

PROCEDURE 1

Place 30cm^3 of distilled water into a 100ml plastic beaker. Measure the initial temperature of the water and record it in the table II below. Add all the solid Pat once; stir the mixture carefully with the thermometer until all the solid dissolves. Measure the final temperature reached and record it in the table II.

(2mks)

Final temperature (^OC)	
Initial temperature (^OC)	

a. Determine the change in temperature T_1. (½ mk)

b. Calculate the;

i. Heat change when H_2X dissolves in water, (Assuming the heat capacity of the solution is $4.2Jg^{-1}K^{-1}$ and density is $1g/cm^3$.(2mks)

ii. Number of moles of the acid that were used (Relative Formula mass of H_2X is 126) (1mk)

iii. Molar heat of solution H_1 of the acid H_2X. (1mk)

PROCEDURE II.

Place $30cm^3$ of solution V into a $100cm^3$beaker. Measure the initial temperature and record it in table III below. Measure $30cm^3$ of sodium hydroxide, solution K. Add all the $30cm^3$ of solution K at once to V in the beaker, stir the mixture with the thermometer. Measure the final temperature reached and record it in table III.

Final temperature (^OC)	
Initial temperature (^OC)	

a. Determine the change in temperature, T_2. (½ mk)

b. Determine the;

i. Heat change for the reaction (assume the heat capacity of the solution is $4.2Jg^{-1}K^{-1}$ and density is $1g/cm^3$) (2mks)

ii. Number of moles of acid used. (H_2X) (1mk)

iii. Heat of reaction H_2 of one mole of the acid H_2X with sodium hydroxide. (1mk)

c. Given that:

H_1 is the heat fir reaction $H_2X(s)$ $H_2O \longrightarrow 2H^+(aq) + X^{2-}(aq)$

H_2 is the heat for the reaction $H^+(aq)$ $OH^-(aq) \longrightarrow H_2O(l)$

Calculate H_3 for the reaction, $H_2X(s) + 2OH^-(aq) \longrightarrow 2H_2O(l) + X^{2-}(aq)$ (2mks)

3. a. You are provided with solid Q. Carry out test indicated below and record your observations and deductions in the table below.

i. Place a spatula full of Q in a boiling tube. Add about $10cm^3$ of distilled water and shake. Divide the resultant mixture into 4 portions.

(2mks)

Observation	**Inference**

ii. To the first portion, add Barium nitrate solution followed by dilute nitric acid.

(1mk)

Observation	**Inference**

iii. To the second portion add 2 – 3 drops of sodium hydroxide till in excess.

(1mk)

Observation	**Inference**

iv. To the third portion add 2 – 3 drops of ammonia solutions till in excess.
(1mk)

Observation	**Inference**

b. You are provided with liquid X. you are required to carry the test below.

i. Place 1cm^3 of substance X in a test tube. Add a small piece of sodium carbonate solid.
(1mk)

Observation	**Inference**

ii. To about 3cm^3 of X in a boiling tube, add acidified potassium chromate (VI) and warm.

Observation	**Inference**

(1mk)

iii. To about $3cm^3$ of x add acidified potassium manganate (VII) (1mk)

iv. Dip a glass rod in liquid X and ignite. (2mks)

Observation	**Inference**

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

CRE FORM FOUR PP1 Answer any **FIVE** questions

1 (a) outline six ways in which the study of cre enhances national unity in Kenya (6 mks)

(b) Describe the activities of god in the second account of creation as recorded in genesis 2:4-5(8 mks)

(c)Give six reasons why some Christians leave the church today

2 (a) give seven actions in life of Abraham that expresses his faith in god (7 mks)

(b) Outline seven conditions that the Israelites were given for the renewal of the Sinai covenant (7 mks)

© How is the faith of the youth strengthened in the church today (6mks)

3 (a) identify seven reasons why Prophet Samuel was against kinship in Israel (7mks)

(b) Outline seven activities of king jeroboam that made the Israelites in the northern kingdom to turn away from god. (7 mks)

© In what ways can Christians reduce corruption in Kenya today (6mks)

4 (a) how did the old testament prophets communicate gods message to the people (7mks)

(b). outline Amos teaching on election of Israel (6mks)

(c). identify seven ways which show that prophecy is practiced in the church today (7mks)

5. a) outline seven religious reforms carried out by king Josiah of Judah (7mks)

(b) Identify seven steps that Nehemiah took to ensure that the work of rebuilding the wall was completed (7mks)

(c). Give six reasons why it is difficult to have reforms in Kenya (6mks)

6. (a) Give seven ways in which elders promote harmony and mutual responsibility in traditional African society (7mks)

b) State the changes that have taken place in the traditional African understanding of leisure (6mks)

(c). Outline seven factors that undermine the status of elders in the society (7mks)

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BRILLIANT STUDENTS
FORM 4 END TERM 1 SERIES 1 EXAMS

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

CRE PAPER TWO FORM 4 Answer any five questions

1.) Identify seven similarities between the annunciation of the birth of Jesus and of John (7)

b) Outline the message of prophet Isaiah about the Messiah which Jesus read in the synagogue in Nazareth (Isaiah 61:1-3) (6 mks)

c) State seven factors that hinder people from accepting salvation (7mks)

2. a) Describe the healing of the woman with the flow of blood as recorded in Luke 3;43-48(8MKS)

b) Explain the significance of the transfiguration of Jesus to His disciples (6mks)

c) Give 6 lessons Christians learn about Jesus from the miracles of healing

3.a) Describe the parable of the good Samaritan as recorded in Luke 10:25-37 (8mks)

(b). Identify six reasons why Judas Iscariot betrayed Jesus (6mks)

c) Give 7 ways in which Christians demonstrate obedience to Jesus command to love ones neighbor (6mks)

4. a) Identify the teachings about Christ relationship with the church from the bride in the new testament(7mks)

b) OutlinesaintPaul's teaching on how the gifts of the holy spirit should be used in the church today (7mks)

C) Give six ways in which Christians demonstrate peace as a fruit of the Holy spirit (6mks)

5 (a) explain the importance of leisure in the life of Christian employee (7mks)

(b) Identify seven secular leisure activities that are acceptable to a Christian (7mks)

© give facts in which a Kenyan youth can overcome drug taking (6mks)

6 (a) outline practices that promote law order and justice in traditional African society (7mks)

(b)give reasons why is it important to have laws in a country (7 mks)

© identify the causes of disorder in the society today (6 mks)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

ENGLISH PAPER 1

1. FUNCTIONAL WRITING

Imagine you are the head of the students' council of Kubamba Secondary School and students have been complaining of incidences of insecurity in the school. The Principal has asked you to form a committee to carry out an investigation the causes of insecurity and come up with recommendations on how to curb the insecurity in school. The report should reach the principal in a month. Write the Report.

(20 marks)

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2.CLOZE TEST

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

Concerns on insecurity (1) _____ persisted over the last one year despite assurances from the government that it was taking robust (2) _____ to protect life and property.

The situation has been complicated by (3) _____ "lone wolf" terrorist attacks linked to the Somalia- based Al – Shabaab, eight months after the deadly Westgate (4) _____ in Nairobi that left at least 70 people dead. The latest in the city's popular Gikomba market only added to the body count and lives shattered.

This is a dangerous way (5) _____ one of Africa's most promising economies to live.

Kenya's international (6) _____ is also slowly being eroded and, with it, the attraction as a magnet for foreign tourists and investors.

This week (7) _____ advisories by some western governments showed how fragile the situation is when hundreds of British tourists (8) _____ short their holiday at the coast (9) _____

flew back home. While some may consider this an overreaction, (10) _____ the reality that terrorists with dark intentions are roaming the country ready to attack is equally unhelpful. ***(Sunday Nation newspaper 18/05/2014)***

3.ORAL SKILLS (30 marks)

a) ***Read the following Ankole song and answer the questions that follow.***

Suck and I hide you, my gentle one
Suck and I hide you, my beloved
I dreamt that the hunt was at Buganga
I dreamt that the hunt was at Ngarama

Where, oh where, shall I put, my little baby?
Where, oh where, shall I put you, my lovely little lips?
If I put you in a clump of grass, my gentle one

The hunters' rough dog will come sniffing around

The hunters' thick club tears up the back

Suck and I hide you, gentle one
Suck and I hide you, for whom the drum sounds

Where, oh where, shall I put you, my lovely little lips?
Where, oh where, shall I put you, my beloved?

If I put you by the wayside, gentle one
Passers-by will take you with them, my beloved
If I put you in an anthill, my little baby
The ants will enclose you in their nest, lovely little lips
Suck and I hide you, little baby
Suck and I hide you, my gentle one

When I am dead and gone, gentle one
Feed on little blades of grass like cow, my beloved
And wash them down with a little water, my little baby
That's what raises orphans, you for whom the drum sounds
If I do not die, my little baby
Good things will be ours to enjoy, you for whom the drum sounds

i) Identify aspects of oral performance that make this song easy to remember? (2mks)

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ii) In what ways would this song be made interesting to **listen to**? (2mks)

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iii) How would you **perform** the last two lines of the above song? (2mks)

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b) **Read the following speech made by the chair of a church youth group and answer the questions that follow**.

"What's up guys? Why do you look so sad? I thought the ting tang tong of the quitar would wake you up. I am here to represent the youth. We are asking you *jamaaz* to give us some colour or bakes to buy more musical instruments for this church. I can hear the click of coins. No, that will not do! We are interested in real colour; real cash in the form of notes. We want you to splash us with real cash."

i. Pick out **four** expressions/words in the speech to demonstrate that the chair has used the wrong register. (2marks)

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ii. Give at least **two** examples of ideophones and onomatopoeia from the chair's speech.
(2marks)

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c) You are part of a student's group representing your school in a conference. You have been elected the Chairperson of a small group discussing a topic on leadership.

i. How would you ensure the group is engaged in an effective discussion?
(3marks)

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ii. As you later present your points to the larger group, nobody seems to pay attention. Give **two** reasons that could have contributed to the lack of attention.
(2mks)

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d) State what type of intonation you would use in the following sentences. (3 marks)

i. When were you born? **…….**

ii. Did you complete your work? **……..**

iii. What a beautiful car you have bought!**……**

e) A teacher of English was in class during a reading lesson. He realized that the students had poor reading habits. Mention **three** of these habits he might have observed. (3marks)

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f) Study the following item of oral literature and answer the questions that follow.

Kot took Kot's coat, Kot went to court, the court told Kot to return Kot's coat to Kot.

(a) Which genre of oral literature has been used above? (1 mark)

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(b) If the above genre was to be translated to another language, what would be the effect of translation? (2marks)

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g) Read the telephone conversation below and answer the questions that follow.

Wanjala: Hello, is that Chaka Limited?

Sheila: *(Picking the phone)* Those shoes fit well.

Hello, is anybody on this line?

Wanjala: Hello, is that Chaka Limited?

Sheila: What do you want?

Wanjala: Please confirm for me whether I called the right place, Chaka Limited?

Sheila: *(Shouting)* Which other company has a similar phone number as this?

Wanjala: May I then speak to the Managing Director?

Sheila: I prefer the red shoes…. *(on phone),* what did you say ?Oh, the Managing Director can't talk to you.

Wanjala: Can I then leave a message which you can pass to him?

Sheila: Why can't you call him on his personal line… *(away from the receiver)* go for the red ones.

Wanjala:*(Surprised)* Hello, excuse me madam, I am WanjalaNicholus and am requesting to talk to the Managing Director over an important matter concerning one of your employees…

Sheila: I told you the Managing Director is not in *(hangs up).*

i). Explain **three** things that make Sheila an ineffective communicator.(3marks).

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ii). Explain **three** things that one should observe if they are to communicate effectively over the phone. (3mks).

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

101 / 2 - English Paper- 2

Time: 2 hours

INSTRUCTIONS TO CANDIDATES

- Write your name and index number in the spaces provided above.
- The paper consists of **three** sections A , B and C.
- Answer all questions in section A and B in the spaces provided
- Answer **any two** questions from section C on foolscaps provided

FOR EXAMINERS USE ONLY

Question	Maximum Score	Candidates Score
1	20	
2	25	
3	20	
4	15	
Total Score		

1. COMPREHENSION:

Read the following comprehension passage and then answer the questions that follow.

Aristotle, the father of Western critical thought, Leonardo da Vinci, Oprah Winfrey, Marie Curie, Albert Einstein, Ronald Reagan, Bill Clinton, Fidel Castro, George Bush, Julius Caesar, Alexander the Great, Napoleon Bonaparte, Bill Gates, Barack Obama and Uhuru Kenyatta all have one thing in common. Not that they are great men and a woman, but because all of them are left-handed!

Is there something special about being left handed? It is a question that has given rise to many myths about left handed people.

Interestingly, in a majority of cultures the world over, left-handed people are a stigmatised minority. Left is associated with femininity while right in linked to masculinity.In many of our cultures, when giving direction, we talk about the female side and male side of the road. Patriarchal structures have ways of twisting the truth to preserve masculine hegemony.

In some cultures of Africa, people view left-handedness as a sign of evil, while in Japan it can be enough reason for divorce. Many myths in our cultures in Africa regard left-handedness as something unacceptable and evil. Languages have ways of carrying these beliefs about left-handedness. In Latin, the word left is synonymous with "sinister", while in Spanish the word for left is linked with "malicious". The French word for left is synonymous with "awkward". In English, the word left comes from the Anglo-Saxon word 'luft', which means weak or broken.

The holy books have not been left out in stigmatising left-handedness. The Bible, specifically the book of Judges, associates left-handedness with war-like tendencies.

We also know of many sayings that are negative in reference to left handedness, for instance left wing and a left-handed compliment.

It is, therefore, possible to argue that left handed people are a minority that deserves attention. They suffer at the hands of right handed people who do not recognise their special needs

Some insensitive teachers are known to punish left handed children and force them to write using their right hands. It is, however, notable that in Western cultures, the discrimination of left-handed people is almost over due to the enlightenment of the society.

But what brings about left handedness? Experts remain unsure of how handedness emerges in children. However, a number of reasons have been advanced to explain why majority of people in all societies are right-handed. In terms percentage, less than 10 percent of the world population is left handed and majority of them are males.

Evolutionary theory attempts to explain this phenomenon by suggesting that during the early ages, primitive hunters needed to protect their most vital organ of the body — the heart — and their left hand was used to hold the shield. The right hand was used to hold the sword or knife and because of this it acquired greater agility, which was passed down through the generations.

This theory, therefore, explains why more men would be right-handed than women. Other studies have also revealed that the left-handedness of children is an inherited trait. It is common if one parent is left-handed and more common if both parents are left handed.

An equally useful theory that tries to explain this phenomenon is the brain hemisphere theory. It postulates that the preference of using one side of the body more than the other in performing special tasks depends on which brain hemisphere is dominant. In most people, the left hemisphere controls speaking and handy work and that is why right-handedness is common. It further argues that left-handed people are controlled by the right hemisphere of the brain.

Some researchers claim that left-handed people are more intelligent and eloquent than the right-handed people. It is argued that there are more left-handed people with IQs of over 140 than right-handed people. Captivatingly, other studies reveal that left-handed people are more unlikely to suffer from disorders of the immune system.

In view of the fact that studies have found that this group of individuals comprise of intelligent and creative people, we need to revisit our curriculum in order for it to take care of their unique potentialities. We have to put in place structures that will create a learner-friendly environment for left handed children. Desks should also be designed to cater for their unique needs. Special pens and writing materials should be provided specifically for this group of children. More importantly, we should re-train teachers to appreciate the fact that pupils are gifted in different ways, and it is their duty to help pupils to put to use these gifts.

Adapted from Saturday Nation 28/02/2015 Pg. 39
By Prof. Egara Kabaji and Dr Misigo Lushya.

Questions

(a) Why do the writers give a long list of people who were / are left-handed? (2 marks)

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(b) How are the left-handed people discriminated against in the society they live in? (3marks)

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(c) What makes left-handed people unique? (1mark)

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(d) According to the passage, why do we have fewer females being left-handed than males? (2marks)

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(e) Distinguish the functioning of the left-handed people from the right-handed ones? (3marks)

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f. Make notes on the various ways left-handed individuals can be accommodated by the learning institutions. (4marks)

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(f) Rewrite the following sentence as instructed.
Desks should also be designed to cater for their unique needs. (1mark)
Begin: Their unique needs:

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(g) Explain the meaning of the following words as used in the passage. (2marks)
(h) Agility:

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(ii) Hemisphere:

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(iii) Postulates:

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

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

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

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

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

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

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

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

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

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

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

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

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

"Thank God his intention was not to rape us," Resian said tears streaming down her face. "We would have been helpless in the hands of such a brute."

Taiyo bit her lower lip struggling to maintain control. "His intention could have been worse than rape," she said, tears of anger and indignation welling up in her eyes.

They quickened their steps to their uncle's home. True, the incident had taken the sparkle from the day that had begun so joyfully, but they reasoned that it could have been worse.

The girls debated as to whether to inform their parents of the ordeal. They knew their mother would understand and empathize with them. But judging from past experience, their father would be less supportive. He would blame them for having dared venture into an unknown territory without his approval. Finally, they decided to keep the incident to themselves.

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

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

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

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

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

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

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

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

i. vehemently……..

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ii. accosted……

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iii .ilk…….

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3. Read the following poem and answer the questions that follow

SYMPTOMS OF LOVE

Love is a universal migraine
A bright stain on the vision
Blotting out reason
Symptoms of true love
Are leanness jealousy
Laggard dawns.

Are omens and nightmares-
Listening for a knock
Waiting for a sign

For a touch of her fingers
In a darkened room
For a searching look.

Take courage lover!
Could you endure such pain
At any hand but hers?

(Literature: reading fiction, poetry and drama McGraw hill, 2000)

(a) Identify the persona in this poem (2marks)

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(b) What is the persona's attitude towards love? Explain your answer (3marks)

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(c) Describe the tone of the poem giving evidence to support your answer (4marks)

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(d) Identify and illustrate any four fingers of speech used in the poem. Commenton their effectiveness(6marks)

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(e) Describe the mood of the poem with illustrations to support your answer (3marks)

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(f) Explain the rhetorical question at the end of the poem (2marks)

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4. **GRAMMAR** **(15 marks)**

a) Rewrite the following sentences as instructed

(3marks)

(i) Judas betrayed Jesus

Begin: Jesus

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(ii) I have some work. I must do it

Rewrite as one sentence using an infinitive

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(iii) He will burst into tears if you tease him.

Rewrite in the past tense

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(b) **Use the words in the brackets to complete the following sentences** **(3marks)**

(i) Most of her crimes are **.....**(forgive)

(ii) The club refused **.....(**admit) to anyone wearing school uniform

(iii) Her only fault is **.....**(indolent)

c) Use a preposition to complete the following sentences

(3marks)

(i) The buffalo charged **.....**Lilian

(ii) The thief was oblivious**.....**trap

(iii) Lazy students prefer sleep **.....**studies

d) **Use a phrasal verb to replace the underlined words**

(3marks)

(i) The school programme has been <u>altered.</u>

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(ii) I cannot <u>understand</u> what he is saying.

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(iii) The meeting was <u>cancelled</u> at the last minute.

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e) Use the words in the brackets to complete the following sentences

(3marks)

(i) I **.....(**write) since morning.

(ii) He**.....**(like) showing off though I detest it.

(iii) She**.....**(pray) for three days by tomorrow.

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

101/ 3 - ENGLISH - Paper 3

(Creative Composition and Essays based on set texts)

Time: 2 ½ hours

INSTRUCTIONS TO CANDIDATES

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

Question	Maximum Score	Candidates score
1		
2		
3		
	Total score	

1. Imaginative Composition

Either

(a) Write an interesting story beginning with.

I had not thought it was such a big problem until I got involved. (20 marks)

Or

(b) Imagine that you are the Minister of Environment. Discuss the measures you would take to curb flooding in Kenyan urban areas. (20 marks)

2.

3. The Compulsory Set Text (20mks)

A Doll's House

Human relations based on lies are bound to fail. Write an essay based on *A Doll's House* to validate this statement.

4. The Optional Set Texts (20 Marks)

Either

a) The short story : Chris Wanjala (Ed) Memories we lost **(20 marks)**

Though now independent, African countries still face many challenges. Using illustrations from Benjamin Branoff's ***Window Seat,*** write a composition in support of this statement.

Or

b) The play: inheritance by David Mulwa. **(20 marks)**

"Lacuna's poor governance results to the suffering of the people of Kutula." Using Judah Zen Melo's family, write an essay depicting the truth of the statement.

Or

c) The novel: the pearl by John Steinbeck. **(20 marks)**

"Our lives are controlled by destiny."

Write a composition in support of this statement with illustrations from the novel, **'The pearl.'**

THIS IS THE LAST PRINTED PAGE

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

312/1
GEOGRAPHY
PAPER 1
2021
TIME: $2^{3}/_{4}$ HOURS

INSTRUCTIONS TO CANDIDATES

- *This paper consists of two sections; section A and section B.*
- *Answer all questions in section A. In section B answer question 6 and any other two questions.*
- *All answers must be written in the answer booklet provided.*
- *This paper consists of 6 printed pages.*
- *Candidates should check to ascertain that all pages are indicated and that no questions are missing.*

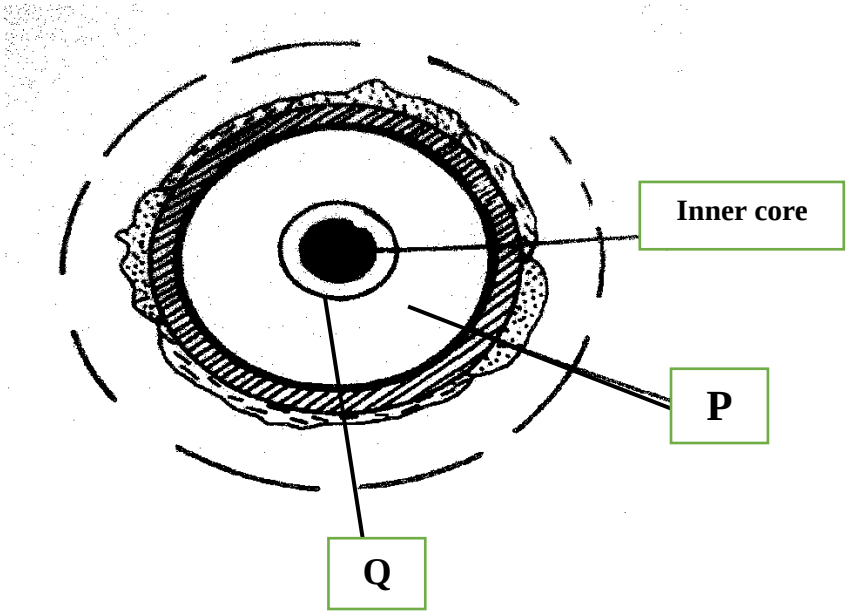
FOR EXAMINERS ONLY

QUESTION	MARKS
SECTION A	
6	
7	
8	
9	
10	

SECTION A

*Answer **ALL** the questions in this section*

1. The diagram below shows the internal structure of the earth. Use to answer question (a) and (b).



(a) Identify:

(i) the layer marked **P**. (1 mark)

(ii) the zone of discontinuity marked **Q**. (1 mark)

(b) Give **four** characteristics of the core. (4 marks)

2. (a) What is a metamorphic rock? (2 marks)

(c) Give the metamorphic rock that form when the following rocks are metamorphosed:

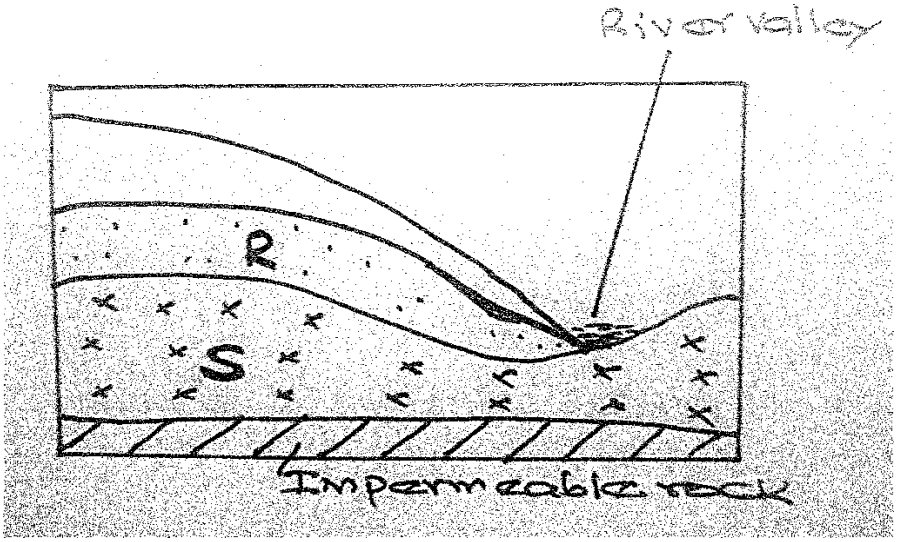
(i) Granite (1 mark)

(ii) Limestone (1 mark)

3. (a) Name **two** main continental plates. (2 marks)

(d) Describe how a subduction zone is formed. (3 marks)

4. Use the diagram below to answer question (a)



(a) Name the zones of saturation marked **R** and **S**. (2 marks)

(b) State **three** conditions necessary for the formation of an artesian well. (3 marks)

5. (a) What is a lake? (2 marks)

(b) Give **three** ways through which a lake is formed. (3 marks)

SECTION B: Answer *Question six* and any other *Two Questions* in this section. (75MKS)

6) *Study the map of Kijabe (1:50000) sheet 134/3 provided and answer the questions that follow*

a) i) What type map of is Kijabe extract? (1mk)

ii) Convert the map scale into statement scale (2mks)

b) i) Measure the length of the railway line to the west of Easting 30 in kilometres. (2mks)

ii) Give six digit grid reference of the forest guard post. (2mks)

c) Draw a square measuring 10cm by 10cm to represent the area enclosed by easting 30 and 40 and northings 90 and 00. (2mks)

On it mark and label;

Thicket vegetation (1mk)

Railway line (1mk)

Bore hole (1mk)

- River upper Ewaso Kedong (1mk)

d) Describe the relief of the area shown by the map (5mks)

e) i) Explain two factors influencing dairy farming in the area covered by the map (4marks)

ii) Citing evidence from the map, state three functions of Kijabe town (3mks)

7 a) i) What is a weather station? (2mks)

ii) State four factors influencing the siting of a weather station. (4mks)

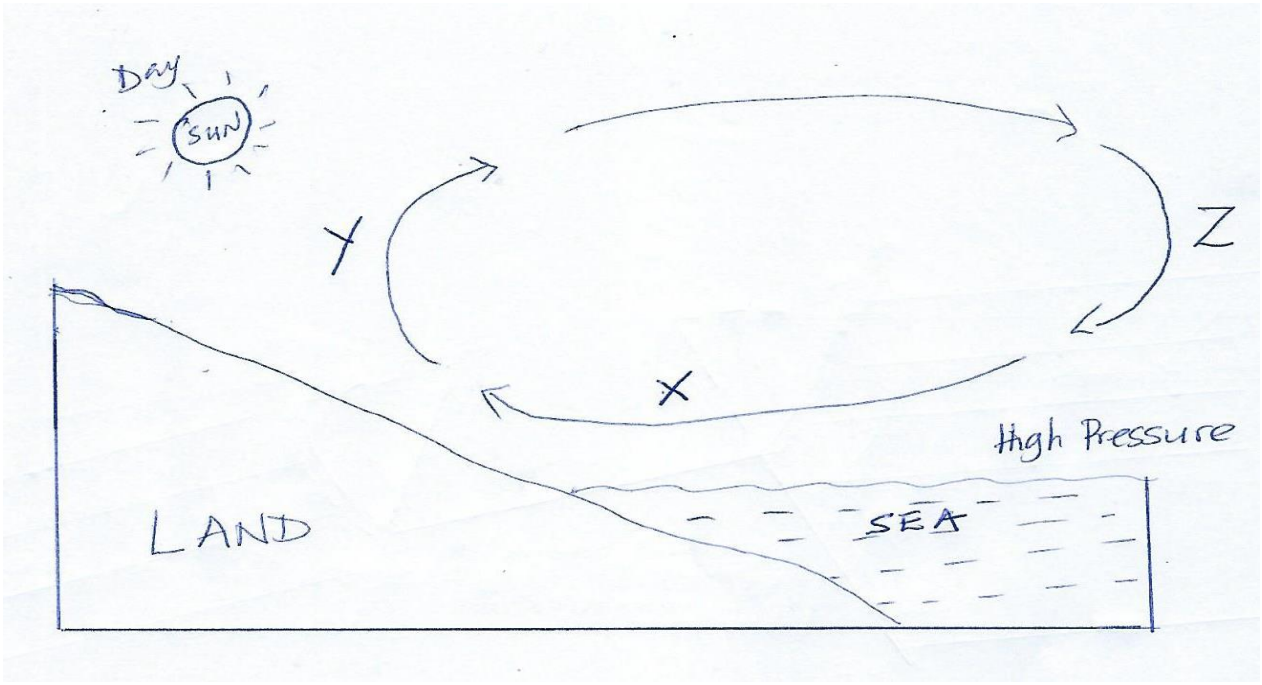
b) Explain how the following factors affect temperature

- Aspect (2mks)

- Ocean currents (2mks)

- Altitude (2mks)

c) Study the diagram below and use it to answer the questions that follow.



i) Label the parts marked X ,Y and Z (2mks)

ii) Identify areas in Western Kenya where the phenomenon shown in the diagram above. Commonly occurs. (1mks)

c) With aid of a well labeled diagram, explain formation of relief rainfall. (6mks)

d) Give four reasons why weather forecasting is important. (4mks)

8.a (i) Explain two causes of faulting (4marks)

(ii) Identify two types of faults (2marks)

b) With the aid of well labelled diagrams, describe the formation of the rift valley by compressional forces (8marks)

c) Identify two examples of block mountains in East Africa (2marks)

d) Explain two effects of faulting on drainage (4marks)

e) Your class conducted a field study at the Great Rift Valley.

i) State three reasons why it was important to seek for permission (3marks)

ii) Give two methods you used to collect data (2marks)

9. (a) (i) Define the term glaciation. (2 marks)

(ii) Name **three** types of glaciers. (3 marks)

(iii) Give **two** reasons why there are no glaciers in Kenya. (2 marks)

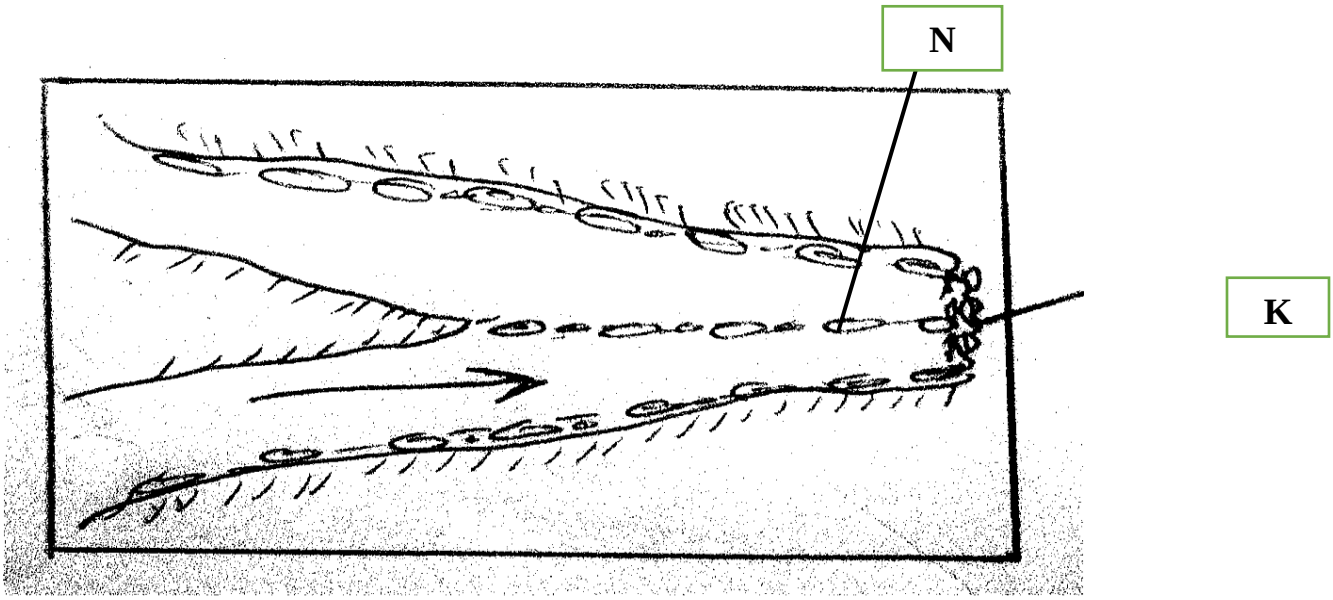
(b) Explain how each of the following factors influence the movement of a glacier:

(i) Gradient of the slope. (3 marks)

(ii) Temperature change (3 marks)

(c) Using a well labelled diagram, describe how a corrie lake is formed. (8 marks)

(d) (i) The diagram below shows the type of moraines:



Name the type of moraine marked **K** and **N**. (2 marks)

(ii) State **two** negative effects of glaciation in lowland areas. (2 marks)

10. (a) Name any two cold deserts in the world. (2 marks)

(b) Describe three factors that influence wind transportation in desert areas. (6 marks)

(c) With the aid of well labelled diagrams, describe how a zeugen is formed. (8 marks)

(d) Give any three features formed by water erosion in desert landscapes. (3 marks)

(e) Explain three ways in which desert features are of significance to human activities. (6 marks)

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INDEX NO: …… SIGN: …… DATE: ……

BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

This paper has two sections A & B. Answer all questions in section A. in section B, answer question 6 and any other two questions. All answers to be written in foolscaps provided.

