BRILLIANT STUDENTS FORM 3 END TERM 1 SERIES 2 EXAMS *(ALL SUBJECTS TESTED)*

BRILLIANT STUDENTS FORM 3 END TERM 1 SERIES 2 EXAMS

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BRILLIANT STUDENTS

FORM 3 END TERM 1 SERIES 2 EXAMS

AGRICULTURE PP1

TIME: 2 HOURS

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SECTION A [30 MAKRS]

1.State four practices that make Agriculture to be considered a science [2mks]

3.Give two advantages of organic farming [1mk]

4.Give 2 branches of crop farming[1 mk]

5. State 2 negative impacts of high temperature.(1mk)

6.Mention four farming practices that help to improve soil structure[2mks]

7. State three factors that have negative impacts on Agriculture

8.State four aspects of rainfall that affect crop production [2mks]

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9.State 2 properties of the soil that are influenced by the texture [1mk]

10.Name four human factors that influence efficiency of Agriculture production[2mks

11.State four factors that determine the type of irrigation that can used in a given area (2mks)

12.State four disadvantages of using farmyard manure(2mks)

13.Give four disadvantages of minimum tillage(2mks)

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14.Outline two methods used by farmers to harden off seedlings in a nursery bed (2mks)

15(a)Name two types of inventories used on the farm for the purpose of record keeping(1mk)

(b)What is the importance of taking farm inventories?(1mk)

16.Give 2 reasons why farmers should establish seedling first in a nursery bed during the growing of cabbages(1m)

17(a).What is vegetative propagation?(1m)

(b).State the materials used to propagate;

Sisal

Pineapples

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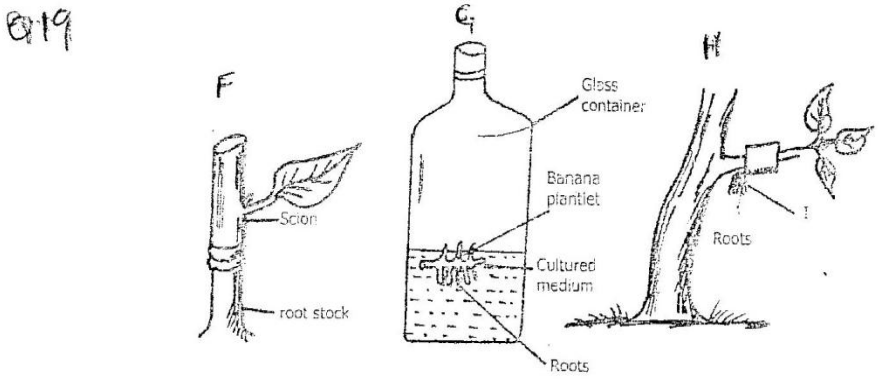
Irish potatoes

18(a)A farmer was advised to apply a fertilizer labeled 18:47:0 on the sack.What do labeled figures stand for?(1⅓mks)

(b)A farmer was advised to apply 200kg of C.A.N fertilizer per hectare,which top dressing the bean crop C.A.N contains 21% nitrogen. Calculate the amount of nitrogen applied per hectare [show your working]1½mk]

SECTION B 20MKS

19 Study the methods of crop propagation F, G, and H illustrated below and answer the questions that follow



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[a] Identify the methods of crop propagation illustrated above[11/2 mks]

F

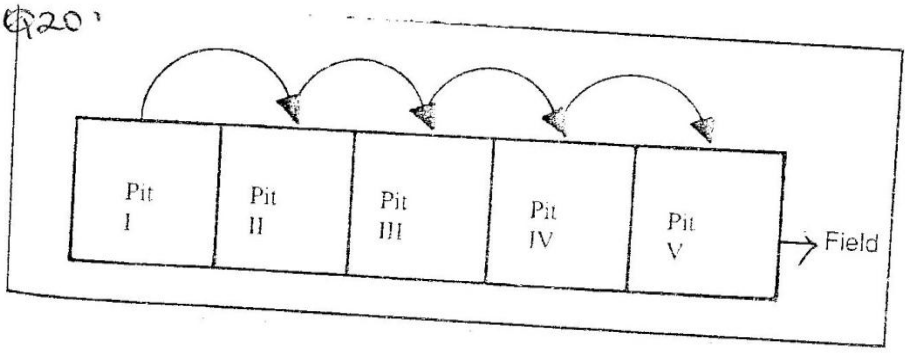
G

H

[b]Give 2 conditions under which H is carried out [2mks]

[c]Give 3 advantages of using the method of propagation illustrated in G above[11/2mks]

20 The following diagram shows a method of compost preparations



[a]Identify the method [1mk]

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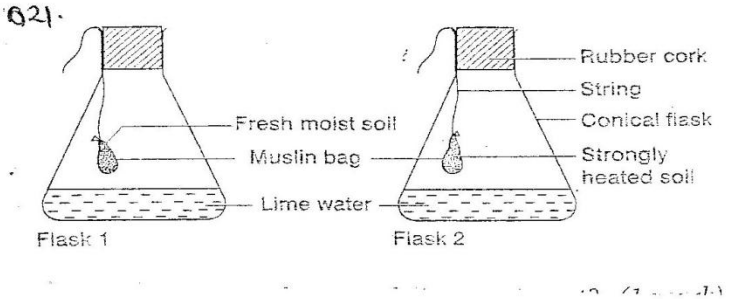
b)Give two factors that should be considered when siting the compost pit.(2mks)

[b] Give 2 factors that determine the time the manure would be ready for use in the field.(2mks)

21 The diagram below shows an experiment that was carried out by a form one class . Study it carefully and answer the questions that follow



[a]What was the aim of the experiment [1mk]

[b] What observations did the students make at the end of the experiment in the 2 flasks[2mks]

Flask 1

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Flask 2

[c] Give the reason for the observations in flask 1.(1mk)

[d]Why did the students heat the garden soil in flask 2 strongly?[1mk]

22 Explain the meaning of the following practices in crop production

1 Chilting[1mk]

2 Seed dressing [1mk]

3 seed inoculation [1mk]

4 Earthing up [1mk]

5 Roguelling [1mk]

SECTION C 40 MKS

Answer any two questions in this section

23 [a] State and explain the factors considered when determining spacing of crops in the field [10mks]

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[b] Determine the process of chemical water treatment [10mks]

24 [a] what are the uses of farm records [10mks]

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[b] Explain 8 ways in which soil loses fertility [10mks]

25Describe the field production of tomatoes under the following sub-headings

[a] Ecological requirements [3mks]

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[b] Land preparations [4mks]

[c] Transplanting [5mks]

[d] Field management practicals [5mks]

[e] Marketing [3mks]

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FORM 3 END TERM 1 SERIES 2 EXAMS

AGRICULTURE PP2 EXAM

TIME: 2 HOURS

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SECTION A

1. Name a tool recommended for the following practices on the farm.
   a. Smoothening a very rough surface of flat wood(1/2mk)

   b. Making threads on metallic pipes.(1/2mk)

   c. Breaking stones during construction and ballast in masonry work.(1/2mk)

   d. Cutting wood along the grains(1/2mk)

2. Give four signs that show a rabbit doe is about to give birth.(2mks)

3. Give four reasons for steaming up a dairy cow.(2mks)

4. Sate four reasons for castrating male calves(2mks)

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5. Outline two disadvantages of using embryo transplant.(1mk)

6. a.State four reasons for dehorning /disbudding livestock.(2mks)

b.State two chemical methods of disbudding livestock.(1mk)

7. Give three types of feed additives given to livestock.(11/2mk)

8. State two features in a gizzard that enable it to carry out its functions (1mk)

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9. Sate four economic importance of internal parasites in livestock (2mks)

10. State four problems that may necessitate a farmer calling a qualified stockman during calving down of a cow.(2mks)

11. .a.What is Zoonotic disease?(1mk)

b.Whta do you understand by the term quarantines in livestock production.(1mk)

12. Study the table below and fill in the missing words(4mks)

Desorption	Cattle	Pigs	Poutlry
Young form birth/hatching to weaning	a)	b)	Chick
Young female before first parturition	c)	Gill	d)
Mature for breeding	Bull	e)	f)
Mature after first parturition	g)	h)	hen

13. Sate the gestation of the following animals

i. Pigs

ii. Cattle

iii. Rabbits

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14. Sate the difference between a vector and an intermediate host.(2mks)

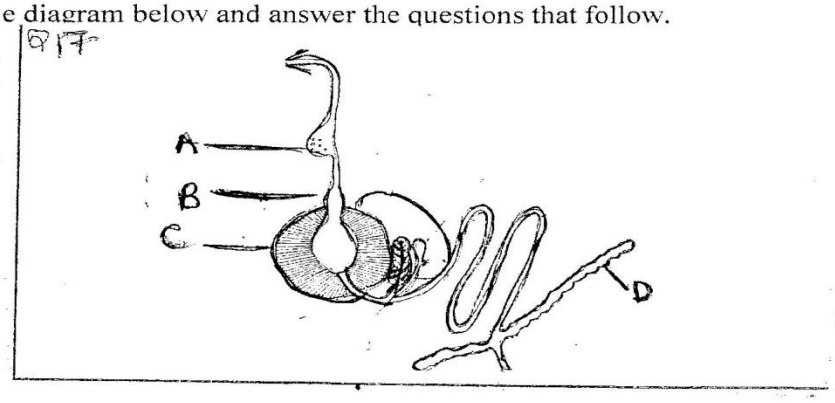
15. State four functions of carbohydrates in animals body.(1mk)

SECTION B(2OMKS)

16. a.Using Pearson's square method compute a 400kg ration with 20% DCP from wheat containing 15% DCP and cotton seed cake containing 60% DCP.Clearly show your working

b.Apart form the method above, state one other method farmer can use to complete a livestock ration.(1mk)

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



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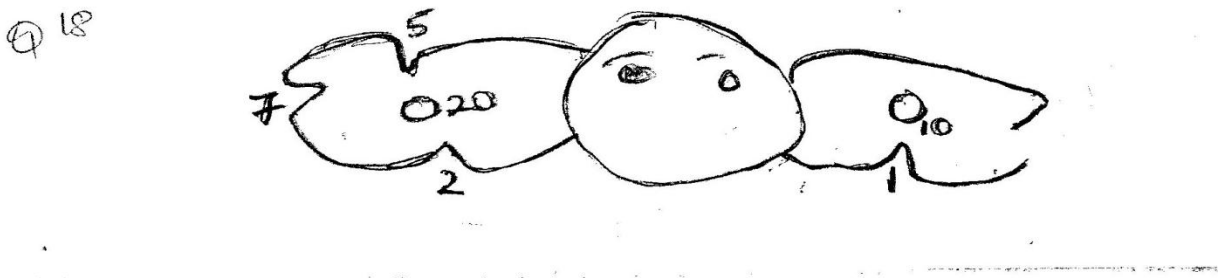
a. I)Identify the above digestive system.

ii)Name the parts labeled A,B and C.(3mks)

iii)State one function of the part labeled D mentioned in (ii) above.(2mks)

iv)What makes the part labeled C be more effective in its functions.(2mks)

18. a. Below is diagram method of identifying livestock.



i)Name the type of identification method used above.(1mk)

ii)Name the identification number on the diagram shown above.(1mk)

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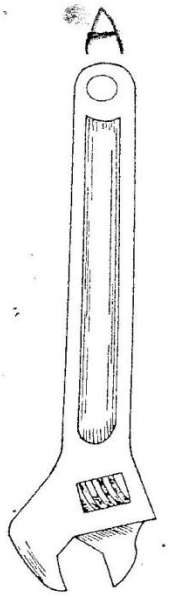
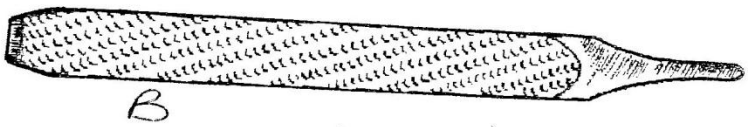
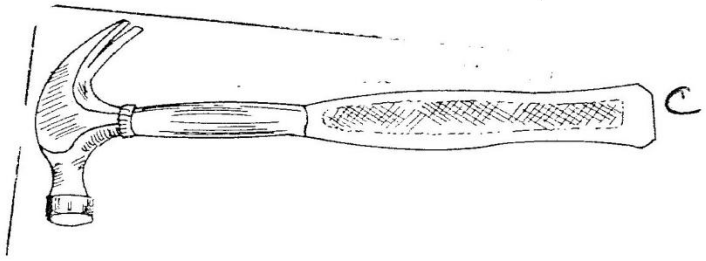
iii)Using the above system, draw a diagram representing livestock number.(1mk)

19. State 1 use of each of the following farm tools and equipment.(4mks)









A

B

C

D

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SECTIONC(40MKS)

Answer any TWO questions in this section.

20. With aid of a fully labeled diagram, describe the processing formation in hen.(20mks)

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21. a)Describe the life cycle of a two-host ticks(7mks)

b)Explain the measure used to control external parasites in livestock.(8mks)

c)State five factors that affect digestibility in livestock nutrition.(5mks

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22. a.Describe twelve measures of controlling livestock diseases(12mks)

b.Outline eight diseases predisposing factors in livestock production.(8mks)

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FORM 3 END TERM 1 SERIES 2 EXAMS

BIOLOGY PP1 EXAM

TIME: 2 HOURS

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1. Sate two ways in which the rough endoplasmic reticulum is adapted to its function.(2mks)

2. State three characteristics that are used to divide phylum arthropoda into classes.(3mks)

3. Distinguish between diffusion and active transport.(2mks)

4. An organism was found to have the dental formula:
   I $\frac{1}{1}$, $C\frac{0}{0}$ $PM\frac{3}{2}$,$m\frac{4}{4.}$

   i. Calculate the total number of teeth in the organism.(1mk)

   ii. Giving a reason ,suggest the mode of feeding of the organism.(2mks)

. a)Give a reason for the biconcave shape of the red blood cells.(1mk)

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b) Name the enzyme that speeds up loading of carbon (iv) oxide in the red blood cells.(1mk)

6. a. Name the vitamin, an enzyme and a mineral element that are involved in blood clotting.(1½mks)

i. Vitamin

ii.Enzyme;

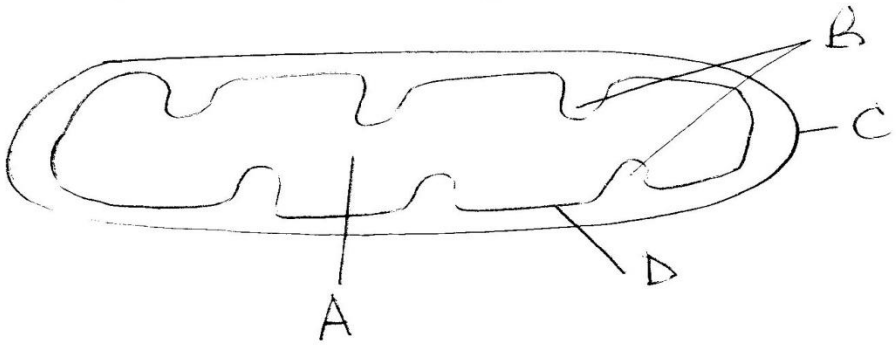
iii.Mineral element

b.Differenciate between heparin and histamine.(2mks)

7. a.Name the part of the brain that influences breathing rate.(1mk)

b.State two advantages of breathing through the nostrils instead of through the mouth in mammals.(2mks).

8. The diagram below resents a cell organelle.



a. Name the main product of the organelle's activity.(½mk)

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b. Name the parts labeled A,B , C and D.(2mks)

A-

B-

C-

D-

9. a.State the cause of diabetes mellitus.(1mk)

b.How may the disease in (9)(a) above be tested in a School laboratory?(2mks)

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

b.State two reasons why plants are included in a fish pond other than provision of food.(2mks)

11. State the functions of the following parts of a light microscope.

a) Diaphragm.(1mk)

b) Objective lenses.(1mk)

12. a.Define the term respiratory quotient.(1mk)

b (i) After respiration of a certain substrate $50cm^3$ of carbon (iv) oxide was produced and 70cm Oxygen was used .Calculate the respiratory quotient of the substrate.(1mk)

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ii.Name the substrate in (12) (c) above. (1mk)

13. (a) If a person who lives at low attitude moves to a higher attitude, changes occurring his blood consumption. Name two of these changes.(2mks)

c. State the importance of these changes.(1mk)

14. How are leaves of submerged plants adapted for photosynthesis? (2mks)

15. Name the causative agents of the diseases below:-

a. Anthrax (1mk)

b.Gonorrhea (1mk)

C.Whooping cough(1mk)

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16. Explain why plants in waterlogged soils dry up.(3mks)

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

c) Explain why people who have blood group AB are called universal recipients.(2mks)

18. Name three processes in the human body in which homeostasis is involved.(3mks)

19. a) How are root hairs adapted to their function?(2mks)

b) Name the process by which food is transported in plants.(1mk)

20. State the significance of the following adaptations in a leaf.

a. Thinness (1mk)

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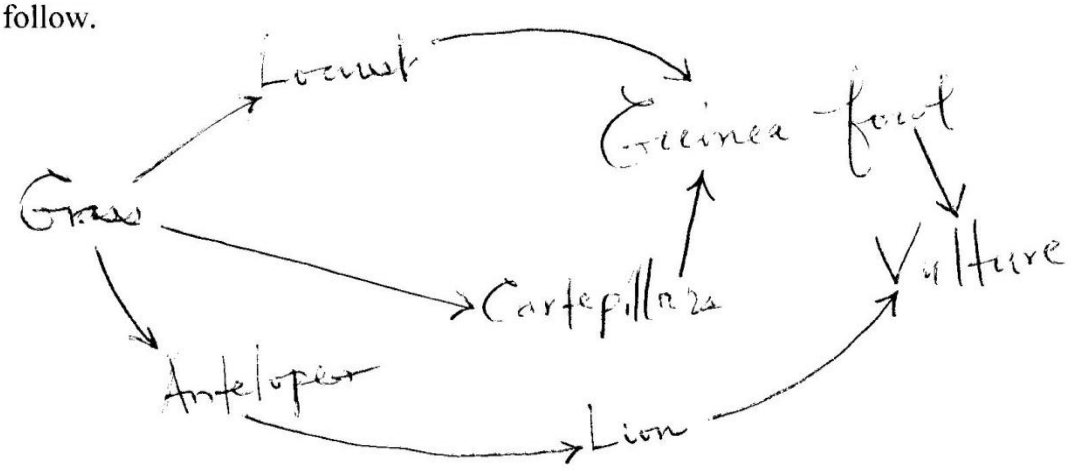
b.Presence of airspaces(1mk)

c.Stomata (1mk)

21. Study the food web below representing a certain ecosystem and use it to answer the questions that follow.



a. State the trophic level occupied by the lion in the food web.(1mk)

b. Write down a food chain in which the vulture is a tertiary consumer(1mk)

c. i.Name the organism with the largest biomass(1mk)

Ii.Give two reasons for your answer in (c)(i) above.(2mks)

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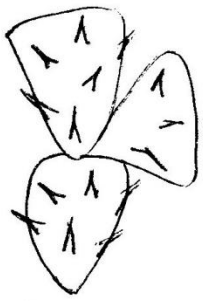
22. Explain how temperature affects an enzyme controlled reaction.(3mks)

23. The diagram below represents a certain plant.



a. What is the likely habitat of the plant?(1mk)

b.Give two reasons for your answer in (a) above.(2mks)

24.The number of stomata on the lower and upper surfaces of two leaves from plant species x and y were counted under the field of view of a light microscope. The results were as shown below.

Leaf	Number of stomata	
	Upper surface	Lower surface
x	4	12
x	20	23

a. Which of the two leaves would be expected to have a lower rate of transpiration?(1mk)

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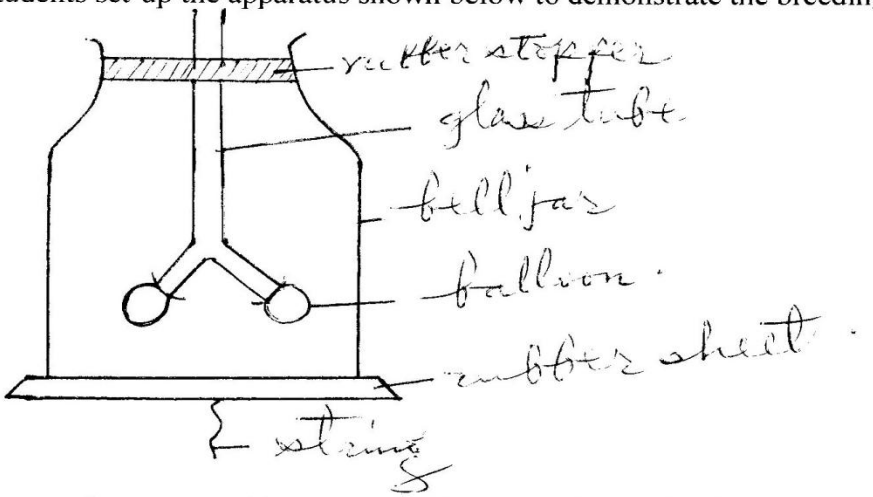
b. Give a reason for your answer in (a) above.(1mk)

25.Construct a dichotomous key for the animals listed below. Part of the key has already been constructed.Bird,Snake,Lizard,Hyena.(4mks)

a. Animal a mammal,…….. Hyena.
b. Animal not a mammal….. go to R.

26. Other than transport of substances, state two other functions of mammalian blood.(2mks)

27.Some students set-up the apparatus shown below to demonstrate the breeding mechanism in a mammal.



a. What structure in a mammal is represented by each of the following?

i. The glass tube.(1mk)

ii.The ballons.(1mk)

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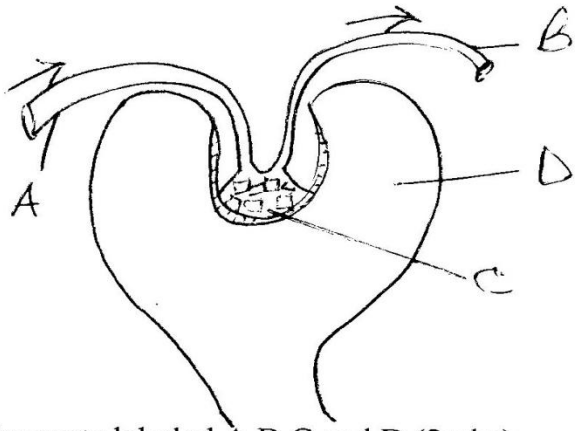
iii.The bell jar.(1mk)

28.The diagram shown below represents a part of the nephron.Use it to answer the questions that follow .



a. I)Name the parts labeled A,B,C and D.(2mks)

A-

B-

C-

D-

ii.Name the fluids found in C and D.(2mks)

C-

D-

iii.Name the process by which the fluid found in D is formed(1mk)

iv.Mention one difference in the composition of the fluids in C and D.(1mk)

29. Apart from having many features in common, state another characteristic of members of a Species (1mk)

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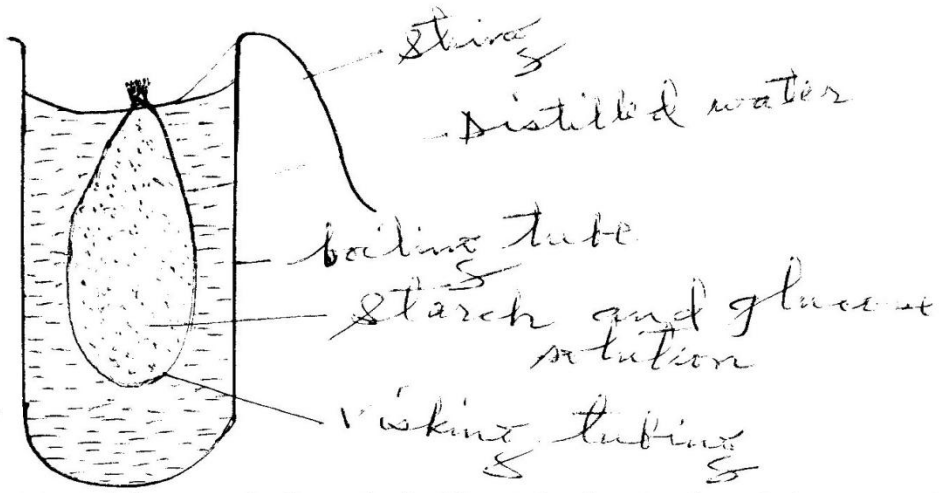
30.An experimental set-up shown below was used to investigate a certain process.



After 20minutes, a student tested the sample from the boiling tube for starch and glucose and recorded the results as shown in the table below.

	Start	After 20 minutes
Start	Absent	Absent
Glucose	Absent	Present

a. Explain the presence of glucose in the water sample.(2mks)

b. What change occurred in the volume of liquid in :

i. The boiling tube(1mk)

ii. The visking tube(1mk)

31.State and explain how respiratory surfaces are adapted for gaseous exchange.(3mks)

32.The equation below shows a process that takes place in mammals.

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Amino acids ⟶ Organic Compound + Urea

a. Identify the process(1mk)

b. State the importance of this process to a mammal.(1mk)

c. In which organ does this process take place? (1mk)

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BIOLOGY PP2 EXAM

TIME: 2 HOURS

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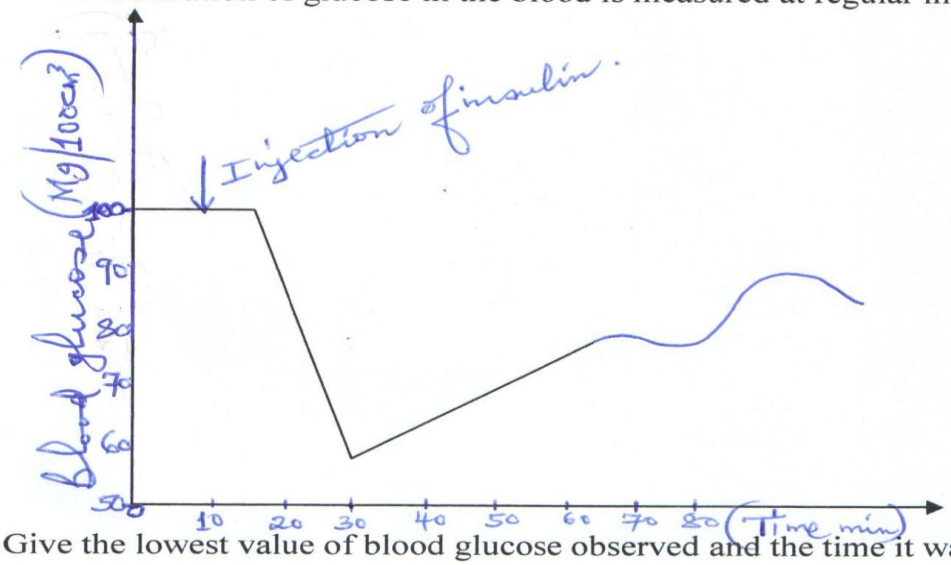
SECTION A(60MKS)

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

1. The graph below shows the effect of injecting one unit of insulin into a person. The concentration of glucose in the blood is measured at regular intervals.



a. Give the lowest value of blood glucose observed and the time it was recorded.(1mk)

b. Explain the fall in blood glucose level.(2mks)

c. Name the mechanism that led to the increase in blood glucose level when it had been falling.(1mk)

d. Name the hormone responsible for the conversion of glycogen to glucose.(½mk)

e. State the effect of each of the following in human beings.
   i. Too much glucose in the blood(1mk)

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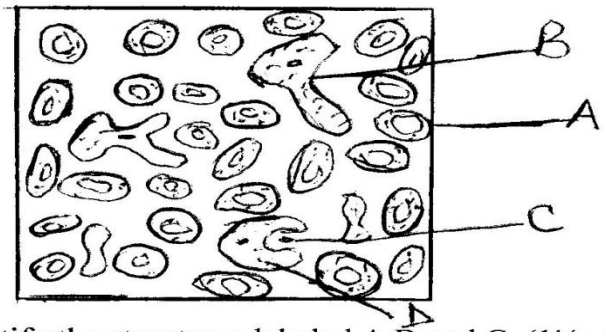
i. Very little glucosein the blood(1mk)

2. The diagram below shows a smear of blood on a microscope slide.



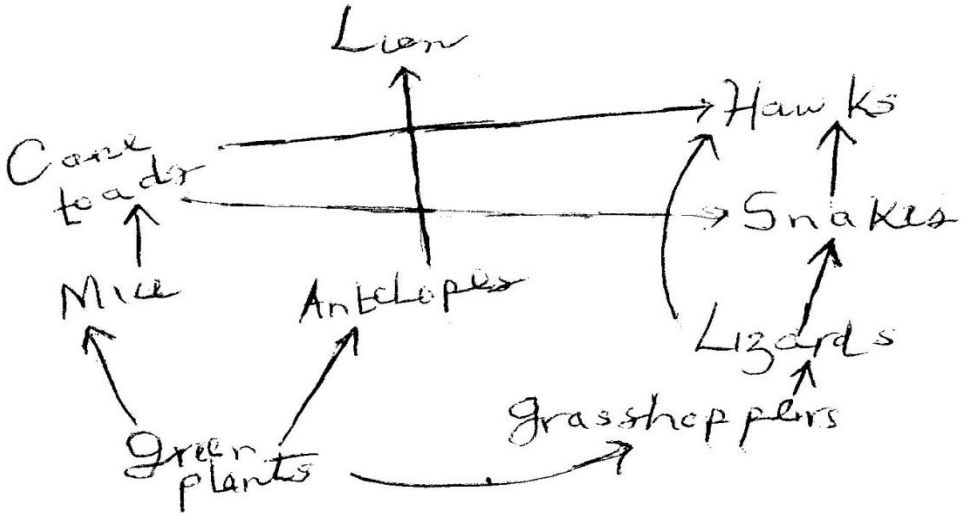
a. Identify the structures labeled A,B and C .(1½mk)
   A-
   B-
   C-

b. State the importance of the large number of structures A in the blood smear.(1mk)

c. Name the process by which structure D would engulf C and state its importance.(1½mks)

d. State one adaptation of the structure labeled A to its function.(1mk)

3. The flow chart below shows a food web in a terrestrial ecosystem.



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a. From the food web, construct a food chain with five organisms.(1mk)

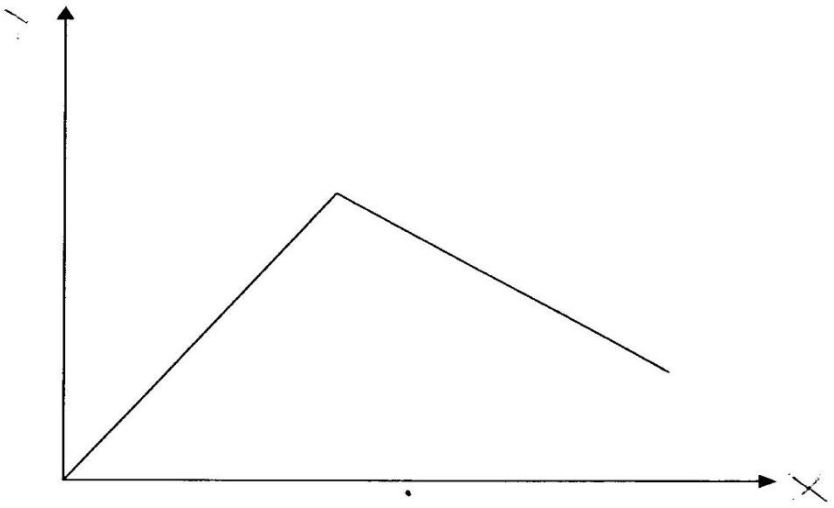
b. Name the trophic level occupied by:
   i. Hawks(½mks)

   ii. Cane toads(½mk)

c. What would happen if leopards were introduced into the ecosystem.(2mks)

4. Describe the processes that occurs in the chest cavity during inspiration.(6mks)

5. The graph below represents the effect of temperature on the rate of photosynthesis.



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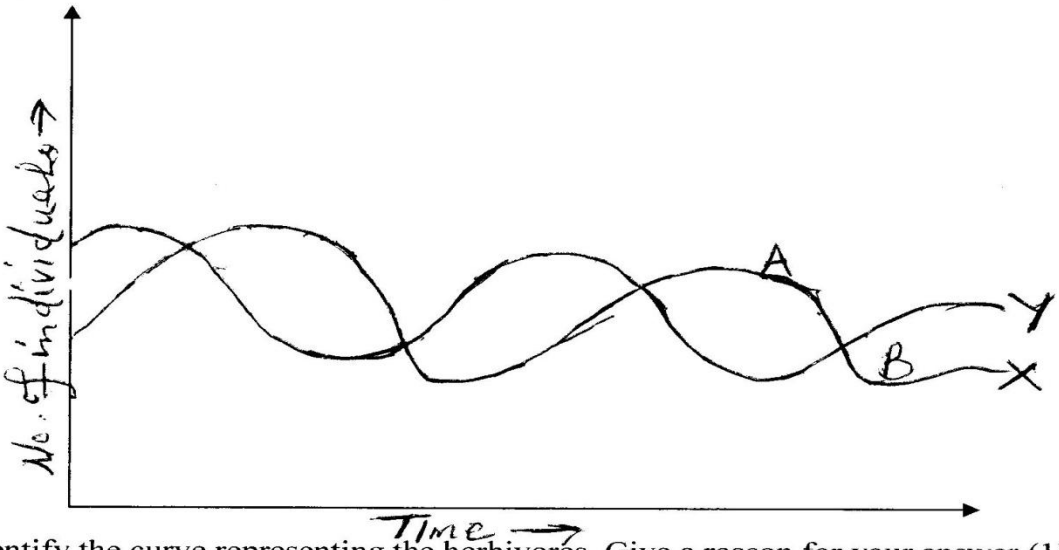
a. On the diagram, label the axes(1mk)

b. Comment on the general trend of the graph.(2mks)

c. List two other factors that may affect the shape of the graph.(2mks)

6. The graph below shows the relationship between number of herbivores and carnivores in a park.



a. Identify the curve representing the herbivores .Give a reason for your answer.(1½mk)

b. Suggest a reason for the slope of graph x between points A and B.(2mks)

c. I)Name the relationship between the two types of organisms as portrayed by the graph.(1mk)

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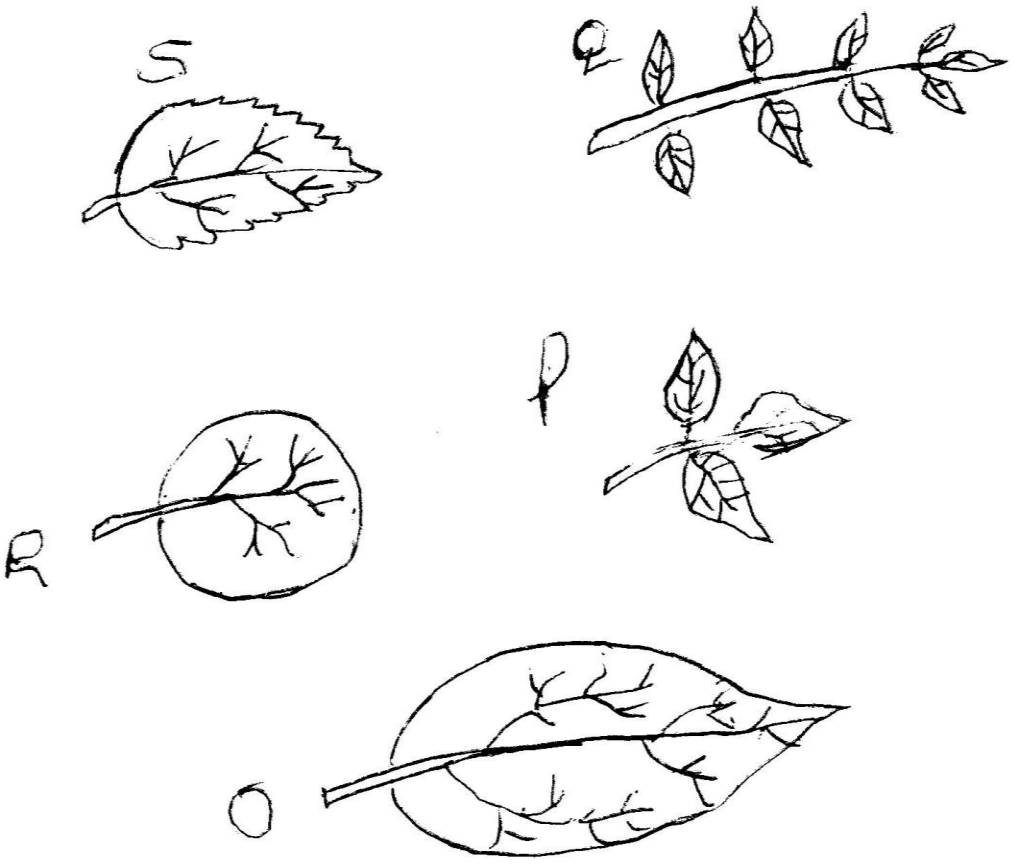
ii)State the significance of the relationship you have stated in (c)(i) above.(1mk)

d. Describe the long-term effect on the parks ecosystem if the species of the carnivores were to become extinct.(2mks)

7. Use the diagrams of leaves below to construct dichotomous keys. Identify the steps you followed to identify leaves O,P,Q and R.(12mks)



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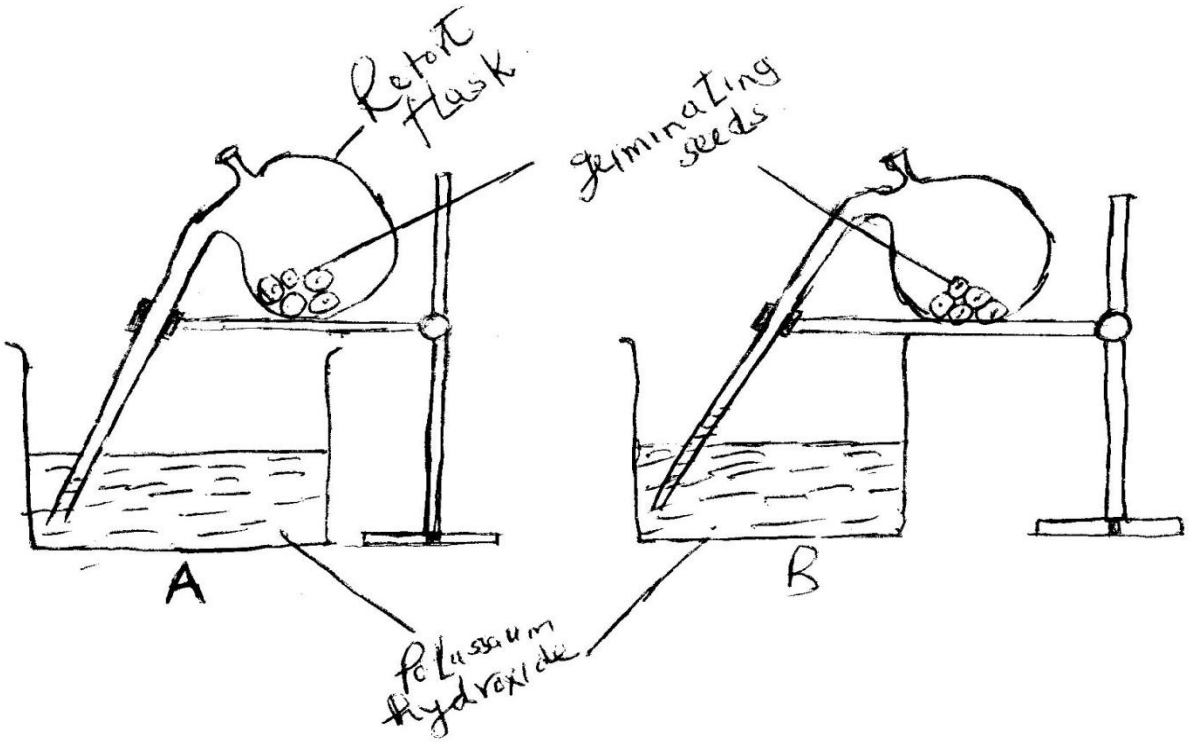
8. In an experiment, germinating pea seeds were put in a retort flask which was placed in a beaker containing potassium hydroxide solution as shown in diagram A below. At the e the experiment, the results were as shown in diagram B.



a. Suggest the aim of the experiment(1mk)

b. State the observable changes that occurred as shown in the diagram .(2mks)

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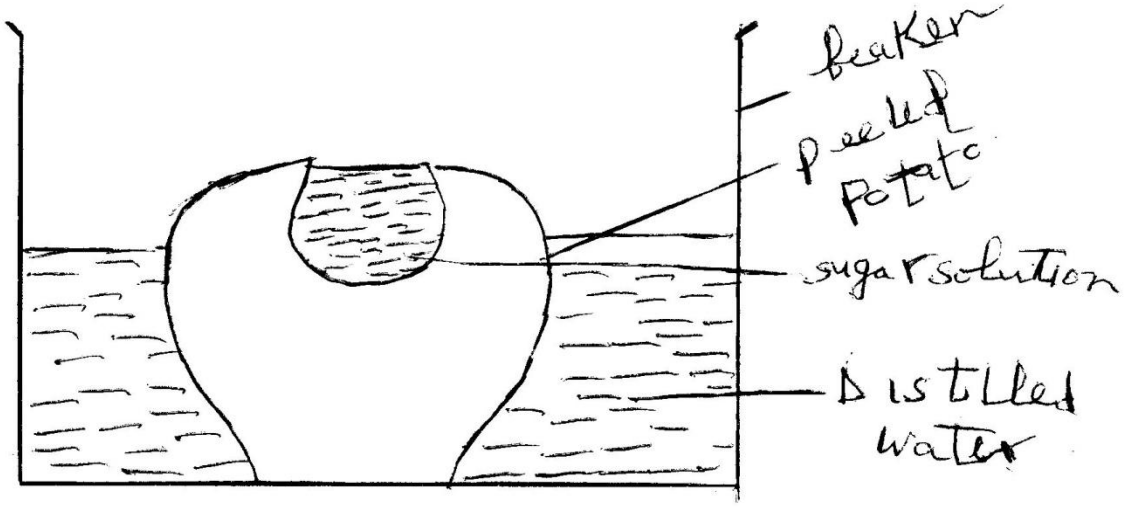
c. Account for the changes noted in (b) above.(3mks)

d. Name the chemical process taking place in the peas.(1mk)

e. How would a control for this experiment be set.(1mk)

9. A group of students set up an experiment to investigate a certain physiological process as shown in the figure below. After some time, the students observed that the level of the sugar solution had risen.



a. What physiological process was being investigated?(1mk)

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b. Account for the rise in the sugar solution in the experiment.(2mks)

c. Suggest with a reason the results that the students would obtain if they repeated the experiment using a piece of boiled potato.(1mk)

d. Explain why the cells of the potato above, would not burst when immersed in distilled water and left for some time.(2mks)

SECTION B(20MKS)- Compulsory.

10. Leaves were collected from the plant of a certain species growing in a shaded site and a plant from the same species growing in an open site. The surface area of each leaf was worked out. The results obtained are shown in the table below.

Surface area of leaves(cm^3)	
Shaded site	Open site
21	15
14	17
16	18
18	17
19	17
21	19
19	13
22	14
18	21
16	13
13	16
22	13
21	16
23	12
19	14
18	22
15	20
Mean surface area = x_1	Mean surface =x_2

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a. Calculate the mean score x_1 and x_2(2mks)

b. Suggest one reason for the differences in the mean surface areas between the leaves from the two sites. Explain your answer.(2mks)

c. Briefly state the adaptations of plant leaves to a desert habitat.(6mks)

d. The leaves of a plant exposed directly to sunlight are often thicker than leaves found in the shade. Suggest two reasons for this observation.(2mks)

e. How does the observation in (d) improve the efficiency of leaves exposed to direct sunlight?(2mks)

f. Apart from photosynthesis, state two other functions of a leaf.(2mks)

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g. State how a leaf is adapted for the functions you have stated in (f) above(3mks)

h. Some plants have rolled leaves. