BRILLIANT STUDENTS FORM 4 END TERM 1 SERIES 2 EXAMS *(ALL SUBJECTS TESTED)*

BRILLIANT STUDENTS
FORM 4 END TERM 1 SERIES 2 EXAMS

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

END-TERM EXAM
TERM ONE FORM FOUR
AGRICULTURE PAPER 1
TIME: 2 HOURS
SECTION A: (30 MARKS)
Answer ALL the questions in this section in the spaces provided

1. What is the meaning of seed dressing? (1mk)

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2. Give four advantages of row planting. (2mks)

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3. List four factors to be considered when choosing site for tomato nursery. (2mks)

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4. State three reasons of treating water in the farm. (1 ½ mks)

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5. Give three ways through which HIV/AIDS affect agriculture. (1 ½ mks)

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6. State four advantages of overhead irrigation. (2mks)

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7. State three ways of conveying water in the firm. (2mks)

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8. A farmer in Premier was advised to apply 150kg C.A.N/*ha* while top dressing the maize crop. CAN, contains 21% N. Calculate the amount of nitrogen applied per ha. (2mks)

9. Give two reasons why opportunity cost is zero. (lmk)

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10. Give three importance of tissue culture in crop production. (2mks)

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11. State four principles which govern agricultural economics. (2mks)

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12. Highlight four problems facing the marketing of cabbages. (2mks)

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13. State four variable costs in maize production. (2mks)

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14. State four constituents of soil. (2mks)

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15. Give four types of product -product relationships. (2mks)

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16. Differentiate between topping and top-dressing as used in pastures. (lmk)

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17. State five factors which influence the spacing of crops. (2mks)

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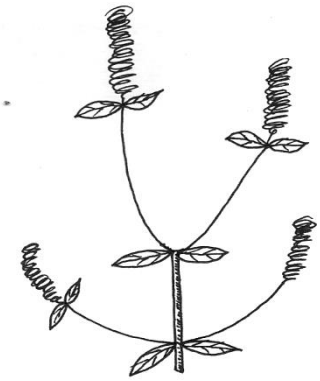
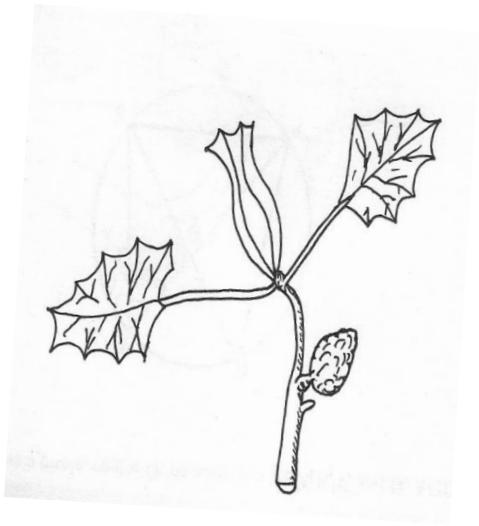
SECTION B (20 MKS)

Answer ALL Questions in this section

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





B

(a) Identify the weeds (2mks)

A……

B……

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

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

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

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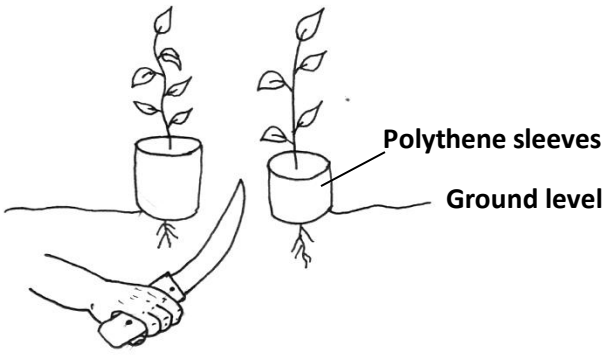
20. The diagram below illustrates a nursery practice carried out on tree seedlings before transplanting. Study it carefully and then answer the questions below



(a) Identify the practice being carried out on the diagram (1mk)

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(b) Give **three** reasons why the practice is encouraged when raising tree seedlings (3mks)

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(c) Give **two** reasons why the polythene sleeves are used in the nursery bed as shown in the diagram (2mks)

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21. (a) Calculate the elasticity of demand when 20 bags of potatoes are demanded at a price of Kshs.1000 while 22 bags were demanded at Kshs.800. (4mks)

(b) Identify the type of elasticity of demand resulting from the situation above (1mk)

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SECTION C (40MKS)

Answer any two Questions in this section

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

(i) Procedure (4mks)

(ii) Precautions (6mks)

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

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

(a) Land preparation (5mks)

(b) Pasture establishment (8mks)

(c) Maintenance (7mks)

24. (a) State **four** major questions a farm manager needs to ask and answer while preparing a partial budget (4mks)

(b) Under what conditions is partial budget an appropriate tool for planning (4mks)

(c) Mzee mkulima has 5 hectare of arable land which is under maize. He wishes to know whether replacing 0.3 ha of maize with beans the following season would be worthwhile. The fertilizer rate would have to be increased from 2 bags per hectare for maize to 2.5 bags per hectare, for beans and an extra 40 man days of casual labour per hectare would be necessary as a result of the change. Average yield of maize and beans are 56 and 90 bags per hectare respectively. The prices are ksh 1200 per bag of maize and ksh 300 per bag of beans. Seed costs are ksh 1350 per 10 kg of maize ksh 200 per 50 kg beans DAP fertilizer costs ksh 1400 per 50 kg bag. Labour is paid at ksh 150 per man day . he would require ten bag of beans seed and 1 bag of maize seed to caver 0.3 of ha.

Draw up a partial budget and indicate the effects of the change (12mks)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

TERM ONE FORM FOUR
AGRICULTURE PAPER 2
TIME: 2 HOURS
SECTION A: (30 MARKS)
Answer ALL questions in this section in the spaces provided.

1. State FOUR categories of produce stores found in a farm (2mks)

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2. Give TWO reasons for tooth clipping in piglets (1mk)

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3. State TWO uses of a rake (1mk)

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4. State TWO diseases that may affect bees in a colony (1mk)

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5. Differentiate between a heifer and a cow (1mk)

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6. Name FOUR species of livestock that are affected by tapeworms (2mks)

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7. Name FOUR viral diseases that affect poultry (2mks)

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8. State FOUR disadvantages of natural incubation in poultry production (2mks)

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9. Name TWO causes of bad flavors in milk production (1mk)

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10. Give TWO causes of death in cows during or after parturition (1mk)

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11. Differentiate between roughages and concentrates as used in livestock nutrition (1mk)

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12. List THREE zoonotic diseases that can occur on the farm (1½ mks)

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13. State FOUR uses of harrows on the farm (2mks)

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14. State FOUR signs of heat in pigs (2mks)

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15. Name FOUR plant species that can be used to establish live fences (2mks)

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16. Give TWO benefits of scattering grains in a deep litter poultry house (1mk)

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17. List THREE types of lubrication systems in farm machines (1½ mks)

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18. List THREE sheep breeds reared for meat production in Kenya (1½ mks)

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19. List THREE farm tools used during castration of farm animals (1½ mks)

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20. Give FOUR disorders associated with calcium deficiency in livestock (2mks)

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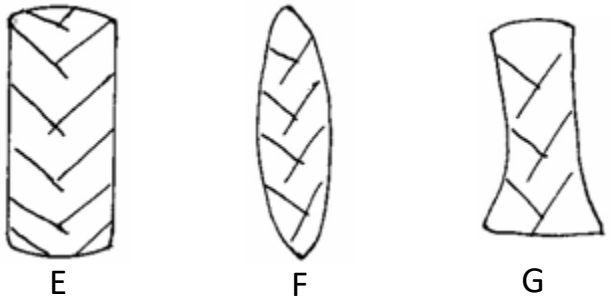
SECTION B: (20 MARKS)

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

21. The diagram **below** represents conditions of the tyre.



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

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(b) Identify the mistakes with the other two tyres. (2 marks)

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(b) Give the correct measures taken for each tyre mentioned in **(b) above**.(2 marks)

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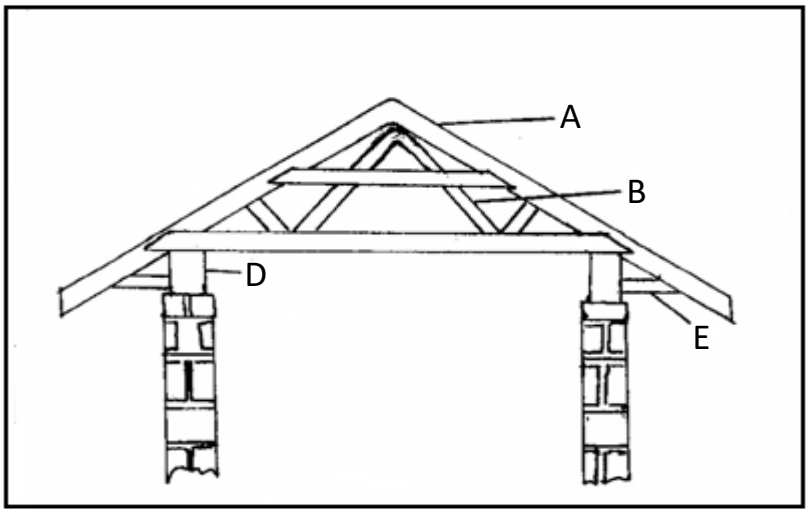
22. Study the diagram **below** of a farm structure.



(a) Identify the structure **above**. (1 mark)

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(b) Name the parts labeled.(4 marks)

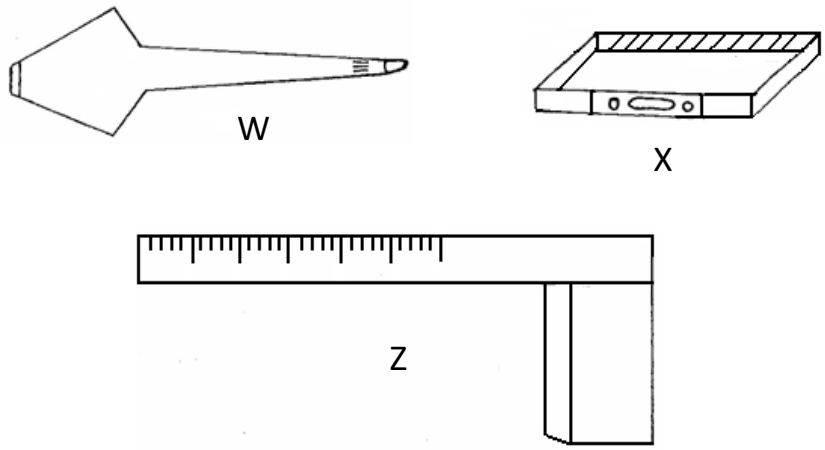
A ……

B ……

E ……

D ……

23. Study the tools **below** and answer the questions **below**.



(a) Identify the tools.(3 marks)

W ……

X ……..

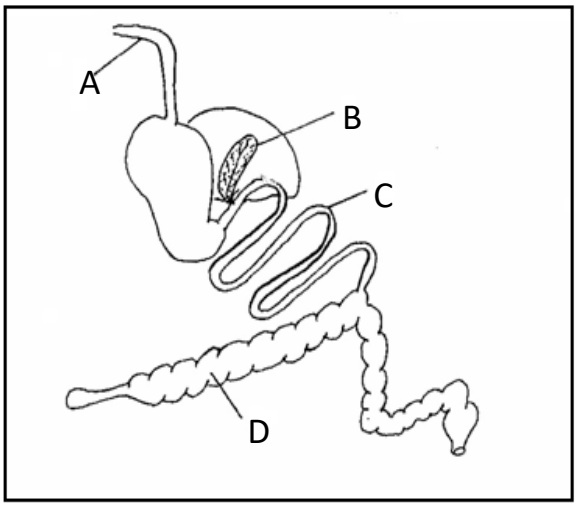
Z …….

(b) What are the functions of tools? (2 marks)

Z ……

X ……..

24. Study the diagram **below** then answer the questions that follow.



(i) Name **one** farm animal which has the above digestive system.(1 mark)

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(ii) Label the following parts.(2 marks)

A ……..

B ……..

(iii) Give the functions of each of the parts named :(2 marks)

C

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D

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SECTION C

Answer any two questions in this section in the spaces provided

25. (a) Give the differences between a petrol and a diesel engine (10mks)

(b) Describe the daily maintenance of a tractor (10mks)

26. (a) What are disease predisposing factors? (2mks)

(b) State **five** disease predisposing factors in livestock (5mks)

(c)State **five** predisposing factors of mastitis in dairy cattle (5mks)

(d) Explain any **four** general methods of disease control in livestock (8mks)

27. Discuss the management of layers from day old up to point of laying in a deep litter system. (20mks)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

BIOLOGY PAPER 1
FORM 4
END TERM 1,
TIME: 2HRS
INSTRUCTION: Answer all questions in the spaces provided after the question.

1. (a) Explain why a person discharges urine more frequency when environmental temperatures are lower than when they are high. (2mks)

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(b) Name the nitrogenous waste product excreted by a fresh water fish. (1mk)

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2. Explain how the xylem vessels are adapted to their functions. (3mks)

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3. State three evidences of organic evolution (3mks)

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4. In an experiment, it was found that when maggots are exposed to light, they move to the dark areas.
   a) Name the type of response exhibited by the maggots. (1mk)

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   b) State the survival value of the response in (a) above. (1mk)

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5. (a) What is meant by oxygen debt. (2mks)

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(b) State one factor that affects basal metabolic rate. (1mk)

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6. Explain what would happen to red blood cells when they are placed in hypotonic solution. (3mks)

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7. State the organelle that perform the following functions. (3mks)
   (i) Synthesis of ribosomes

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   (ii) Transport of lipids

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   (iii) Package and transport of gloco-proteins

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8. What are structural units of lipids. (2mks)

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9. (a) State the major factor in the 'Global warming" experienced in the world today. (1mk)

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(b) Suggest the ways of reducing the global warming (2mks)

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10. State the role of the following in Homeostasis. (2mks)

i) ADH:

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ii) Aldosterone

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11. Explain why cells of an endosperm are triploid and not haploid. (2mks)

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12. State four ways in which respiratory surfaces are suited to their functions (4mks)

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13. State three structural modifications of nephrons found in desert mammals. (3mks)

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14. How would you find out from a sample of urine whether a person is suffering from diabetes mellitus. (3mks)

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15. What are the advantages of fruit and seed disposal (2mks)

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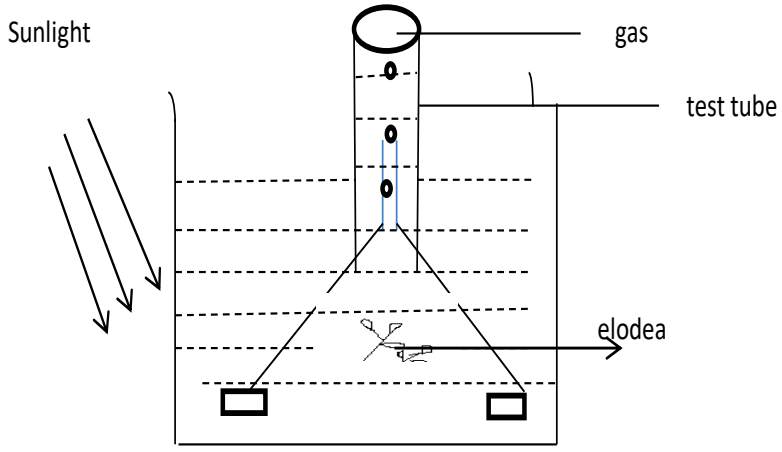
16. The diagram below represents a set-up that was used to investigate a certain process in a plant.



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

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b) Name the gas collected in the gas jar. (1mk)

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c) What is the confirmation test for the gas in (b) above? (1mk)

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d) State two factors that would affect the process. (2mks)

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17. Name the antigens that determine human blood group. (2mks)

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18. a) Explain why pepsin in stomach of man is secreted in inactive form (1mk)

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b) Which gland secretes pepsinogen? (1mk)

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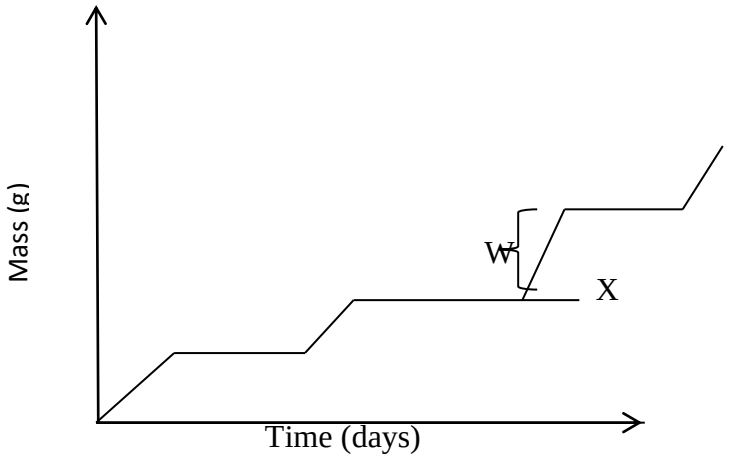
19. The graph below represents its growth of animals in a certain phylum.



a) Name the type of growth pattern shown on the graph. (1mk)

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b) Identify the process represented by x. (1mk)

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c) Name the hormone responsible for the process in (b) above. (1mk)

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20. A student smeared Vaseline jelly on the lower epidermis of a leaf of a potted green plant which had been kept in the dark for 24hrs. She then transferred the plant to the light for six hours starch test on the leaf of the plant were negative. Account for the observation. (3mks)

21. State the three different types of blood cells. (3mks)

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22. The following cell are found in living organisms.

a) Identify the parts labeled V and U. (2mks)

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b) State the function of part labeled S. (1mk)

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c) State one cell organelle which is most abundant in the structure and explain its role. (2mks)

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23. a)) Explain briefly Lamarck's theory of evolution. (2mks)

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b)State a reason why Lamarck's theory of evolution has been disapproved by scientists. (1mk)

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24. Below is an equation showing the aerobic breakdown of fat.

$2C_{51}H_{98}O_6 + 145O_2 \xrightarrow{Energy} 102CO_2 + 98H_2O$.

Calculate the respiratory quotient of the breakdown above. (2mks)

25. (a) What are vestigial structures? (1mk)

b) Give two examples of vestigial structures found in man. (2mks)

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26. Give two limitations of fossil records as evidence of evolution. (2mks)

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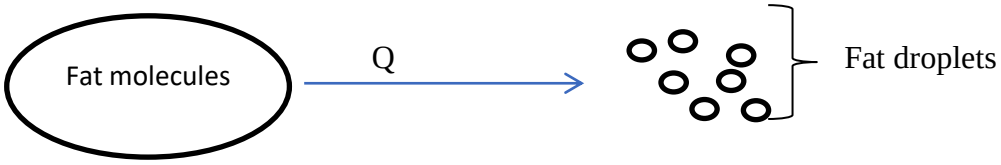
27. The diagram below illustrates a physiological process that occurs in the alimentary canal of man.



a) Name the process Q above. (1mk)

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b) Explain the biological importance of the above process. (1mk)

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c) Name the substance that helps the process name in (a) above (1mk)

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28. List 3 features that make man the most dominant species on earth. (3mks)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

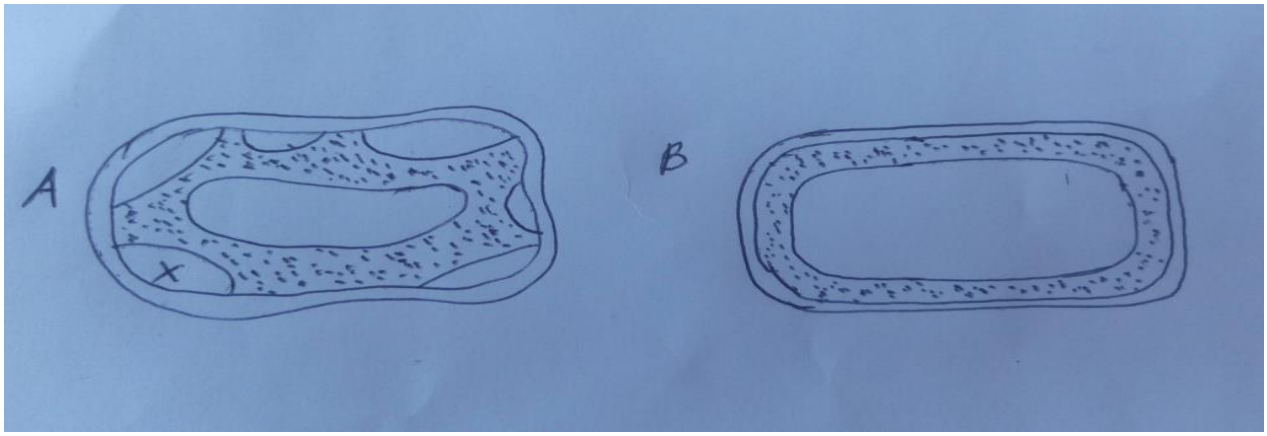
BIOLOGY PP2
FORM 4
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

a) This paper consists of two sections A and B.
b) Answer All the questions in Section A in the spaces provided
c) In section B answer question 6. (compulsory) and either question 7 or 8 in the spaces provided after question &.
d) Candidates should answer the questions in English.

SECTION A(40 MARKS)

1. The diagrams below represents two plants cell A and B placed in two different solutions. Study the diagrams and answer questions that follow.



a) Identify the nature of solution into which each cell was placed. (2mks)

A ……..

B ……..

b) Name the physiological process responsible for the observed results. (1mk)

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c) Give the correct biological term used to describe cell A. (1mk)

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d) Describe what would happen if a red blood cell was placed in the solution in which cell B was placed. (2mks)

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e) Explain why freshwater amoeba do not burst when placed in distilled water. (2mks)

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f) Explain the fate of glucose after assimilation. (2mks)

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2. (a) Distinguish between the terms homodont and heterodont. (2mks)

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(b) What is the function of carnassial teeth? (1mk)

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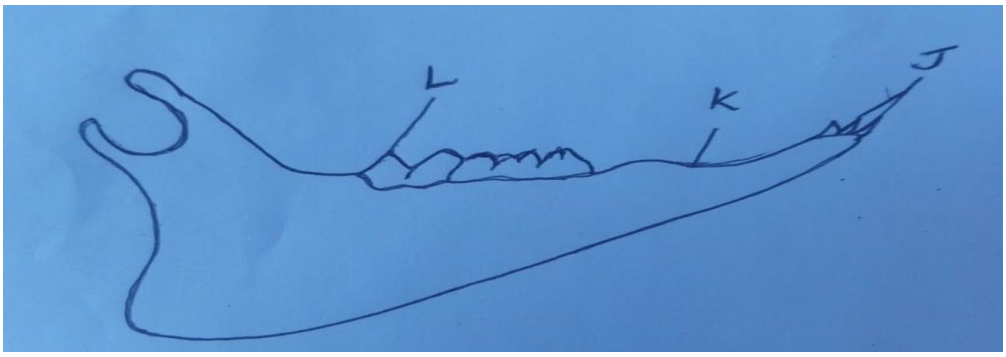
(c) The diagram below represents the lower jaw of a mammal.



(i) Name the mode of nutrition of the mammal whose jaw is shown above. (1mk)

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(ii) State one structural and one functional differences between the teeth labeled J and L (2mks)

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(iii) Name the toothless gap labeled K. (1mk)

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(iv) State the function of the gap. (1mk)

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(v) Name the substance that is responsible for hardening of teeth. (1mk)

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(v) What do you understand by the term 'dental formula'. (1mk)

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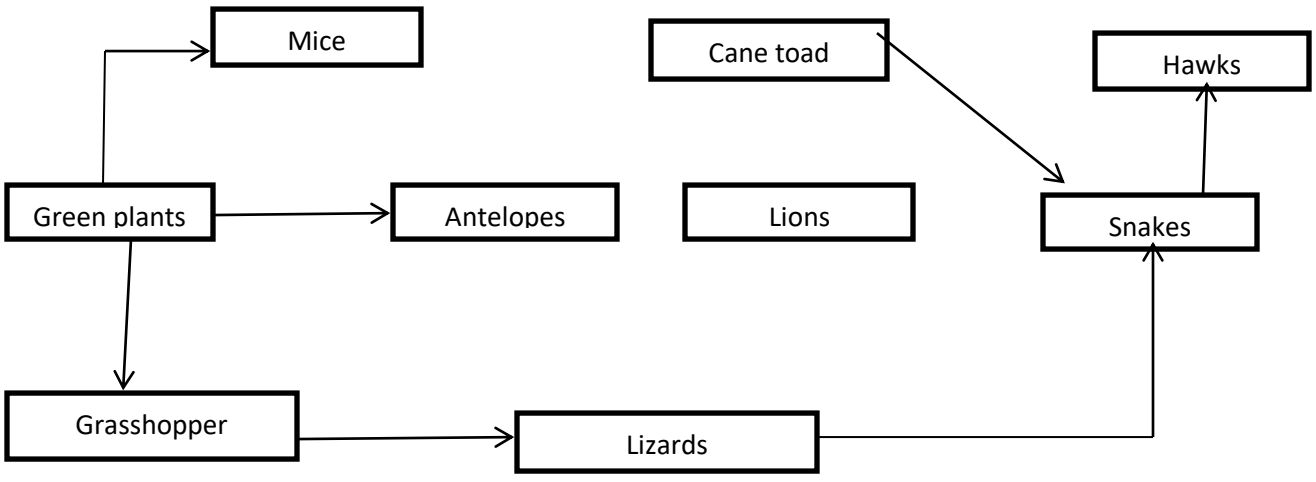
3. The diagram below represents a food web in a terrestrial ecosystem.



a) Which organism has the highest number of preys? (1mk)

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b) Construct food chains with snakes as tertiary consumers. (2mks)

c) State the trophic level occupied by hawks in the food chains constructed in (b) above (1mk)

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d) Describe how capture-recapture method can be used in estimating the population of fishes in a lake. (4mks)

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e) Name the process through which:

(i) Producers convert chemical energy into heat energy lost to the environment. (1mk)

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(ii) Living organisms convert chemical energy into heat energy lost to the environments. (1mk)

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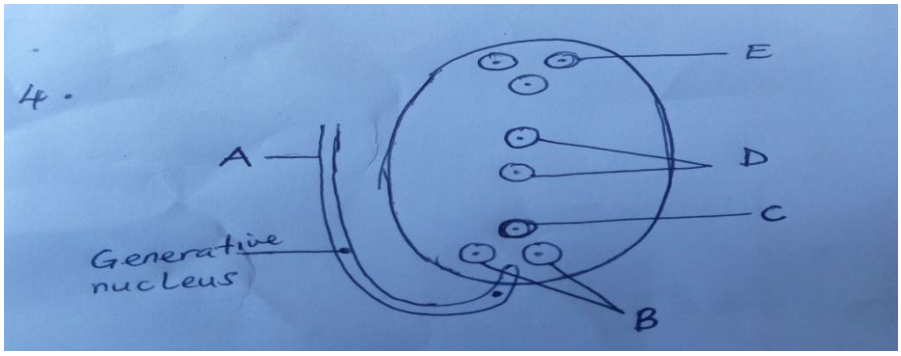
4. The figure below shows the embryo sac before fertilization.



a) Identify the structures labeled A and B (2MKS)

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b) Identify the structures labeled in the diagram that will develop into the following after fertilization.

(i) Embryo (1mks)

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(ii) Endosperm (1mk)

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c) State the ploidy of each of the following nuclei after fertilization

i) C (1mk)

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ii) D (1mk)

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d) Briefly outline the process of 'double fertilization' in flowering plants. (2mks)

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e) Name two substances which are found in the intercellular air spaces in a green leaf during a hot sunny day. (2mks)

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5. In an investigation, snapdragon plants with broad leaves (B) were crossed with narrow leaves (N). The F1 progeny had intermediate leaf breadth.
   (i) Give a reason for intermediate leaf breadth in F1 generation (1mk)

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(ii) If the plants in the F1 Generation were selfed, state the genotypic and phonotypic ratio of the F2 generation. (show your working) (5mks)

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

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(iv) Explain why an under dose insecticide spraying of mosquitoes may cause a serious problem on this mode of killing mosquitoes using the same spray in future. (2mks)

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SECTION B(40 MARKS)

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

6. Two sets of a pea seeds were germinated, set A was placed in normal day light conditions in the laboratory which set B was placed in a dark cupboard. Starting a few days later the shoots lengths were measured twice daily and their mean length recorded as shown in the table below.