SECTION A

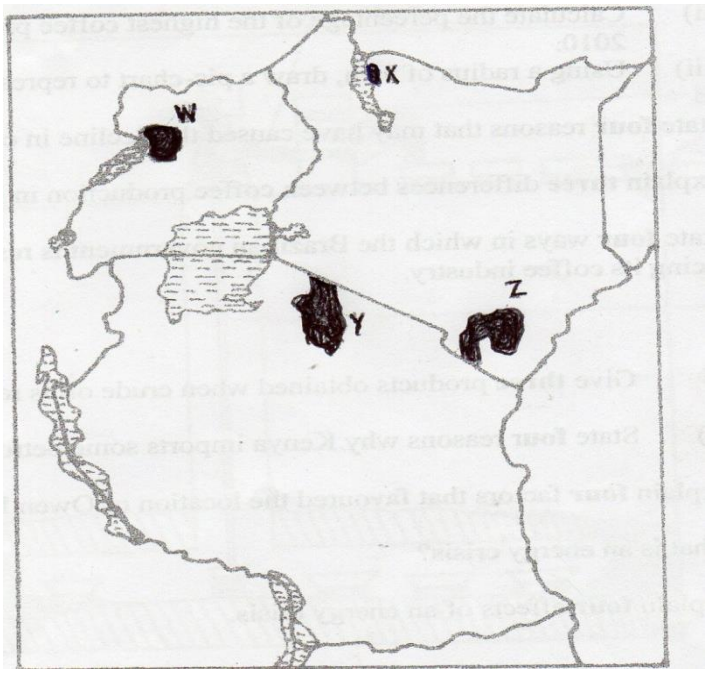
1a)Name two areas where gold is mined in South Africa (2marks)

b)State three uses of gold (3 marks)

2.a)What is balance of trade (2marks)

b)List two major imports to Kenya from Japan (2marks)

3. Study the map of East Africa below and use it to answer question (a)



a)Name the national parks marked W,X,Y & Z (4marks)

b)State two differences between a national park and a game reserve (2mks)

4.a)Give three trans -Africa highways (3marks)

b)State three ways through which challenges hindering smooth navigation along St. Lawrence water way were overcome (3mks)

5.List four main factors that influence population growth (4mks)

SECTION B

6.The table below shows world leading producers of heat between 2010 and 2012 in million metric tonnes.

Country	2010	2011	2012
China	115	117	126
India	81	87	95
U.S.A	60	54	62
France	38	38	40
Russia	42	56	37
Canada	23	25	25

a)i)What is the difference in wheat production between China and Canada in yeay 2010 (2mks)

ii)Calculate the percentage decrease in wheat production in Russia between 2011 and 2012 (2mks)

b)ii)Draw a divided rectangle 15cm long to present the data for year 2012 (10mks)

ii)List three suitable methods that can be used to present the data in the table (3mks)

c)Explain four problems facing wheat farmers in canada (8mks)

7a)i) Differentiate between a forest and a forestry (2mks)

ii)Give three examples of coastal forests in Kenya (3mks)

b)Explain four factors that have favoured the growth of Mau forest (8mks)

c)i)Name three main lumbering regions in Canada (3mks)

ii)State five characteristics of coniferous trees that favour their exploitation (5mks)

d)Compare softwood forests in Kenya and in Canada under the following sub-headings

i)Distribution of softwoods forests (2mks)

ii)Marketing of forest products (2mks)

8a)i)State five physical conditions that favour tea growing in Kenya (5mks)

ii)Name three counties within the highlands East of the rift valley where tea is produced (3mks)

b)Describe the stages involved in tea processing at the factory (8mks)

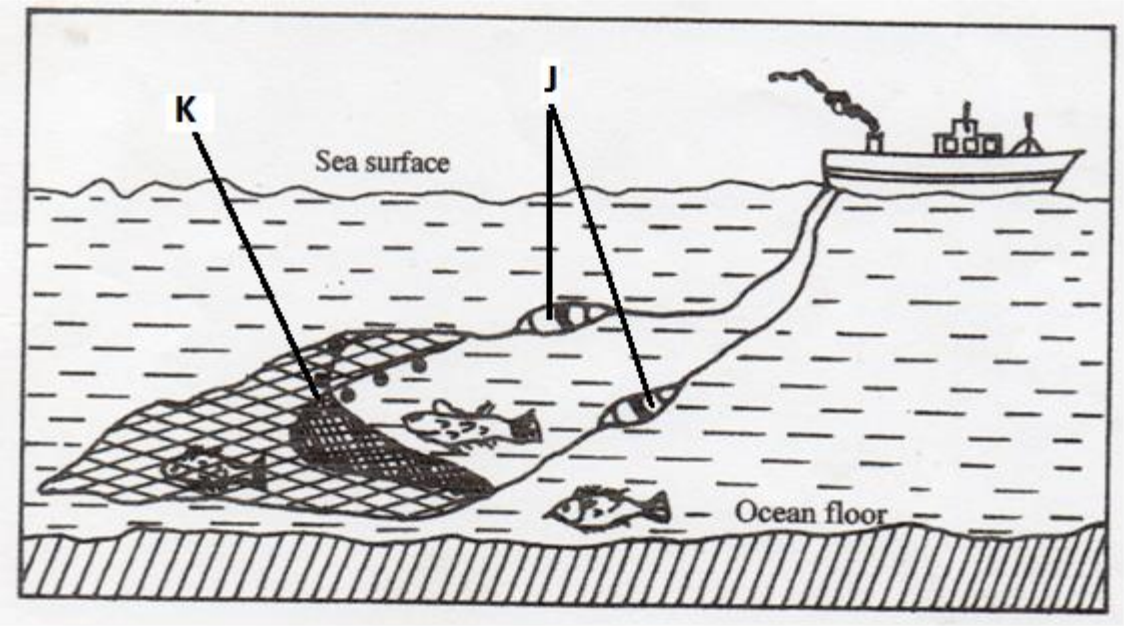
c)i)Outline three ways through which tea is sold in Kenya (3mks)

iiExplain three ways in which KTDA assist tea farmers in Kenya (6mks)

9a)i)Differentiate between fishing and fisheries (2mks)

ii)Give three examples of pelagic fish (3mks)

b)The diagram below represents a method of fishing



i)Name the fishing method represented by the diagram (1mk)

ii)Identify the parts marked J and K (2mks)

iii)Describe how fishing is carried out using the basket Method (5mks)

c)Explain three measures taken to conserve fisheries in Kenya (6mks)

d)Compare fishing in Kenya and in Japan under the following sub-headings

i)Ocean currents (2mks)

ii)Nature of the coastline (2mks)

iii)Level of technology (2mks)

10a)i)Define the term industrialization (2mks)

ii)State three reasons why some industries are located at the source of raw materials (3mks)

b)Explain four problems arising fro industrialization in Kenya (8mks)

c)State six characteristics of the cottage industry in India (6mks)

d)Suppose you were to carry out a field study in a shoe making factory in Kenya.

i)State three objectives that you would set for the study (3mks)

ii)Give three main methods that you would use to collect data at the factory. (3mks)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

HISTORY PP1
FORM 4

INSTRUCTION TO CANDIDATES

- **a) This paper consists of three sections A, B, and C**
- **b) Answer all questions in section A, three questions from section B and two questions from section C.**
- **c) All answers must be written in the answer booklet provided.**
- **d) Candidates should check the question paper to ascertain that all the pages are printed d.**

SECTION A

1. Name the historic site in Kenya where Kenyapithecus fossil was discovered (1mk)
2. State the man social custom to Suba adapted from the River-Lake Nilotes. (1mk)
3. Give two provisions Anglo-German treaty 1886 (2mks)
4. Identify two principles of democracy (2mks)
5. Name any two factors that enabled white settlers to establish farms in Kenya highlands during colonial period. (2mks)
6. Mention two ways through which one can become a citizen of Kenya. (2mks)
7. What was the main reason for the formation of Kenya Africa Democratic Union (KADU) in 1960?
8. Name any two institutions that have a control of public revenue and expenditure. (2mks)
9. Mention two types of national philosophies in Kenya (2mks)
10. Name the commission that was established in 1924 to look into African education in colonial Kenya. (1mk)
11. Give one role of the controller of budgets in Kenya. (1mk)

12. Give the meaning of the term National referendum (1mk)
13. State any two functions of the African welfare organizations in urban centres during the colonial period. (2mks)
14. Give the main reason for convening the 2nd Lancaster House conference. (1mk)
15. Which title is referred to the head of National police service in Kenya. (1mk)
16. Give three functions of the Kenya National Human Rights and Equality commission (3mks)

Section b
Answer any three questions

17. (a) Name three groups of the Nilotes.
(3mks)
(b) Discuss the social organization of the Maasai during pre-colonial period. (12mks)
18. (a) Identify five methods that the colonial government used to discourage the activities of Maumau. (5mks)
(b) Explain five factors that led to the migration of Africans to the urban areas in Kenya during the colonial period.
(10mks)
19. (a) State three challenge that have undermined government efforts to eradicate illiteracy in Kenya since independence.
(3mks)
(b) Discuss six factors that have facilitated industrialization in Kenya since independence (12mks)
20. (a) State five ways in which the government of Kenya has promoted the health of its citizen since independence.
(5mks)
(b) Explain five factors that have undermined the provision of health services by the government of Kenya. (1omks)

SECTION C (30MKS)
ANSWER ANY TWO QUESTIONS FROM THIS SECTION

21. (a) Give three conditions that a person should meet to quality to be a Kenyan by birth.
(3mks)
(b) Explain six social rights of an individual in Kenya. (12mks)
22. (a) State three qualifications for a person to be eligible for election as a member of the national assembly in Kenya
(3mks)
(b) Explain functions of the independent candidate electoral and boundaries commission of Kenya.
(12mks)
23. (a) Mention any three features of African socialism.
(3mks)
(b) Explain six social impacts of national philosophies in Kenya (12mks)

NAME: ……..……

SCHOOL: ……

INDEX NO: …… SIGN: …… DATE: ……

BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

HISTORY AND GOVERNMENT
PAPER 2
FORM FOUR
TIME: 2 ½ HOURS

INSTRUCTIONS TO CANDIDATES:

This paper consists of three sections; A, B and C. Answer all questions from section A, three questions from section B and two questions in section C. All answers must be written on the answer sheets provided.

SECTION A: (25 MARKS)

Answer all the questions from this section.

1. Name the branch of history that deals with study of culture, believes and way of live among communities. (1 mk)

2. Identify two similarities between early agriculture in Egypt and Mesopotamia. (2 mks)

3. State two advantages of using currency system of trade. (2 mks)

4. Name the 'ship' which was used to transport goods across Sahara desert during trans Saharan trade. (1 mk)

5. What was the main disadvantage of using sailing ships to transport goods. (1 mk)

6. State two negative impacts of modern means of communication. (2 mks)

7. Give two uses of gold in ancient Egypt. (k2 mks)

8. State one function of Nairobi as a modern city. (1 mk)

9. Identify two sources of British constitution. (2 mks)

10. State the impact of wars of resistance on African religion. (1 mk)
11. State the main reason why British failed to offer Sarmori Toure assistance against the French. (1 mk)
12. Give the main reason why the French used assimilation policy in administering the colonial posseton. (1 mk)
13. Mention two types of nationalism that existed in South Africa. (2 mks)
14. Identify one of the state men who dominated the Paris peace conference of 1919.(1 mk)

15. Give the immediate reason that dragged United States of America into 2nd world war. (1 mk)
16. What was the main ideological difference between Joseph Kasavumbu and Patrice Lumumba of Congo. (1 mk)
17. Name two houses in U.S.A. parliament. (2 mks)

SECTION B: (45 MARKS)

Answer any three questions from this section.

18. (a) State three ways in which discovery and use of stones changed the life of early man. (3 mks)
    (b) Describe the way of life of early human beings during the Old Stone Age.(12 mks)
19. (a) Mention five importance of Lukiiko among the Baganda people. (3 mks)

    (b) Describe the political organization of Asante Kingdom upto 19th century. (12 mks)
20. (a) State three political reasons that led to colonization of Africa. (3 mks)
    (b) Explain six reasons why Africans were defeated in the wars of resistance.(12 mks)
21. (a) Give five reforms introduced in Congo by Mobutu Sese Seko that led to dictatorship. (5 mks)
    (b) Explain five social challenges facing Tanzania since independence. (10 mks)

SECTION C: (30 MARKS)

Answer any two questions from this section.

22. (a) State five differences between British and French systems of administration in Africa. (5 mks)

    (b) Explain five impacts of direct policy in Zimbabwe. (10 mks)

23. (a) State functions of United Nations General Assembly. (5 mks)

    (b) Discuss five achievements of United Nations since its inception. (10 mks)

24. (a) Give five organs of the economic community of West African States ECOWAS (5 mks)

    (b) Explain five factors that led to the collapse of East Africa Community in 1977. (10 mks)

JINA: _____

SHULE: _____

NAMBARI YA USAJILI _____ **SAHIHI:** _____ **TAREHE:**_____

BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

FORM 4

KISWAHILI KARATASI YA KWANZA

102/1 INSHA

Jibu maswali mawili.

Swali la kwanza ni la lazima.

1. Wewe ni katibu wa kamati iliyoteuliwa na afisa mkuu wa elimu katika jimbo lako kushughulikia visa vya uchomaji na uharibifuwa mali ya shule. Andika kumbukumbuku za mkutano wa kamati hiyo. (Alama 20)

2. Mtoto wa kiume ametelekezwa sana katika jamii. Eleza. (Alama 20)

3. Baada ya dhiki faraja. (Alama 20)

4. Andika insha itakayoanza kwa: (Alama 20)

   "Naikumbuka siku hiyo vizuri sana, sijawahi kufedheheka jinsi ile maishani mwangu……

JINA: _____

SHULE: _____

NAMBARI YA USAJILI _____ **SAHIHI:** _____ **TAREHE:**_____

BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

KISWAHILI KIDATO NNE

MWISHO WA MUHULA WA KWANZA 2022

KARATASI YA 2

1. **UFAHAMU** (Alama 15)

Soma makala yafuatayo kisha ujibu maswali

Nilianza kusikia habari za ugoniwa wa ukimwi mnamo mwaka wa 1984. Wakati huo nilikuwa nimemaliza masomo yangu ya kidato cha sita na kujiunga ia chuo cha walimu kilichoko wilayani Nyeri kiitwacho Kagumo. Nilihofu sana maradhi hayo hasa nilipowaona walioambukizwa wakikondeana mthili ya ng'onda. Baada ya waathiriwa kufariki, jamaa zao hawakuruhusiwa kuwazika. Wizara ya afya ilitoa amri kali kuwa wale wore waliofariki kutokana na maradhi ya ukimwi wazikwe na kikundi maalum cha madaktari ma wauguzi wa hospitali za wilayani. Kulikuwa na kasisi mmoja tuliyehusiana kiukoo aliyefariki kutokana na maradhi ya ukimwi. Sisi hatukuruhusiwa hata kumsongea karibu marehemu alipoletwa nyumbani.

Madaktari na wauguzi walivalia majoho meupe ungedhani ni malaika. Mikononi walivaa glovu nyeupe ambazo zilitutisha machoni.

Mara nyingi nimeshangazwa na athari za ugonjwa huu. Inasemekana kuwa kuna njia kadha za usambazaji wa ugonjwa wa ukimwi. Njia moja ni kuhusika katika kitendo cha mapenzi na mtu ambaye ameambukizwa virusi vya ugonjwa huo. Njia nyingine nimeelezwa kuwa ni kwa kutumia kwa pamoja vifaa vyenye makali na mtu aliyeambukizwa virusi vya ukimwi. Inasemekana kuwa kugusa damu ya mtu aliyeambukizwa ugonjwa huo pia kunaweza kukutia mashakani.

Mama mja mzito aliyeambukizwa ugonjwa huu anaweza kumwambukiza mtoto aliye tumboni anapojifungua na hati baadaye anapomnyonyesha mtoto wake mchanga. Kisha kuna kupokea damu kutoka kwa mtu ambaye tayari ameambukizwa virusi hivyo. Yote hayo yanachangia pakubwa katika kututumbukiza kwenye janga hili la ukimwi.

Lakini nimewahi kusikia watu wakisema kuwa ukimwi si maradhi. Yaani ni upungufu tu wa kinga ya kukabiliana na magoniwa katika mwili wa binadamu. Maadamu ukiweza kuimarisha kinga ya magonjwa katika mwili wako basi unaweza kuishi kwa miaka ma mikaka. Anachohitajika mtu ni apate chakula na lishe bora, afanye mazoezi ya kutosha, na kujiepusha na mahusiano ya kimapenzi na watu wenine ambao huenda wakamwambukiza aina tofauti tofauti za virusi vya ukimwi. Hayo yakifanyika mwathiriwa huwa na matumaini ya kuishi kwa muda mrefu kwani hatazidiwa na maradhi hayo na mwishowe kwenda jongomeo. Kuna haja kubwa ya kujilinda na kuepukana kabisa na janga hili lililotuzingira. Wengi tayari wameshapoteza roho zao. Wengine walioambukizwa wanaugua mahospitalini ma na majumbani mwao kisirisiri. Mungu atujalie heri na shari, kwani utafiti wote ambao umefanywa kuhusu tiba ya uwele huu haujafua dafu hata kidogo. Hata hivyo Mola hamtupi mja wake.

Maswali

a) Ipe habari hii anwani ifaayo. (alama 1)

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b) Kwa nini mwandishi ana hofu sana ya maradhi ya ukimwi? (alama 2)

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c) Hapo awali watu waliwachukulia vipi walioambukizwa maradhi ya Ukimwi? (al 2)

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d) Eleza njia mbalimbali zinazomfanya mtu kuambukizwa maradhi ya ukimwi. (al3)

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e) Je, tunawezaje kuepukana na janga hili la ukimwi? (alama 2)

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f) Eleza maana ya vifungu hivi vya maneno kama vilivyotumika katika taarifa. (alama 5)

i) Wauguzi ……..…

ii) Makali……

iii) Virusi……,…..……

iv) Uwele……..……

v) Janga……

MUHTASARI

Soma kifungu kifuatacho kwa makini kisha jibu maswali.

Sayansi ya lugha kwa mujibu wa matumizi yake katika jamii ni taaluma mpya sana katika silabasi ya somo la Kiswahili kwa shule za Sekondari. Taaluma hii mpya imeibuka na kuibua hali ya taharuki si kwa wanafunzi, si kwa walimu na si kwa washikadau wote wa kitengo maalum cha kukuza lugha nchini. Wanapoulizwa sababu ya taharuki yao, jibu huwa ni moja, “Kuku mgeni hakosi kamba mguuni”Jambo la kimsingi ni kuwa mahuluki hutumia lugha katika shughuli ainati.Aidha ni dhahiri shahiri kwamba katika shughuli hizi kuna matumizi ya lugha — ama maneno kwa sauti au ishara kama zile za vipofu na viziwi.

Lugha itumiwapo katika shughuli au taaluma fulani mahsusi, huwa pana msamiati fulani wa kipekee unaotawala katika shughuli hiyo. Istilahi hizi ndizo huunda sajili. Mathalani, katika taaluma ya zaraa

kuna istilahi kama vile kulima, kupalilia, kuchimba makoongo, kuandaa weu, kupiga matuta, miche, mbegu, mbolea, jembe, koleo, mundu, mifugo, mazao na istilahi nyinginezo.

Msamiati kama huu ndio huunda istilahi za sajili ya zaraa.

Mbali na zaraa, kuna sajili nyingine kama sajili ya matangazo ya mpira utibabu, mazungumzo ya watoto wa mitaani; biashara, sheria na mahakama, dini ya Kikristo, Kiislamu na ya Kihindu na sajili nyinginezo.

Waama, bila lugha matendo yote ya wanadamu yangegonga mwamba na kudorora. Je, viongozi wangetawala vipi? Wafanya biashara wangenadi vipi bidhaa zao? Walimu wangefunzaje'? Bila shaka jibu ni moja tu: ingekuwa vigumu sana.

Hivyo basi lugha ni chombo muhimu sana. Katika maisha ya waja. Shime kila mtu, tuendeleze lugha yetu ya Kiswahili. Tusiwe *wendaguu* kwani makofi hayalii ila kwa viganja viwili.

a) Fupisha aya tatu za mwanzo kwa maneno yasiyozidi 60. (Alama 7)

Matayarisho

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Jibu

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b) Fupisha aya tatu za mwisho kwa maneno yasiyozidi 40. (alama 8)

Matayarisho

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Jibu

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3. MATUMIZI YA LUGHA

a) Toa sita bainifu za sauti /h/ ***(alama 2)***

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b) Tumia neno “hadi” kama kihusishi cha (al.2)

(i) Wakati

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(ii) Mahali

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c) Onyesha matumizi mawili ya parandesi katika sentensi ***(alama 2)***

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d) Tunga sentensi mbili kuonyesha matumizi tofauti ya

(i) – ki –

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(ii) – po - ***(alama 2)***

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e) Unda nomino ukitumia mizizi ifuatayo; ***(alama 2)***

(i) – f –

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(ii) – l –

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f) Kanusha

Sisi ndisi wakulima ***(alama 2)***

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g) Andika kwa msemo wa tarifa

Askari: Ulikuwa unaelekea wapi uliposhambuliwa?

Jirani: nilikuwa nikienda sokoni jana. ***(alama 2)***

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h) (i) Eleza dhana ya shamirisho ***(alama 1)***

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(ii) Onyesha aina tofauti za shamirisho katika sentensi hii. ***(alama 2)***
Ali alimnunulia Asha viatu kwa pesa zake

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i) Andika sentensi ifuatayo kwa udogo / wingi ***(alama 2)***
Mtoto mkaidi aliiba kitabu cha mwenzake.

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j) Bainisha virai katika sentensi ifuatayo ***(alama 3)***
mtoto wake aliketi kando ya barabara asubuhi sana

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k) i) Nini maana ya kiima? ***(alama 2)***

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ii) Onyesha kiima katika sentensi ifuatayo ***(alama 2)***
watoto walisafiria basi

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l) Changanua sentensi kwa kutumia jedwali ***(alama 4)***
Wachezaji vikapu watakaofanikiwa katika mechi hiyo watatuzwa medali.

m) Tunga sentensi yenye muundo wa:-
kiima, kiarifu, yambwa tendwa, yambwa tendewa na yambwa ala **(alama2)**

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n) Bainisha matumizi ya “ni” katika sentensi zifuatazo. ***(alama 2)***
(i) Ondokeni

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(ii) Kiptoo ni mwinzi sugu.

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o) Huku ukitoa mifano, eleza maana ya silabi funge ***(alama 2)***

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p) Yakinisha katika nafsi ya tatu wingi ***(alama 2)***

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Sijasafiri kwenda Marekani ***(alama 2)***

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4. ISIMU JAMII (alama 10)

a) Eleza sababu zozote **sita** zinazochangia kufa kwa lugha (***alama 6)***

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b) Taja mambo yoyote **manne** yanayofanywa na serikali yetu kuimarisha lugha ya Kiswahili ***(alama 4)***

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JINA: _____

SHULE: _____

NAMBARI YA USAJILI _____ **SAHIHI:** _____ **TAREHE:**_____

BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

MTIHANI WA MWISHO WA MUHULA WA KWANZA
KISWAHILI KIDATO CHA NNE
KARATASI YA TATU (FASIHI)
MUDA; SAA $2^1/_2$
MAAGIZO:
1. Jibu naswali manne katika karatasi hii
2. Swali la kwanza ni la lazima
3. Maswali mengine matatu yachaguliwe kutoka sehemu zilizobaki
NB: Usijibu maswali mawili kutoka kitabu kimoja/ sehemu moja

SEHEMU YA A
USHAIRI

1. Soma shairi lifuatalo kisha uyajibu maswali

Mungu naomba subira, subira nayo imani
Imani iliyo bora, bora hapa duniani
Duniani mwa kombora, kombora nayo hiani
Hiani pamwe ukora wenye kuhini.

Kuhini kwenye kiburi, kiburi na ufidhulu
Ufidhuli wa kudhuri, kudhuri wangu muwili
Muwili hata kidari, kidari kuwa thakili
Thakili kisinawiri, kisinawiri misuli.

Misuli kuwa hafifu, hafifu kama muwele
Muwele wa hitilafu, hitilafi ya nduwele
Nduwele kutakilifu, kutakilifu milele
Milele kutoniafu, kutoniafu na vishale.

Vishale vinitomele, vitomele vikwato
Vikwato pia maole, maole kufanya mito
Mito ya matozi tele, tele mithili kitoto
Kitoto kilo vipele, vipele vyenye fiakuto.

Fukuto lanipa neno, neno hili kutamka
Kutamka wazi vino, vino subira kutaka
Kutaka imani mno, mno n'sipate wahaka
Wahaka wa matukano, matukano na mashaka.

Mashaka haya ya leo, leo yawe yarnepita
Yaniepita na vilio, vilia vipishe nyota
Nyota njema ingarao, ing'arao kunikita
Kunikita salamani, salamani nikadata.

a) Kwa nini nafsi neni anaomba subira na amani. (al.2)
b) Shairi hili ni la Bahari gani kwa kuzingatia;
i) Mpangilio wa maneno. (Al. 4)
ii) Mpangilio wa vina.
c) Kwa kutolea mifano eleza mbinu mbili za lugha zilizotumika katika shairi. (al.4)
d) Andika ubeti wa tatu kwa lugha ya nathari. (al.4)
e) Kwa kutolea mifano, elezea jinsi uhuru wa kishairi ulivyotumiwa kutekeleza arudhi. (Al.6)

SEHEMU YA B RIWAYA (Jibu swali la 2 au 3)
CHOZI LA HERI (Assumpta k. Matei)

2. "……Unatumia mantiki gani kusema kuwa sisi si watoto wa miaka hamsini?"
a) Eleza muktadha wa dondoo hili. (al. 4)
b) Taja mbinu ya lugha inayojiotokeza katika dondoo hili. (al.1)
c) Kwa kutumia hoja nane, thibitisha wazungumziwa walikuwa watoto wa miaka Hamsini. (al.8)
d) Eleza wasifu wa msemaji wa maneno haya. (al.4)
e) Eleza umuhimu wa msemewa wa maneno haya. (al.3)

3. Fafanua changamoto zinazoikabili jinsia ya kike katika riwaya ya chozi la heri. (al.20)

SEHEMU YA C: TAMTHILIA
KIGOGO (PAULINE KEA) – Jibu swali la 4 au la 5.

4. Tamthilia ya kigogo ni taswira kamili ya matatizo yanayokumba mataifa mengi barani Afrika. Fafanua ukirejelea tamthilia nzima . (al.20)

5. "Ukitaka kuwafurusha ndege, kata mti. Hawa wangekuwa sasa wametuliza nafsi zao.
a) Eleza muktadha wa kauli hii. (al. 4)
b) Tambua mbinu mbili za uandishi zilizotumika. (al.4)
c) Onyesha jinsi wahusika kadhaa walivyofurushwa kama ndege. (al. 12)

SEHEMU YA D: HADITHI FUPI.
TUMBO LISILOSHIBA NA HADITHI NYINGINE – Jibu swali la 6 au la 7

6. Jadili maudhui ya usaliti katika hadithi;
a) Mame Bakari (al.10)
b) Mapenzi ya kifaurongo (al.10)

7. Thibitisha ufaafu wa jina 'mashaka' katika hadithi ya Ndoto ya mashaka. (al.20)

SEHEMU YA E: FASIHI SIMULIZI

8. a) Taja aina mbili kuu za fasihi. (al.2)
b) Fafanua tofauti baina ya fasihi ulizotaja hapo juu. (al.4)
c) Tambua istilahi zifuatazo za fasili. (al.8)
i) Fanani
ii) Jagina
iii) Maleba
iv) Miviga
d) i) Eleza maana ya vitanza ndimi. (al.2)
ii) Fafanua sifa za vitanza ndimi. (al.4)

NAME: ……..……

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

121/1
MATHEMATICS
PAPER 1

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

1. Without using mathematical tables or calculators evaluate. (3mks)

$$\frac{450x\sqrt{0.36}}{81^{\frac{3}{4}} \div 27^{\frac{2}{3}}}$$

2. A line passing through points P (4, a) and Q (3, 2) is perpendicular to the line 3y + x + 3 = 0. Find the value of a and write down equation of line PQ. (4 marks)

3. Simplify; (3 marks)

$$\frac{8-12x}{6x^2-7x+2} - \frac{4x-7}{3-6x}$$

4. A positive two digit number is such that the product of the digits is 24. When the digits are reversed, the number formed is greater than original number by 18. Find the number. (3 marks)

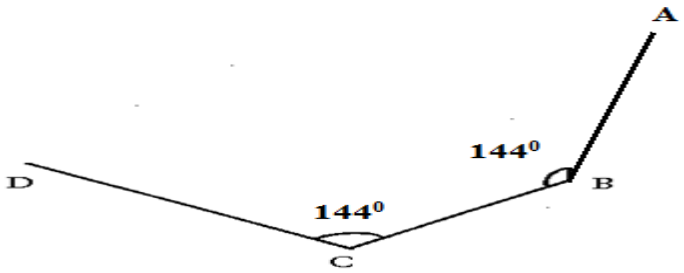
5. During a certain period the exchange rates at a Pesa point were;

	Buying shs	Selling shs
Riyal	19.68	19.78

A tourist arrived with 5480 Riyal which he changed to Kshs. He spend $\frac{2}{3}$ of the total in visiting various sites. As he was leaving he changed all he had to Riyal. How much did he leave with? Answer to 1 d.p. (3 marks)

6. From a viewing tower 30metres above the ground, the angle of depression of an object on the ground is 30^0 and the angle of elevation of an aircraft vertically above the object is 42^0.Calculate the height of the aircraft above the ground. (3mks)

7. The figure below shows part of a regular polygon not drawn to scale.



a) Determine the number of sides of the polygon. (2mks)

b) Calculate the sum of interior angles of the polygon. (1mk)

8. Given that a = $0.\dot{4}\dot{5}$ and b = $1.\dot{5}$ .Find the percentage error in evaluating $\frac{b}{a}$ given that the values of a and b used are a = 0.45 and b = 1.5.Give answer correct to 2dp (3mks)

9. The heights of two similar pails are 12cm and 8cm.The larger pail can hold 2 litres.What is the capacity of the smaller paid? (3mks)

10. If $x = {}^{2}/_{3}$ is a root of $6x^2 + kx - 2 = 0$, find the value of k and the other root. (4 marks)

11. Tap A takes 4 minutes to fill a tank and tap B takes 6 minutes to empty the tank. If the tank has a capacity of 3000 litres find the volume of the tank after 2 minutes when both taps are open. (3 marks)

12. Jim is 12 years old. In three years time he will be 1/3 of his father's present age. How old was his father 12 years ago. (2 marks)

13. Solve the following inequality and show your solution on a number line. (3 marks)

$4x - 3 \leq \frac{1}{2}(x + 8) < x + 5$

14. The midpoint of a vector PQ whose P (1, -4) and Q (x, y) is (-2, 5).

a) Find the values of x and y. (2 marks)

b) Calculate the length of PQ to 4 s.f (2 marks)

15. Using tables evaluate. (3marks)

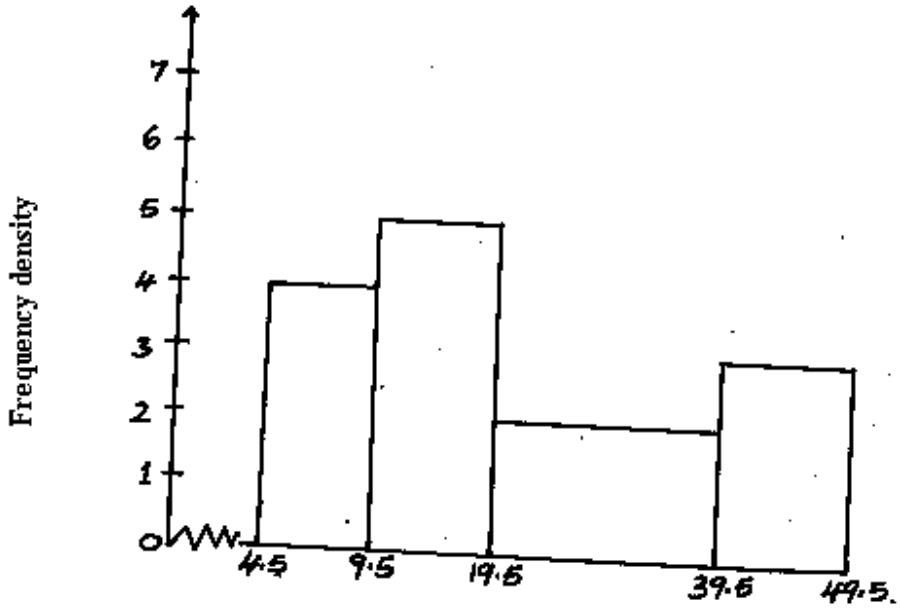
$$\frac{1}{34.52} + \sqrt[3]{0.787} + (0.934)^3$$

16. Determine the equation of the normal to the curve $y = 3x^2 - 4x + 1$ at the point (2, 5).

(3marks)

SECTION B:ATTEMPT ANY FIVE QUESTIONS

17. The diagram below shows a histogram representing the marks obtained in a certain test



Marks

a) Prepare a frequency distribution table of the data (3mks)

b) From above , estimate:-

i) the mean mark (4mks)

ii) State the modal class (1mk)

iii) the median mark (2mks)

18. A bus travels from Nairobi to Kakamega and back.The average speed from Nairobi to Kakamega is 80km/h while that from Kakamega to Nairobi is 50kkm/h.It takes the bus three more hours to travel from Kakamega to Nairobi.

a) Determine the distance between the two towns. (4mks)

b) At 50km/h the fuel consumption is 0.35litres per km and at 80km/h the consumption is 0.3litres per kilometer.Find

i) the total fuel consumption for the round trip (3mks)

ii) the average fuel consumption per hour for the round trip. (3mks)

19. A particle P moves in a straight line such that t seconds after passing a fixed point Q. it's velocity is given by the equation $2t^2 - 10t + 12$ find:

a) The values of t when p is instantaneously at rest. (2 marks)

b) An expression for the distance moved by P after t seconds. (2 marks)

c) The total distance traveled by P in the first 3 seconds after passing point O. (3 marks)

d) The maximum velocity attained by the body. (3 marks

20. Triangle ABC has co-ordinates A(2, 0) B (2, 2) and C(0, 2).

Using the squared grid determine;

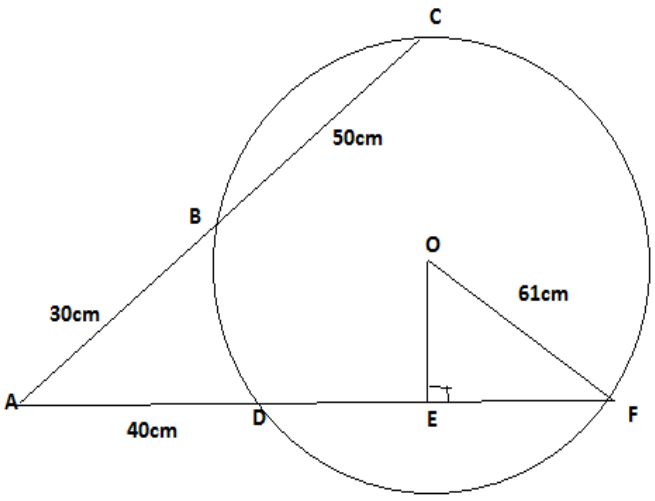
a) The co-ordinates of triangle $A^1B^1C^1$, the image of triangle ABC under reflection in line x = 0. (3 marks)

b) The co-ordinates of triangle $A^{11}B^{11}C^{11}$ and D^{11}, the image of triangle ABC under rotation of 90^o clockwise centre (0, 0). (3 marks)

c) The co-ordinates of triangle $A^{111}B^{111}C^{111}$, the image of triangle ABC under enlargement centre (0, 0) scale factor -1. (2 marks)

d) The single transformation which maps triangle $A^{111}B^{111}C^{111}$ to triangle $A^{1}B^{1}C^{1}$. (2 marks)

21. In the figure below OF is the radius of the circle centre O chords EDC and CB are extend to meet at A and OE is perpendicular to DF at E. OF = 61cm, AB= 30cm, BC = 50cm, AD= 40cm.



a) Calculate the length of

i) DF (2marks)

ii) OE (2marks)

b) Calculate correct to 1dp

i) Size of angle EOF (2marks)

ii) The length of the major arc DF (3marks)

22. Every Sunday, Chalo drives a distance of 80km on a bearing of 074^{o} to pick up his brother Ben to go to church. The church is 75km from Ben's house on a bearing of S50^{o}E. After church they drive a distance of 100km on a bearing of 260^{o} to check on their father before Chalo drives to Ben's home to drop him off then proceeds to his house.

a) Using a scale of 1cm represent 10km show the relative positions of these places (4 marks)

b) Use your diagram to determine
(i) The true bearing of Charo's

(ii) The compass of bearing of the father's home from Ben's home (1 marks)

(iii) The shortest distance between Ben's home and father's home. (2 marks)

(iv) The total distance Charo travels' every Sunday. (2 marks)

23. Given that $y = 7 + 3x - x^2$, complete the table below 2mks

x	-3	-2	-1	0	1	2	3	4	5	6
y	-11			7						-11

b) On the grid provided and using a suitable scale draw the graph of $y=7 + 3x - x^2$. (3 marks)

(PROVIDE A GRAPH PAPER)

c) Use your graph to solve:

i) $X^2-3x-7=0$ 1mk

ii) $x^2 - 4x -3 = 0$ (3 marks)

d) Determine the coordinates of the turning point of the curve. (2 marks)

24. The income tax rates in a certain year are as shown below.

Income (k£ – p.a	Rate (KSh. per £)
1 – 4200	2
4201 – 8000	3
8001 – 12600	5
12601 – 16800	6
16801 and above	7

Omar pays Sh. 4000 as P.A.Y.E per month. He has a monthly house allowance of KSh.10800 and is entitled to a personal relief of KSh. 1,100 per month. Determine:

(i) his gross tax per annum in Kshs (2 Marks)

(ii) his taxable income in K£ per annum (4marks)

(iii) his basic salary in Ksh. per month (2marks)

(iv) his net income per month (2 marks)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

121/2
MATHEMATICS
PAPER 2
TIME: 2½ HOURS

INSTRUCTIONS TO CANDIDATES

a) Write your name and Admission number in the spaces provided above.
b) This paper consists of **TWO** sections. Section I and Section II.
c) Answer **ALL** the questions in section I and only **FIVE** questions from Section II.
d) All answers and working must be written on the question paper in the spaces provided below each question.
e) Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.
f) Marks may be given for correct working even if the answer is wrong.
g) Non-programmable silent calculators and KNEC mathematical tables may be used except where stated otherwise.
h) This paper consists 16printed papers
i) Candidates should check the question paper to ascertain that all the papers are printed as indicated and that no questions are missing.

FOR EXAMINER'S USE ONLY

SECTION I

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	AL

SECTION II

17	18	19	20	21	22	23	24	AL

GRAND TOTAL	

SECTION I (50 MARKS)
Answer ALL the questions in this section.

1. Use logarithms to evaluate:

$$\sqrt[3]{\frac{45.3 \times 0.00697}{0.534}}$$ (4 marks)

2. a) Expand $\left(1 - \frac{1}{2}x\right)^6$ to fourth term. (2 marks)

b) Use the expansion above to evaluate $(0.98)^6$ (2 marks)

3. The price of a new car is shs. 800,000. If it depreciates at a constant rate to shs. 550,000 within 4 years, find the annual rate of depreciation. (3 marks)

4. Find the inverse of $\begin{pmatrix} 1 & 2 \\ 2 & 5 \end{pmatrix}$ and hence solve the simultaneous equations below (3 mks)

$x + 2y = 21$
$2x = 34 - 5y$

5. Without using a calculator or mathematical tables, express $\frac{\sqrt{3}}{1-Cos\ 30^0}$ in surd form and simplify. (3 marks)

6. The position vector of A and B are a = 4**i** + 4**j** – 6**k** and b = 10**i** + 4**j** + 12**k.** D is a point on AB such that AD:DB is 2:1. Find the co-ordinates of D. (3 marks)

7. A variable Z varies directly as the square of X and inversely as the square root of Y. Find percentage change in Z if X is increased by 20% and Y decreased by 19%. (3 marks)

8. Pipe A can fill a tank in 2 hours, Pipe B and C can empty the tank in 5 hours and 6 hours respectively. How long would it take:

a) To fill the tank if A and B are left open and C is closed. (2 marks)

b) To fill the tank with all pipes open. (2 marks)

9. Given that $\text{Sin}\left(\frac{2}{3}x + 20^0\right) - \text{Cos}\left(\frac{5}{6}x + 10^0\right) = 0$. Without using a mathematical table or a calculator, determine $\tan(x + 20^0)$. (3 marks)

10. Make P the subject of the formula $XY^P = Q^{PX}$ (3 marks)

11. The coordinates of the end points of diameter are A(2,4) B(–2,6). Find the equation of a circle in the form $ax^2 + by^2 + cx + dy + e = 0$ (3 marks)

12. A bag contains 10 balls of which 3 are red, 5 are white and 2 green. Another bag contains 12 balls of which 4 are red, 3 are white and 5 are green. A bag is chosen at random and a ball picked at random. Find the probability the ball so chosen is red. (3 marks)

13. The first, the second and sixth terms of an increasing arithmetic progression are the three consecutive terms of a geometric progression. If the first term of the arithmetic progression is 2, find:

a) Common difference of the arithmetic progression (2 marks)

b) Common ratio of the geometric progression. (1 mark)

14. The distance S metres moved by a particle along a straight line is given by $S= 7 + 8t^2 – 2t^3$. Find the velocity at t = 2 seconds. (2 marks)

15. The length and breadth of a rectangular floor garden were measured and found to be 4.1m and 2.2m respectively. Find the percentage error in its area. (3 marks)

16. A train moving at an average speed of 72km/h takes 15 seconds to completely cross a bridge that is 80 metres long

(a) Express 72km/h in metres per second (1mk)

(b) Find the length of the train in metres (2mks)

SECTION II (50 MARKS)

Answer any FIVE questions in this section.

17. A steel manufacturing factory had a sample of 53 iron rods of various lengths. The lengths of the rods were measured and recorded in the table below:

Length (cm)	8-10	11-13	14-16	17-19	20-22	23-25	26-28
No. of rods	4	7	11	15	8	5	3

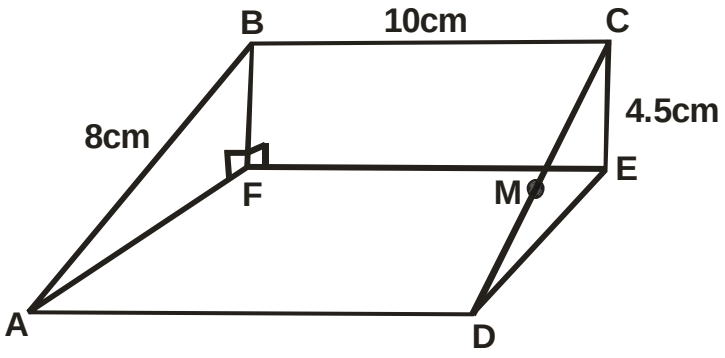
a) State the frequency of the modal class. (1 mark)

b) Using 18 as an assumed mean, calculate:

i) Actual mean (5 marks)

ii) Variance (3 marks)

iii) Standard deviation (1 mark)



18. The above diagram represents a wooden prism. ABCD is a rectangle. Points E and F are directly below C and B respectively. M is the midpoint of CD. AB = 8cm, BC= 10cm and CE= 4.5cm.

a) The size of angle CDE. (2 marks)

b) Calculate:

i) Length of AC. (2 marks)

ii) The angle CAE makes with the plane ADEF. (2 marks)

c) Find the:

i) Length of MB. (2 marks)

ii) Angle CBM. (2 marks)

19. An aeroplane flies from a point P(60^0N, 45^0W) to a point Q(60^0N, 135^0E). Given that the radius of the earth is 6370km,

a) Calculate the shortest distance between P and Q:

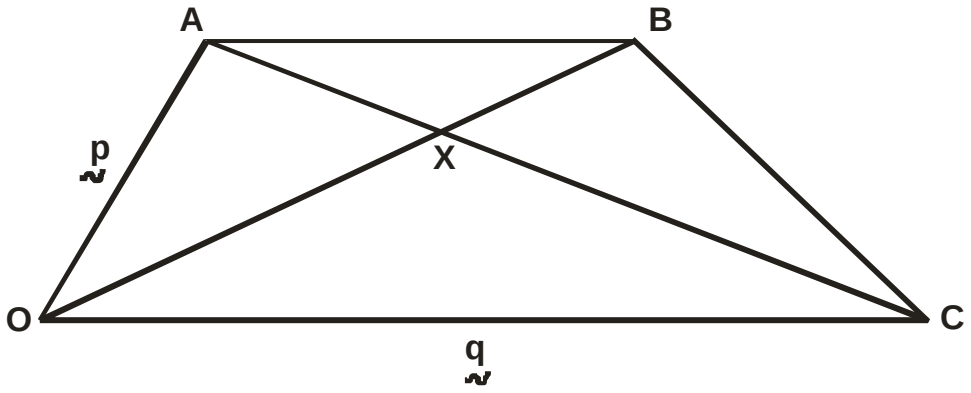
i) inkilometres (km) (3 marks)

ii) in nautical miles (nm) (1 mark)

b) If the plane flew at a speed of 600 knots, how long did it take to move from P to Q.? (2 marks)

c) The plane left P at 10.00a.m on Monday. At what time did it arrive at Q if it travelled along a parallel latitude at the same speed. (4 marks)

20. In the figure below OA = **p** and OC = **q**. Vector AB = $\frac{3}{4}$OC. Express in terms of unit vectors **p** and **q** the vectors.



a)

i) AC (1 mark)

ii) OB (1 mark)

iii) BC (1 mark)

b) Vector AC intersects with vector OB at X such that AX = tAC and OX = hOB. By expressing OX in two ways in terms of t and h,
Find:

i) Scalars t and h (5marks)

ii) the ratio OB: BX (2 marks)

21. Two fair dice one a regular tetrahedron (4 faces) and the other a cube are thrown. The scores are added together. Complete the table below to show all possible outcomes.
(2 marks)

TETRAHEDRON \ CUBE	1	2	3	4	5	6
1						
2						
3						
4						

a) Find the probability that:

i) The sum is 6. (1 mark)

ii) The sum is an odd number. (1 mark)

iii) The sum is 6 or 9. (2 marks)

b) If a player wins a game by throwing a sum of 6 or 9, draw a tree diagram and use it to find probability that he wins at least once when the dice are thrown twice. (4 marks)

22. i) Find the y- intercept of the curve $y = x^3 - 3x + 2$ (1 mark)

ii) Find the coordinates of the stationary points of the curve $y = x^3 - 3x + 2$ (3 marks)

iii)For each stationary point in a (ii) above, determine whether it is a maximum or a minimum turning point. (4 marks)

iv) Sketch the graph of $y = x^3 - 3x + 2$ (2 marks)

23. A number of people working at a factory decided to raise 72000 to buy a plot of land. Each person was to contribute the same amount. Before contributions five people retired from working at the factory and thus did not contribute. The same target of 72000 was still to be met by the remaining.

a) If n stands for the number of people working in the factory originally, show that the increase in the contribution per person was shs.$\frac{360000}{n\,(n-5)}$ (3 marks)

b) If the increase in contribution per person was sh.1200, find the number of people originally working at the factory. (4 marks)

c) Calculate the percentage increase in the contributions per person caused by retirement, giving your answer to one decimal place. (3 marks)

24. a) Complete the table below for the functions y = 3Sin x and y = 4Cos (2x - 10) (2 marks)

x	0	15	30	45	60	75	90	105	120	135	150	165
3Sin x	0	0.78						2.90			1.50	
4Cos (2x-10)	3.94		2.57			3.06				-0.69		3.06

b) Using a scale of 1cm to rep 1 unit on the vertical axis and 1cm to rep 150 on the horizontal axis, draw both curves on the same axes. (5 marks)

(**PROVIDE A GRAPH PAPER)**

c) Use your curves to solve 3 Sin x – 4 Cos (2x -10) = 0 (2 marks)

d) State the phase angle of the curve y = 4 Cos (2x -10) (1 mark)

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BRILLIANT STUDENTS

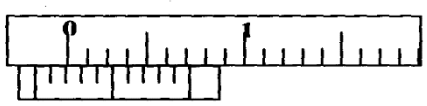
FORM 4 END TERM 1 SERIES 1 EXAMS

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

FORM 4 PHYSICS PAPER 1

SECTION A: 25 MARKS

1. The figure below shows part of a vernier callipers when the jaws are closed without an object in between the jaws.



a)State the zero error of the vernier callipers. (1mk)

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b) A student used the same vernier calipers to measure the diameter of a test tube of actual diameter 2.15cm. What was the reading shown by the vernier callipers? (2mks)

2. Xcm^3 of substance A of density $800kgm^{-3}$ is mixed with 100cm3 of water of density $1000kgm^{-3}$. The density of the mixture is 960kgm-3. Determine the value of **x.** (3mks)

3. Chalk is denser than air. Explain why chalk dust floats in air. (1 mark)

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4. A bullet of mass 10g travelling at a speed of 400ms-1 hits a tree trunk, it penetrates the tree trunk and stops inside the trunk after 4 cm.

(a) Calculate the average resistance force offered by the trunk to the bullet. (3mks)

(b) State the energy changes that takes place. (1mk)

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5. State **one** way of making surface tension of water stronger. (1mk)

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6. State the law of conservation of energy. (1 mark)

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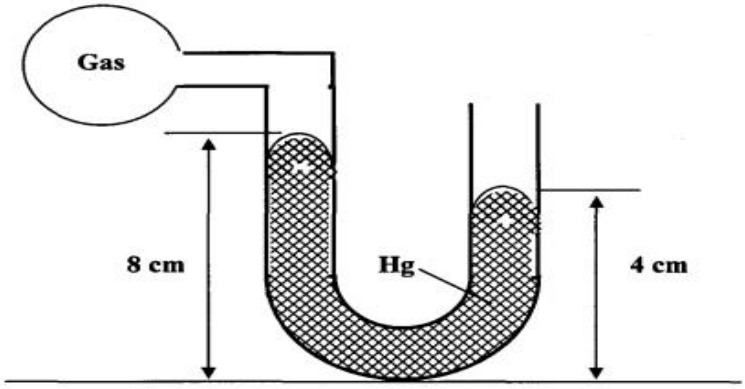
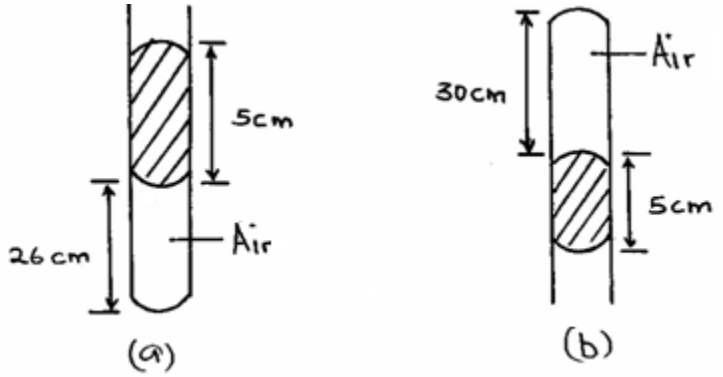
7. An airtight flask containing a gas is connected to a mercury manometer. The levels of mercury in the two limbs of the manometer are as shown in the diagram below.



Calculate the pressure of the gas (Density of mercury = 1.36×10^4 kg/m^3 and atmospheric pressure = 1.0×10^5 N/m^2) (3mks)

8. A column of air 26cm long is trapped by mercury thread 5.0cm long as shown in the figure (a) below. When the tube is inverted as in figure (b) the air column becomes 30cm long. What is the value of atmospheric pressure? (3 marks)



9. a) State two conditions necessary for a body to be in equilibrium . (2mks)

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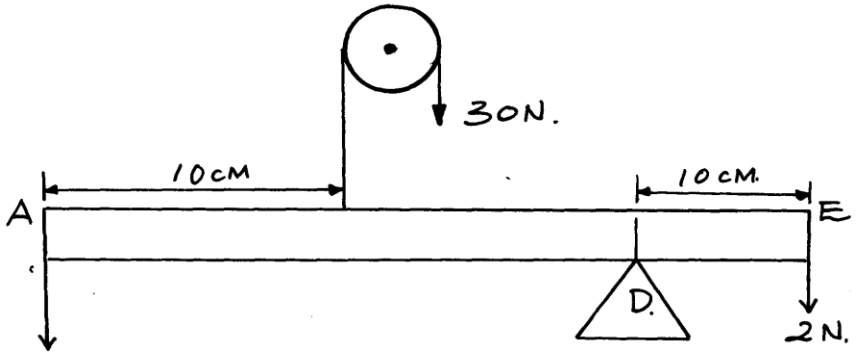
b) The figure below shows a uniform rod **AE** which is 40cm long. It has a mass of 2kg and pivoted at **D**. If 2N is acting at point **E**, and 30N force is passed through a frictionless pulley



X

Find the force X acting at end **A** (3mks

10. State the reason why a trailer carrying heavy loads has many wheels. (1 mark)

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SECTION B

11. a) State the Archimedes Principle. (1 mark)

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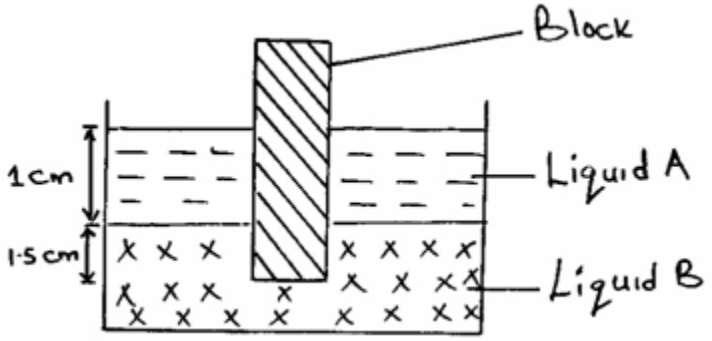
(b) The figure below shows rectangular block of height 4cm floating vertically in a beaker containing two immiscible liquid A and B. The densities of the liquid are 8000 kg/m³ and 12,000kg/m³ respectively.



The cross sectional area is 2cm².Determine.

(i) the weight of the liquid A displaced by the black. (2 marks)

(ii) the weight of the liquid B displaced by the block. (2 marks)

(iii) the mass of the block. (1 mark)

(iv) the density of the block. 2 marks)

12. (a) (i) What is meant by perfectly inelastic collision. (1 mark)

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(ii) A minibus of mass 1600kg travelling at a constant velocity of 20mls collides with a stationary car of mass 800kg. The impact takes 2 seconds before the two moves together and come to rest after 15 seconds. Determine.

(a) The common velocity. 3marks

(b) The distance moved after the impact. (2 marks)

(iii) The impulse force. (3 marks)

13. (a)Sketch a block and tackle pulley system with three movable pulleys in the lower block and two fixed pulleys in the upper block. (2mks)

Find:

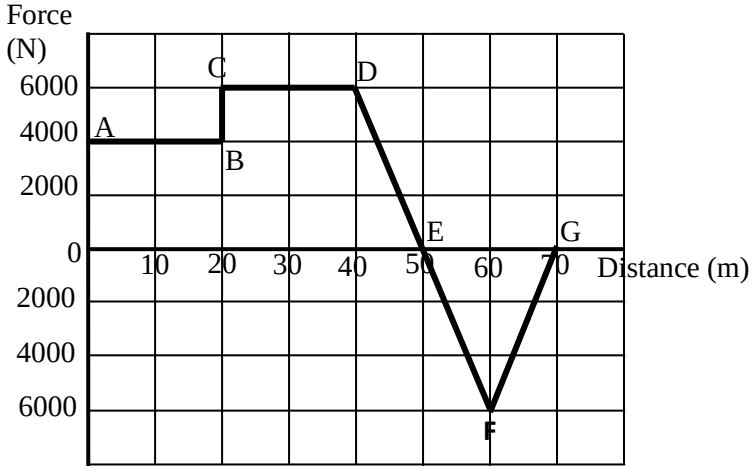
(b) (i)Velocity ratio (V.R.) (1mk)

(c) A man uses the inclined plane to lift a 50kg load through a vertical line height of 4.0m. The inclined plane makes an angle of 30° with the horizontal. If the efficiency of the inclined plane is 80%, determine.

i. The effort needed to move the load up the inclined plane at a constant velocity. (3 marks)

ii. The work done against friction in raising the load through the height of 4.0m. (Take g = 10N/kg). (3 marks)

d) The graph below shows the variation of force with distance for a body being towed



Calculate the total work done on the body. (3 Marks)

14. a) The moon goes round the earth at constant speed. Explain why it is true to say that the moon is accelerating. (1 mark)

(b) A string of negligible mass has a bucket tied at the end. The string is 60cm long and the buckets has a mass of 45g. The bucket is swung horizontally making 6 revolutions per second. Calculate:

(i) The angular velocity. (1 mark)

(ii) The centripetal acceleration. (2 marks)

(iii) The tension on the string. (2 marks)

(iv) The linear velocity. (1 mark)

(c)Figure 6 shows a body of mass;$m = 200g$ attached to the centre of a rotating table with a string . The radius of the string was varied and different values of angular velocity recorded. The mass of the body remained constant throughout the experiment.

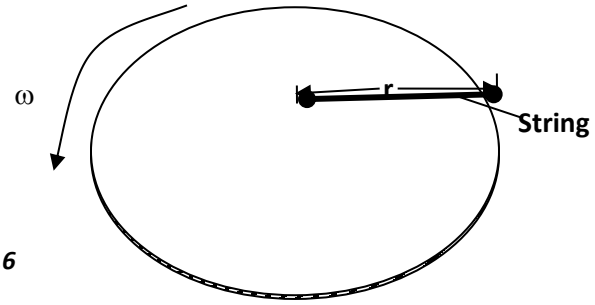
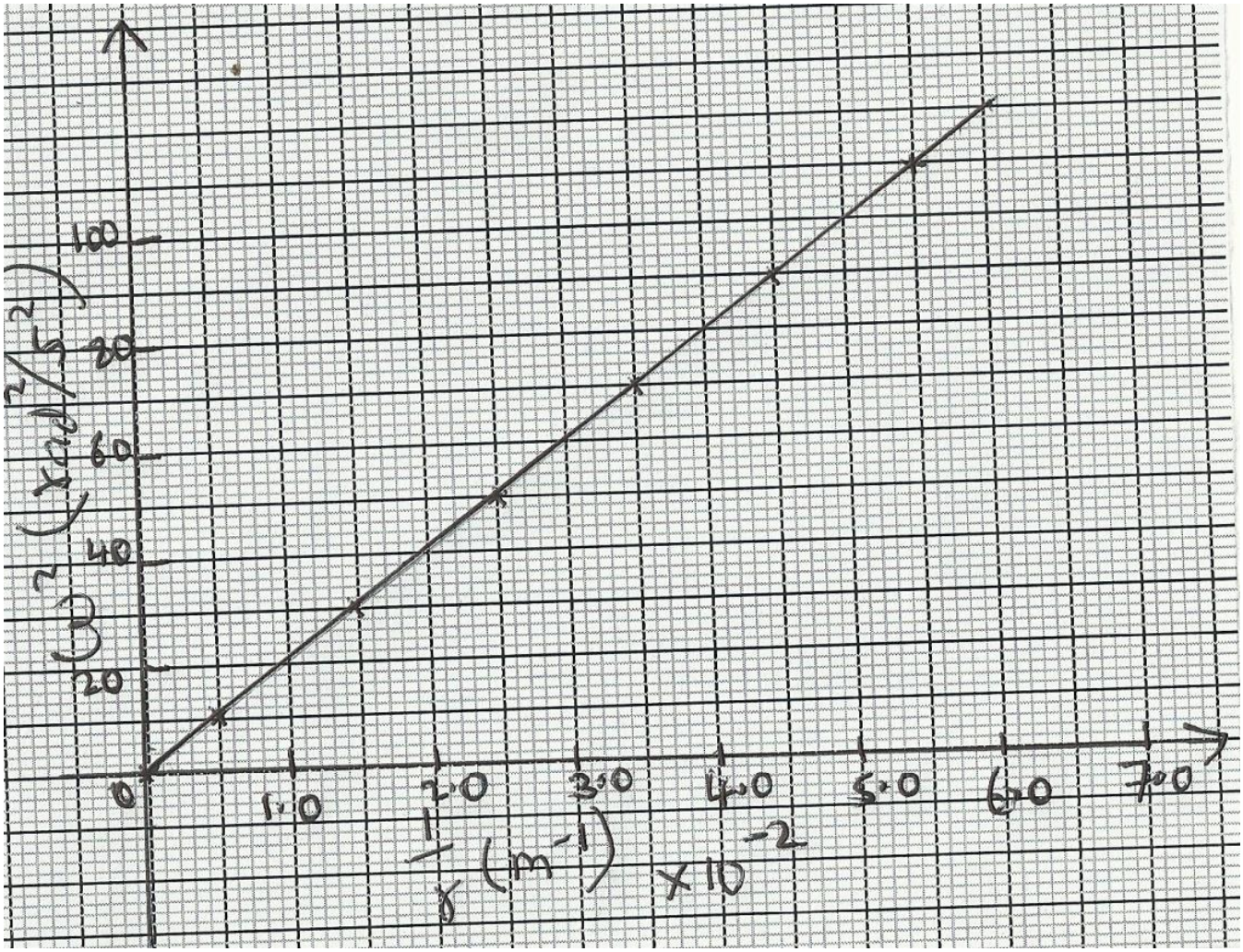


fig.6

The results obtained for angular velocity and radius were used to plot the following graph;



From the above graph;

(i)Calculate the value of the slope. (2mks)

(ii)If $\boldsymbol{\omega}^2$ and $\frac{\mathbf{1}}{\boldsymbol{r}}$ are related by the equation; $\boldsymbol{\omega}^2 = \frac{\boldsymbol{p}}{\boldsymbol{r}} \times \frac{\mathbf{1}}{\boldsymbol{m}}$, find the value of **P**. (2mks)

(iii)State the significance of **P.** (1mk)

15. a) Define the term specific heat capacity. (1 mark)

(b) A block of metal of mass 150g at 100°C is dropped into a lagged calorimeter of heat capacity $40Jk^{-1}$ containing 100g of water at 25°C. The temperature of the resulting mixture is 34°C. (Specific heat capacity of water = $4200Jkg^{-1}$).

Determine;

(i) Heat gained by calorimeter. (2 marks)

(ii) Heat gained by water. (2 marks)

(iii) Heat lost by the metal block. (1 mark)

(iv) Specific heat capacity of the metal block. (3 marks)

(c)200 g of ice at 0°C is added to 400g water in a well lagged calorimeter of mass 40g.The initial temperature of the water was 40°C. If the final temperature of the mixture is X°C,
(Specific latent of fusion of ice L = 3.36×10^5 Jkg^{-1}, specific heat capacity of water, c = $4200 Jkg^{-1}K^{-1}$, specific heat capacity of copper = $400\ Jkg^{-1}K^{-1}$.)

(i) Derive an expression for the amount of heat gained by ice to melt it and raise its temperature to X°C (2mks)

(iii) Determine the value of X. (3mks)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

PHYSICS PAPER TWO

SECTION A (25 MARKS)

Answer All questions in this section in the spaces provided

1. Briefly explain how polarization can be overcome in a simple cell (1mark)

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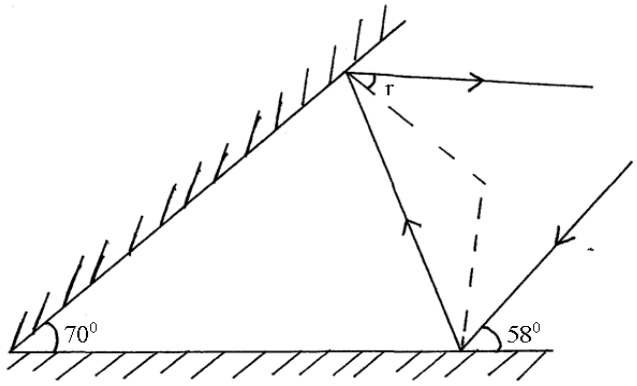
2. Determine the angle of reflection r in the diagram below(3marks)



3. In a house electrical system the appliances used on a ring circuit must have their plugs with fuses. Explain how the fuse protects the appliances used.(1mark)

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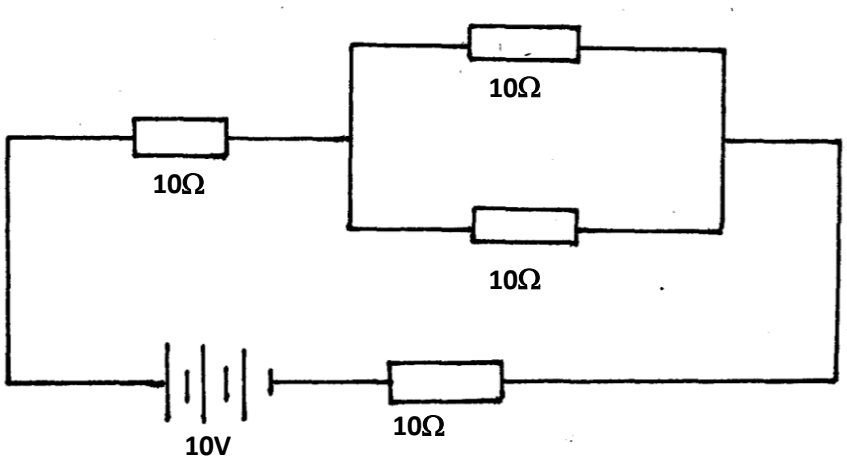
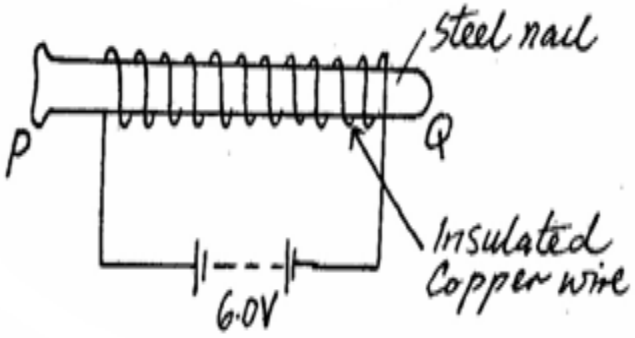
4. Four 10Ω resistors are connected to a 10V dc supply as shown in the diagram below.

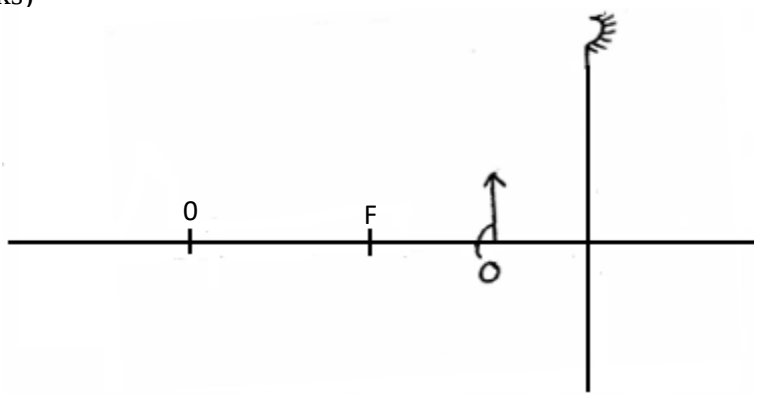


Calculate the total current flowing in the circuit. (3marks)

5. A steel is to be magnetized by electrical method as shown below. Identify the pole **P** and **Q** of the resulting magnet.(2marks)



6. An object O is placed in front of a concave mirror and on the principal axis, as shown in the figure **below**. Complete the light ray diagram to locate the position of the image.
(3marks)



7. Arrange the following electromagnetic waves in order of increasing frequency; Visible light: Gamma rays; Ultraviolet rays and Microwaves (l mark)

8. A charged conductor is slowly brought near the cap of a positively charged electroscope. The leaf first collapses and then diverges. Explain(2marks)

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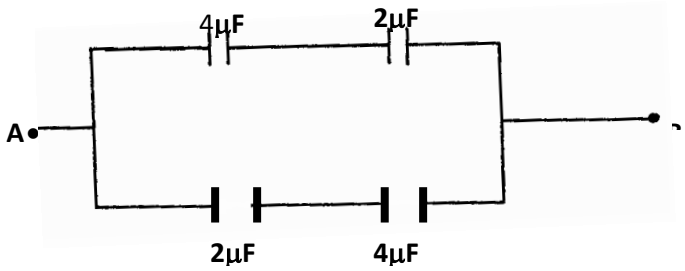
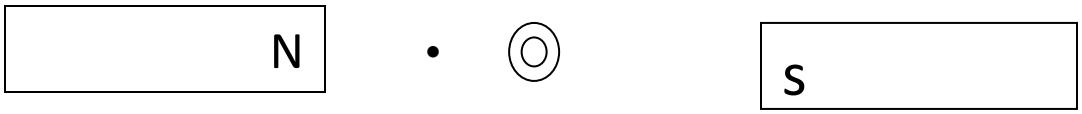
9. The circuit diagram in figure13 below shows four capacitors connected between two points **A** and **B.** Determine the capacitance across **AB**. (3mks)



10. The figure below shows a conductor carrying current placed within the magnetic field of two magnets. Complete the diagram by showing the field pattern and the direction of force F that acts on the conductor.(2marks)



11. Explain why electric power is transmitted over long distances at high voltages.(1mark)

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12. (a) Define diffraction with respect to waves.(1 mark)

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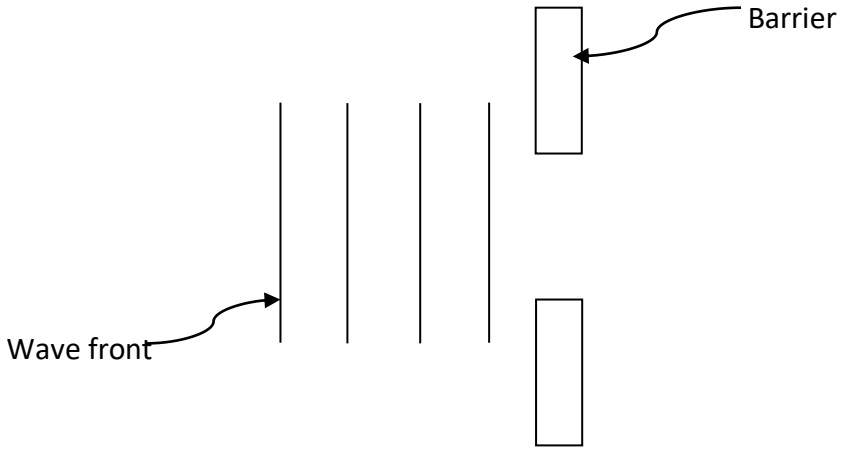
(b) In the diagram below the size of the aperture at the barrier is 10cm while the distance between two consecutive wave fronts is 3cm. If the waves are moving towards the barrier, draw the wave fronts as they appear after passing through the aperture. (2 marks)



SECTION B (55 MARKS)

Answer all questions in this section in the spaces provided

13. a) State Faraday's Law of electromagnetic induction.(1mark)

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b) An Armature composed of turns of insulated copper wire wound on a soft iron core is rotated in a magnetic field to produce an e.m.f. Other than the speed of rotation, state two other factors that affect the magnitude of the generated e.m.f (2marks)

c) Briefly explain why the soft iron is laminated.(1mark)

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d) A transformer with 500turns in the primary and 50 turns in the secondary is connected to 240V a.c. mains. If a 50Ω resistor is connected to the secondary coil, determine the energy dissipated by this resistor if the transformer is 100% efficient. (3marks)

e) Give one major difference between a step up transformer and step down transformer.
(1 mark)

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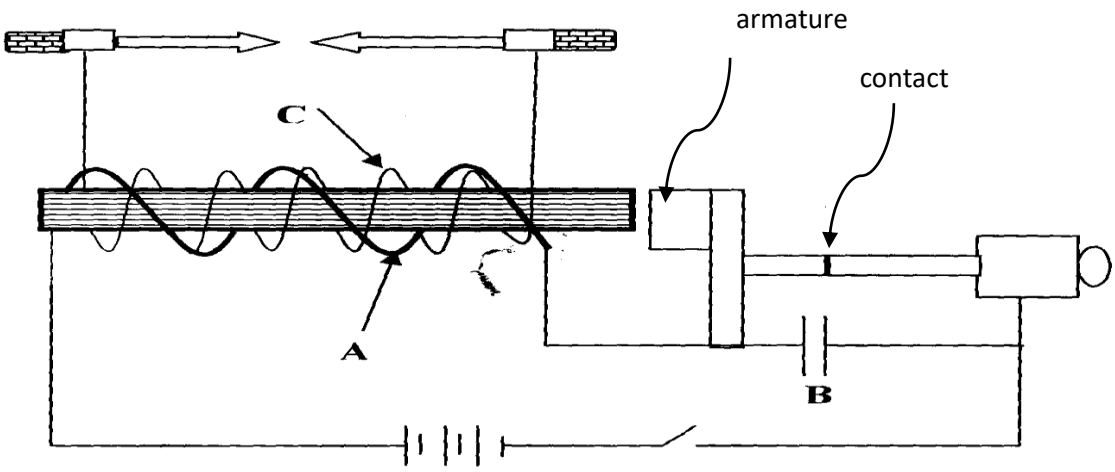
f) The diagram below shows an induction coil used in the car ignition system.



(i) Name parts labelled A and B. (2 marks)

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(ii) Give the function of B. (1mark)

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14. (a) (i) What is the difference between stationary and progressive waves (2marks)

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(ii) State two distinctions between the way mechanical waves and electromagnetic waves are transmitted.(2marks)

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(b) A student stands between two halls and 400m from the nearest hall. The halls are x metres apart. Every time the student claps, two echoes are heard by the student such that the first echo comes after 2.5 seconds while the second follows 2 seconds later. From this information calculate.

(i) The speed of sound in air. (3marks)

(ii) The value of x. (3marks)

(c) Explain the effect of temperature of air on the speed of sound. (1mark)

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15. a) Define the term critical angle. (1mk)

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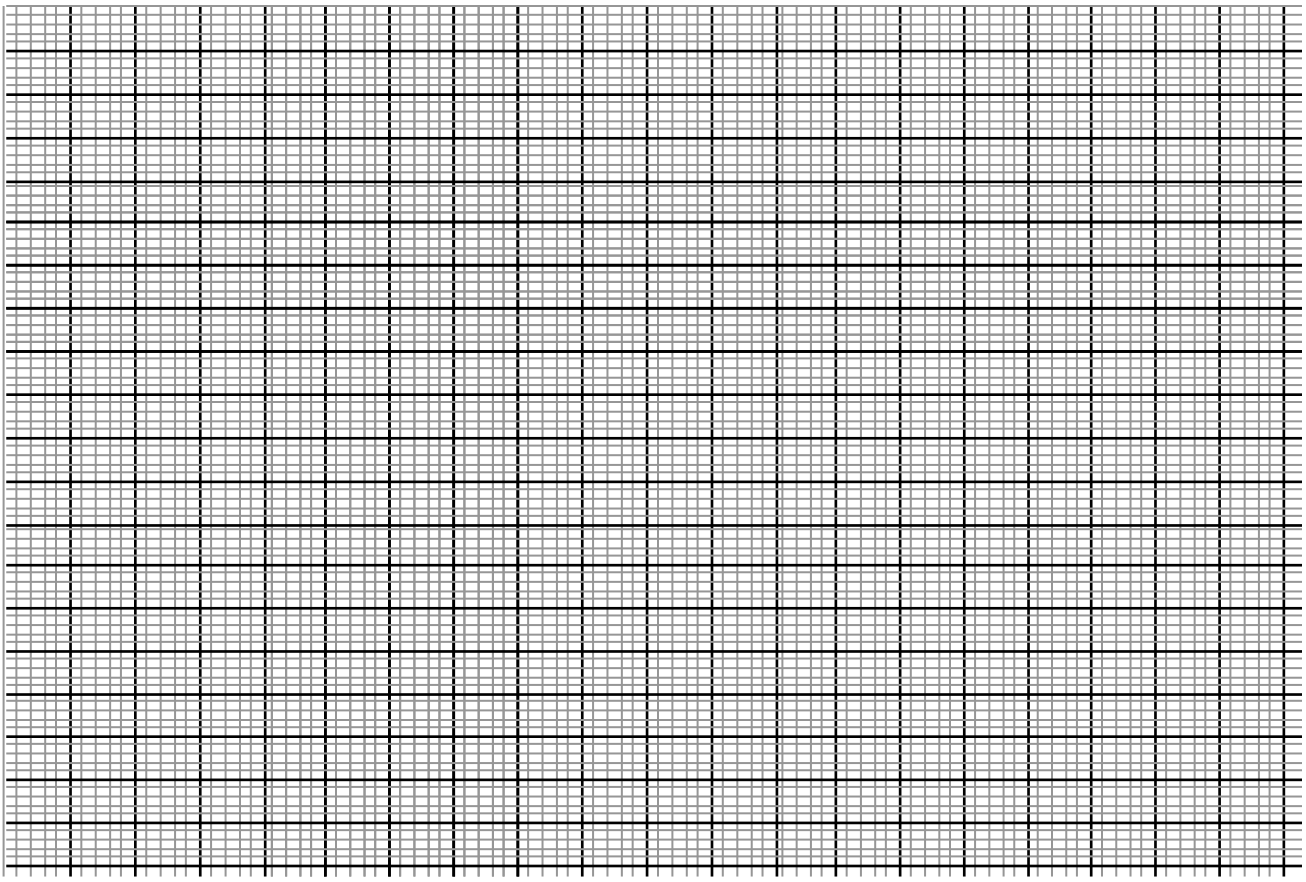
b) The critical angle of a certain material medium is 43.2º. Determine the refractive index of the material.(2marks)

c) The following results were obtained in an experiment to determine the reactive index of as certain liquid.

Real depth (mm)	40.5	60	80	100
Apparent depth (mm)	29.5	45	60	75.5

(i) Plot a graph of apparent depth against the real depth.(4marks)



(i) From the graph, determine the refractive index of the liquid.(2mks)

(ii) Identify the liquid. (1mk)

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d) Give two conditions necessary for total internal reflection to occur. (2marks)

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16. a) Differentiate between electromotive force (e.m.f) and potential difference(2marks)

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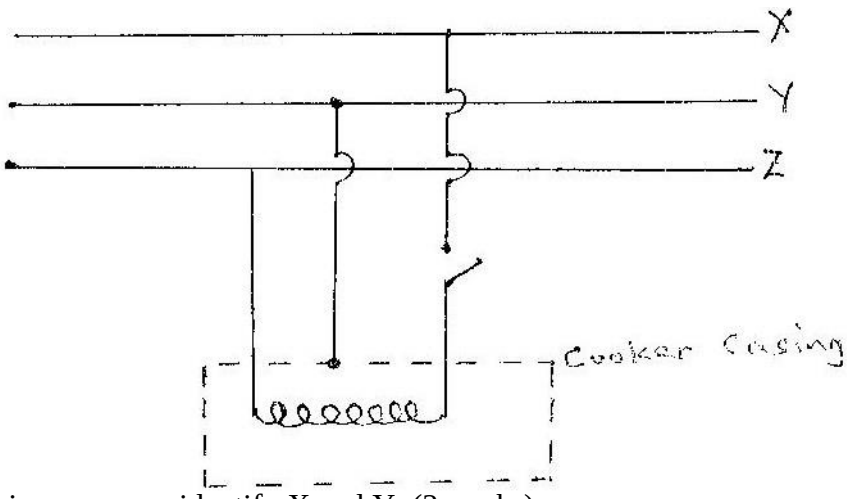
b) The figure shows the electric wiring of an electric cooker X, Y and Z are main wires.



Giving a reason, identify X and Y. (2 marks)

c) A student has a large number of 240V, 60W coloured bulbs he wishes to use for decorations so that the bulbs operate normally.

(i). How many bulbs can be connected to a 240V supply through a 5A fuse (2 marks)

(ii). If electric energy cost Kshs. 6.75 per unit, what will be the cost of running the above circuit for 5 hours a night for 20 nights?(2 marks)

e) A cell drives a current of 5A through a 1.6Ω resistor. When connected to a 2.8Ω resistor, the current that flows in 3.2A. Find E and r for the cell. (3marks)

b) Calculate the length of a nichrome resistance wire of cross-sectional area $7 \times 10^{-8} m^2$ required to make a resistor of 10 ohms. (Take resistivity of nichrome = $1.10 \times 10^{-6} \Omega m$).
(3 marks)

17. a) Define the term accommodation as used in lenses.(1mk)

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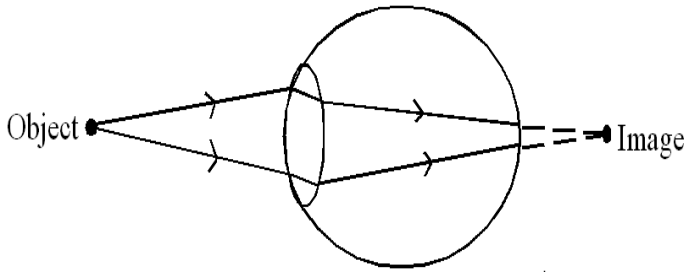
b) (i) Identify the defect.(1mk)



(iii) State how the defect can be corrected (1mark)

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c) Give one difference between the eye and the camera.(1mark)

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d) An object of height 10cm stands before a diverging lens of focal length 30cm and at a distance of 20cm from the lens. Determine the image distance and state two characteristics of the image formed. (3 marks)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 1 EXAMS

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

PHYSICS FORM FOUR PAPER THREE

END OF TERM 1

TIME 2 ½ HOURS

Question one

You are provided with the following:

- Two new dry cells
- An ammeter 0 – 1A
- A voltmeter 0 – 5V
- A resistance wire labelled XY on mm scale
- Jockey or crocodile clip
- Cell holder
- Switch
- Six connecting wires at least three with crocodile clips at one end

(a) Set up the circuit as shown in figure 1

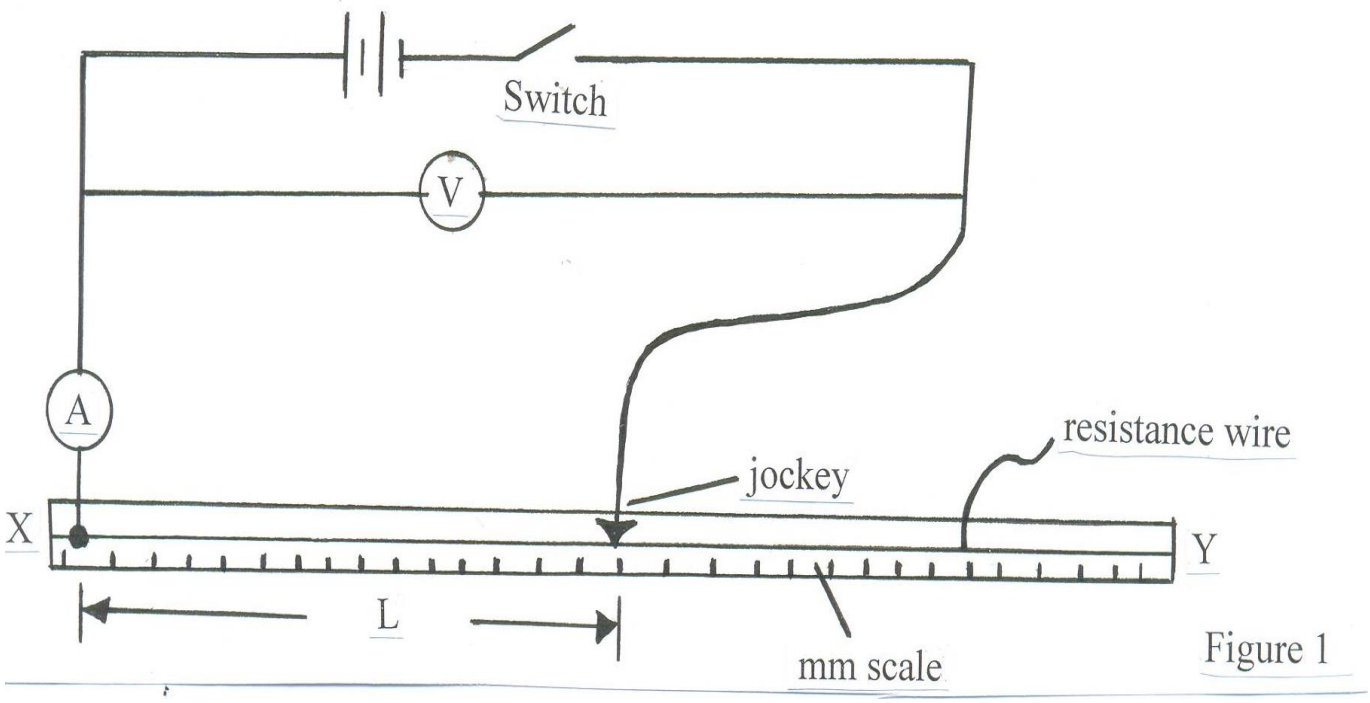


Figure 1

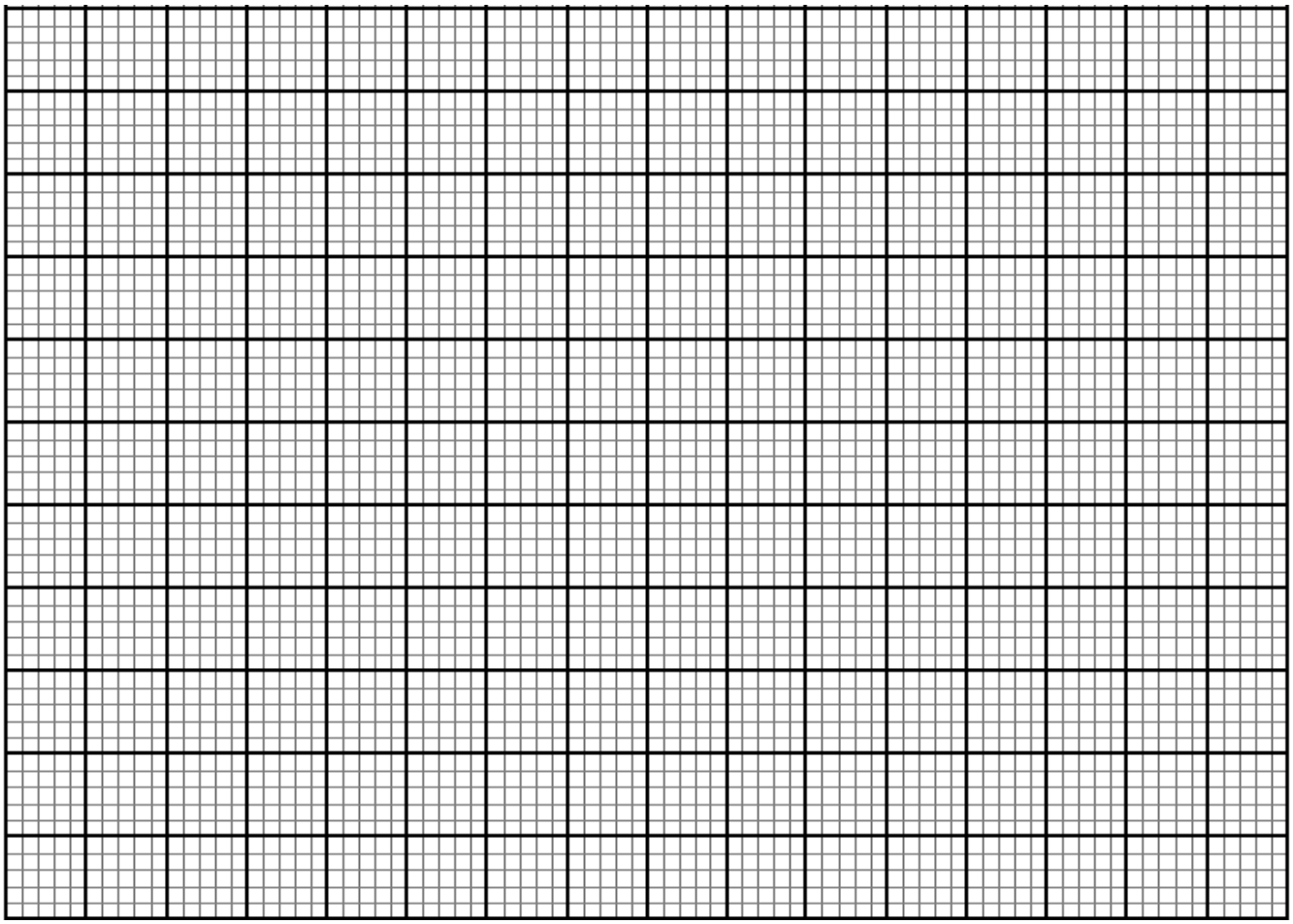
(b) Close the switch and place the jockey in contact with the resistance wire such that the length L, of the wire XY = 0.20m. Measure and record the current, I, through the wire XY and the p.d, V, across it and enter the results in table 1

(c) Repeat procedure (b) above for the other values of L given. Read and record the corresponding values of I and V.

L (cm)	0.2	0.4	0.5	0.6	0.7	0.8	1.0
p.d (V)							
I (A)							
R (Ω)							
$^1/_I$ (A^{-1})							

Table 1 (7mks)

(d) Plot a graph of $^1/_I$ (y axis) against R (5mks)



(e) Determine the slope, S, of your graph (3mks)

(f) Given that I and R of the graph are related by the equation $\frac{1}{I} = \frac{R}{E} + \frac{r}{E}$, use your graph to

Determine the values of :

E = (3mks)

r = (2mks)

Question two

This question has three parts A, B and C. Answer all the parts

PART A

You are provided with the following:

- A metre rule
- Two identical 100g masses (labeled A and B)
- About 200ml of liquid L in 250ml beaker
- Three pieces of thread, each about half meter long.
- Stand with clamps
- Tissue paper.

Proceed as follows:

(a) Using a stand and one piece of thread, suspend the metre rule in air such that it balances horizontally. Record the position of the centre of gravity. G.

G = _____ cm (1mk)

NOTE: The metre rule should remain suspended at this point throughout the experiment.

(b) Set up the apparatus as in figure 2

x d B Liquid L stand Figure 2 A

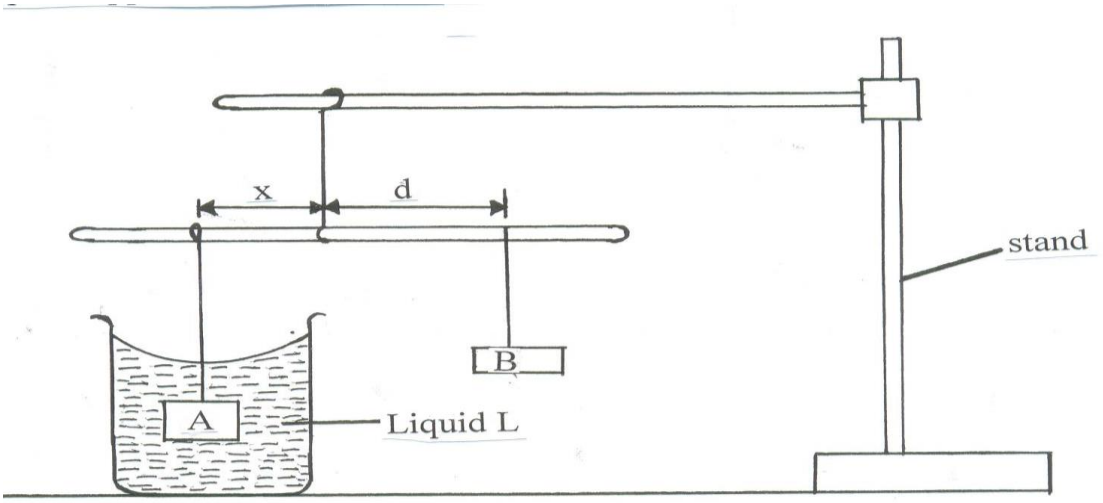


Figure 2

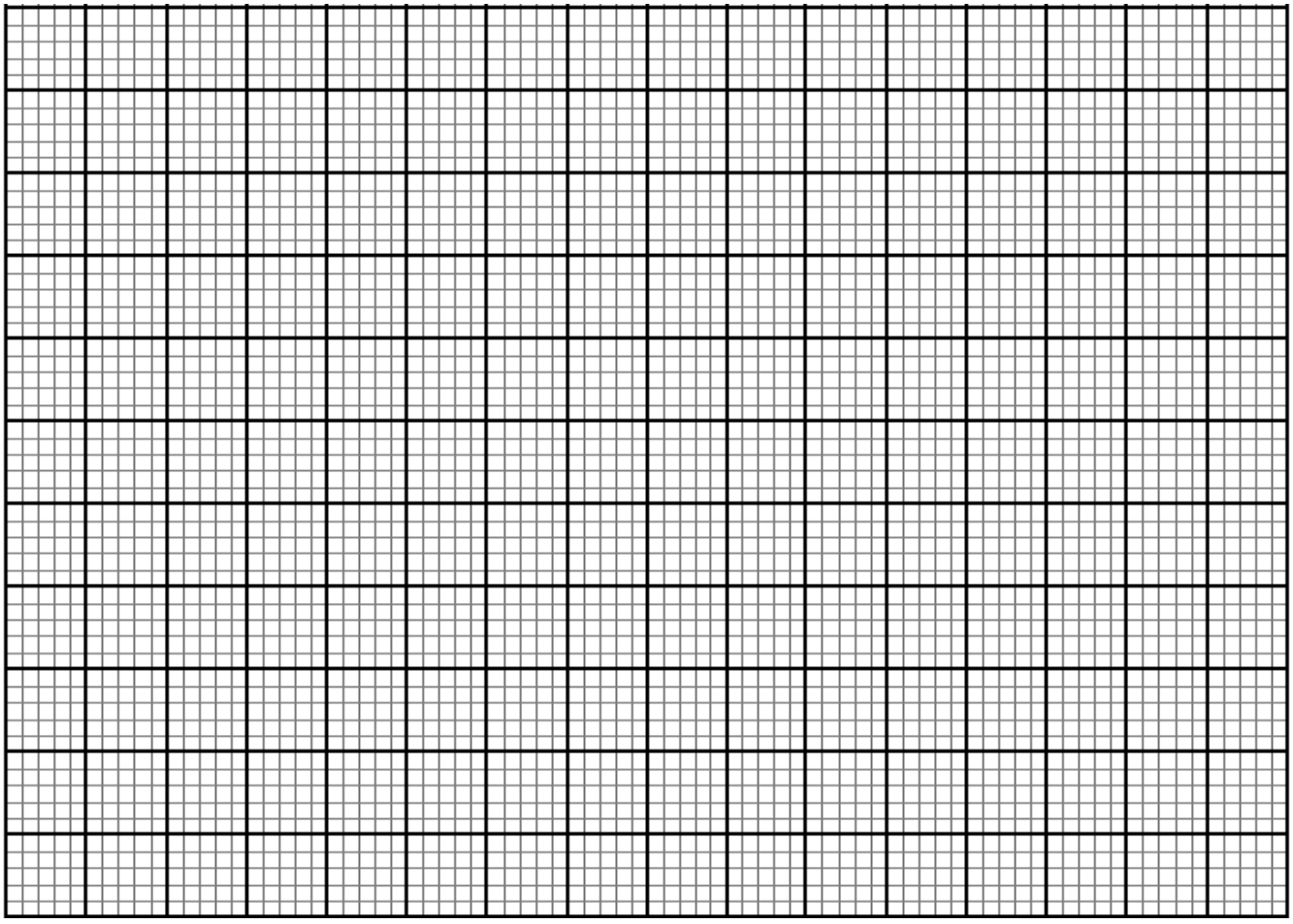
Suspend the mass A at a distance x = 5cm. adjust the position of mass B until it balances mass A immersed in liquid L. record the distance d, of mass B from the pivot.

Repeat the same process for other values of x in table 2 and complete the table.

x (cm)	5	10	15	20	25	30
d (cm)						

(3mks)

(c) Plot a graph of d (y axis) against x (5mks)



(d) Determine the slope, S of the graph. (2mks)

(e) Given $S = \frac{F}{W}$, where F is the apparent weight of object A in the liquid L and W is the actual weight of A, find:-

(i) The value of F. (2mks)

(ii) The upthrust, U (2mks)

PART B

You are provided with the following:

- A 70cm long thread
- Stop watch
- Metre rule

- Clamp, boss and retort stand

- Pendulum bob

Proceed as follows:

(a) Using the provided thread, tie the bob to be used as a pendulum. Clamp the thread so that the length of the pendulum to the centre of the bob is 50cm as in figure 3.

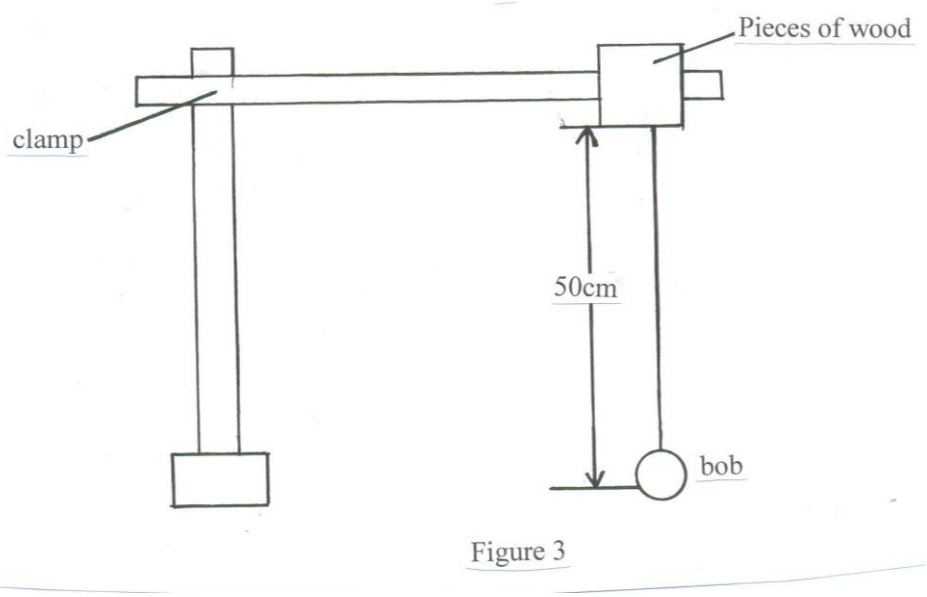


Figure 3

Displace the bob slightly so as to oscillate along the vertical plane. Time and record the time, t, for 20 oscillations.

t = _____s (1mk)

$T = \frac{t}{20} =$ _____ s (1 mk)

(b) If the oscillation of the bob is given by the formula $T^2 = 4\pi^2 L$. Use the values in (a) above to determine the value of g. g (1 mk)

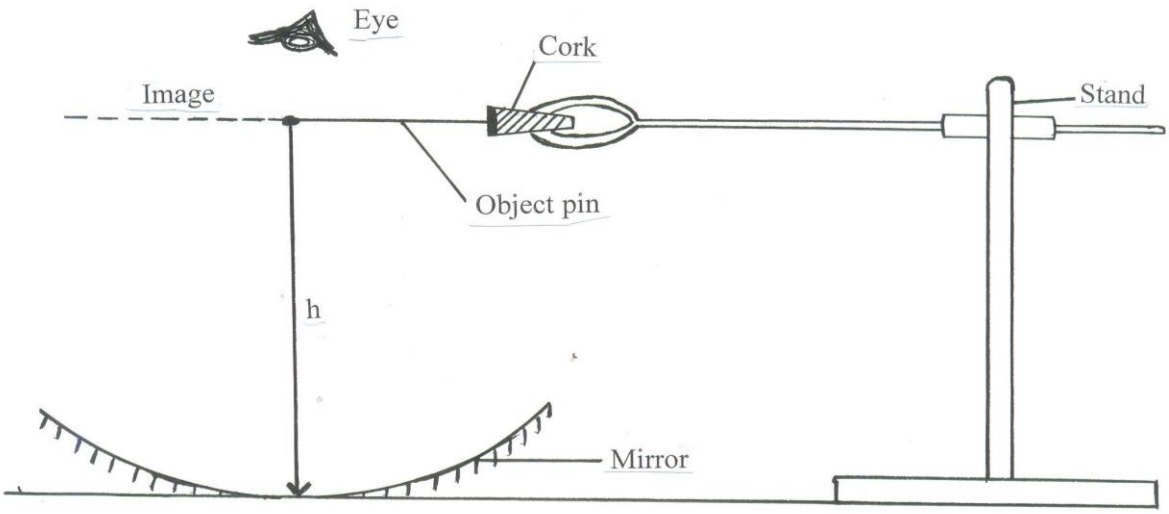
PART C

You are provided with the following

- A complete retort stand
- An optical pin
- A concave mirror and a holder or a lump of plasticine
- A cork
- A metre rule

Arrange the apparatus as follows in figure 4.

Figure 1



(a) By adjusting the clamp on the stand, move the object pin up and down until the inverted image and object pin appear to coincide (use – no – parallax method). Measure the distance

h = _____ cm (1mk)

(b) Calculate the value ***f*** given that

$f = \frac{h}{2}$ _____ cm (1mk)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