Time in hours	0	12	24	36	48	60	72	84
Set A (length (mm)	12	14	20	23	28	31	47	54
Set B length (mm)	17	23	28	35	48	62	80	94

(a) Using suitable scale draw the graphs of the mean lengths in set A and B against time (7mks)

(PROVIDE A GRAPH PAPER)

(b) From the graph, state the man shoot length of each set of seedling at the 66^{th} hour.(2mks)

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© Account for the difference of curve B and A. (3mks)

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(d) Explain what would happen to set up B if it were allowed to continue to grow under conditions of darkness. (4mks)

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(e) State 3 external conditions which should be constant for both set ups. (3mks)

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(f) Why is oxygen important in the process of active transport? (1mk)

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7. (a) state five difference between aerobic and anaerobic respiration. (5mks)

(b) Discuss the application of anaerobic respiration in industry and at home. (15mks)

8 (a) state two functions of the mammalian skin. (2mks)

(b) Describe the structure and function of the mammalian skin. (8mks)

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NAME: ……..……

SCHOOL: ……

INDEX NO: …… SIGN: …… DATE: ……

BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

231/3 BIOLOGY
PRACTICAL FORM

FOUR END OF TERM 1
TIME: 1 3/4 HOURS
MAX 40 MKS.

ANSWER ALLTHE QUESTION IN THE SPACES PROVIDED.

Answer all the questions in the spaces provided.

1. You are provided with substance L. Carry out food tests on the substance using the reagents provided .Record your procedure , observations and conclusions in the table below.(9mks)

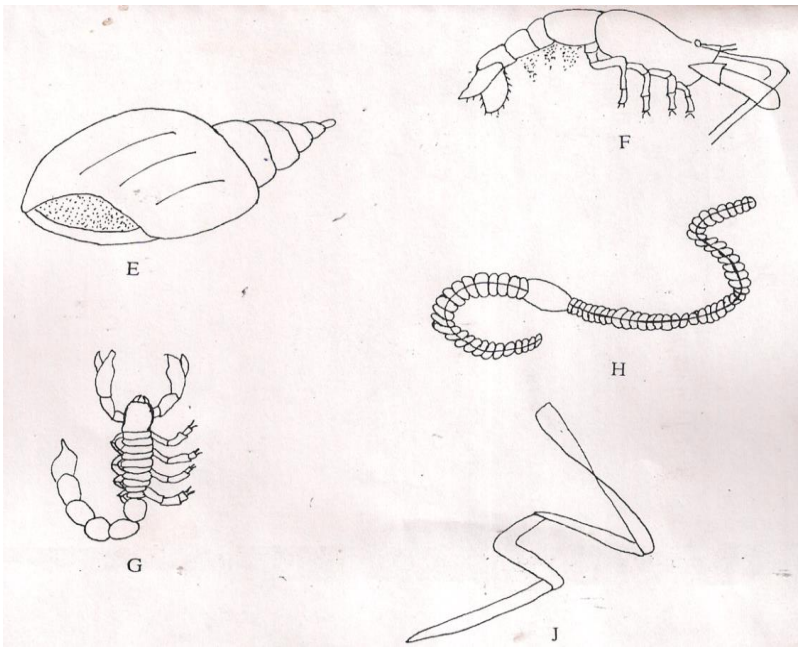
	Procedure	**Observation**	**Conclusions**

2. During a visit to a museum, students were shown ten specimens of organisms on display.The teacher provided a dichotomous key (shown in a separate page) to enable them to place each species on display into its taxonomic group. Five of the specimens that were on display are shown in the diagrams provided.

Dichotomous Key.

1.(a) Animal with a flattened body….. ……..go to 9.
(b)Animal without a flattened body……. go to 2.
2.(a)Animal with body in a shell …….Mollusca.
(b)Animal with body in shell…….. go to 3.
3.(a)Animal with segmented body….. …….go to 4.
(b)Animal with body not segmented…….Nematoda.
4.(a)Animal with jointed appendages go to 6.
(b) Animal without jointed appendages to 5.
5.(a)Animal with long and cyndrical body……..annelida.
(b)Animal with short stout body…….. Trenada.
6.(a) Animal with antennae……...go to7.
(b) Animal without antennae ….. …….go to 8.
7.(a)Animal with one pair of antennae…… Insecta.
(b) Animal with more than one pair of antennae…….. crustacean.
8.(a)Animal with pincer –like mouthparts…….. Arachida.
(b) Animal with sucking mouth parts…….….Acarina.
9.(a)Animal with long ribbon-like body …….cestoda.
(b) Animal with circular body…….. rinoidea).

Use the dichotomous key to identify the taxonomic group of each of the five specimens shown in the drawings.



a. In each case, show in sequence the steps (ef 1a,2a,5a, 7b) in the key that you followed to arrive at the identify of each specimen.(5mks)

Animal	Steps followed	Identity

E

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F

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G

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H

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J

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b)i)Nam the phylum and the class to which specimen M belongs(2mks)

Phylum:……..

Class: …….

ii) Name the observation features that enabled you to place it in the class above.(3mks)

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(c)With the help of a hand lens, examine the body of specimen M.

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i)State with a reason in each case he observable features that enable the specimen to be a disease vector.(2mks

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(ii) Name one disease transmitted by specimen M.(1mk)

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iii) State two methods that can be used to prevent specimen M from spreading diseases.(2mks)

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2. You are provided with specimens labeled S_1S_2 and S_3
   a. Using a scarpel blade split S_1longitudinally and draw a well labeled diagram to show the internal structures. State your magnification (4mks)

b. With a reason ,state the class to which the plant from specimen S_1 belongs to.
Class(1mk)

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Reason(1mk)

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c. Specimen S_2 is a germinated seedling of S_1.In the table below, name three structures and say which structure in S_1developed into the structure in S_2.

Structure in S_1	**Structure in S_2**

d.(i) Using specimens S_1 and S_3 ,name the type of germination in :-

S_1

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S_3 (1mk)

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ii. Give the difference between the this type of germination in (d) (i) above (2mks)

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iii.Account for the type of germination in :-

S_1 2mks

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S_3(2mks)

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NAME: ……..……

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

565/1
BUSINESS STUDIES
PAPER 1
TIME: 2 HRS
INSTRUCTIONS to candidates

(a) Write your name and adm number in the spaces provided above.
(b) Answer ALL the questions.
(c) All answers must be written in the spaces provided.
(d) Candidates should check the question paper to ascertain that all the pages are printed as indicated and no of questions missing.
(e) This paper consist of 8 printed pages.

For Examiners Use Only

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

Questions	13	14	15	16	17	18	19	20	21	22	23	24	25
Marks													

Total marks

1. Highlight four principles of insurance. (4 mks)

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2. Outline four reasons how competitive environment affects Business activities. (4 mks)

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3. State four characteristics of a perfect competition market. (4 mks)

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4. Outline four differences between a good and a service. (4 mks)

(i)		
(ii)		
(iii)		
(iv)		

5. Match the following statements with the correct source documents. (4 mks)

	Statement	Source document
(i)	A document that serves as an evidence that cash has been received or paid out.	
(ii)	A document that shows the details of all the expenses incurred, the amount of money spent and the purpose of incurring such an expense.	
(iii)	A document sent by the seller to the buyer demanding payment for goods or service delivered.	
(iv)	A document written by a supplier and sent to a buyer informing him / her that his / her account with the supplier has been debited.	

6. This is the Mitegi's demand schedule for Bread in a week.

Price per loaf (shs)	No of loaves demanded
30	1
20	2
15	4
12	6
10	8
5	12
1	20

Required:

Draw the demand curve of Mutegi's Bread for a whole week. (4 mks)

7. Highlight four importance of business studies to a learner. (4 mks)

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8. Using the balance sheet equation. Fill the missing figures in the following table. (4 mks)

	Assts	Capital	Liabilities
(i)	21,920	?	30,341
(ii)	?	2,192	19,840
(iii)	3,773	1,591	?
(iv)	240	150	?

9. Outline four roles played by the stock exchange market as a market for securities. (4 mks)

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10. Highlight four factors which may influence choice of a distribution channel. (4 mks)

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11. Outline four advantages of a bonded warehouse. (4 mks)

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12. Match the following documents with their relevant uses. (4 mks)

	Statement	Documents
(i)	This is a document which briefly describes the goods a seller stocks	
(ii)	A documents sent by the seller to the buyer when an inquiry is specific in mature.	
(iii)	A document sent to a prospective buyer to inform him/her that the order has been received and it is being acted upon.	
(vi)	A document sent by the buyer when goods get damaged on the way and returned to the seller.	

13. Highlight our goals of economic development. (4 mks)

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14. Outline the type of unemployment in an economy and give the cause for each. (4 mks)

(i) Unemployment occurs when people lose jobs and go looking for new ones

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(ii) Unemployment that occurs when people are actively looking for jobs at the existing wage rate but cannot get them**…..**

(iii) Unemployment that occurs repeatedly at similar times

……..

(iv) Unemployment that occurs when demand for labour declines due to either changes in the method of production or a decrease in the supply of goods and services.

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15. Outline four reasons why there is need for ethical practices in business. (4 mks)

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16. Highlight four problems encountered in measuring national income using the output approach method. (4 mks)

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17. Match the following uses with the appropriate office equipment. (4 mks)

	Uses	Office equipment
(i)	It is a machine that is used for preparing cash receipts	
(ii)	It is a machine used for trimming documents into required shapes and size.	
(iii)	A machine which is used for cutting unwanted documents into tiny pieces to avoid such documents getting into the wrong hands.	
(vi)	A machine which is used to complex calculations.	

18. Explain the meaning of the following terms of sale as used in international trade. (4 mks)

(i) F.O.B. (Free on Board)

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(ii) LOCO or ex-warehouse or ex- works

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(iii) F.O.R. (Free on Rail)

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(iv) In bond

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19. Highlight four ways how consumers can protect themselves from exploitation from unscrupulous wholesalers / traders. (4 mks)

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20. Outline four criteria used in determining the size of the firm. (4 mks)

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21. Outline four tools that the central bank of Kenya uses to control monetary policy. (4 mks)

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22. Calculate the gross profit given the margin of $^1/_6$ and the cost of goods sold to be 400,000/=. (4 mks)

23. Highlight four advantages of operating a current account. (4 mks)

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24. Outline four factors that influences the choice of product in the market.

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25. List four essential of an effective communication.

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NAME: ……..……

SCHOOL: ……

INDEX NO: …… SIGN: …… DATE: ……

BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

565/2

BUSINESS STUDIES

PAPER 2

TIME: **2 ½ HOURS**

INSTRUCTIONS TO CANDIDATES

i) This paper consists of **six** questions
ii) Answer any **five** questions
iii) Answers should be written on the spaces provided after question **six**
iv) All questions carry equal marks
v) This paper consists of **9** printed pages
vi) Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing
vii) Candidates should answer the questions in English

TOTAL SCORE

1. (a) Explain **five** circumstances that can cause a business to succeed in their activities. (10marks)

   (b) Explain **five** problems facing the savings and credit cooperative societies in Kenya. (10marks)

2. (a) A prudent tax system must meet certain essential qualities. Explain **five** indicators of a good tax system . (10marks)

   (b) Describe the procedure an insured must take when making an insurance claim. (10marks)

3. (a) Ondari intends to promote his products. Explain **five** factors that he must take into account when deciding on which method to use. (10marks)

   (b) Explain **five** weaknesses of using national income statistics as a measure of social welfare. (10marks)

4. (a) Explain **five** factors that justify the existence of small scale firms in an economy. (10marks)

   (b) Bartenge Enterprises started business on 1st May 2014 with Shs. 250,000 consisting of:
   Cash at bank Shs.200,000, Cash in Hand Shs. 30,000 and Furniture Shs. 20,000.
   The following transactions took place during the month of May.
   3rd May 2014, Motor Van worth Shs. 85,000 and stock of Shs. 25,000 were bought on credit
   6th May 2014, more stock worth shs.10,000 was bought by cash
   9th May 2014, withdrew money from bank sh 50,000 for office use
   15th May 2014, Sold stock at cost to a customer on credit for shs. 18,500
   19th May 2014, received a cheque for the full settlement of a debt owed from the transaction of 15th may 2014
   23rd May 2014, paid Shs. 65,000 by cheque for the motor van bought earlier on credit
   31st May 2014, paid Shs. 20,000 cash for the stock bought on credit
   Required:
   Prepare the balance sheet of Bartenge Holdings as at 31st May 2014. (10marks)

5. (a) Explain **five** problems that are faced by a country with a big population of ageing persons. (10marks)
   (b) Explain **five**difference between banking and non-banking financial institutions . (10marks)

6. (a) Explain **four** reasons why upward communication should be encouraged in an organization. (8marks)
   (b) The following trial balance was extracted from the books of Lule Traders on 30th April 2015

Lule Traders
Trial Balance
As at 30th April 2015

	Dr (Kshs.)	Cr (Kshs.)
Sales		186,000
Purchases	115,560	
Stock 1.5.2014	37,760	
Carriage outwards	3,260	
Carriage inwards	2,340	
Returns	4,400	3,550
Salaries	24,470	
Electricity	6,640	
Rent		5,760
Sundry expenses		12,020
Equipment		24,000
Furniture		6,000
Debtors	45,770	
Creditors		30,450
Bank	38,760	
Cash	1,200	
Drawings	20,500	
Capital		128,440
	348.440	348,440

Stock as at 30.4. 2015 Shs. 49,980

Required:

a) Trading, profit and Loss account for the year ended 30th April 2015 (8mks)

b) Balance sheet as at 30th April 2015 (4mks)

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NAME: ……..……

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

CHEMISTRY

FORM FOUR

(THEORY) PAPER ONE

TIME: 2 HOURS

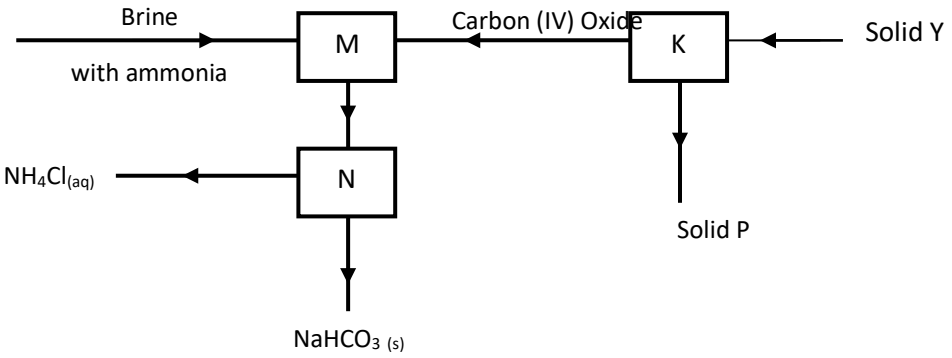
INSTRUCTIONS TO STUDENTS:

- Write your **name** and **adm** in the spaces provided **above**.
- **Sign** and write the **date** of examination in the spaces provided **above**.
- Answer **ALL** the questions in the spaces provided.
- All working **must be** clearly shown where necessary
- Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing
- Candidates should answer the questions in English.

For Examiner's Use Only

Questions	Maximum Score	Candidate's Score
1 – 29	**80**	

1. The diagram below shows part of Solvay process.



(a) Name solid P (1 Mark)

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(b) State the process taking place in chamber N. (1mark)

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……

(c) State two uses of calcium chloride which is a by-product in this process.(1 mark)

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2. $100cm^3$ of methane gas diffused through a porous partition in 40 seconds. How long would it take $90cm^3$ of ozone gas to diffuse through the same partition? C = 12, H = 1, O = 16 (3marks)

3. Ammonia is produced in large scale by Haber process.
   (i) Write an equation for the formation of ammonia gas. (1 mark)

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   (ii) State **two** optimum conditions for obtaining a high yield of ammonia in the process.(2 marks)

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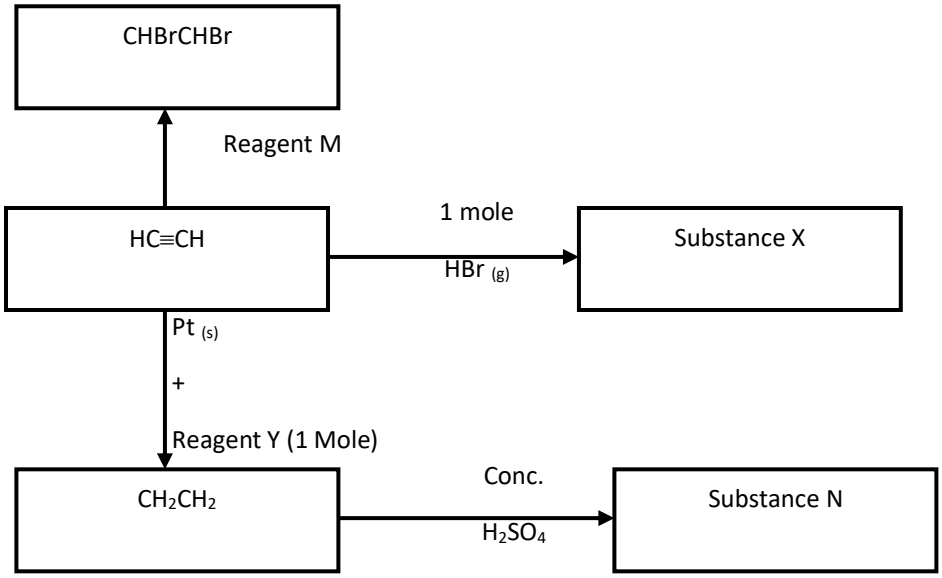
4. The scheme below shows some reactions starting with ethyne. Study it and answer the questions that follow.



   (a) Name substance X and N (1mark)

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   (b) Name reagent M (1 Mark)

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(c) Ethene undergoes polymerization to form a polymer. Give an equation for the reaction and name the product.

(i) Equation; (1 mark)

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(ii) Name: (1mark)

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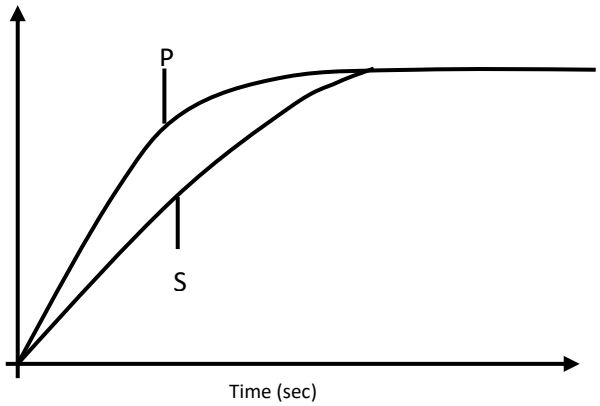
5. The curves below represent the volume of carbon (IV) oxide gas evolved once 2M(concentrated) hydrochloric acid was reacted with 100g of powdered calcium carbonate and also when 1M concentrated hydrochloric acid was reacted with the same quantity of carbonate.



(i) Which of the two curves represents the reaction of 2M concentrated HCl with powdered calcium carbonate. Give a reason. (2 marks)

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(ii) Why do the two curves flatten at the same level of production of CO_2 (1 mark)

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6. Study the following equilibrium equation.
   $2X_2(g) + Y_{2(g)} \rightleftharpoons 2X_2Y_{(g)}$ $\Delta H = -197Kj/mol$

   Suggest two ways of increasing the yield of X_2Y. (1 mark)

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7. The table below gives some elements in the periodic table. Use it to answer the questions that follow. The letters do not represent the actual symbols of the elements.

Element	A	B	C	D	E
Atomic number	12	13	14	15	16

   Which of the above letters represent:

   (a) A metallic element which forms ions with the smallest ionic radius? Explain(2 marks)

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   (b) A non metallic element with the largest atomic size? Explain. (1mark)

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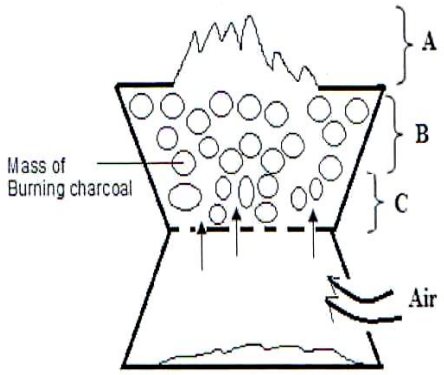
8. The diagram below shows a burning jiko. Study it and answer the questions that follow.



(a) Write the equation for the reaction taking place in region A. (1 Mark)

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……

(b) Name the gas produced at region B. (1 Mark)

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(c) State ONE use of the gas named in (b) above. (1 Mark)

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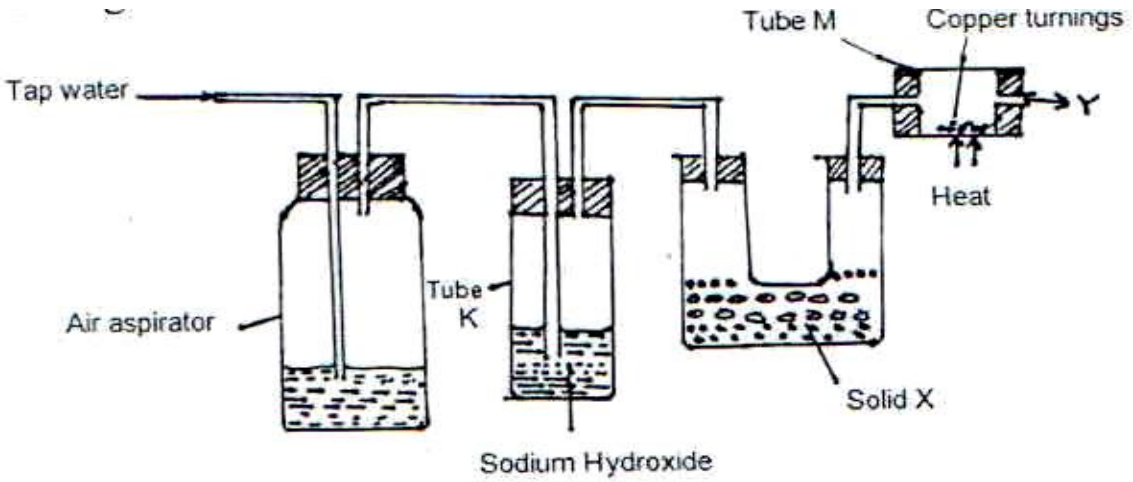
9. Study the diagram below and answer the questions that follow.



(i) What is the purpose of passing tap water through the air aspirator? (1 Mark)

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(ii) State and explain the observation that would be made in tube M after sometime.(1 Mark)

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10. 15g of sodium chloride was dissolved in 120cm^3 of distilled water. Calculate the concentration of the resulting solution in moles per litre. (Na = 23, Cl = 35.5) (3Marks)

11. (a) State Boyle's Law. (1 Mark)

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(c) The volume of a gas at 30^0C and 780mmHg is 400cm^3. What will be its volume at 50^0C at 600 mmHg. (3marks)

12. Sulphur exhibits allotropy.
    (a) What is allotropy? (1 Mark)

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    (b) Name the **two** allotropes of sulphur. (2 Marks)

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    (c) Sulphur powder was placed in a deflagrating spoon and heated on a Bunsen Burner.
        (i) State the observation made. (1 Mark)

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        (ii) The product obtained was dissolved in water. Comment on the PH of the solution formed.(1 Mark)

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13. 0.318g of an oxide of metal M was completely reduced by hydrogen gas to 0.254g of metal. Calculate empirical formula of the metal oxide. (M = 63.5, O = 16) (3 Marks)

14. Given the following reagents: Solid sodium Carbonate, water, solid Lead (II) nitrate. Describe how a sample of Lead (II) Carbonate can be prepared in the laboratory.(3 Marks)

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15. Volume of liquids can be measured using a pipette; measuring cylinder or burette. Explain which one would be best for measuring 29.1cm^3 of liquid. (1 Mark)

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

Substance	Solubility g/100g water
V	126
W	2

Describe how a solid sample of substance **V** could be obtained from a solid mixture of **V** and **W**.(2 Marks)

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17. Use the bond energies given below to calculate the heat of reaction for; (3 marks)

$$H_{2(g)} + Cl_{2(g)} \rightarrow 2HCl_{(g)}$$

Bond	Energy (Kj/Mol)
H – H	435
Cl – Cl	243
H – Cl	431

18.The PH of a soil sample was found to be 5.7. An agricultural officer recommended addition of lime.

(a) State **two** functions of the lime. (2 Marks)

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(b) Give the name of the process applied in (a) above. (1mark)

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19.The electronic configuration of ions X^{2+} is 2.8 while that of ion Y^{-} is 2.8.8.

(a) Write down the electron arrangement of the atoms of X and Y (2 Marks)

(b) Compare the atomic radii of the two elements. (1 Mark)

(c) Give the name of the chemical family to which element X belongs (1 Mark)

20. Use the information below to answer the questions that follow.

$C_{(s)} + O_{2(g)} \longrightarrow CO_{2(g)}$ $\Delta H_1 = -393$ KJ/mol

$H_{2(g)} + ½\ O_{2(g)} \longrightarrow H_2O_{(l)}$ $\Delta H_2 = -286$ KJ/mol

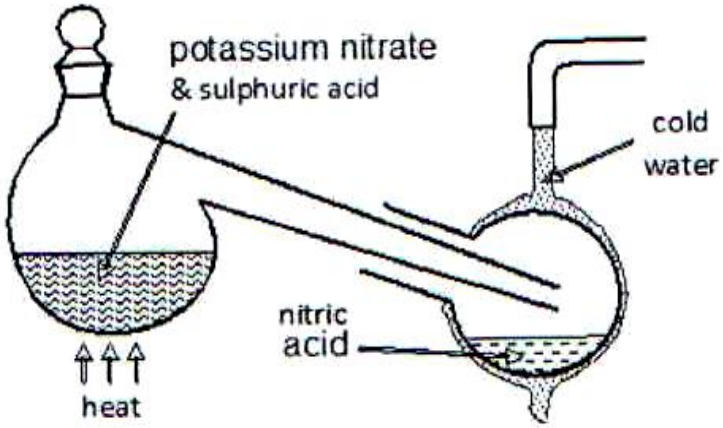
$C_4H_{10} + 6\ ½\ O_{2(g)} \longrightarrow 4CO_{2(g)} + 5H_2O_{(l)}$ $\Delta H_3 = -2877$KJ/mol

(a) Calculate the molar enthalpy of formation of butane (C_4H_{10}) from its elements in their normal states. (3mks)

21. (a) (i) A student found a colourless liquid in the laboratory which he suspected to be water. Describe a chemical test the could have performed to confirm that the liquid is water.(2 Marks)

(ii) What other test could he have done to prove that the liquid is pure water?(1 Mark)

22.The diagram below shows that the set-up that was used to prepare and collect a sample of nitric acid



(a) Give a reason why it is possible to separate nitric acid from sulphuric acid in the set-up. (1 Mark)

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(b) Name another substance that can be used instead of potassium nitrate.(1 Mark)

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(c) Give one use of nitric acid.(1mark)

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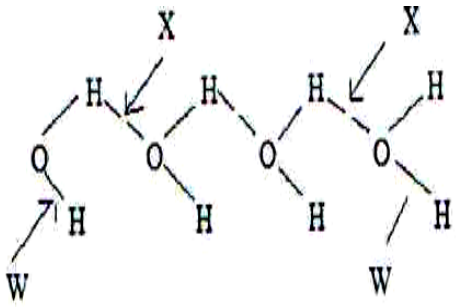
23.The structure of water molecules can be represented as shown below.



(i) Name the bond type represented by letter X and W. (1 Mark)

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(ii) Relative molecular mass of methane and water are almost similar, however the boiling of water is 100^0C while that of methane is -161^0C. Explain. (1 Mark)

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24.Diamond and graphite are allotropes of carbon. In terms of structure and bonding, explain why?

(i) Diamond is used in drilling of hard rocks. (1 Mark)

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(ii) Graphite is a lubricant. (1Mark)

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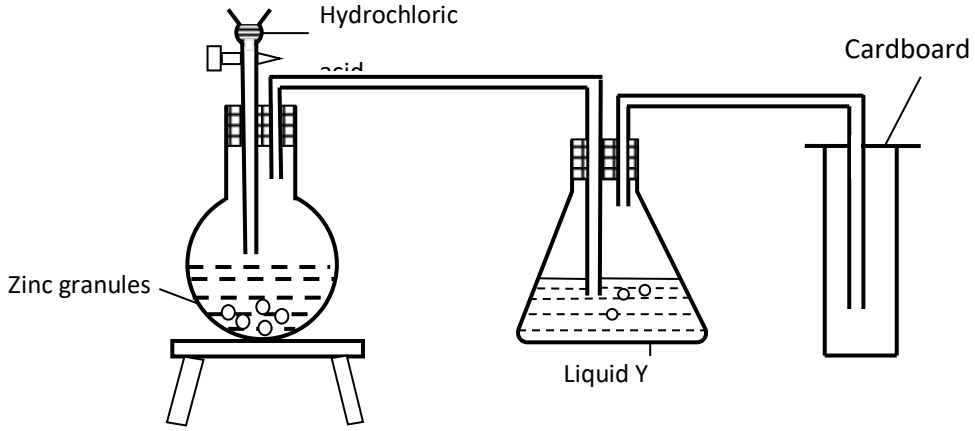
25.The set up was used to prepare dry hydrogen gas. Study it and answer the questions that follow.



(i) Is set-up used to prepare the gas correct? Give reason. (1 Mark)

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(ii) What would be liquid Y?(1mark)

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(iii) Give two physical properties of hydrogen gas (1 Mark)

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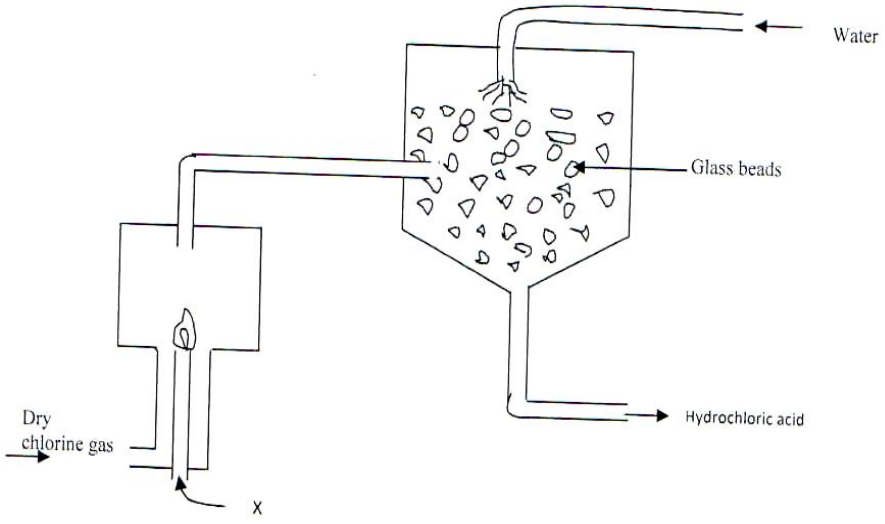
26. Given element W has atomic number 14 and consists of isotopes as shown below.

Isotope	A	B	C
Isotope mass	28	29	30
Percentage abundance	92.2	4.7	3.1

Determine the relative atomic mass of W (2 Marks)

27.The diagram below represents a set up used for the large scale manufacture of hydrochloric acid.



(a) Name substance X (1Mark)

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(b) What is the purpose of the glass beads? (1 Mark)

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(c) Give one use of hydrochloric acid (1Mark)

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28. A mixture contains Iron (III) Chloride, calcium chloride and iron filings. Describe how one can separate and recover the substances in the mixture.(3marks)

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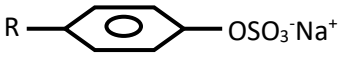
29. The structure below represents two cleansing agents A and B. Which cleansing agent would be suitable for washing in water containing calcium chloride? Give a reason.(2marks)



A

$R–COO^-Na^+$

B

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NAME: ……

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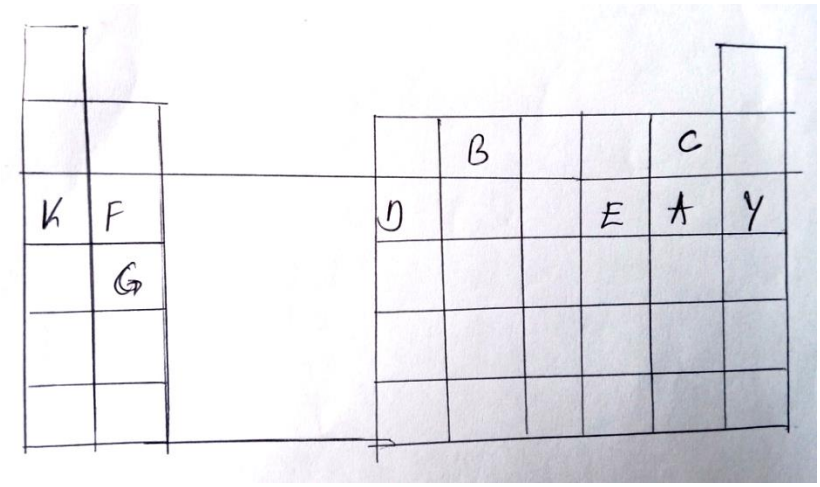
BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

233/2
CHEMISTRY
PAPER 2
INSTRUCTIONS TO CANDIDATES:
Answer all the questions in the spaces provided.
Mathematical tables and electronic calculators may be used.
All working must be clearly shown where necessary.

1. The grid below represents part of the periodic table. Study it and answer the questions that follow.



(a) Identity the family name to which element F and G belong. (1 mk)

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(b) Name the type of bond formed when a and F belong. (1 mk)

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(c) Write the formula of the oxide formed when D reacts with oxygen. (1 mk)

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(d) What type of oxide is formed in (c) above. (1 mk)

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(e) Compare the atomic radii of F and D. Explain. (2 mks)

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(f) Element F burns in air to form two products. Write two equations of the two products formed. (3 mks)

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(g) Stat e two uses of element K and its compounds. (2 mks)

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2. (a) Name the following organic compounds.

(i) $CH_3CH_2CH(Br)CH_3$

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(ii) $CH_3\text{-}CH_2CH_2\text{-}CH_2\text{-}C(=O)\text{-}OH$ (OH)

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(iii) $CH_2CHCH_2CH(Br)CH_3$

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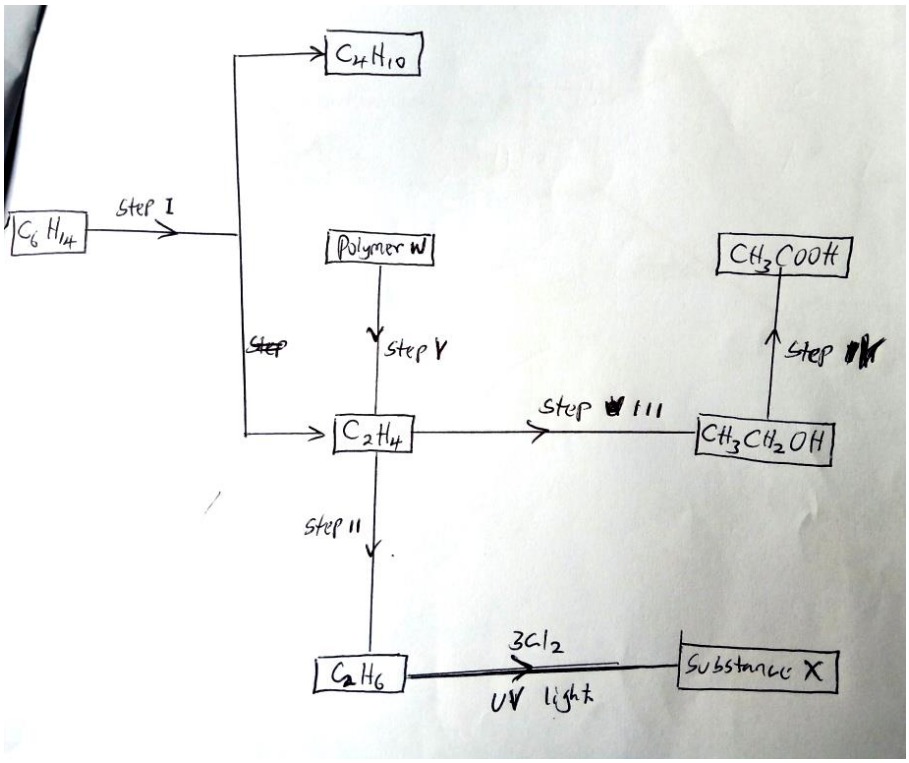
(b) Study the flow chart below and answer the questions that follow.



Name:-

(i) The process that occur in steps marked I, II and IV. (1 mk)

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(ii) The reagent and conditions in step II. (1½ mks)

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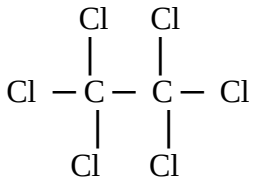
(iii) Draw the structural formula of substance X, give the name of the substance. (2 mks)



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

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

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

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

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3. (a) $50cm^3$ of 1M copper (II) Sulphate solution was placed in a $100cm^3$ plastic beaker. The temperature of the solution was measured. Excess metal A powder was added to the solution, the mixture stirred and the maximum temperature was repeated using powder of metal B and C. The results obtained are given in the table below.

	A	**B**	**C**
Maximum temperature ^oC	2.63	31.7	22.0
Initial temperature (^oC)	22.0	22.0	22.0

(i) Arrange the metal A, B, C and Copper in order of reactivity starting with the least reactive. Give reasons for the order. (3 marks)

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(ii) Other than temperature change, state one other observation that was made when the most reactive metal was added to the copper (II) Sulphate solution. (1 mk)

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(b) The Standard enthalpy change of formation of methanol is -239Kjmol-1

(i) Write the thermal chemical equation for the standard enthalpy change of formation of methanol. (1 mk)

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(ii) Use the following data to calculate the enthalpy change for the manufacture of methanol from carbon (II) oxide and hydrogen. (3 mks)

$CO_{(g)} + ½\ O_{2(g)} \longrightarrow CO_2$; $\Delta H^{\theta} = -283Kj/mol$

$H_{2(g)} + ½\ O_{2(g)} \longrightarrow H_2O_{(l);} = \Delta H^{\theta} = -286Kj/mol$

$CH_3OH + {}^{3}/_{2} \longrightarrow CO_{2(g)} + 2H_2O$; $\Delta H^{\theta} = -715Kj/mol$

(c) Study the information given in the table below and answer the questions that follow.

Bond	Bond energy ($Kjmol^{-1}$
C – H	414
Cl – Cl	244
C – Cl	326
H - Cl	431

Calculate the enthalpy change for the reaction. (3 mks)

4. Carbon IV oxide is produced when solid X is heated strongly. It can also be prepared by adding dilute hydrochloric acid to solid X. The reaction between X and dilute Sulphuric acid, however gradually slows down and stops.

(a) (i) Name solid X. (1 mk)

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(ii) Write an ionic equation for the reaction of X and acid. (1 mk)

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(b) A gas jar full of Carbon (IV) oxide was inverted over burning candle.

(i) State the observations made. (1 mk)

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(ii) What two properties of carbon (IV) oxide does this observation illustrate. (2 mks)

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(iii) Name a practical everyday use of this property of carbon (IV) oxide. (1 mk)

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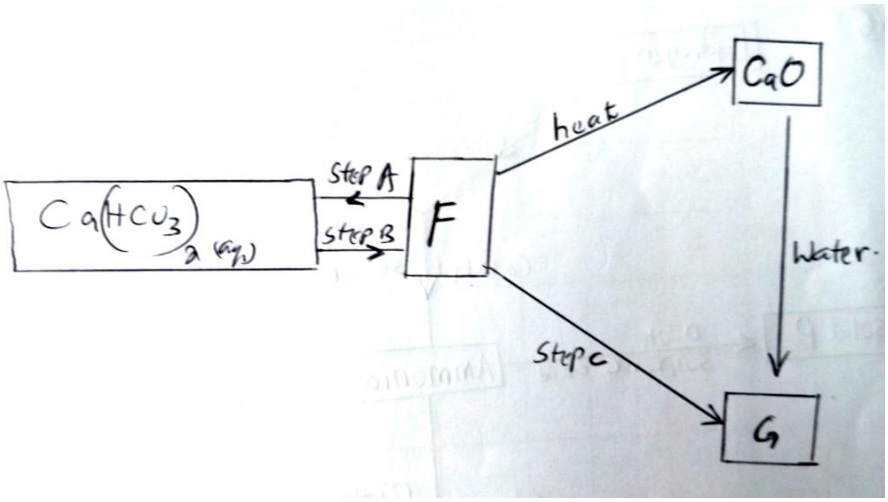
(c) The flow diagram below shows some reactions of calcium compounds.



(i) Name compound F and G. (2 mks)

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(ii) Write equations for reactions in step A, B and C. (3 mks)

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5. A piece of sodium metal which had been exposed to air, was found to be covered with a white powder. The piece was dropped into 50g of ethanol and 2400cm^3 of hydrogen gas measured at room temperature and pressure was obtained. The unused ethanol was distilled off and a white solid remained (Na = 23, molar gas volume at room temperature and pressure = 24dm^3)

(i) Name the other substance formed other than hydrogen. (1 mk)

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(ii) Calculate the mass of sodium that dissolved in ethanol. (2 mks)

(iii) What mass of ethanol was distilled of assuming there was no loss during the process?(2 mks)

(iv) The ethanol was distilled off at 80^oC, while the white solid remained unaffected at this temperature. What is the difference in structure of ethanol and the white solid.(2 mks)

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(b) Name another liquid which produces;

(i) Hydrogen with sodium metal. (1 mk)

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(ii) What difference would you observe if identical pieces of sodium were dropped separately into small beakers containing ethanol and this other liquid? (2 mks)

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(c) (i) Name the white powder coating the original piece of sodium, explain how it was formed.(3 mks)

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(ii) Describe one test by which you could identify white powder which originally covered sodium. (2 mks)

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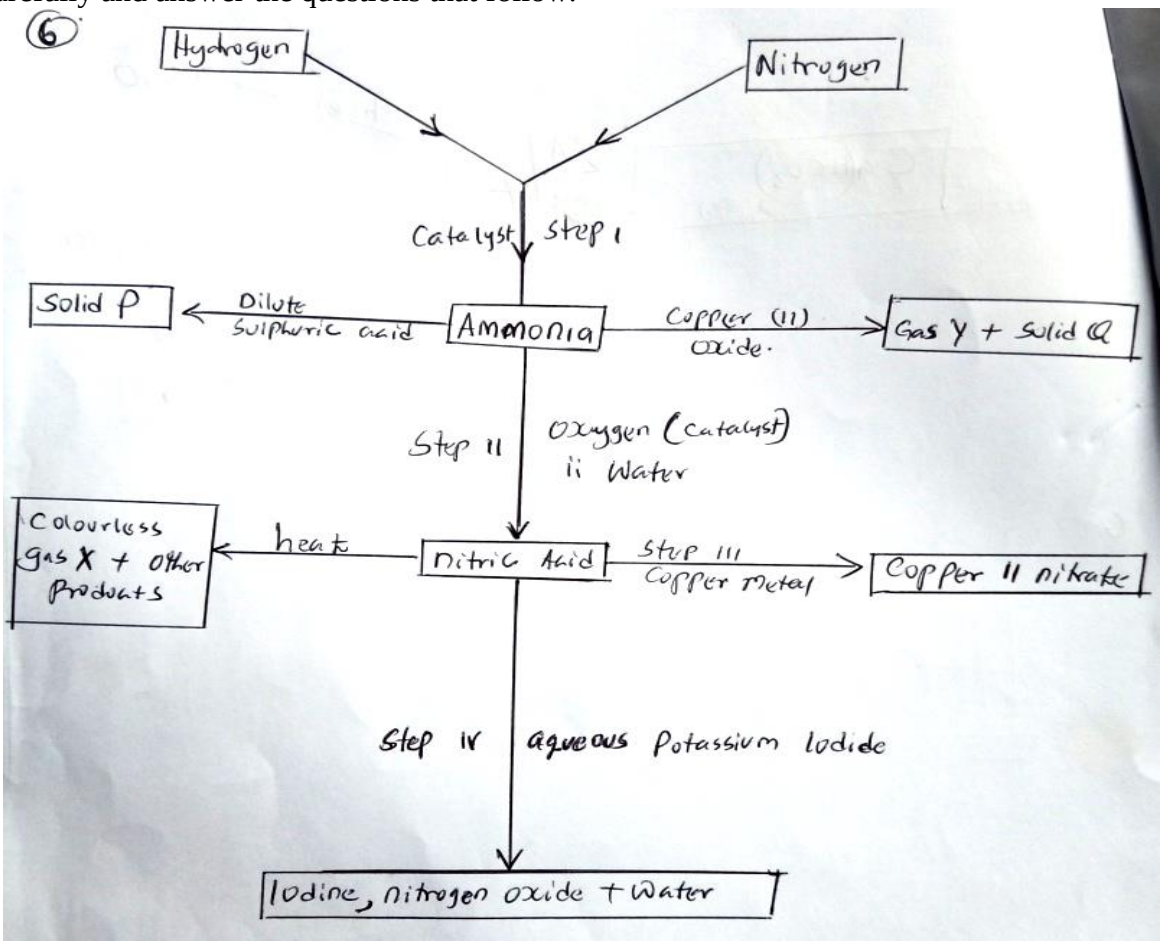
6. The scheme below shows various reactions starting with hydrogen and nitrogen. Study it carefully and answer the questions that follow.



(i) Give one condition other than the of a catalyst that would favour the reaction in step I. (1 mk)

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(ii) Name the catalysts used in step I and II. (2 mks)

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(iii) Name substances P, Q, X and Y . (2 mks)

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(iv) Write equations for the reactions that takes kplace in step II. (3 mks)

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(v) Name the oxidizing agent for the reaction that takes place in step IV. (1 mk)

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(vi) Why is a concentrated nitric acid transported on aluminium container and not copper? (1 mk)

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7. Use standard electric potentials for elements A, B, C, D and F given below to answer the questions that follow.

	E^{θ} (volts)
$A^{2+}_{(aq)} + 2e^- \rightleftharpoons A_{(s)}$	-2.90
$B^{2+}_{(aq)} + 2e^- \rightleftharpoons B_{(s)}$	-2.38
$C^{+}_{(aq)} + 2e^- \rightleftharpoons \frac{1}{2} C_{(g)}$	-0.00
$D^{2+}_{(aq)} + 2e^- \rightleftharpoons D_{(s)}$	+0.34
$\frac{1}{2} F_{2(g)} + e^- \rightleftharpoons F^{-}_{(aq)}$	+2.87

(i) Which element is likely to be hydrogen? Give a reason for your answer.(2 mks)

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

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

(iv) Calculate the E^{o} value of the strongest reducing agent. (2 mks)

(b) During the electrolysis of aqueous copper II Sulphate using copper electrodes, al current of 0.2 amperes was passed through the cell for 5 hours.

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

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(ii) Determine the change in mass of the anode which occurred as a result of the electrolysis process. (C.u = 63.5, 1 Faraday = 96,500 coulombs) (2 mks)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

233/3

CHEMISTRY

PRACTICAL

Paper 3

FORM 4

Time: 2 ½ Hours

Instructions to candidates

- *You are not allowed to start working with the apparatus for the first 15 minutes of the 2 ¼ hours allowed for this paper. This time is to enable you to read the question paper and make sure you have all the chemicals and apparatus that you may need.*
- *All working MUST be clearly shown.*
- *Mathematical tables and electronic calculators may be used.*

1. You are provided with:

- 0.1m sodium hydroxide solution F

- Solution G made by dissolving 9.0g of dibasic acid H_2MO_4 in 250cm^3 of distilled water

You are required to:

(i) Dilute solution G

(ii) Standardize the diluted solution H using the sodium hydroxide solution F

(iii) Determine the mass of M in the formula H_2MO_4

Procedure 1

Using a measuring cylinder measure 20cm^3 of solution G and transfer it into a beaker.

Measure 80cm^3 of distilled water and add it to the 20cm^3 of solution G in the beaker. Label this as solution H.

Procedure II

Place solution H in a burette. Pipette 25cm^3 of solution F into 250cm^3 conical flask. Add 2 – 3 drops of phenolphthalein indicator and Titrate with solution H. Record your results in table 1. Repeat the titration two more times and complete the table.

a) Table 1

	1	**II**	**III**
Final burette reading (cm^3)			
Initial burette reading (cm^3)			
Volume of solution H used (cm^3)			

(4 marks)

b) Calculate the average volume of solution H used. (1 mark)

c) Determine the number of moles of:-

I Sodium hydroxide in Solution F in $25cm^3$ (1 mark)

II Acid in solution H in the average volume used. (1 marks)

III acid in $100cm^3$ of solution H. (1 marks)

IV acid in $20cm^3$ of solution G. (1 mark)

V acid in $250cm^3$ of solution G (2 marks)

d) Calculate the:

I Molar mass of acid H_2MO_4 (2 marks)

II Mass of M in the formula H_2MO_4 given that H = 1, O=16. (1 marks)

2. You are provided with:

- 0.15M ethan-1,2-dioc acid (oxalic), solution M

- 0.02M acidified potassium manganate (VII) solution N

You are required to determine the rate of reaction between acidified potassium manganate (VII) and ethan – 1,2 – dioc (oxalic) acid at different temperatures.

Procedure

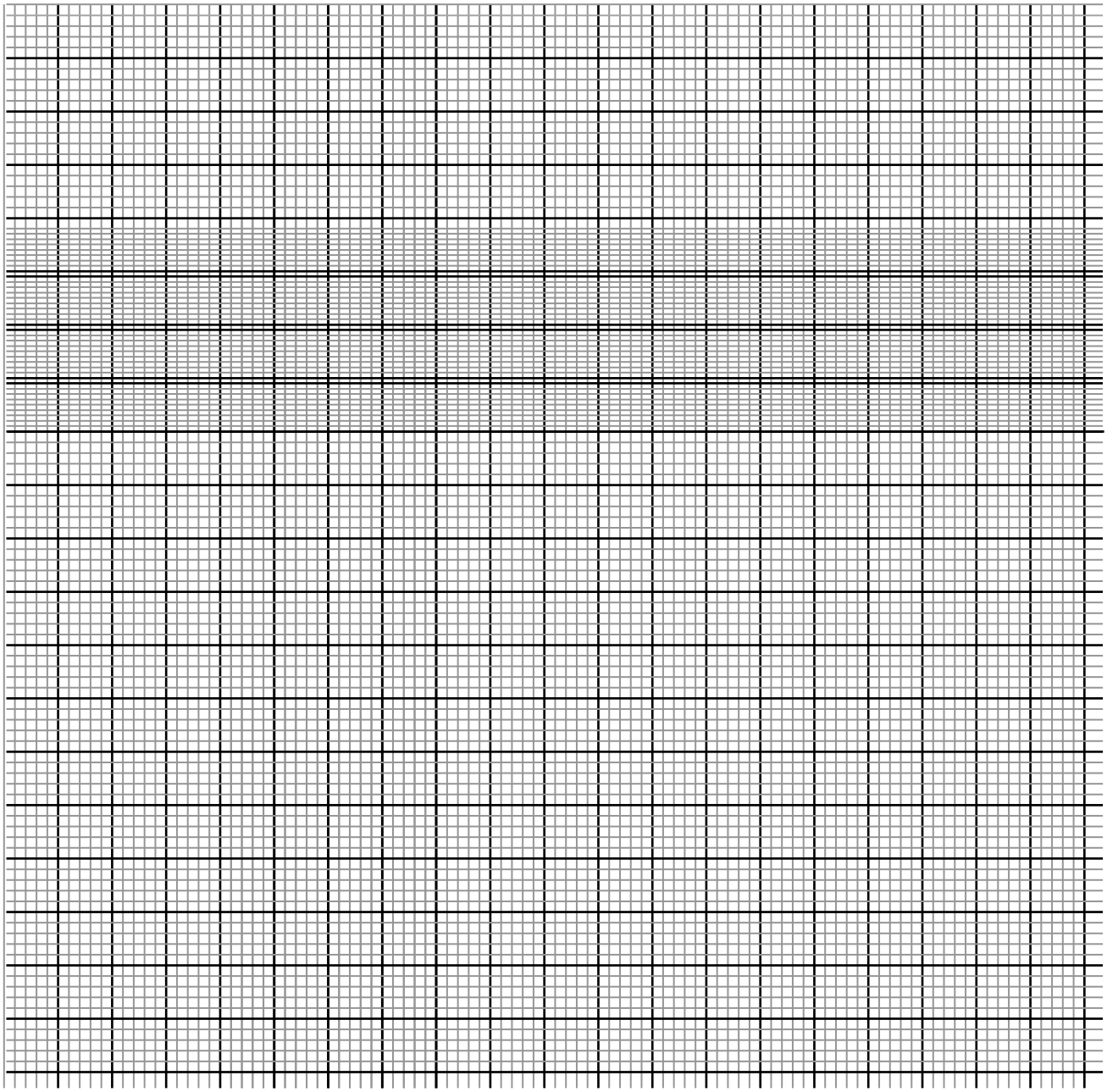
1. Place $5cm^3$ of solution N in a boiling tube
2. Place another $5cm^3$ of solution M in another boiling tube.
3. Heat solution N on a Bunsen burner flame to 80^0C. Allow it to cool to 70^0C.
4. Add all solution M into solution N and at the same time start the stop watch
5. Stir the mixture and record in table II the time taken for purple colour to disappear. At the same time record the temperature.
6. Using clean boiling tubes repeat the procedure while allowing solution N to cool to 60^0, 50^0C and 45^0C in each case to complete table II below.

a) Table II

Temperature before mixing °C	**70**	**60**	**50**	**45**
Temperature at which purple colour disappear ^0C				
Time taken for purple colour to disappear				
$^1/_{time}$ sec				

(4 marks)

b) On the grid of graph paper provided plot $^{1}/_{time}$ (y-axis) against temperature at which the purple colour disappears. (3 marks)



b) From your graph;

I. determine the time taken for purple colour to disappear at 47.5^0C. (1 marks)

II State the relationship between rate of reaction and the temperature at which purple colour disappears. (1 mark)

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3. a) You are provided with substance ***P*** for this question. ***Transfer*** the substance into a clean boiling tube. ***Add*** about 10cm^3 of distilled water and ***stir***. ***Pour*** the mixture into ***four*** clean test tubes of about 2cm^3 each.

Observations	***Inferences***
1mk	1mk

i) To the ***first*** portion of the solution, ***add*** sodium hydroxide solution dropwise ***until*** in excess.

Observations	***Inferences***
1mk	1mk

ii) ***Dip*** a clean stirring rod/glass rod/nichrome wire into the second portion and then ***place*** into the side of a blue bunsen flame.

Observations	***Inferences***
½ mk	1mk

iii) To the ***third*** portion, ***add*** 2-3 drops of barium nitrate solution ***followed by excess*** hydrochloric acid.

Observations	***Inferences***
1mk	½ mk

iv) To the ***fourth*** portion, ***add*** 2-3 drops of acidified potassium manganate (VII)

Observations	***Inferences***
½ mk	1mk

b) You are provided with solid K. Carry out the tests below. Write your observations and inferences in the spaces provided.

i) Using a clean metallic spatula, heat about one third of solid K in a Bunsen burner flame.

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

ii) Dissolve the remaining portion of solid K into about $10cm^3$ of distilled water and divide the solution into 4 portions.

To the first portion, add two drops of acidified potassium permanganate solution.

Observations	***Inferences***
(1mark)	(1 mark)

iii) To the second portion, add two drops of bromine water.

Observations	***Inferences***
(1mark)	(1mark)

iv) Determine the pH of the third portion using universal indicator paper.

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

v) To the fourth portion, add a small amount of solid sodium hydrogen carbonate.

Observations	***Inferences***
(1mark)	(1mark)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

313/1

C.R.E

Paper 1

Time: 2½ Hours

Kenya Certificate of Secondary Education

Instructions to Candidates

- *The paper consists of **Six** questions*
- *Answer **ANY FIVE** questions in the answer sheets provided*
- *Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*

TOTAL SCORE

1 a) Explain **four** similarities between the biblical concept of sin and the African view of evil (8 marks)

b) State **seven** teachings about man from the Genesis stories of creation (7 marks)

c) Give **five** ways in which Christians continue with God's work of creation (6 marks)

2) a) Describe how God tested Abraham's faith in Genesis 22:1-19 (8 marks)

b) With reference to Genesis 17:10-17, outline **five** instructions given by God to Abraham concerning Jewish circumcision (5 marks)

c) Identify **seven** attributes of God learnt by Christians from the ten plaques (8 marks)

3. a) State **seven** functions of the Temple in Jerusalem at the time of King Solomon. (7 marks)

b) Explain ways in which the Israelites moved away from the true worship of Yahweh during Prophet Elijah's time. (6 marks)

c) Identify **seven** ways how the Church is promoting the true worship of God in Kenya today. (7 marks)

4. a) Outline **seven** characteristics of false prophets. (7 marks)

b) Explain **four** visions of Prophet Amos. (8 marks)

c) Mention ways in which God communicates to His people today. (5 marks)

5. a) With reference to Jeremiah's teachings, **explain four** symbolic acts related to hope and restoration (8 marks)

b) Give **seven** vows made by the Israelites during the time of the renewal of the covenant (Nehemiah 10v 28-39) (7 marks)

c) Give **five** problems that Christian leaders face in their work today (5 marks)

6. a) Explain four roles performed by ancestors in traditional African communities (8 marks)

b) Outline **five** requirements for a sacrifice to be offered (5 marks)

c) Give the changes that have taken place in the traditional African understanding of property (7 marks)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

313/2

CHRISTIAN RELIGIOUS EDUCATION

PAPER 2

2 ½ hours

KENYA CERTIFICATE OF SECONDARY EDUCATION

Instructions to Candidates

Answer **any five** questions in the foolscaps provided

TOTAL SCORE

1 a) outline Isaiah's prophecy about the messiah on the suffering servant in Isaiah 53. (8mks).

b) Describe the message of angel Gabriel to Mary according to Luke 1:26-38 (6mks)

c) Outline **six** lessons on family relationships drawn from the incident when Jesus accompanied his parents to the temple at the age of twelve (6mks)

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

b) State **seven** teachings of Jesus on true discipleship from the sermon on the plain (7mks).

c) Give reasons why modern Christians should accept to suffer in Christ's name (5mks).

3 a) state **six** teachings on the growth of God's kingdom from the parable of the mustard seed and the yeast (6mks).

b) Explain **four** significance of the triumphant entry to Jerusalem to the ministry of Jesus (8mks).

c) Identify **six** ways in which Christians prepare themselves for the coming of God's kingdom(6mks).

4a) Describe the New Testament teachings on unity of believers based on the image of the bride (8mks).

b) Identify **six** signs which confirmed the coming of the Holy Spirit on the

day of Pentecost (6mks).

c) Outline Saint Paul's teaching on how the gifts of the Holy Spirit should be used in the church (6mks).

5.a) Explain the traditional African understanding of marriage. (7mks)

b) List **six** forms of abuse that children go through in child labour.(6mks)

c) Give **seven** criteria that Christians use to evaluate the use of leisure. (7mks)

6.a) Identify **eight** reasons why people engage in corrupt practices in Kenya today. (8mks)

b) In which ways are people punished in Kenya for causing social disorders?(6mks)

c) How can Christians today help to improve the environment?(6mks)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

101/1
ENGLISH
Paper 1
Form 4
(Functional Skills)
TIME: 2 hours

Instructions to candidates

1. *Write our name and index number in the spaces provided above.*
2. *Answer **all** the questions in this question paper.*
3. *All your answer must be written in the spaces provided in this paper.*
4. *Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*

1. You are the manager of Quick Safaris Transport Company. Of late you've realized that the workers, mainly drivers and conductors have lost discipline, and this has made the company incur a lot of loss.

   a) Write an internal memo to them, warning them of dire consequences if they do not change their behaviour and attitude.
      Some of the areas you wish to address are:
      i. Punctuality
      ii. Foul language
      iii. Lack of courtesy
      iv. Policy bribery
      v. Any other relevant area from your observation

(13 marks)

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b) Design a Card inviting the workers to a motivational talk with an aim of changing their behaviour and attitude. (7 marks)

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

Poaching is increasing *(1)* _____ a menance, not just in Kenya, (2) _____ also in other parts of the continent, (3) _____ a grave danger to the survival of various animal species particularly the elephant. Whereas, there have been *(4)* _____ to raise awareness about the danger posed by the menance, not enough has been done to *(5)*_____ it out and punish offenders.

As it is, poaching is becoming a crisis, threatening species like elephants, which are hunted *(6)* _____ for their ivory, rhinos which are targeted because of their horns and other game like lions.

The Kenya Wildlife Service has been doing well to combat *(7)* _____but it appears that more is needed if the criminals *(8)* _____ to be stopped. If the killers have more sophisticated weaponry, then KWS must *(9)* _____ its game or call *(10)* _____ the military to assist.

Oral Skills (30 marks)

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

Her lip suckle the nipples
Milk bubbles, foams and ripples
Little hands up in the air
Catch on the mother's hair
Sweet sensation rises in pressure
Tiny legs kick with pleasure
Sleep comes gently and strong
Sleep whispers softly and long.

(EmusaraOssieEnekase)

i. Identify any two pairs of rhyming words in the poem. (1mk)

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ii. Identify one major sound pattern in the poem. (1mk)

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iii. Give two examples of the above sound pattern. (2mks)

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iv. How would you perform the last two lines of the poem? (3mks)

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b) Suppose you were asked to make a speech at a friend's graduation party. What would you do to capture the audience's attention? (5 mks)

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c) Challenger: Two Europeans peeping through the window.

Response : Mucus

i. Classify the above genre. (1mk)

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ii. Identify and illustrate the most outstading stylistic device used in the above genre.(1mk)

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

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d) In the words below, underline the part that should be stressed.

i. Suc.cess
ii. ad.vice
iii. Chal.lenge
iv. ob.serve (4mk)

e) Give a word with a similar pronounciation (4mks)

i. Muscle ……..

ii. Worn …….

iii. Come ……

iv. Which …….

f) The following is a conversation between a father and his daughter. Identify six shortcomings in the father's listening skills. (6mks)

DAUGHTER: *(Shortly after having arrived home from school)* Good afternoon, Daddy.

FATHER: *(Sitting complacently in the sofa, reading a newspaper. Looking up……..)* Good afternoon.*(Resumes reading).*

DAUGHTER: *(Holding out her school report form)* Daddy, I'm excited. My classteachersaid I was the best improved. I was…

FATHER: Oh, you were? Me, I used to be number one. I was absolutely unbeatable.

DAUGHTER: Chemistry has been a particular headache (*now looking at the report form which she thought her father would wan see),* but this time…

FATHER: *(Stretching his arms, looking preoccupied)* Chemistry for me was particularly easy I never scored anything less than 90%.

DAUGHTER: Dad, I was going to tell you that this time…

FATHER: *(Absent-mindedly)* By the way, where is your mum?

DAUGHTER: Mum is in the garden pickng vegetables. But Dad, you are not listening to my story I was telling you about Chemistry.

FATHER: You mean you have a story about Chemistry? Chemistry is not about stories. It is hard science.

DAUGHTER: It's about my improvement…

FATHER:(*Laughing)* Me, it wasn't a matter of improvement. I was always at the top of the class.

DAUGHTER: Daddy, I give up. You are not listening.

FATHER:*(looking surprised)* Listening? I heard you: you were talking about improvement in Chemistry, weren't you?

DAUGHTER: Anyway, Dad. Thank you for paying attention. Enjoy your newspaper.

FATHER:Oh, yes I'm reading an interesting story about politics.

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

101/2
ENGLISH PAPER 2
FORM FOUR
END TERM ONE EXAMS

INSTRUCTIONS TO CANDIDATES:
Answer all the questions in the spaces provided.

QUESTION 1: COMPREHENSION. (20MKS)

Read the following passage and then answer the questions that follow.
The question is at least as old as Socrates: If we know what the right thing to do is, why do we not do it? It is an especially acute question when applied to global warming. The science showing that carbon dioxide emissions are already changing the planet's climate, and are likely to have severe effects (melting ice caps, sea-level rise, and species extinction), is compelling and now barely disputed. Almost 90% of Europeans say they recognize climate change as a major issue, and 75% identify fossil fuel emissions as a major cause.

And yet, as was widely discussed at a conference of environmentalists, geologists and writers in May 2006 in Ankelohe, Germany, public understanding has not translated into even the simplest of public actions. Less than 1% of Britons, for example, have switched their home electricity to renewable sources, even though it requires little more than a phone call to one's existing provider. Proportions on the continent are slightly higher, but there is clearly no rush to **go green** or — shudder — stop driving cars.

Why such a disconnect between information and action? Part of the problem is that environmental advocates emit mixed messages. In mid-May 2006, Britain's Guardian published a front-page story showing that five companies in Britain produce more CO_2 pollution in a year than all the country's motorists combined. That is a strong argument for targeting industries, but the average reader could hardly be blamed for thinking, "Why should I bother to cut down my driving?"

Similarly, not enough thought has been devoted to the best role for government. Climate change is too vast a problem for individuals to solve alone, and some big businesses have an incentive not to solve it. That leaves government to take the lead, which is tricky, because over-reliance on government can allow individuals to
fob off their own responsibilities. What is worse, government power seems to tickle autocratic fantasies. In my experience, environmentalists spend far too much energy advocating hard-line government 'solutions' that do not stand a chance of being enacted. Sure, it might be good for the planet if governments banned the use of sports-utility vehicles or, for that matter, of all fossil fuels. Yet not only is it hard to sell outright prohibitions to voters, but the sad truth is that governments have a woeful record in even the mildest interventions. One of the most Significant innovations in the last decade has been Europe's carbon-emission trading scheme: some 12 000 companies, responsible for more than half of the EU's emissions, have been assigned quotas. Companies with unused allowances can sell them; the higher the price, the greater the i**ncentive** for firms to cut their use of fossil fuels. The system seemed to work for about a year — but now it turns out that Europe's governments allocated far too many credits, which will likely hinder the program's effectiveness for years.

Perhaps the real reason that well-intentioned consumers do not change is that they do not see any benefit. Climate change may be a frightening, irreversible **calamity**, but its worst effects will not be felt next week or next year. The planet looks the same regardless of whether we use environmentally friendly technology or we do not care how much CO_2 we emit. But sure as the sun rises and sets every day, if we do not cut down on carbon emissions, then we may not have a planet to hand over to the next generation.
(Adapted from Times, June 5, 2006)

a) According to the passage, what are the effects of global warming? (4 marks)

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b) What, according to the passage, is the main cause of global warming? (3 marks)

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c) How does Britain encourage people to use renewable electricity? (3 marks)

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d)Paraphrase the following sentence: That is a strong argument for targeting industries, but the average reader could hardly be blamed for thinking, 'Why should I bother to cut down my driving?' (4 marks)

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e)What message does the writer communicate in this passage? (2 marks)

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

(i) fob off

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(ii) incentive

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(iii) calamity

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(iv) go-green

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2. Read the following excerpt and answer the questions that follow

"Yes, Papaai," Resian said **apprehensively**. "I am here. Taiyo tells me you are calling me?"

"Yes, yes," her father replied. "Please take a seat."

"Yes, *Papaai*," Resian repeated as she sat on a chair far away from her father.

"Come nearer…child," her father said pleasantly.

"Why do you **sit a mile away**? Come nearer."

Resian moved her chair hardly an inch from where it was and then she looked up into her father's face with eager expectation.

"If I do remember well," her father began in a low even tone, "you will be nineteen in September this year, am I right"

"You are quite right, *Papaai.*" Resian answered eyeing him curiously. His face was unusually kind. His eyes held hers as he smiled broadly. That's it!' she thought triumphantly. "That must be it!

"You and I have not discussed important issues for a long time," he said with a friendly chuckle that was intended to bring her closer to him. "I thought today would be the best day to break the news. Your future is very important to me, my dear child."

Resian thought the concern in her father's voice, rang false. She hesitated, but could not **hold herself** any more. The anxiety was too great.

"Papaai, is it Yeiyo or Taiyo who spoke to you?" she asked sensationally, thinking she was stating the obvious. But seeing her father's face cloud, she added quickly.

"Who between them spoke to you about our enrolment at the Egerton University?"

"What are you talking about, child? Her father, who seemed dumbfounded, asked after a long and uncomfortable silence.

"Both Yeiyo and Taiyo promised to talk to you about it, and I thought she had."
"What, in the name of God are you talking about, child?" he repeated, this time **agitated** and shaking his head vigorously. "No, I have never spoken to anybody about any of you enrolling at the university. Never! When I said I wanted us to discuss your future, that isn't what I meant at all. Of course not!"Resian looked at her father's face enquiringly.

1. What has happened before the excerpt? (3mks)

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2. What is so ironical in this passage? Explain your answer referring to elsewhere in the novel. (3mks)

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3. "Your future is very important to me, my dear child" From elsewhere in the novel, explain why Ole Kaelo tells his daughter so. (3Mks)

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4. Discuss two aspects of character in Resian in this excerpt. (4Mks)

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5. What major issue is addressed in this excerpt? (2Mks)

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6. Explain what happens after this excerpt. (3Mks)

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7. "Who between them spoke to you about our enrolment at the Egertonuniversity?" Rewrite in the indirect speech. (1Mk)

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8. A part from irony, discuss any other aspect of style evident in the excerpt. (2Mks)

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9. Explain the meaning of the following words and expressions used in the excerpt. (4 Mks)

(i). Apprehensively

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(ii). Sit a mile away

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(iii). Hold herself

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(iv). Agitated

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QUESTION 3: LITERARY APPRECIATED. (20MKS)

03. Read the poem below and then answer the questions that follow.

No coffin, no grave by fared Angira

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

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

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

Who could signal yellow
When we had to leave politics to the experts
And brood on books
Brood on hunger
And schoolgirls
Grumble under the black pot
Sleep under torn mosquito net
And let lice lick our intestines
The lord of the bar, money speaks madam
Woman magnet, money speaks madam
We only cover the stinking darkness of the cave of our mouths
And ask our father who is in hell to judge him
The quick and the good.

Well, his diary, submarine of the Third World
War
Showed he wished

To be buried in a gold-laden coffin
Like a VIP
under the jacaranda tree beside his palace
A shelter for his grave
And much beer for the funeral party

Anyway one noisy pupil suggested we bring
Tractors and plough the land.

(*From Poems from East Africa, D. Cook andD. Rubadiri (Eds,): East African EducationalPublishers)*

(a) Briefly explain what this poem is about. (3 marks)

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(b) Explain the use of onomatopoeia in the poem. (2 marks)

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(c) Identify and explain the tone of the poem. (4 marks)

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d) Comment on the central theme of the poem. (3 marks)

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(e)Explain the meaning of the following lines:

(i) who could signal yellow (4 marks)

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(ii) submarine of the Third World War

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(f)How else can people bring change in society without assassinating politicians? (2mks)

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(g)Explain the meaning of the following word as used in the poem

i. Anchored (1mk)

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ii. Brood (1mk)

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QUESTION 4: GRAMMAR **(15 MARKS)**

A. **Complete the following sentences by choosing the appropriate expressions to fill the gaps**. (3mks)

(1) Although Nduati is a great friend of mine. I _____ him on a few important issues. (differ to, differ with)

(2) As good citizens, we must all pay our taxes _____ the policy. (in accordance to, in accordance with)

(3) She chose her career _____ (independent of, independent to) her mother.

B. ***Rewrite the sentences below according to the instructions given after each***. (3mks)

(1) My father would not allow us to attend night parties under any circumstances. (Begin: Under no circumstances …….)

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(2) Strangers should not be allowed into the compound without the security officer's permission. (Begin: On no account……..)

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(3) The plane had just taken off when one of the passengers began to scream. (Begin: Scarcely ……)

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C. ***<u>Rewrite the following sentences avoiding repetition.</u>*** (3mks)

(1) Always be frank and open with your friends. When you are frank and open to your friends, you will win your friends trust and confidence.

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(2) Some of the questions are difficult, so find the easier questions and do the easier questions first.

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(3) Help yourself to some oranges. These oranges are sweet but those oranges are sweeter.

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D. ***<u>Combine each of the following pairs of sentences into one sentence by making one of them a relative clause.</u>***

(1) Naliaka joined our school this term. She is very good at grammar.

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(2) The elephant is a very big animal. It is also very strong.

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(3) The generator had been on the whole night. It broke down in the morning.

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E. ***<u>Add an appropriate question tag to each of the following statements.</u>*** (3mks)

(1) They aren't serious.……

(2) He bought a new house last month. ……

(3) They won't shut up. ……

(4) Let us go. ……

(5) He hasn't been here before. ……

(6) You live in an apartment. ……

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

ENGLISH
PAPER 3
TIME: 2 ½ HOURS

Blossoms of the Savannah (Compulsory)

1. Gender inequality is tantamount to violation of human rights.
   Write an essay in support of the asse4tion drawing your illustrations from the Novel the Blossoms of the Savannah. (20 mks)

2. Write a composition starting "When I left home that bright Sunday afternoon, I did not realize the
   events of the next few days would completely change my life.

OR

3. Write a composition to justify this statement: "The source of corruption in our country is the legislature'

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

312/1
GEOGRAPHY Paper 1
Time: 2¾ hours

INSTRUCTIONS TO CANDIDATES

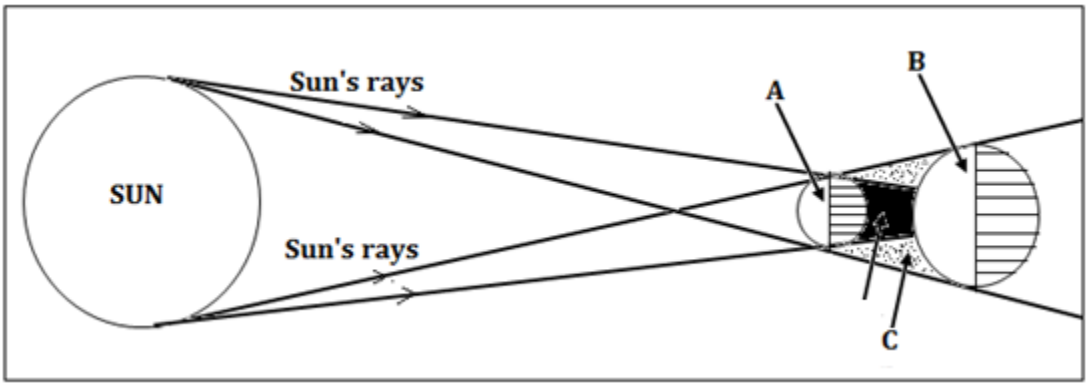
- *This paper has **two** sections: **A** and **B***
- *Answer **ALL** the questions in **section A.***
- *In section **B,** answer **questions 6** and any other **TWO** questions.*
- *All the answers must be written on the foolscaps provided after page 4.*
- *Candidates must answer the questions **in English**.*

FOR EXAMINER'S USE ONLY

Section	Questions	Maximum Score	Candidate's Score
A	1 - 5	25	
B	6	25	
		25	
		25	
		Total Score	

SECTION A

1. The diagram below shows a type of an eclipse.



(a) Name the parts marked A, B, and C. (3 marks)

(b) Apart from the occurrence of eclipses, state **three** other effects of the movement of the earth round the sun. (3 marks)

2. (a) What are metamorphic rocks? (2 marks)

(b) Give **two** examples of organically formed sedimentary rocks. (2 marks)

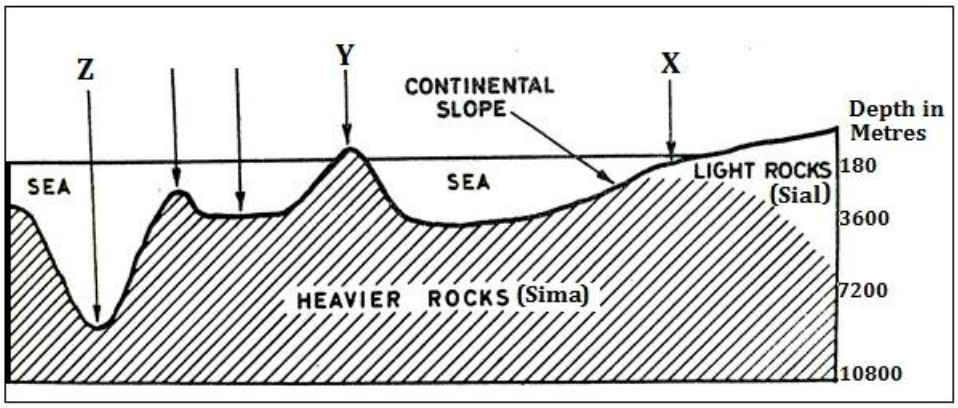
3. (a) List **three** landmasses that formed from Gondwanaland according to continental drift theory. (3 marks)

(b) Give **two** types of tectonic plate boundaries. (2 marks)

4. (a) What is an earthquake? (2 marks)

(b) State **three** natural causes of earthquakes. (3 marks)

5. The diagram below shows some features that form ocean relief.



(a) Identify the features marked X, Y and Z. (3 marks)

(b) List **two** main forms of horizontal movements of ocean water. (2 marks)

SECTION B

6. Study the map of Kijabe (1:50,000 sheet 134/3) provided and use it to answer the following questions.

(a) (i) Determine the six figure grid reference of an air photo principal point near the South Western corner of the map. (2 marks)

(ii) Give **two** types of scale on the map extract (2 marks)

(iii) Give the position of the South Eastern corner of the area covered by the map by latitude and longitude. (2 marks)

(b) (i) Citing evidence from the map, give **three** settlement patterns in the area covered by the map. (3 marks)

(ii) Identify **two** relief features at grid square 3099. (2 marks)

(iii) Explain how relief has influenced the distribution of settlements in the area covered by the map. (4 marks)

(c) Citing evidence from the map, give **five** economic activities carried out in the area covered by the map. (5 marks)

(d) Describe the distribution of natural vegetation in the area covered by the map. (5 marks)

7. (a) (i) Differentiate between weather and weather climate. (2 marks)

(ii) Give **three** types of rainfall. (3 marks)

(b) Explain how the following factors affect the climate of a place:

(i) Cold ocean currents. (4 marks)

(ii) Inter Tropical Convergence Zone. (2 marks)

(c) With the aid of a well labelled diagram, describe how sea breeze occurs.(8 marks)

(d) Suppose you were to carry out a field study at a weather station:

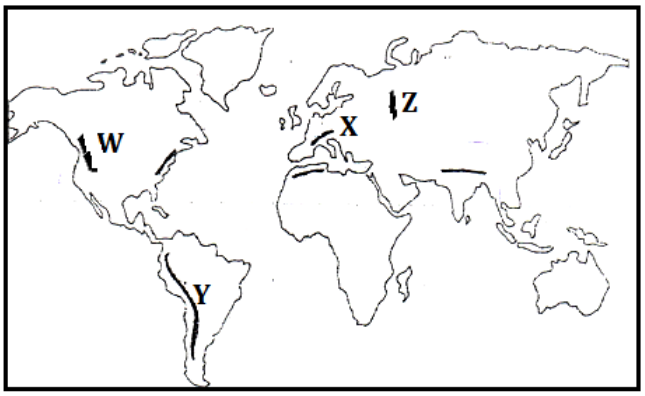
(i) Give **three** methods that they would use to collect data (3 marks)

(ii) State **three** follow up activities for the field study. (3 marks)

8. (a) (i) Define the term folding. (2 marks)

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

(b) The world map below shows the distribution of some fold mountains. Use it to answer question (i)



(i) Identify the fold mountains marked W, X, Y and Z (4 marks)

(ii) With the aid of well labelled diagrams, how Fold Mountains were formed.

(10 marks)

(c) Explain **three** negative effects of Fold Mountains (6 marks)

9. (a) (i) What is a karst scenery? (2 marks)

(ii) State **five** characteristics of karst landscapes. (5 marks)

(b) Give **four** sources of ground water. (4 marks)

(c) Explain how the following factors influence the occurrence of ground water:

(i) Nature of rocks. (2 marks)

(ii) Slope of land. (2 marks)

(iii) Vegetation cover. (2 marks)

(d) Explain **four** conditions that favour the development of an artesian well. (8 marks)

10. (a) (i) What is glaciation? (2 marks)

(ii) Outline **four** factors which determine the rate at which ice moves. (4 marks)

(b) Apart from a cirque, name **four** other glacial erosional features. (4 marks)

(c) Using well-labelled diagrams, describe how a cirque is formed. (8 marks)

(d) Students of Nanyuki High School carried out a field study on glaciation on Mt. Kenya

(i) Give **three** reasons why they conducted a reconnaissance. (3 marks)

(ii) State **two** factors they must have considered when selecting the data collection methods. (2 marks)

(iii) Give **two** activities they may have been involved in during the study. (2 marks)

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

312/1
GEOGRAPHY Paper
Time: 2¾ hours

INSTRUCTIONS TO CANDIDATES

- *This paper has **two** sections: **A** and **B***
- *Answer **ALL** the questions in **section A.***
- *In section **B,** answer **questions 6** and any other **TWO** questions.*
- *All the answers must be written on the foolscaps provided after page 4.*
- *Candidates must answer the questions **in English**.*

FOR EXAMINER'S USE ONLY

Section	Questions	Maximum Score	Candidate's Score
A	1 - 5	25	
B	6	25	
		25	
		25	
		Total Score	

SECTION A

2. (a) What is management of forests? (2 marks)

   (b) State three reasons why agroforestry is encouraged in Kenya. (3 marks)

2. (a) Name **two** categories of agricultural processing industries in Kenya.(2 marks)

   (b) State **three** similarities between the cottage industry of India and the Jua Kali industry in Kenya. (3 marks)

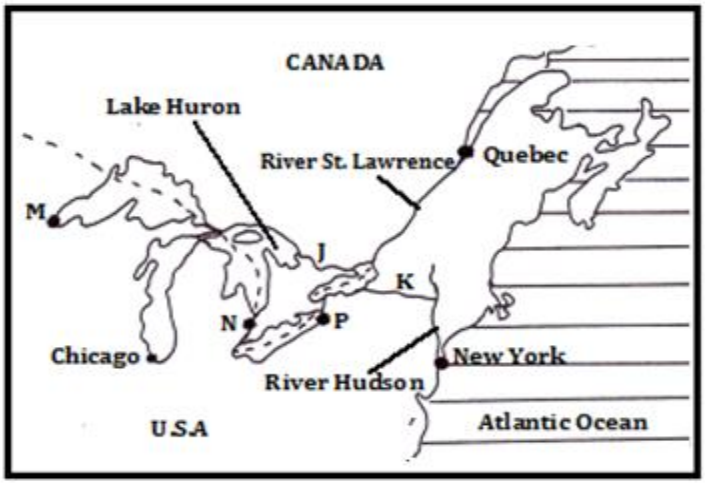
3. (a) Differentiate between settlement and urbanization. (2 marks)

   (b) State **four** characteristics of central business district of a town. (4 marks)

4. (a) Name **two** types of environment. (2 marks)

   (b) State **three** consequences of water pollution. (3 marks)

5. The map below shows the Great Lakes and St. Lawrence Seaway. Use it to answer question (a) and (b).



   (a) Name the canals marked **J** and **K**. (2 marks)

   (b) Name the towns marked **M** and **N**. (2 marks)

SECTION B

6. Study the table below and use it to answer questions (a) and (b)

Value of leading imports to Kenya from 2015 to 2019 (Ksh million)

MPORT	2016	2017	2018	2019
Industrial machinery	253,500	238,400	252,400	257,600
Petroleum products	183,800	234,900	295,100	307,500
Iron and Steel	75,500	83,600	97,700	104,100

(a) (i) What is the difference between the value of petroleum products imports between year 2018 and year 2016? (2 marks)

(ii) Calculate the percentage increase between the value of industrial machinery imported between year 2017 and the year 2019. (2 marks)

(b) (i) Apart from comparative bar graphs, give **three** other statistical methods that can be used to present the data in the table. (3 marks)

(ii) Using a vertical scale of 1cm to represent Ksh 30 Billion, draw a comparative bar graph to present the data in the table. Use the graph paper provided. (9 marks)

(c) State **three** advantages of using comparative bar graphs to present statistical data. (3 marks)

(d) Explain **three** reasons for low volume of trade between the countries in Africa.

(6 marks)

7. (a) (i) Define the term mining? (2 marks)

(ii) Give four methods of underground mining. (4 marks)

(b) Explain how the following factors influence mining:

(i) Level of technology (4 marks)

(ii) Quality of the ore (2 marks)

(c) Explain **four** benefits of trona mining at Lake Magadi to Kenya. (8 marks)

(d) State **five** negative effects of mining on the environment. (5 marks)

8. (a) (i) State **three** physical factors that favour tea growing in Kericho County. (3 marks

(ii) Describe the stages involved in tea processing at the factory. (7 marks)

(b) Outline **three** ways in which tea is marketed in Kenya. (3 marks)

(c) Explain **thre**e physical problems facing small scale tea farmers in Kenya.(6 marks)

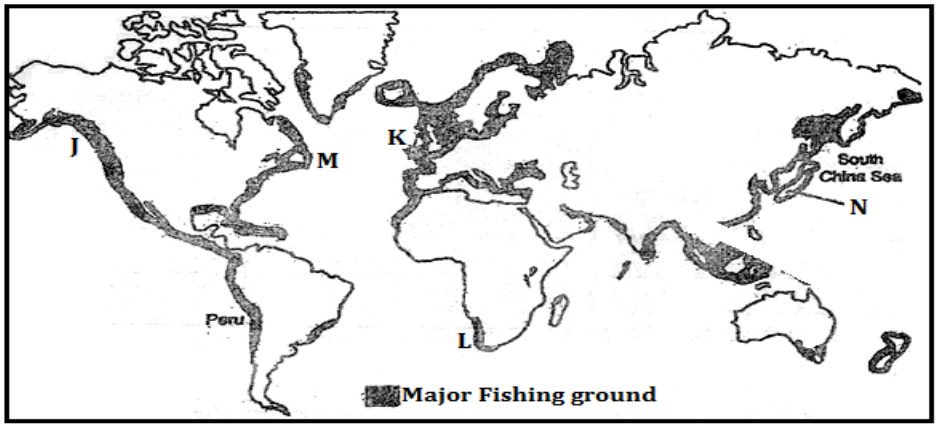
(d) Your Geography class carried out a field study on a tea plantation.

(i) Give **three** reasons why it is important to prepare a route map of the area. (3 marks)

(ii) State **three** methods that the class would have used to present data.

(3 marks)

9. The map below shows the major fishing grounds of the world. Use it to answer question (a) (i), (ii) and (iii)



(a) (i) Name the fishing ground marked J,K,L and M (4 marks)

(ii) Name **the two** ocean currents that converge at region M (2 marks)

(iii) Explain **three** physical factors that have favoured fishing in country N. (6 marks)

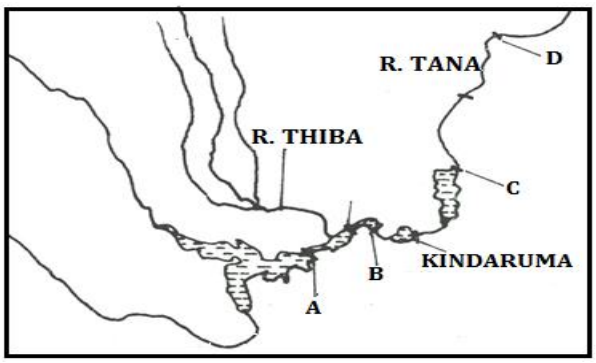
(b) (i) Describe how trawling as a method of fishing is carried out. (5 marks)

(ii) Explain **four** measures being undertaken in Kenya to reduce overfishing of the natural water fisheries (8 marks)

10. (a) (i) Name **three** non-renewable sources of energy. (3 marks)

(ii) State **four** advantages of solar energy. (4 marks)

(b) The diagram below shows the Kenya's hydroelectric power stations along River Tana.



(i) Name the H.E.P stations marked **A, B** and **C**. (3 marks)

(ii) The proposed H.E.P dam site marked **D**. (1 mark)

(iii) Explain **four** challenges hindering hydroelectric power generation in Kenya (8 marks)

(d) (i) What is an energy crisis. (2 marks)

(ii) Explain the effects of an energy crisis in the following sectors.

- Agriculture (2 marks)
- Industries (2 marks)

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NAME: ……..……

SCHOOL: ……

INDEX NO: …… SIGN: …… DATE: ……

BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

311/1

HISTORY AND GOVERNMENT

PAPER 1

TIME: 2½ hours

Instructions to Candidates

*(a) This paper consists of **three** sections **A, B** and **C.***

*(b) Answer **all** questions in section **A, three** from Section **B** and **two** from Section **C.***

(c) Answers to all the questions must be written legibly in the answer booklet provided.

*(d) **This paper consists of three printed pages***

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

(f) Candidates should answer the questions in English

TOTAL SCORE

Section A (25 marks)

Answer all questions in this section in the answer booklet provided

1. Give the source of information on history and government which deals with scientific analysis of man's material culture. (1 mark)
2. Which was the most common political authority in pre-colonial Kenya? (1 mark)
3. Identify ***two*** duties of Orkoiyot among the Nandi during the pre-colonial period (2 marks)
4. What was the ***main*** negative effect of plantation agriculture on the people of Kenya coast. (1 mark)
5. State ***two*** terms of Anglo-Germany Treaty of 1890. (2 marks)
6. What was the ***main*** importance of the Devonshire white paper of 1923? (1 mark)
7. State ***two*** economic benefits of the Kenya Uganda railway during the colonial period. (1 mark)
8. State ***two*** immediate events that led the Governor to declare a state of emergency in the colony in October 1952. (1marks)
9. Name the first African to be nominated to the legislative council in Kenya. (1mark)
10. State ***two*** features of political associations that were formed in Kenya between 1920-1939. (2marks)
11. Identify ***two*** education bodies that appeared among the Agikuyu during the colonial period. (2marks)
12. Give ***two*** objectives of Kenya African Democratic Union (KADU). (2marks)
13. Name any ***two*** women warriors who were involved in the Mau Mau movement. (2marks)
14. Identify ***one*** political challenge faced by Daniel arap Moi as the president of Kenya. (1mark)
15. Identify the parliamentary symbol of authority. (1mark)
16. Mention ***two*** units that make up the national police units in Kenya. (2marks)
17. State the ***main*** function of the attorney General in Kenya. (1mark)

Section B (45 marks)

Answer any three questions from this section in the answer booklet provided

18. (a) Give ***five*** reasons for the migration of the highland Nilotes into Kenya during the pre-colonial period. (5 marks)

    (b) Describe the social organization of the Borana during the pre-colonial period. (10 marks)

19. (a) State ***five*** characteristics of the early coastal city states. (5 marks)

    (b) Explain ***five*** effects of missionary activities in Kenya. (10 marks)

20. (a) State ***five*** problems faced by the European settlers in Kenya. (5 marks)

    (b) Explain ***five*** results of the Maasai collaboration with the British. (10 marks)

21. (a) Give ***five*** challenges faced by independent churches and schools during the colonial period. (5 marks)

    (b) Describe the role played by Ronald Ngala in the struggle for independence in Kenya. (10 marks)

Section C (30 marks)

Answer any two questions from this section in the answer booklet provided

22. (a) State ***three*** survival rights of a child in Kenya. (3 marks)

    (b) Explain ***six*** responsibilities of a Kenyan citizen. (12 marks)

23. (a) Give ***three*** reasons why elections are important in Kenya. (3 marks)

    (b) Describe the law making process in Kenya. (12 marks)

24. (a) Give ***three*** factors which may undermine the effectiveness of the traffic police in Kenya. (3 marks)

    (b) Explain ***six*** functions of the Kenya Defense Forces. (12 marks)

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INDEX NO: …… SIGN: …… DATE: ……

BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

311/2

HISTORY AND GOVERNMENT

PAPER 2

TIME: 2½ hours

TOTAL SCORE

Section A (25 marks)

1. Give the name of the tools made by early man during the New Stone Age period (1 mark)

2. State ***two*** distinct characteristics of Homo Erectus. (2 marks)

3. Identify ***one*** form of writing during the early civilizations resulting from early agriculture. (1 mark)

4. State ***two*** factors that promoted large-scale farming in Britain during the Agrarian Revolution. (2 marks)

5. State ***two*** ways in which poor transport system has contributed to food shortages in Africa. (2 marks)

6. Identify ***two*** political benefits of Trans-Saharan-trade to the people of Western Sudan. (2 marks)

7. State ***two*** characteristics of Macadam roads. (2 marks)

8. Give one early source of energy. (1 mark)

9. State ***two*** political results of industrial Revolution in Europe. (2 marks)

10. State ***one*** contribution of Joseph Lister in the field of medicine in the nineteenth century. (1 mark)

11. Identify ***two*** factors that facilitated colonization of Africa in the nineteenth century. (2 marks)

12. Give ***one*** reason why the Shona supported the British forces against the Ndebele during the Anglo-Ndebele war of 1893. (1 mark)

13. State ***one*** reason why Kabaka Mwanga of Buganda collaborated with the British. (1 mark)

14. Give ***two*** political developments in South Africa which facilitated establishment of a multi-racial government. (2 marks)

15. Give the name given to Germany and her supporters during the First World War. (1 mark)

16. Give the **main** reason why the League of Nations was established in 1919. (1 mark)

Section B (45 marks)

ANSWER 3 QUESTIONS

18. (a) State ***five*** reasons why man turned from hunting and gathering to agriculture. (5 marks)

    (b) Explain ***five*** effects of Agrarian revolution in United States of America (USA). (10 marks)

19. (a) Identify ***five*** ways in which iron working spread in Africa. (5 marks)

    (b) Explain ***five*** factors that led to emergence of Japan as an industrial power.(10 marks)

20. (a) Give ***five*** causes of the Maji Maji rebellion of 1905 to 1907 in Tanganyika.(5 marks)

    (b) Explain ***five*** reasons why Samori Toure resisted the French for so long. (10 marks)

21. (a) Give ***five*** qualifications for one to be assimilated in Senegal. (5 marks)

    (b) Describe ***five*** effects of direct rule in Zimbabwe. (10 marks)

SECTION C (30 MARKS)

ANSWER 2 QUESTIONS

22. (a) State ***three*** economic activities of the Baganda during the pre-colonial period.(3 marks)

    (b) Describe the social organization of Asante Kingdom in the eighteenth Century. (12 marks)

23. (a) Identify ***three*** roles of the church in promoting African Nationalism in South Africa. (3 marks)

    (b) Explain ***six*** problems encountered by African Nationalists in South Africa. (12 marks)

24. (a) State ***three*** functions of the Assembly of the League of Nations. (3 marks)

    (b) Describe ***six*** achievements of the League of Nations. (12 marks)

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JINA: _____

SHULE: _____

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

BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

102/1 KISWAHILI
INSHA
KARATASI YA 1

MUDA : 1 ¾

Maagizo

(a) Andika insha **mbili.** Insha ya kwanza ni ya **lazima.**

(**b**) Kisha chagua insha nyingine kutoka tatu zilizobakia.

(c) Kila insha isipungue maneno **400.**

(d) Kila insha ina alama **20.**

(e) Watahiniwa lazima waangalie kama kurasa zote za karatasi hii zimepigwa chapa sawasawa na kuwa maswali yote yamo.

MASWALI

1. Wewe ni mhariri wa gazeti la Msemakweli. Andika tahariri kuhusu athari za baa la njaa na hatua zinazochukuliwa na serikali katika kukabiliana na tatizo hili.

2. Matumizi ya afyuni katika taasisi za masomo nchini ni suala muhali kutatuliwa. Jadili.

3. Andika kisa kinachothibitisha ukweli wa methali: Mtaka yote hukosa yote.

4. Tunga kisa kinachoanza kwa maneno haya:

Ilinichukua muda mrefu kusadiki niliyoyapata...

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JINA: _____

SHULE: _____

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

BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

MTIHANI WA MWISHO WA MUHULA
KISWAHILI
KIDATO CHA NNE
KARATSI YA PILI 102/2
LUGHA
MUDA: 2 ½

MAAGIZO.

a. **Andika jina lako na nambari yako katika nafasi ulizoachiwa hapo juu.**
b. **Jibu maswali yote kwa nafasi wazi ulizoachiwa.**
c. **Watahiniwa wanaweza wakaadhibiwa iwapo hawatazingatia maagizo.**
d. **Majibu yaandikwe kwa lugha ya Kiswahili**

Kwa mtahini pekee.

Swali	**Upeo**	**Alama**
1.		
2.		
3.		
4.		

1. UFAHAMU

Soma taarifa ifuatayo kisha ujibu maswali.

Ilikuwa jumamosi. Nilifika nyumbani kwangu saa moja jioni. Tangu nistaafu miaka miwili awali sikupenda kuchelewa Taarifa ya habari.

Mwezi mmoja ukawa umepita tangu nipewe pesa za kiinua mgongo. Mwezi mmoja mzima nilikuwa katika shughuli za kulipa deni hapa na kulipa karo huku. Kuwekeza kwenye mradi ule na kununua hili. Sasa shilingi lake mbili tu zilikuwa zimesalia katika benki. Watu wengi walinishawishi nijaribu kilimo cha mahindi. Bei ilikuwa imeanza kuimarika. Katika taarifa ya habari jioni hiyo, Waziri wa Kilimo alitangaza bei mpya. Shilingi 1,500 kwa kila gunia. name nilikuwa naanza kuumakimikia mradi huu.

Baada ya tarifa, nilikoga, nikala na nikaenda kulala. Kwa sababu ya uchovu, usingizi ulinichulua mara moha. Usingizi niliota. Katika ndoto niliutekeleza mradi wangu. Msimu huo wa kilimo nilitenga ekari kumu za shamba langu. Wataalamu walinishauri kuwa wakati mzuri wa kulima ni wa kiangazi. Mwezi wa Januari ulipoanza tu nilitafuta trekta na kulima. Malipo yalikuwa shilingi 1,200 kila ekari. Katikati ya mwezi wa Machi, nilitafuta trekta la kutifua shamba tena kwa gharama ya shilingi 15,000 ekari zote kumi. Kufuatia ushauri wa manyakanga wa kilimo, nilipa shilling elfu kumi na tatu kupiga shamba lote haro.

Mwishoni mwa mwezi huo, nilienda mjini kutafuta pembejeo. Kwanza, nililipa shilling 20,500 kwa magunia 15 ya mbolea. Kisha nilinunu amagunia manne ya mbegu ya mahindi yenye uzani wa kilo 25 kwa shilling 3,300 kila gunia. Mwzi wa Aprili ulipotimia tu, niliamua kupanda. Ili nipate mazao bora, nilipanda kwa tandazi. Gharama ilikuwa shilling 1,000 kila ekari. Mvua ilinesha vizuri na baada ya siku saba mahindi yalianza kuota. Ilifurahisha kuhesabu mistari ya kijani iliyonyooka. Hali hii iliwezekana tu baada ya kuajiri vijana wa kuwafukuza korongo na vidiri ili wasifukue mebgu mchangani.

Baada ya mwezi mmoja, hatua ya kupalilia ilifika. Nilitafuta vibarua wa kupalilia. Malipo yalikuwa shilingi 700 kila ekari. Kumbe kupalilal kulichochea mtifuko wa mahindi. Punde yakawa yananifikia magotini. Hii ikawa ishara kuwa yanahitaji kumwagiwa mbolea ya kunawirisha iitwayo ‘amonia’. Gharama yake ikawa shilling 1,300 kila gunia. Hivyo, nikalipa shilingi 19,500 kwa magunia kumi na matano.

Mahindi yalibadilika kimiujiza. Ghafla tu yalirefuka na kunenepa maisha. Yalibadilika rangi yakapiga weusi. Shamba liligeuka likawa kama msitu wa rangi ya kijani iliyokolea. Wapita njia waliajabia mimea na juhudi zangu. Shamba langu sasa likawa kielelezo. Maafisa wa kilimo wakawa kila siwanawaleta wakulima wengine kujifunza siri ya ufanzi wanfu. Hapo nikaanza kuhesabu mavuno nitakayopata kukadiria faida. Nilipuuza kabisa ushauri wa wahenga kuwa ‘Usikate majani, mnyama hajauawa.’

Bila taarifa wala tahadhari mvua ikatoweka. Hayakupita majuma mawili mahinda yakaanza kubadilika. Juma moja baadaye mahindi yalinyauka. Badala ya mahind, shamba ilkageuka la vitunguu vilivyochomwa na jua. Makasio yangu ya faida yaliyeyuka jinsi yfanyavyo moshi.
Lakini 'Muumba ndiye Muumbua'. Siku moja mawingu yalitanda na mvua ikanyesha.Muda si muda mahind yalianaza kunawiri. Kumbe tukio lililonivunja moyo lilikuwa laja. Siku moja mvua kubwa ilinyesha. Asubuhi nilipotoka nje nilipigwa na butwaa. Barafu ilitapakaa pote. Shamba lilikuwa limetapakaa barafu huku majani ya mahindi yamechanika kama nyuzi. Niliugua. Baada ya wiki moja, nilipata nafuu. Nilipotazama upande wa shamba nikaona dalili za majani mapya ya mahindi yakianza kuchomoza. Maumbile ni kitu cha ajabu kweli. Muda sio mferu mahindi yalirudi hali yake tena, kisha yakakomaa. Haraka za kutafuta watu wa kuyakata na kuyakusanya zilianza. Gharama ya shughuli kii ikawa shilingi 5,000. Kuvuna, kusafirisha kutoka shamba na kukoboa kwa mashine magunia 200 yakachukua shilingi 20,500. Kufikia hapo nilikuwa nimetumia takribani shilingi 192,700. Gharama nyingine zilikuwa za usafiri, gharama ya dharura na usimamizi, usumbufu wangu binafsi, gharama ya magunia na kadhalika. Mahindi yalipokuwa tayari kwenye magunia nilifunga safari kwenda mjini kutafuta soko. Niliposhuka tu niliona gazeti. habari motomoto siku hiyo ilikuwa: "MAHIND GUNIA 900/-" Niligutuka usingizini.

Maswali

(a) Andika kichwa mwafaka kwa kifungu hiki cha habari. (al 1)

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(b) Msimulizi alikuwa na kiasi gani cha pesa katika benki baada ya mradi kukamilika? (al 1)

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(c) Taja matatizo matatu yaliyotisha mradi wa msimulizi wa kukuza mahindi. (al 3)

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(d) Eleza maana ya methali zifuatazo: (al 4)

(i) Usikate majani, mnyama hajauawa

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(ii) Muumba ndiye muumbua

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(e) Eleza mambo mawili yaliyosababisha msimulizi asipate faida alivyotarajia. (al 2)

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(f) Kwa nini msimulizi alisem maumbile ni kitu cha ajabu? (al 2)

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(g) Eleza maana ya: (al 2)

(i) kiinua mgongo

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(ii) manyakanga wa kilimo

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2 UFUPISHO (alama 15)

Jamii ya leo inatawaliwa na kuendeshwa na kanuni ya maarifa. Inawezekana kusema kuwauchumi wa jamii za leo na zijazo utategemea maarifa zaidi kuliko utakavyotegemea uwezo wowote mwingine. Utambuzi wa uwezo mkubwa wa maarifa katika maisha ya binadamu ndio msingi wa watu kusema 'maarifa ni nguvu.'

Maarifa huelezwa kwa tamathali hii kutokana na uwezo wa: kuyadhibiti,kuyaendesha, kuyatawalana kuyaongoza maisha ya binadamu popote pale walipo. Mtu ameyakosa maarifa fulani huwa ameikosa nguvu hiyo muhimu na maisha yake huathirika pakubwa. Kwa msingi huu, maarifa yanawezakuangaliwa kama utajiri mkubwa ambao binadamu anaweza kuutumia kwa faida yake au kwa faida ya wanajamii wenzake. Ukweli huu ndio unaoelezwa na methali ya Kiswahili: 'Elimu ni mali.' Elimu ni chimbuko la maarifa muhimu maishani.

Msingi wa utajiri na maendeleo ya binadamu popote alipo basi ni maarifa. Je, maarifa kwa upande wake yana sifa gani? Maarifa yenyewe hayana upinzani. Maarifa uliyo nayo huweza kuwa na watu wengine pasiwe na upinzani baina yenu kwa kuwa kila mmoja ana maarifa sawa. Kila mmoja ana uhuru wa kuyatumia maarifa hayo kama chanzo cha kuyazalisha mengine. Utumiaji wa maarifa yenyewe hauyamalizi maarifa hayo. Maarifa hayawezi kugusika ingawa mtu anaweza kuyanyumbua maarifa yenyewe kwa kuyatumia kwa namna tofauti.

Maarifa huingiliana na maarifa mengine. Maarifa aliyo nayo mtu huweza kuhusishwa na maarifa aliyo nayo mtu mwingine ili kuvyaza au kuzuka na maarifa tofauti. Maarifa yanaweza kuchukuliwa kutoka sehemu moja hadi nyingine kwa namna ambavyo mtu huweza kufanya bidhaa nyingine ile. Kwa mfano, ni muhali mtu kulalamika kuwa hawezi kutembea kutoka sehemu moja hadi nyingine kwa sababu ana mzigo wa maarifa kichwani.

Sifa nyingine muhimu ya maarifa ni kuwa yanaweza kuwasilishwa kwa njia au mitindo mingine ya kidhahania. Ikiwa unataka kukihamisha chombo fulani kutoka sehemu moja hadi nyingine, lazima uwazie ukubwa wake, uzito wake na labda hata umbali wa panapohusika. Maarifa huweza kubadilishwa au kugeuzwa na kuwa ishara ambazo huyafanya kuwasilishswa kwa njia nyepesi kuliko kwa mfano ikiwa mtu atayawasilisha katika muundo wa, kwa mfano,kitabu.

Maarifa yana sifa ya uhusianaji. Kipengele fulani cha maarifa huwa na maana kinapowekwa sambabmba au kugotanishwa na kipengele kingine cha maarifa. Huo huwa muktadha mzuri wa kueleweka au kuwa na maana kwa mfano, neno 'mwerevu' huweza kuwa na maana kwa kuwekwa katika muktadha wa 'mjinga', ' mjanja', 'hodari' na kadhalika.

Maarifa huweza kunifadhiwa katika nafasi ndogo sana. Suala hili linaeleweka kwa njia nyepesi tunapoangalia maarifa katika muktadha wa teknolojia. Data zinazowahusu

mamilioni ya watu,ambazo zingehitaji maelfu ya maktaba na lukuki ya vitabu, huweza kuhifadhiwa kwenye kifaa kidogo kinachoweza kutiwa mfukoni.
Maarifa hayawezi kuthibitiwa au kuzuiliwa mahali fulani yasisambae. Maarifa huenea haraka sana. Maarifa ni kitu kinachoepuka pingu za watu wanaopenda kuwadhibiti binadamu wenzao. Hata pale ambapomfumo wa kijamii au wa kisiasa unafanya juu chini kuwadhibiti raia au watu wenyewe,ni muhali kuyadhibiti maarifa yenyewe. Inawezekana kuzidhibiti njia fulani za uenezaji wa maarifa lakini maarifa hayo yatapata upenyu wa kusambaa. Ni kweli kuwa maarifa ni nguvu inayozishinda nguvu zote.

(a) Fupisha aya ya pili na tatu (maneno 55-60)(alama 5, 1 ya utiririko)

Matayarisho

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Nakala safi

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(b) Eleza sifa kuu za maarifa kama zinavyojitokeza kuanzia aya ya nne hadi aya ya nane.

(maneno 100-110) (alama 10, 2 za utiririko)

Matayarisho

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Nakala safi

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Matumizi ya lugha (alama 40)

a. Taja na utofautishe irabu za mbele. (alama 2)

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b. Tunga sentensi Moja kubainisha maana mbili za neno kikosi. (alama 2)

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c. Andika katika wingi. (alama 1)
Jino langu bovu linaloniuma linanitatiza.

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d. Tumia kielezi cha wakati badala ya kielezi kilichotumika katika sentensi ifuatayo.
(alama 2)

Watalii walitutembelea mjini Nakuru.

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e. Geuza sentensi zifuatazo kulingana na maagizo. (alama 2)

i. Maimuna anapika wali. (wakati uliopo hali isiyodhihirika)

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ii. Wao walisoma riwaya hiyo. (wakati ujao hali timilifu)

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f. Unda neno lenye muundo ufuatao. (alama 2)

i. Nafsi ya kwanza umoja. ……

ii. Hali timilifu ……

iii. Mtendewa ……

iv. Mzizi ……

v. Kauli ya kutendea ……

vi. Kauli ya kutenda/ kiishio ……

g. Tumia nomino zifuatazo za kawaida kuunda nomino za jamii. (alama 2)

i. Nzige ……..

ii. Zabibu ……

h. Tunga sentensi kuonyesha matumizi yafuatayo ya neno KAMA. (alama 2)

i. Kihusishi

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ii. Kitenzi

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i. Eleza matumizi ya neno <u>wale</u> katika sentensi hii. (alama 3)
Wale walioiba ni mabanati wale ambao waliambiwa wale kabla ya kitendo hicho.

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j. Changanua kwa mstari. (alama 4)
Yohana na Otieno hucheza kandanda.

k. Andika sifa tatu zinazobainisha sentensi changamano. (alama 3)

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l. Onyesha matumizi ya viwakifishi vifuatavyo katika sentensi. (alama 2)

i. Kibainshi

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ii. Parandesi

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m. Tumia neno –baya kama: (alama 3)

i. Kiwakilishi

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ii. Kivumishi

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iii. Kielezi katika sentensi

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n. Onyesha miundo miwili ya nomino za ngeli ya A- WA. (alama 2)

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o. Bainisha maana mbili ya sentensi hii. (alama 2)

Umu alimwandisha mkewe.

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p. Unda nomino nne kutokana na kitenzi. (alama 4)
Fa

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q. Geuza katika usemi halisi. (alama 2)
Askari jela alimuuliza Kendi kama alidhnani hapo ni kwao. Alimwamuru aende kwake mara moja.

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4. **ISIMU JAMII** **(alama 10)**

(Mdundo wa muziki) kina mama mpo…..! Kina siste nanyi… are you there? Kampuni ya platinium imewaletea mafuta mpya ya silk. Mafuta hayo yana vitamin C, Sunscreen na yana marashi ya kupendeza. Ukiyatumia kwa wiki moja tu, ngozi yako itakua laini na nyororo kama ya kitoto kichanga. Nayo macho ya wote, Waaa! Yatakuwa kwako 24/7. Jinunulie! Jinunulie! Mafuta ya silk. Mafuta ya wanawake wa kisasa.

a. Taja sajili iliyotumiwa hapa. (alama 1)

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b. Taja sifa nne za sajili hii. (alama 4)

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c. Kwa nini Wakenya wengi hupenda kuchanganya na kubadili msimbo? (alama 5)

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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.)

102/3
KISWAHILI
FASIHI
KIDATO CHA NNE
MUDA: SAA 2 ½

MAAGIZO:

1. Jibu maswali manne pekee.
2. Swali la kwanza ni la lazima.
3. Maswali hayo mengine matatu yachaguliwe kutoka sehemu nne zilizobaki; yaani Riwaya, Tamthilia, Hadithi fupi na shairi.
4. Usijibu maswali mawili kutoka sehemu moja.

SEHEMU A: (FASIHI SIMULIZI)

1. (a) Watu watatu walikuwa wakivuka mto. Mmoja alivuka pasi kukanyaga maji wala kuyaona. Wa pili aliyaona maji akayavuka bila kuyakanyaga. Wa watatu aliyaona akayakanyaga huku akiyavuka.

   (i) Bainisha kipera cha makala hayo. (alama 1)

   (ii) Eleza umuhimu wa kipera ulichotaja(i) hapo juu. (alama 4)

   (b) Fafanua muundo wa mawaidha yanayotolewa katika miktadha rasmi. (alama 3)

   (c) Fafanua sifa za mawaidha. (alama 12)

SEHEMU B: (TAMTHILIA) KIGOGO(PAULINA KEA)

2. …… kila mtu sagamoyo hafanyi kazi yakek – hata hao chatu! Kwa hivyo wataka niache raha zangu, nijishike kichwa nilie?

(a) Eleza muktadha wa dondooo hili. (alama 4)

(b) Taja na ufafanue mbinu mbili za lugha zilizotumika katika dondoo hili. (alama 4)

(c) Kwa kutolea mifano mwafaka, angazia nafasi chanya alizopewa mwanamke katika tamthilia ya Kigogo. (alama 12)

3. Mgala muue na haki umpe. Thibitisha ukweli wa methali hii ukimrejelea mhusika Husda. (alama 20)

SEHEMU C: (CHOZI LA HERI) Assumpta K. Matei

4. "Nyamaza wewe! Nyinyi ndio mlioturudhisha nyuma miaka yote hii ……."

(i) Eleza muktadha wa dondoo hili. (alama 4

(ii) Fafanua baadhi ya malalamishi ya msemaji wa kauli hii. (alama 6)

(b) Fafanua dhuluma dhidi ya watoto katika Riwaya ya Chozi la Heri. (alama 10)

5. Fafanua nafasi ya vijana katika jamii kwa mujibu wa Riwaya ya Chozi la Heri. (alama 20)

SEHEMU D: (HADITHI FUPI)

6. MAPENZI KIFAURONGO: Kenna Wasike

"Hadi sasa mimi ni kama rubani aliyeharibikiwa na ndege angani."
Onyesha ukweli wa dondoo hili. (alama 20)

7. Ndoto ya Mshaka: Ali Abdulla Ali

Mwandishi wa hadithi hii anatupa taswira ya jamii iliyozongwa na masaibu yanayotamausha. Tetea ukweli wa kauli hii. (alama 20)

SEHEMU E: (SHAIRI)

Soma shairi lifuatalo kisha ujibu maswali.

Weusi likosa nini?

1. Sie watu weusi, lipataje weusi?
2. Kila kitu kibaya, hupewa sifa mbyaya.
3. Sifa hii 'eusi', yaleta wasiwasi.
4. Rangi hii hakika, ni wapi ilitoka?
5. Ibada za Weusi, harusi kuzitusi.
6. Kama mtu mweusi, Lusifa ni mweusi
7. Ibada ya Weupe, hupokewa peupe
8. Adamu naye Hawa, weupe walipewa
9. Yesu Mwana wa Mungu, alikuwa Mzungu
10. Malaika wa Mungu daima ni Wazungu
11. Mweusi ti hatendi, silaumiwe pindi
12. Mweusi duniani, likosa kitu gani?
13. Mweusi jilaumu, measi yako damu.
14. Mweusi umeiga, hata ya kutoiga
15. Asojali mkuu, atavunjika guu
16. Baa mejikatia, nani takulilia?

MASWALI:

(a) Hili ni shairi la aina gani? Toa sababu yako. (alama 2)

(b) Eleza umbo la shairi hili. (alama 4)

(c) Toa mifano miwili ya matumizi ya mbinu ya inkisari katika shairi hili na uyaandike katika

(d) Eleza maudhui ya shairi hili. (alama 2)

(e) Ni nini dhamira ya mtungaji wa shairi hili? (alama 2)

(f) Kwa kutoa mifano matatu, eleza matumizi ya lugha mkato. (alama 6)

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NAME: ……..……

SCHOOL: ……

INDEX NO: …… SIGN: …… DATE: ……

BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

121/1
MATHEMATICS
PAPER 1
TIME: $2^{1}/_{2}$ HOURS

INSTRUCTIONS TO THE CANDIDATES

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

- *This paper contains **two** sections; **Section 1** and **Section 11**.*
- *Answer **all** the questions in **section 1** and **only five** questions from **Section 11***
- ***Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.***
- *Marks may be given for correct working even if the answer is wrong.*
- *Non-Programmable silent calculators and KNEC Mathematical tables may be used **EXCEP**T where stated otherwise.*

FOR EXAMINERS'S USE ONLY

Section 1

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total
Marks																	

Section 1I **GRAND TOTAL**

Question	17	18	19	20	21	22	13	24	**Total**
Marks									

This paper consists of 16 printed pages. Candidates should check carefully to ascertain that all the pages are printed as indicated and no questions are missing.

SECTION I (50 Marks)

Answers all the questions in this section in the space provided.

1. Evaluate without using tables or calculators (3marks)

$$\frac{\sqrt{45}\times(2.04)^2}{2.89\times\sqrt{0.05}}$$

2. Momanyi spent one eight of his February Salary on farming, half on school fees and two thirds of the remainder on food. Calculate his February salary and the amount he spend on school fees if he spent sh. 3200 on food. (3marks)

3. Makau, Wanjiru and Kemboi start a race at 9.03 a.m in the same direction to run round a circular course. Makau makes the circuit in 252 seconds, Wanjiru in 308 seconds and Kemboi in 198 seconds. If they start from the same point, at what time will they next be all at the starting point together? (3marks)

4. Use squares square roots and reciprocal tables to evaluate (3marks)

$$3.045^2 + \frac{1}{\sqrt{49.24}}$$

5. Simplify the expression

$$\frac{9t^2 - 25a^2}{6t^2 + 19at + 15a^2}$$ (3marks)

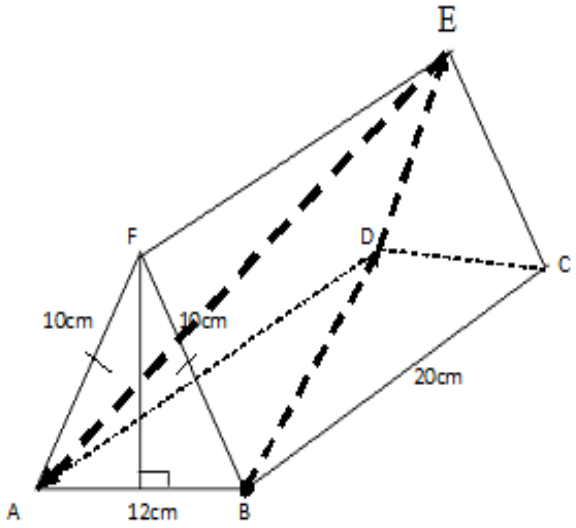
6. A square based brass plate is 2mm high and has a mass of 1.05kg. The density of the brass is 8.4g/cm^3. Calculate the length of the plate in centimeters. (3 marks)

7. The currency exchange rates of a given bank in Kenya are as follows;

Currency	Buying	Selling
1 sterling pound	135.50	135.97
1 US dollar	72.23	72.65

A tourist arrived in Kenya with 5,000 US dollars which he converted to Kenya shillings upon arrival. He spent ksh.214, 500 and converted the remaining to sterling pounds. How many pounds did he receive? (3marks)

8. The figure below shows a simple tent.AF=FB=10cm, AB=12cm and BC=FE=AD=20cm. On the tent, a tight rope is tied as shown on the diagram from BD, DE and EA. Draw the net of the tent and show the path of the rope on the net using the scale $1cm$ rep. $5cm$ (3marks)

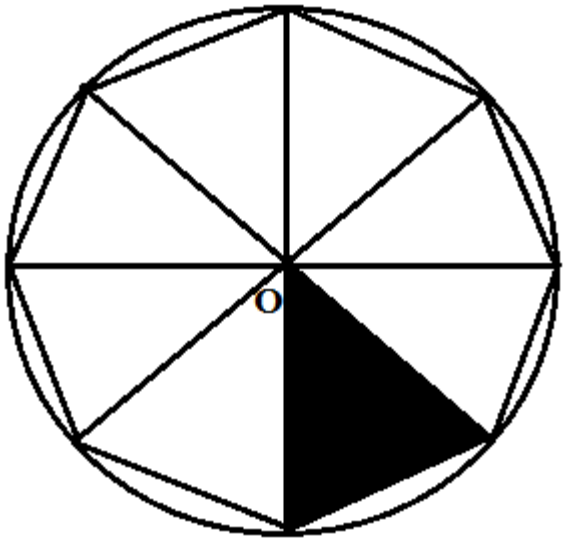


9. Mrs Wekesa paid shs 12500 for a wrist watch after the shopkeeper gave her a discount of 2%. If the shopkeeper made a profit of 20%.calculate the price the shopkeeper bought from the manufacturer. (3marks)

10. Solve for x in $\left(\frac{4}{9}\right)^{x} \times (8)^{1-x} = 486$ (4marks)

11. Find the equation of a perpendicular bisector of line PQ if the coordinates of P and Q are (-2,6) and (4,-2) respectively, in the form $y = mx + c$ (3marks)

12. Complete the figure below by adding the correct missing features if it has a rotational symmetry of order 4 about O. (3marks)



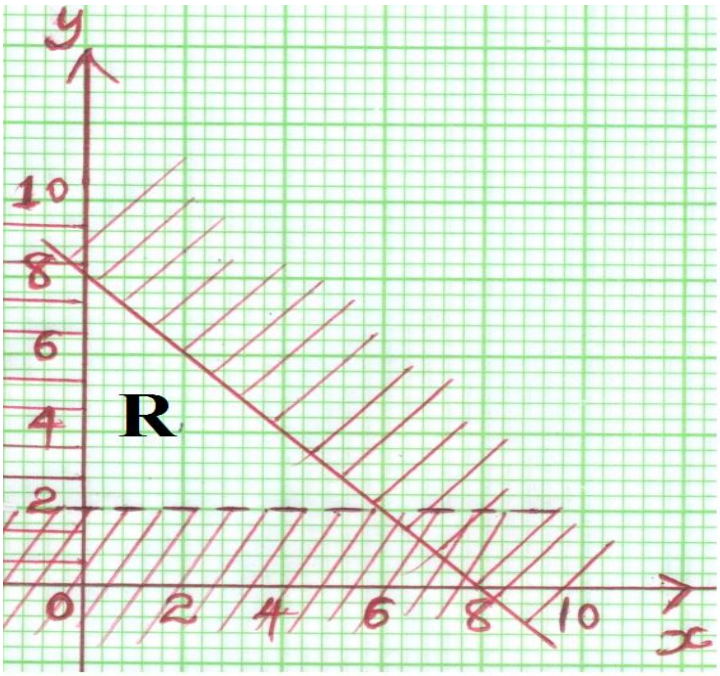
13. The volumes of two similar cylindrical containers are $27cm^3$ and $125\ cm^3$ respectively. Given that the height of the smaller container is 12cm, find the height of the larger container.

(3marks)

14. Without using calculator or mathematical tables, simplify (4marks)

$$\frac{\cos 30 - \sin 45}{\sin^2 30 + \tan^2 45}$$

15. Form three inequalities that satisfy the unshaded region R. (3marks)



16**.** A railway line and a road are parallel to each other on a flat and level section of land. A 5 metre long car moving at a speed of 110kmh^{-1} starts overtaking a train which is 495 metres and moving at 80kmh^{-1} .How long will it take the car to completely overtake the train?

(3marks)

SECTION II (50 Marks)

Answers only **five** questions from this section in the spaces provided.

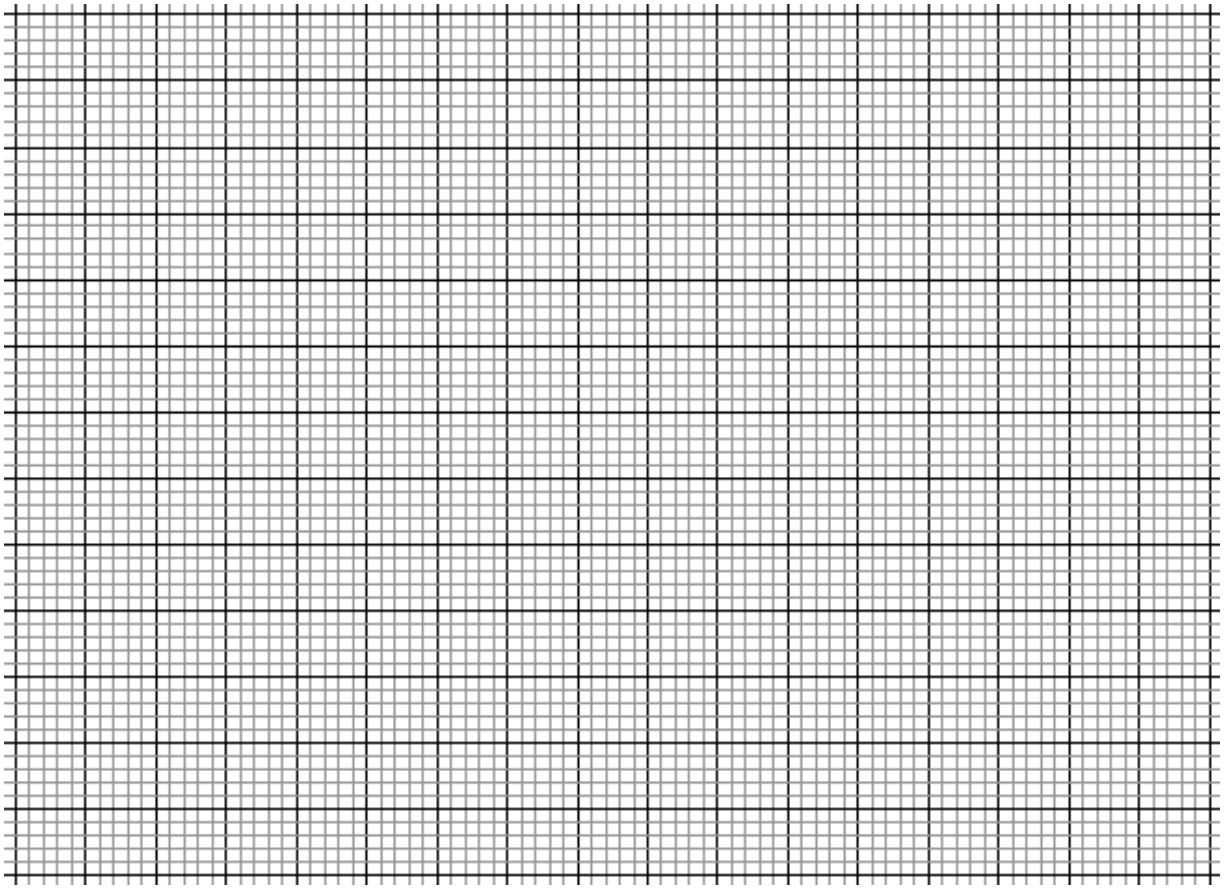
17. The vertices of a parallelogram are O (0,0), A(5,0),B(8,3) and C(3,3)

Plot on the same axes

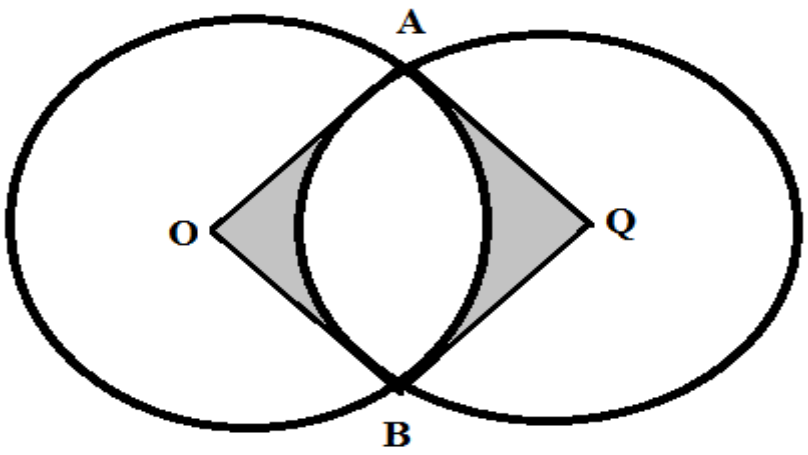
i) Parallelogram O'A'B'C', the image of OABC under reflection in the line x=4 (4marks)

ii) Parallelogram O''A''B''C'' the image of O'A'B'C' under a transformation described by the matrix $\begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix}$. Describe the transformation. (4marks)

iii) Parallelogram O'''A'''B'''C''', the image of O''A''B''C'' under the enlargement, centre (0,0) and scale factor $\frac{1}{2}$ (2marks)



18. Two circles with centres O and Q and radii 8cm intersect at points A and B as shown below.



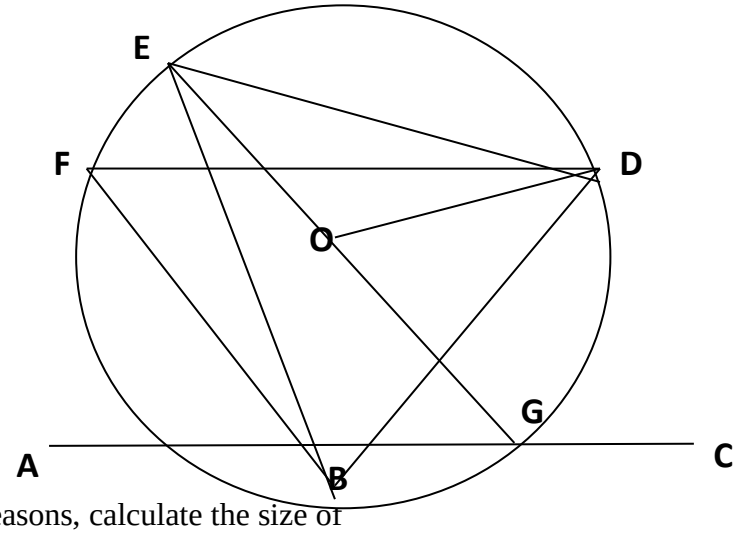
Given that the distance between O and Q is 12cm and that the line AB meets OQ at X, find:

(a) the length of the chord AB. (3marks)

(b) the reflex angle AOB. (3marks)

(c) the area of the shaded region. $\pi = 3.142$ (4marks)

19. In the figure below, EG is the diameter of the circle centre O. Points B, G, D, E and F are on the circumference of the circle. $\angle BFD = 50^0$, $\angle BEO = 25^0$ and line ABC is a tangent to the circle at B



Giving reasons, calculate the size of

(a) $\angle CBD$ (2marks)

(b) $\angle BED$ (2marks)

(c) The reflex angle BOD (2marks)

(d) $\angle EBA$ (2marks)

(e) $\angle BGD$ (2marks)

20. OAB is a triangle in which **OA= a, OB= b**, M is a point on OA such that OM:MA=2:3 and N is another point on AB such that AN:NB = 1:2. Lines ON and MB intersect at X.

a) Express the following vectors in terms of **a** and **b**

i) **AB** (1mark)

ii) **ON** (1mark)

iii) **BM** (1mark)

b) If **OX**=k **ON** and **BX**=h **BM**, express **ON** in two different ways. Hence or otherwise find the value of h and k (6marks)

c) Determine the ratio OX: XN (1mark)

21. Every Sunday Alex drives a distance of 80km on a bearing of 074^0 to pick up his brother John to go to church. The church is 75km from John's house on a bearing of **S**50^0**E**. After church they drive a distance of 100km on a bearing of 260^0 to check on their father before Alex drives to John's home to drop him off then proceeds to his house.

(a) Using a scale of 1cm to represent 10km, show the relative positions of these places. (4 marks)

(b) Use your diagram to determine:

(i) the true bearing of Alex's home from their father's house. (1 mark)

(ii) the compass bearing of the father's home from John's home. (1 mark)

(iii) the distance between John's home and the father's home. (2 marks)

(iv) the total distance Alex travels every Sunday. (2 marks)

22. The data below shows the sample of age distribution of some of the people who reside in a Yoruba village in years.

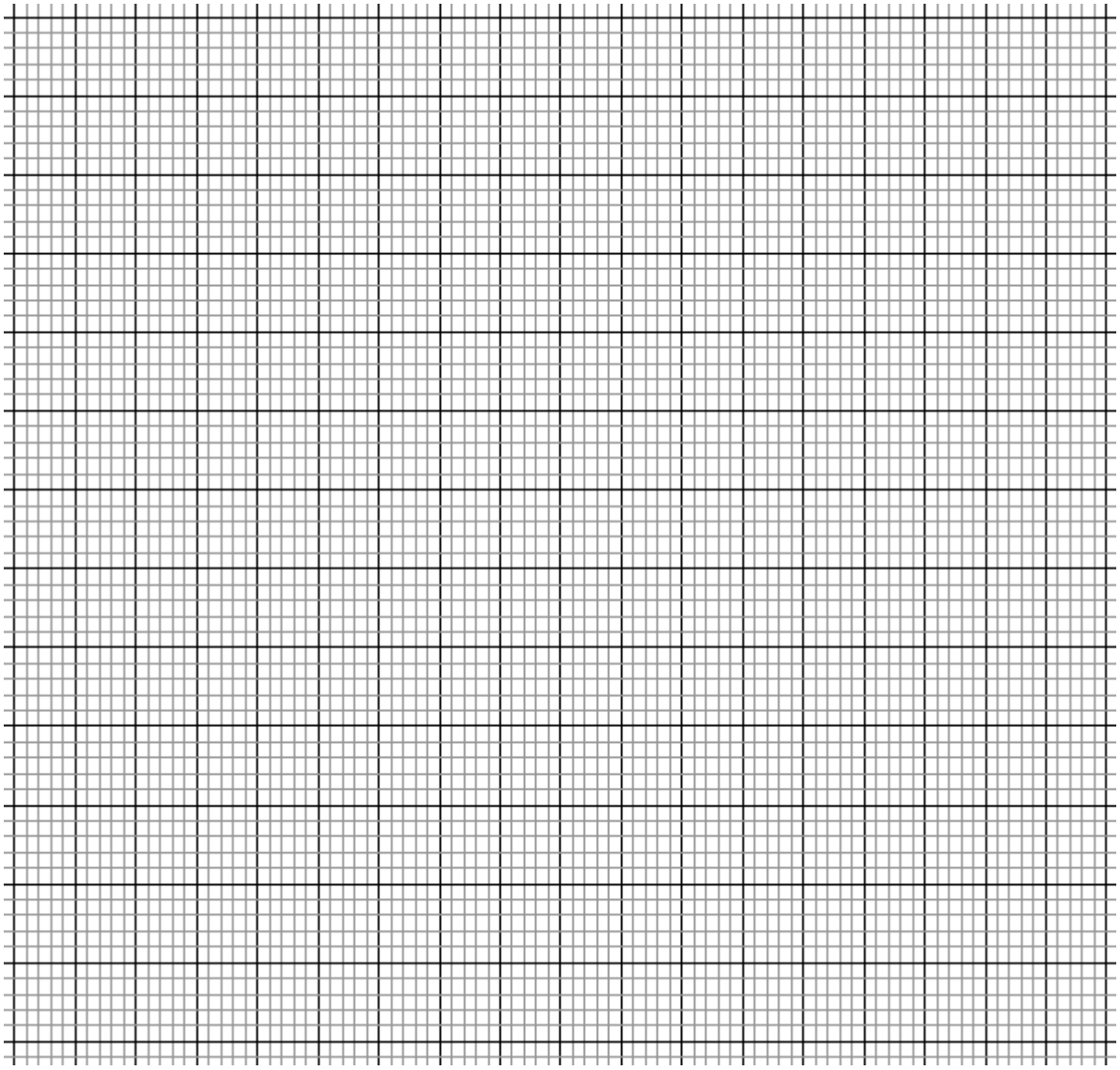
Age group	Number of persons in age group
1 - 5	4
6 - 10	12
11 - 20	9
21 - 30	6
31 - 50	18
51 - 55	4
56 - 65	2

(a) Complete the frequency distribution table above and hence

(i) Calculate the mean. (3marks)

(ii) Calculate the median. (2marks)

(b) Draw a frequency polygon from the given data on the grid below (5marks)

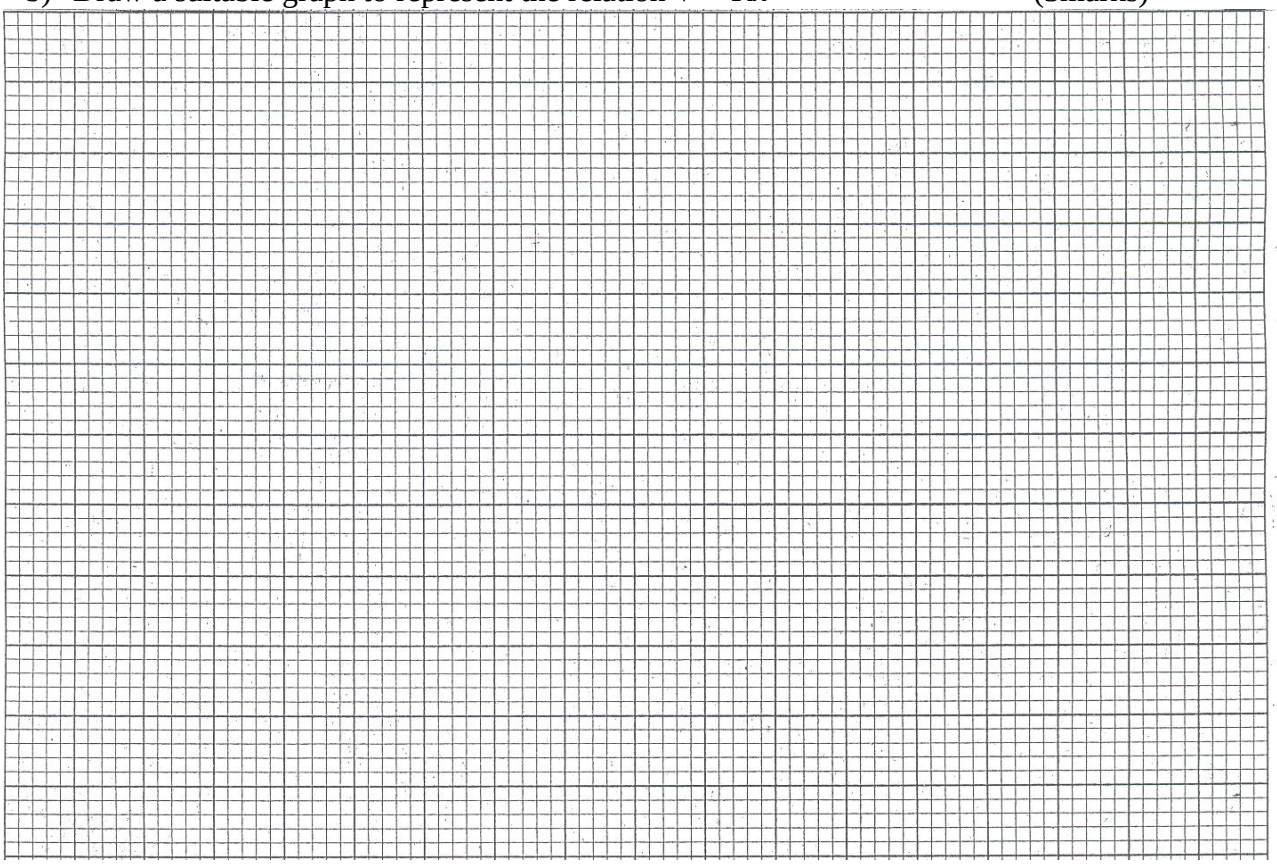


23. Two variables x and V are known to satisfy the relation $V = Kx^n$ where k and n are constants. The table below shows data collected from an experiment.

x	3.01	3.98	5.01	6.02	7.08	8.94
V	10.5	101	989	9600	95000	854000

a) Write down the function $V = Kx^n$ in linear form and make a suitable table of values correct to one decimal place. (3marks)

b) Draw a suitable graph to represent the relation $V = Kx^n$ (3marks)



24. A particle moves in a straight line. It passes through point O at $t = 0$ with velocity $V = -4m/s$. The acceleration $a\ m/s^2$ of the particle at time *t* seconds after passing through O is given by $a = 10t + 1$

(a) Express the velocity V of the particle at time *t* seconds in terms of *t*. (3marks)

b) Find V when $t = 3$ (1mark)

c) Determine the value of *t* when the particle is momentarily at rest (3marks)

d) Calculate the distance covered by the particle between $t = 2$ and $t = 4$ (3marks)

NAME: ……..……

SCHOOL: ……

INDEX NO: …… SIGN: …… DATE: ……

BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

MATHEMATICS
PAPER 2
TIME: 2 ½ HOURS

INSTRUCTIONS TO CANDIDATES:

- *Write your name, index number, admission and class in the spaces provided above.*
- *Sign and write the date of examination in the spaces provided above.*
- *This paper contains **TWO** sections: Section **I** and Section **II**.*
- *Answer **ALL** the questions in Section **I** and **FIVE** questions from section **II**.*
- *All answers and working **MUST**be written on the question paper in the spaces provided below each question.*
- *Marks may be given for correct working even if the answer is wrong.*
- *Non-programmable silent electronic calculators and KNEC Mathematical tables may be used, except where stated otherwise.*

FOR EXAMINERS USE ONLY

SECTION I

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total

SECTION II

17	18	19	20	21	22	23	24	Total

Grand Total

1. Use logarithm table to evaluate (4marks)

$$\sqrt[5]{\frac{75.4x4.83^2}{0.00521}}$$

2. Make b the subject of the formula given that a = $\frac{bd}{Nb^2 - d}$ (3 marks)

3. Line PQ is the diameter of a circle such that the coordinates of P and Q are (-2, 2) and (-2,-6) respectively. Find the equation of the circle in the form $ax^2 + ay^2 + bx + cy + d = 0$. (4marks)

4. Use completing the square method to solve the equation

$4 - 3x - 2x^2 = 0$ (3marks)

5. Given that $P=4+\sqrt{2}$ and $Q=2+\sqrt{2}$ and that $\frac{P}{Q}=a+b\sqrt{c}$, where a, b and c are constants, find the values of a, b and c. (3 marks)

6. The table below shows the temperature readings of four different solutions recorded by students to nearest 0.1^0C during a laboratory lesson. Calculate the percentage error in $\frac{P+Q}{S-R}$ to 3 d.p. (3marks)

Quantity	Temperature in ^0C
P	22.5
Q	19.4
R	17.3
S	26.2

7. Use matrix method to solve the simultaneous equations

$2x + y = 10$

$2x + 2y = 14$ (3marks)

8. (a) Expand $(1+2x)^5$ to the fourth term. (1 mark)

(b) Hence evaluate $(1.02)^5$ correct to 3 decimal places. (3 marks)

9. It is known that the value of land appreciate at 7% p.a in a town. John bought a plot in the town at Ksh 500,000. Given that he plans to sell the plot after 6 years, find out how much profit he expects to get. (Give your answer correct to the nearest thousand).
(3marks)

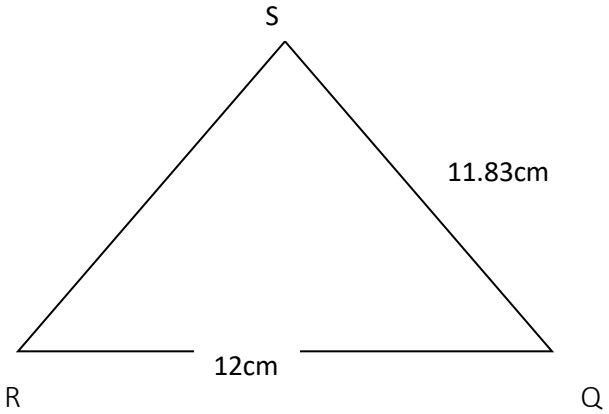
10. The mass of a wire varies jointly with its length and with the square of its diameter. A section of the wire 500m long, with diameter 3mm has a mass of 31.5kg. what is the mass of 1000m of wire of diameter 2mm? (3marks)

11. Mr. Gatua has a salary of sh.80000 per annum. He lives rent free in company house and is entitled to a monthly personal relief of sh.1056. Based on the tax rates given below, calculate his PAYE. (3 marks)

Taxable income (KE p.a.)	Rate
1 - 1500	10%
1501 - 3000	15%
3000 - 4500	25%
Above 4500	35%

12. The third term and sixth term of a geometric series are $3^1/_3$ and $11^1/_4$ respectively. Calculate the common ratio and hence find its first term. (3marks)

13. Use the figure below to answer the question that follows



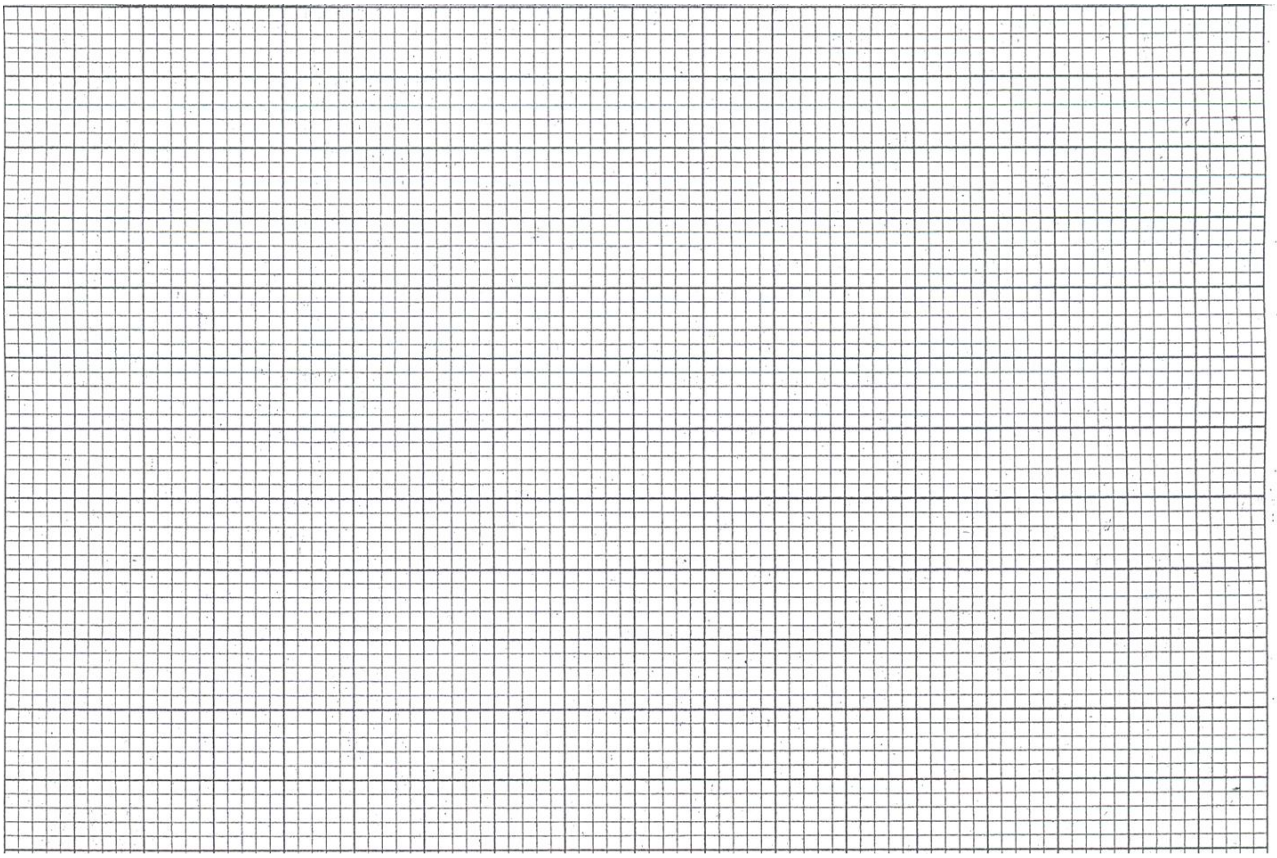
Given that angle RSQ = 50^0, SQ= 11.83 cm and QR=12cm.A circumcirle is drawn on the triangle.Find the radius of the circle (2marks)

14. A Business man bought commodity A and commodity B at shs.60 and sh.72 respectively. In what ratio must he mix so that when he sells at shs.78, he makes a profit of 200%. (3 marks)

15. Points A $(x^0N, 30^0E)$ and B $(x^0N, 50^0E)$ are 1935 kilometres apart. Taking R= 6370 km and $\pi = \frac{22}{7}$, find the value of *x.* (3marks)

16. Find the gradient function of the curve $y = 1/3x^3 - 4x^2 + 9x + 4$hence,find the gradient of the curve at point (1,-4) (3marks)

17. Use a scale of 1:1 in both axes to draw the graphs of $y = x^2 - 6x + 7$ and $y = x - 2$ for the domain $0 \leq x \leq 6$. The point of intersection of the two functions satisfy a certain quadratic equation in x. Obtain the equation in x hence calculate it's solutions. Give answer correct to 2d.p. (10 marks)



18. Points A and B are centres of two equal circles of a radius 2 cm and 10 cm apart.
    i. Construct the two circles in the space given below. (1mark)
    ii. Construct the transverse common tangents to both circles. (4marks)

iii. Calculate the length of the transverse common tangents (Take $\pi = \frac{22}{7}$)

(5marks)

19. Albert, Bonny and Charles competed in a game of chess. Their probabilities of winning the game are $^2/_5$, $^3/_5$ and $^1/_{10}$ respectively.

(a) Draw a probability tree diagram to show all the possible outcomes.(2 marks)

(b) Calculate the probability that;

(i) No one loses the game. (2 marks)

(ii) Only one of them wins the game. (2 marks)

(iii) At least one of them wins the game. (2 marks)

(iv) At most two of them lost the game. (2marks)

20. Construct rhombus ABCD such that AB=BC= 6cm and $\angle ABC=60^0$.

(a) Measure BD. (1 mark)

(b) On the same diagram, construct the inscribed circle of triangle ACD. (3marks)

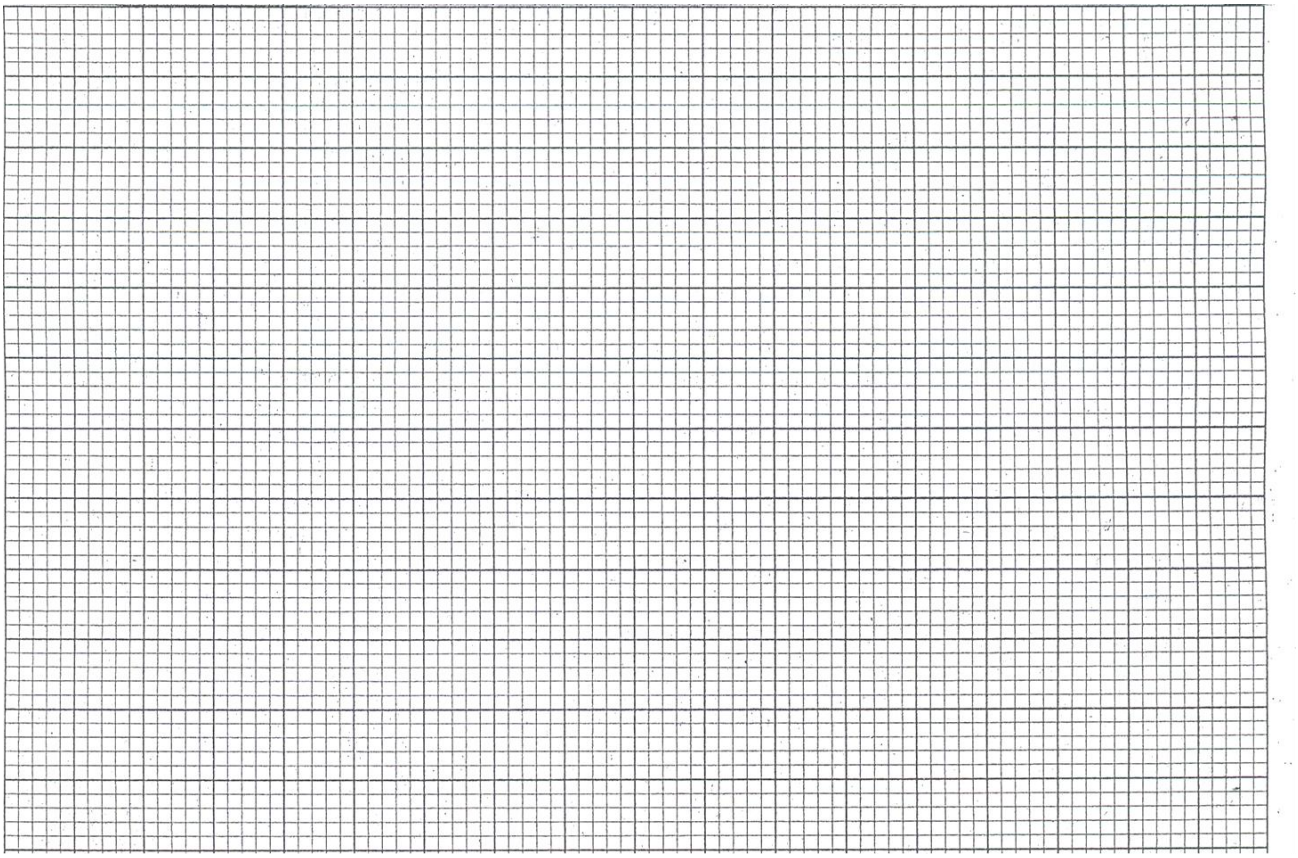
(c) Construct the locus of points equidistant from A and C. (3 marks)

(d) If x is a point on the circle in b above such that AX=XD and $\angle AXD$ is acute, find the locus of X and make it on the diagram. (3 marks)

21. (a) Complete the table below. (2marks)

X	-180^0	-150^0	-120^0	-90^0	-60^0	-30^0	0^0	30^0	60^0	90^0	120^0	150^0	180^0
Y=2cosx		-1.73			1		2		1	0			
Y=cos(x-60)	-0.5			-0.9		0			1				-0.5

(b) On the same axes plot the graphs of y= cos(x-60^0) and y = 2 cosx (use a scale of 1unit for 30^0 on the x axis and 1 unit for 0.5 units on the y axis) (4mrks)



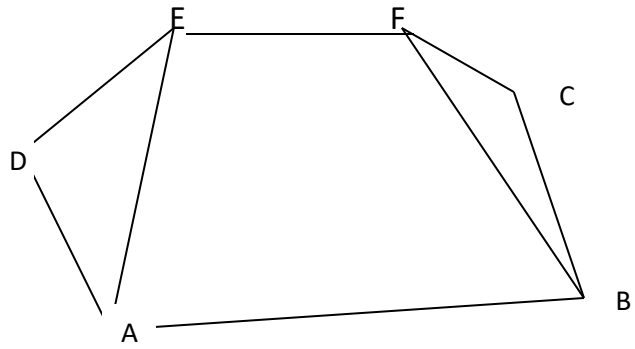
(c) Describe the transformation which maps y= cos(x-60^0) to y = 2cosx. (2marks)

(d) State the period and amplitude of each of the waves above.(1mark)

	Amplitude	Period
Y=2cosx		
Y=cos(x-60)		

(e) Using the graph above determine the values of x for which
cos(x-60^0) - 2cosx = 0 (1mark)

22.



The roof of a building is as shown in the figure above with a rectangular base ABCD. AB = 20m and AD = 8m. The ridge EF = 10m and is centrally placed. The faces ADE and BFC are equilateral triangles. Calculate

(i) The height of E above the base ABCD (2 marks)

(ii) The angle between the planes ABCD and ADFE (3 marks)

(iii) The angle between the planes AED and ABCD (2 marks)

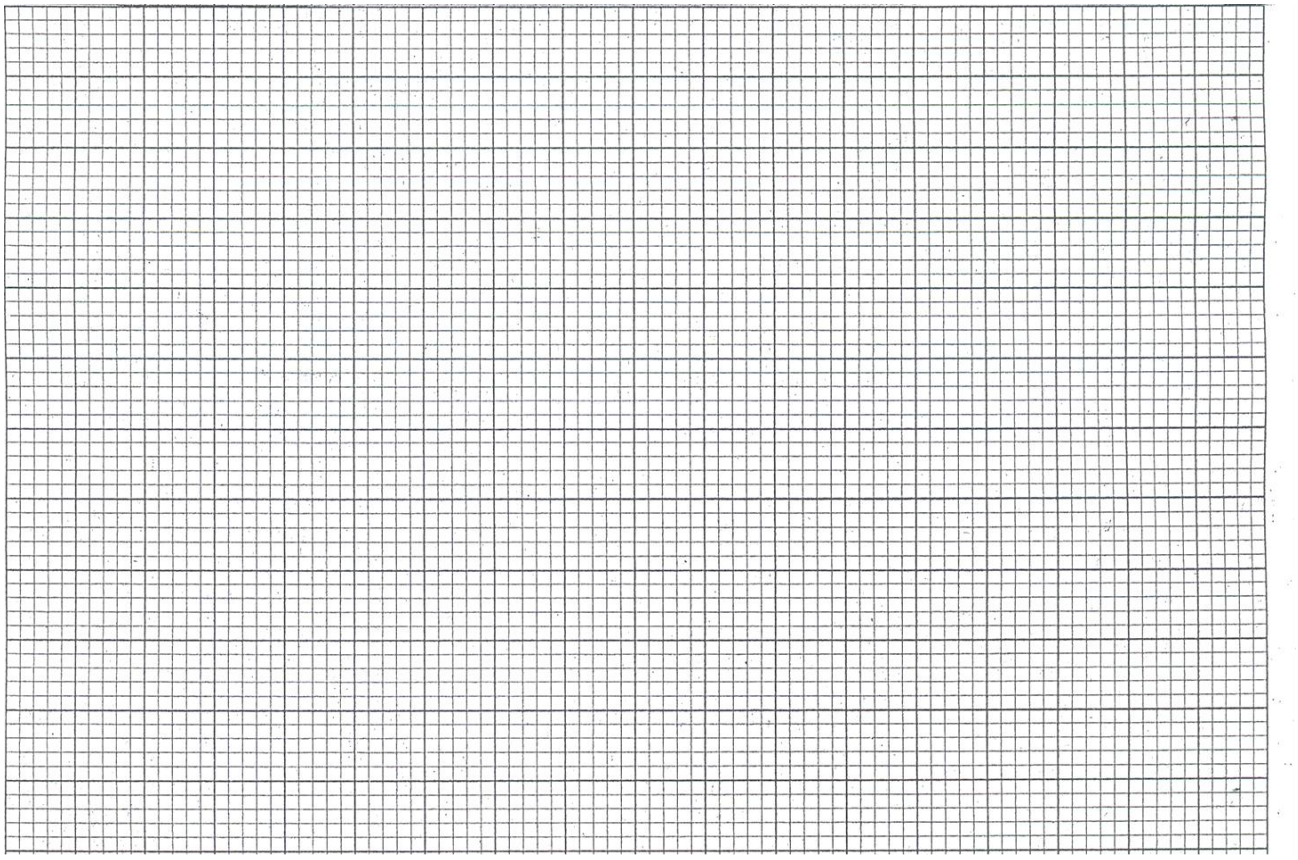
(iv) The acute angle between lines DB and EF (3 marks)

23. Kiprop has at least 50 acres of land on which he plans to plant potatoes and cabbages. Each are of potatoes requires 6 men and each are of cabbages requires 2 men. The farmer has 240men available and he must plant at least 10 acres of potatoes. The profit on potatoes is kshs.1200 per acre. If he plants x acres of potatoes and y acres of cabbages;

(a) Write down 3 in equalities in x and y to describe the information.(2 marks)

(c) Represent these in equalities graphically. (use a scale of 1:10 for both axes) (4 marks)

(c) Use your graph to determine the number of acres for each vegetable which will give maximum profit. (4 marks)



24. (a) Complete the table below for $y = x^2 - 3x + 5$ in the range $2 \leq x \leq 8$ (2marks)

x	2	3	4	5	6	7	8
y	3		9		23	33	

(b) Use the trapezium rule with six strips to estimate the area enclosed by the curve, x-axis and the lines x=2 and x=8. (2marks)

(c) Find the exact area of the region given in (b). (4marks)

(d) Calculate the percentage error in the area. (2marks)

NAME: ……..……

SCHOOL: ……

INDEX NO: …… SIGN: …… DATE: ……

BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

232/1
PHYSICS PAPER 1
FORM FOUR
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

- Write your name, school and index number in the spaces provided above.
- Write the date of examination and sign in the spaces provided above.
- This paper consists of two sections, Section **A** and **B**.
- Answer **ALL** the questions in section **A** and **B** in the spaces provided.
- **ALL** answers and working **MUST** be clearly shown.
- Mathematical tables and electronic calculators **may be** used.
- Take acceleration due to gravity, g = 10m/s^2

FOR EXAMINER'S USE ONLY:

Section	Question	Maximum score	Candidate's score
A	1–12	25	
B	13	12	
	14	11	
	15	10	
	16	12	
	17	10	
	TOTAL	80	

1. Figure 1 below shows a micrometer screw gauge being used to measure the diameter of a metal rod. The thimble scale has 50 divisions.

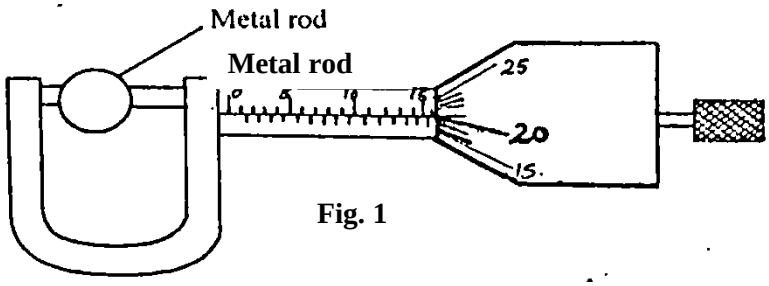


Fig. 1

Find the diameter of the metal rod. (1 mark)

2. A man of mass 72kg jumps from a small boat on to the lake shore with a forward velocity of $9.0ms^{-1}$.
If the mass of the boat is 216kg, calculate the initial backward velocity of the boat.(3 marks)

3. Explain briefly how the temperature in a green house is kept higher than outside.(2 marks)

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The diagram shown in figure 2 below is an arrangement of three pulley wheels used to help in lifting loads. Use it to answer questions 4 and 5.

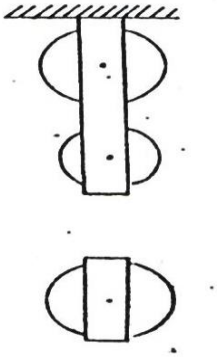

Fig. 2

4. Complete the diagram to show how the rope goes round the wheels, position of the load and the effort. (2 marks)

5. Write down the velocity ratio (VR) of the system. (1 mark)

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6. State how temperature affects the speed of sound in air. (1 mark)

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7. State **two** facts which show that heat from the sun does not reach the earth surface by convection. (2 marks)

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8. The diagram in figure 3 below shows water with negligible viscosity flowing steadily in a tube of different cross-section area. If at a point A, the cross section area is $120cm^2$ and the velocity of water is $0.40ms^{-1}$, calculate the velocity at B where cross section area is $4.0cm^2$? (3 marks)

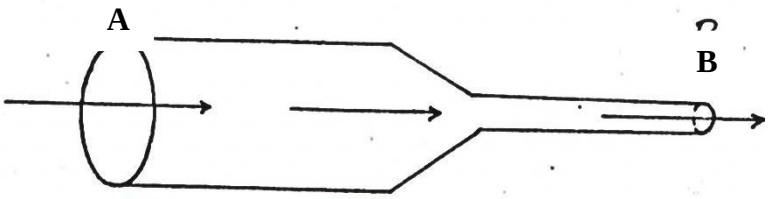


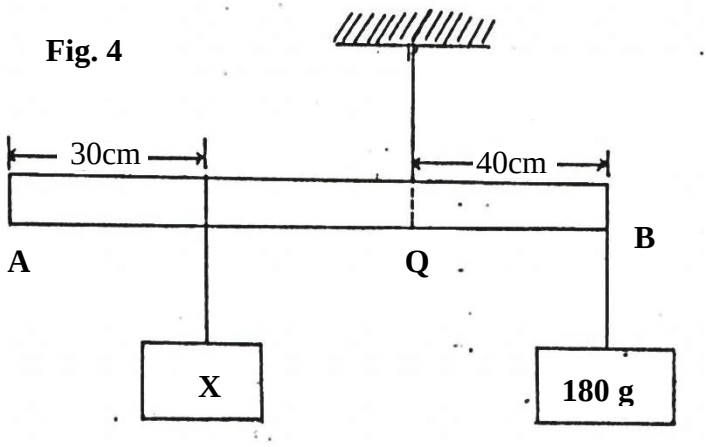
Fig. 3

9. A motor uses an electrical energy at a rate of 200W and raises a mass of 25kg through a vertical distance of 20m in 0.5 minutes. Determine the efficiency of the motor.(3 marks)

How long will it take 240V, 3000W electric immersion heater to raise the temperature of 150 litres of water in a well-lagged calorimeter made of copper of mass 20kg from 15^0 to 70^0C? (3 marks)

10. The diagram shown in the Figure 4 below shows a system in equilibrium with the rule horizontal.
AB is a uniform rule of length 1.0m and weight 1.8N. Calculate the weight of the block X. (3 marks)

Fig. 4



11. State the reason why a trailer carrying heavy loads has many wheels.(1 mark)

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SECTION B (55 MARKS)

Answer ALL the questions

12. A student in Anestar Girls set up an experiment to study the acceleration of a trolley using ticker tape timer. The timer made 50 dots per second on the tape. Dots A to E measured 2.5cm apart and dots E to I measured 4.5cm apart.

a) Using a scale drawing show the dots A, B C, D, E, F, G and I as they appeared on the tape. (3 marks)

b) Determine the velocity of the trolley from:

i) A to E. (2 marks)

ii) E to I. (2 marks)

c) Calculate the acceleration of the trolley.(2 marks)

d) What end of the tape was fixed onto the trolley?(1 mark)

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e) State **two** precautions that the student should take before she takes her final samples of the dots.(2 marks)

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13. a) i) What is Brownian motion?(1 mark)

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ii) Describe with the aid of a diagram, the apparatus you could set up in order to demonstrate

Brownian motion of smoke particles suspended in air.(5 marks)

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b) An oil drop has a volume of $0.01mm^3$ when it is placed on the surface of some water, it spreadsout to form a circular patch of area $500cm^2$

i) Calculate the thickness of the oil film. (3 marks)

ii) What **two** assumptions have you made in the answer b(i) above. (2 marks)

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14. a) i) Distinguish between inelastic and elastic collisions.(2 marks)

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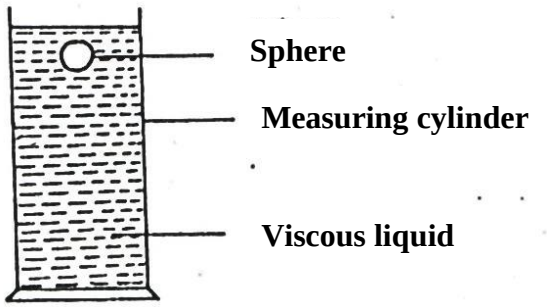
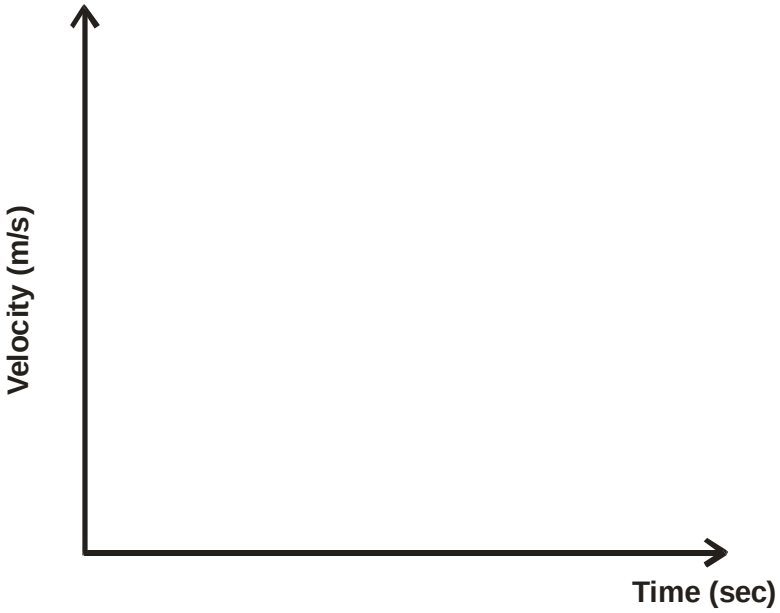
ii) A particle A of mass M moving with an initial velocity, u, makes a head-on collision with another particle B of mass 2M, B being initially at rest. In terms of u, calculate the final velocity of A if the collision is perfectly inelastic.(3 marks)

b) The diagram in Figure 5 below shows a sphere moving in a viscous liquid in a tall measuring cylinder.

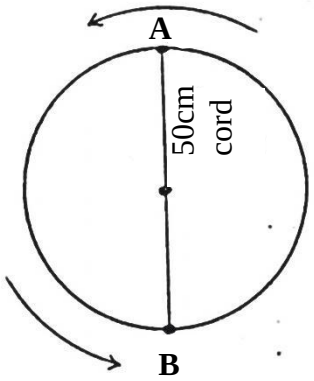


i) Show on the diagram the forces acting on the sphere.
(3 marks)

ii) Sketch a graph showing the variation of velocity with time in figure 6 below. Show on the graph the terminal velocity, V_T. (2 marks)



15. A mass of 1kg is attached to a cord of length 50cm. It is whirled in a circle in a vertical plane at 10 revolutions per second as shown in the figure below.



a) Find the tensions in the cord when the mass is at:

i) Highest point of the circle A.(2 marks)

ii) Lowest point of the circle B.(2 marks)

b) i) Describe an experiment to determine specific heat capacity of aluminium block with two holes drilled in it to accommodate a thermometer and an electric heater.(5 marks)

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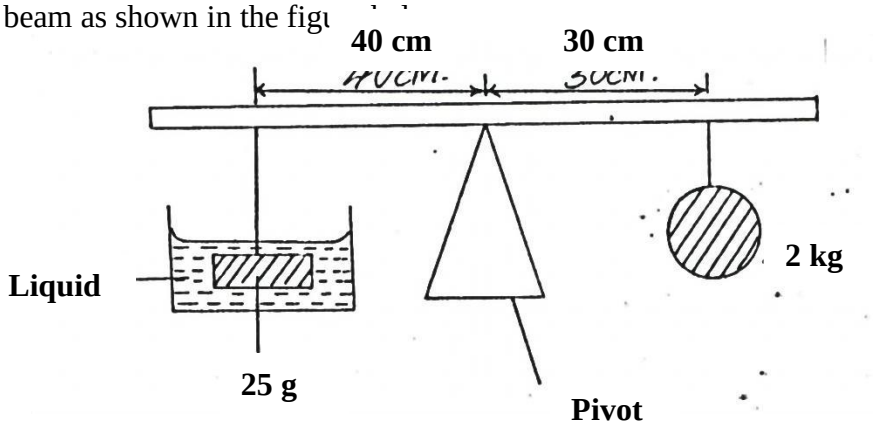
ii) An immersion heater rated 90W is placed in a liquid of mass 2kg. When the heater is switched on for 15minutes, the temperature of the liquid rises from 20^0C to 30^0C. Determine the specific heat capacity of the liquid. (3 marks)

16. a) The figure below shows a block of mass 25g and density 200kg/m^3 submerged in a certain liquid and suspended from a homogenous horizontal beam by means of a thread. A mass of 2kg issuspended from the beam as shown in the figu



i) Determine the upthrust force acting on the block.(3 marks)

ii) Calculate the density of the liquid. (3 marks)

b) i) State the law of floatation.(1 mark)

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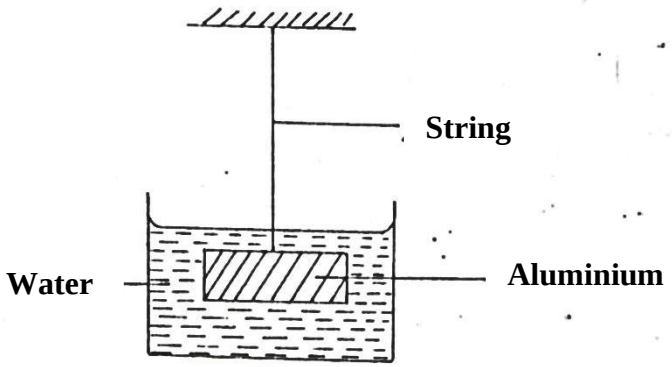
ii) The figure below shows a piece of aluminum suspended from a string and completely immersed in a container of water. The mass of the aluminium is 1kg and its density is $2.7 \times 10^3 kg/m^3$



Calculate the tension in the string.(3 marks)

NAME: ……..……

SCHOOL: ……

INDEX NO: …… SIGN: …… DATE: ……

BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

232/1
PHYSICS PAPER 2
FORM FOUR
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

- Write your name, school and index number in the spaces provided above.
- Write the date of examination and sign in the spaces provided above.
- This paper consists of two sections, Section **A** and **B**.
- Answer **ALL** the questions in section **A** and **B** in the spaces provided.
- **ALL** answers and working **MUST** be clearly shown.
- Mathematical tables and electronic calculators **may be** used.
- Take acceleration due to gravity, g = $10m/s^2$

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

TOTAL SCORE:

1. State the property of light suggested by the formation of shadows. (1 mark)

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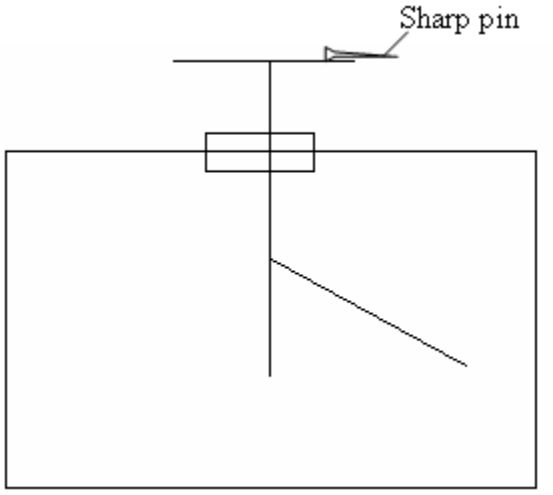
2. The figure **below** shows a sharp pin fixed on a cap of leaf electroscope. The electroscope is highly charged and then left for sometime.



Explain why the leaf collapses. (2 marks)

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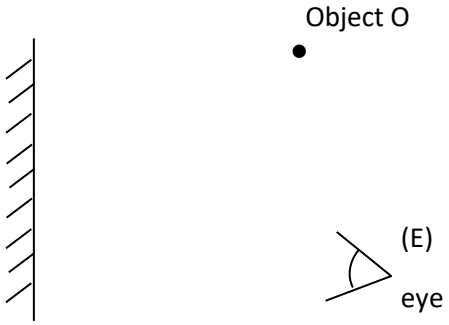
The figure **below** shows an object O placed infront of a plane mirror.



On the same diagram, draw rays to locate the position of the image I as seen from the eye E. (2 marks)

4. (a) State the basic law of magnetism. (1 mark)

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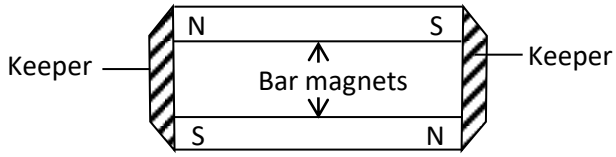
(b) The figure **below** shows how magnets are stored in pairs with keepers at the ends.



Explain how this method of storing helps in retaining magnetism longer. (2 marks)

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5. Why is a convex mirror better than plane mirror when used as a driving mirror? (1 mark)

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6. The figure 2 shows a circuit diagram with cells in parallel. Each cell has e.m.f of 1.5V and internal resistance of 0.5Ω and the resistance of the bulb is 6Ω each. Determine the ammeter reading when the switch is closed. (3mks)

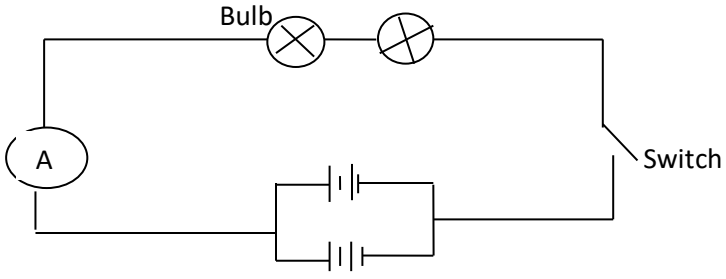

Fig2

7. An appliance is rate 2.5KW, 240V a.c 50Hz. Explain the meaning of the rating(figures) on this appliance. (2mks)

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8. The following are electromagnetic waves. Arrange them according to their increasing frequency. Gamma rays, microwaves, ultra-violet, TV waves and blue light. (1mk)

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9. Distinguish between a transformer and induction coil. (2mks)

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10. Distinguish between a transverse and a longitudinal wave. (1 mark)

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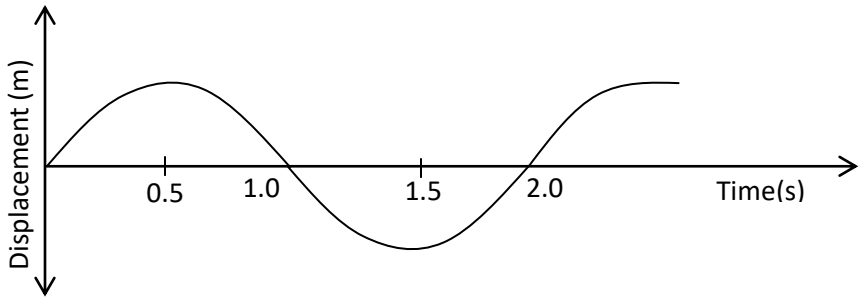
(b) Determine the frequency of the wave shown below. (2 marks)



11. An electric heater rated 240V, 3000W is to be connected to a 240V mains supply, through a 10A fuse. Determine whether the fuse is suitable or not. (3 marks)

(c) State **one** reason why ultrasound is preferred to audible sound in echo-sounding.(1 mark)

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12. An electric heater rated 240V, 3000W is to be connected to a 240V mains supply, through a 10A fuse. Determine whether the fuse is suitable or not. (3 marks)

13. Kiai noticed that any time he a light from his car and close the door holding the metallic hand he get a slight shock. Explain. (2mks)

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SECTION B (55 MARKS)

<u>Answer all the questions from this section in the spaces provided</u>.

14. A transformer with 2000 turns in the primary circuit and 150 turns in the secondary circuit has its primary circuit connected to a 800Va.c. source. It is found that when a heater is

connected to the secondary circuit it produces heat at the rate of 1000W. Assuming 100%

efficiency, determine the:

(i) Voltage in the secondary circuit. (2 marks)

(iii) Current in the secondary circuit. (1 mark)

(iv) State the type of transformer represented above. (1 mark)

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(b) (i) State the reason why long distance power transmission is done at a very high voltage and using thick cables. (1 mark)

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(ii) Calculate the cost of using the following appliances in one month (30 days) of the company rate is Ksh.9.50 per unit.

I A 2000W water heater for 2 hours per day.

II A 75W bulb for 10 hours per day.

III An 1500W electric iron for 1 hour per day. (3 marks)

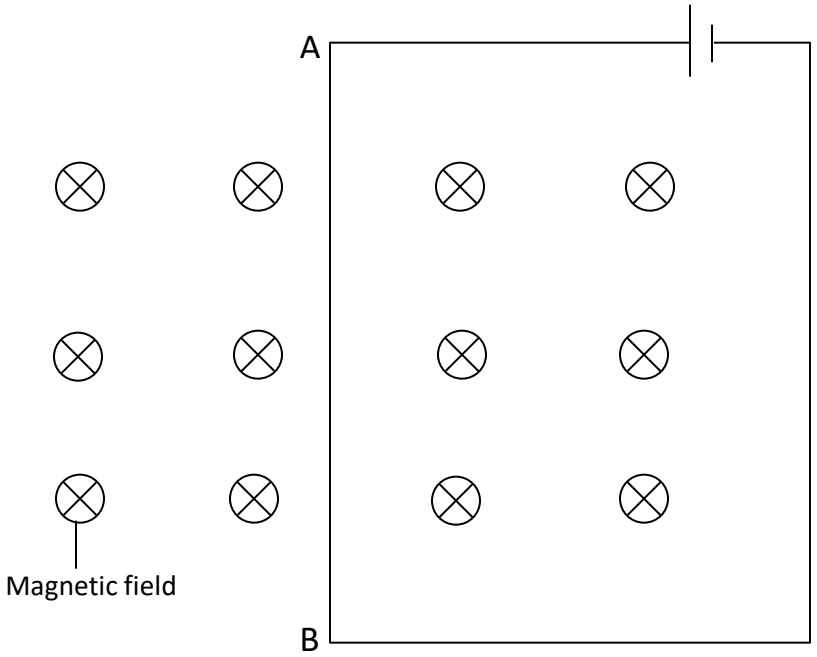
(iii) Find the total monthly bill for the above household if in addition to the energy consumed, the power company charges each consumer.

I A standing charge of Ksh.200.

II Fuel cost levy at 70 cents per unit. (2 marks)

15. (a) State **two** ways in which one can increase the strength of an electromagnet.(2 marks)

(b) The following figure shows a conductor placed in a magnetic field. Indicate on the diagram the direction of motion of part AB of the conductor. (2mks)

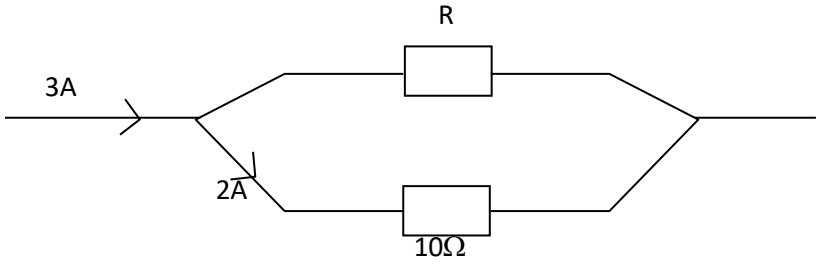


(b) A cell drives a current of 5A through a 1.6Ω resistor. When connected to a 2.8Ω resistor, the current that flows in 3.2A. Find E and r for the cell. (4 marks)

(c) 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 = $1.10 \times 10^{-6} \Omega m$).

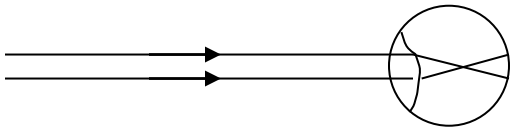
(3 marks)

(e) In figure **below**, calculate the p.d across resistor **R**. (2 marks)



(ii) Current in the primary circuit. (2 marks)

16. The figure below shows rays of light entering a human eye which has a defect.



i) Name the defect. (1mk)

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ii) State 2 possible causes of the defect. (1mk)

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b) Define the accommodation. (1mk)

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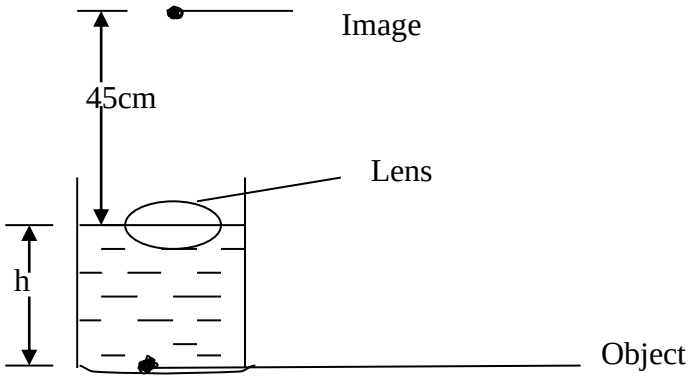
c) A small bright object O lies at the bottom of a beaker containing water of depth h cm. A convex lens of focal length 15cm is held at the surface of water. The lens forms an image of O at 45cm from the surface of water.

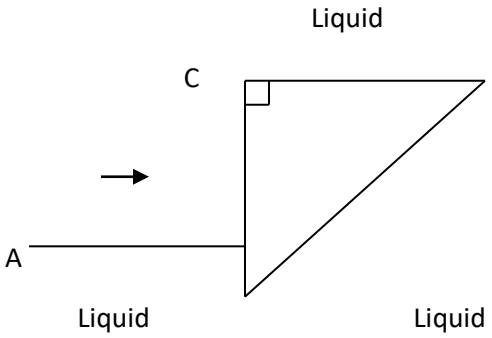


Taking the refractive index of water to be 4/3, determine:

(i) the apparent depth of the object(2mks)

(ii) the real depth h, of the object (2mks)

d. A ray of light is incident at right angles to the face AB, of a right angled isosceles prism of Refractive index 1.6 as shown in the figure below.



If the prism is surrounded by a liquid of refractive index 1.40, determine:

(i) The angle of incidence on the face BC. (2mk)

(ii) The angle of refraction on the face BC. (3mks)

17. State **two** ways through which the rate of evaporation of a liquid may be increased. (2 marks)

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(b) A metal of mass 10kg is heated to 120ºC and then dropped into 2kg of water. The final temperature of the mixture is found to be 50ºC. Calculate the initial temperature of the water. (Specific heat capacity of the metal and water is 450JKg^{-1}K^{-1} and 4200JKg^{-1}K^{-1} respectively). (3mks)

(c) Give the property of water which makes it suitable for use as a coolant in machines. (1 mark)

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(d) Formation of ice on roads during winter in cold countries is known to hamper vehicles. State **two** ways in which the melting point of ice may be lowered to solve this problem. (2 marks)

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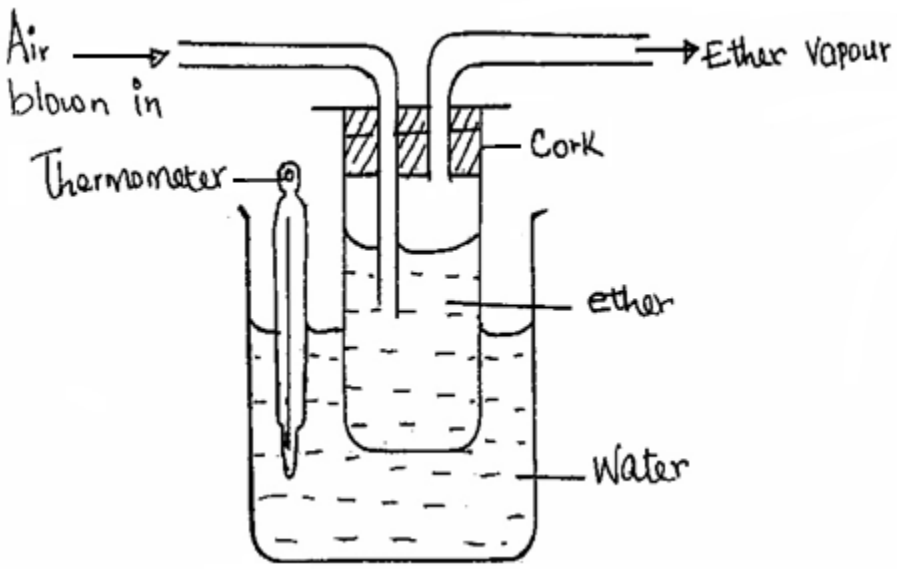
(f) Some ether is put in a combustion tube and two glass tubes inserted into the tube through

a cork as shown in the figure **below**. The combustion tube is then put into a small beaker containing some water and a thermometer dipped in the water. When air is blown into the ether as shown, the reading in the thermometer lowers. Explain this observation. (2 marks)



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18. (a) An object is released to fall vertically from height of 100m. At the same time another object is projected vertically upward with velocity of 40m/s.

(i) Calculate the time taken before the objects meet (3mks)

(ii) At what height do the objects meet? (2mks)

(b) A string of negligible mass has a bucket tied at the end. The string is 60cm long and the bucket has a mass of 45g. The bucket is swung horizontally making 6 revolutions per second. Calculate

(i) The angular velocity (2mk)

(ii) The angular acceleration (2mks)

(iii) The tension on the string (2mks)

(iii) The linear velocity (1mk)

NAME: ……..……

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BRILLIANT STUDENTS

FORM 4 END TERM 1 SERIES 2 EXAMS

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

232/3
PHYSICS PAPER 3
(PRACTICAL)
FORM FOUR
TIME: 2 ½ hours

INSTRUCTIONS

- *Answer ALL questions in the spaces provided in the question paper.*
- *You are supposed to spend the first 15 minutes of the 2 ½ hrs allowed for this paper reading the whole paper carefully before commencing your work.*
- *Marks are given for a clear record of the observations actually made, their suitability, accuracy and the use made of them.*
- *Candidates are advised to record their observations as soon as they are made.*
- *Non-programmable silent electronic calculators and KNEC mathematical tables may be used except where stated otherwise.*
- *Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*

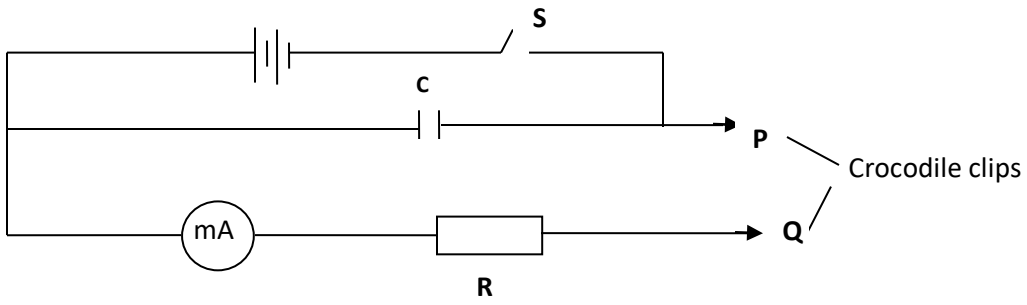
Question one

You are provided with the following:

- 2 new dry cells size D
- A cell holder
- A switch
- A millimeter of range 0 to 1 mA
- A capacitor labeled C
- 8 connecting wires; at least four with crocodile clips on one end
- A stopwatch
- A carbon resistor labeled **R**

Proceed as follows

Connect the circuit as shown in the figure 1below, where P and Q are crocodile clips.



a. Close the switch **S**

b. Name the process which takes place when the switch **S** is closed

……. (1 mark)

c. Connect the crocodile clips P and Q. Observe and record the highest reading of the millimeter $\mathbf{I_o}$

……. (1 mark)

d. Open the switch S and at the same time start the stopwatch to measure the time taken for the current to decrease to **four fifth** the value of $\mathbf{I_o}$ i.e. $^{4}/_{5}\mathbf{I_o}$. Record your value in the **table 1**.

e. Close the switch S for a second time and observe the deflection in the millimeter. ***(the pointer should rise back to the same initial value I_o)***

f. Repeat part (b) for other values of current as shown in the **table 1** below. (8 marks)

Current **I**(mA)	$^{4}/_{5}\mathbf{I_o}$	$^{3}/_{4}\ \mathbf{I_o}$	$^{2}/_{3}\ \mathbf{I_o}$	$^{1}/_{2}\ \mathbf{I_o}$	$^{2}/_{5}\ \mathbf{I_o}$	$^{1}/_{3}\ \mathbf{I_o}$	$^{1}/_{4}\ \mathbf{I_o}$
Your calculated fraction of $\mathbf{I_o}$(mA)							
Time **t**(s)							

g. Plot a graph of Current **I** (y – axis)(mA) against time **t**(s) (5 marks)

h. From your graph, find**W** the value of **I** when **t = 10s**. (2 marks)

i. Given that **A = 10W**, determine the value of **A.** (2 marks)

j. Determine the voltage across **R** at**t = 10s**given that R = 4.7k**Ω** (1 mark)

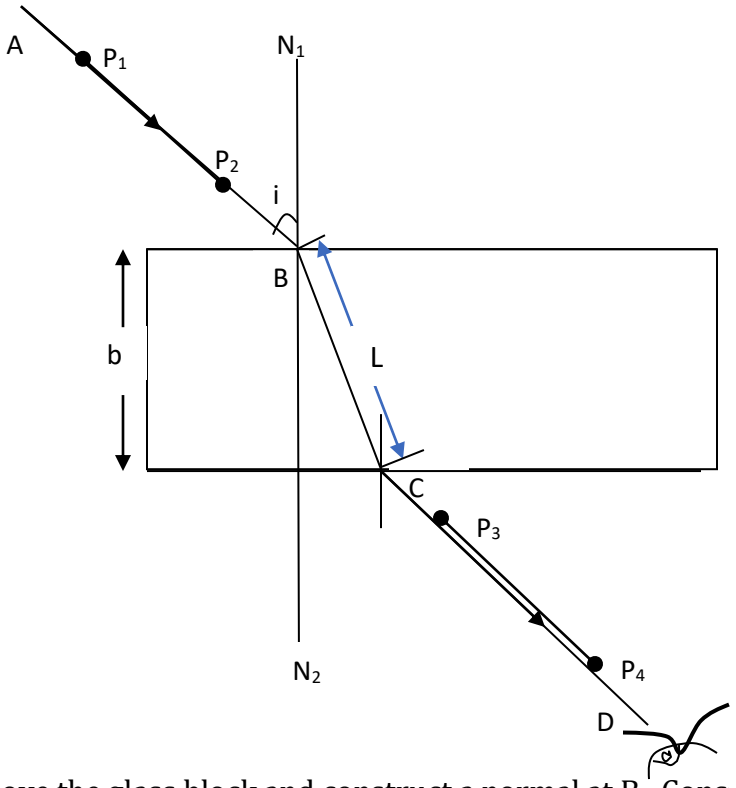
Question Two

You are provided with the following;

- a rectangular glass block
- 4 optical pins
- 2 thumb pins
- a soft board
- a plain paper

Proceed as follows:

(a) Place the glass block on the plain paper with one of the largest face upper most. Trace round the glass block using a pencil as shown below.



(b) Remove the glass block and construct a normal at B. Cons... ...ncident ray AB of angle of incidence, i = 20^0.

(c) Measure the breadth **b** of the glass block (1 mark)

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(c) Replace the glass block and trace the ray ABCD using the optical pins.

(d) Remove the glass block and draw the path of the ray ABCD using a pencil.

(e) Measure the length L and record it in the table below

Angle i^0	L (cm)	L^2 (cm) ^{2}	$\frac{1}{L^2}$(cm-^{2})	$Sin^2 i$
20				
30				
40				
50				
60				
70				

(6 marks)

(f) Repeat the procedure above for the angles of incidence given.

(g) Calculate the values of $\frac{1}{L^2}$ and $Sin^2 I$; and record in the table above.

(h) Plot a graph of $\frac{1}{L^2}$ (y-axis) against $Sin^2 i$. **(5 marks)**

(PROIDE A GRAPH PAPER)

(i) Calculate the gradient **S** of the graph **(3 marks)**

Given that the equation of that graph is; $\frac{1}{L^2} = -\left(\frac{1}{n^2 b^2}\right) Sin^2 i + \frac{1}{b^2}$

(j) Determine the value of ***n*** (3 marks)

(k) Present your work sheet; attached to the exam paper (2 mark)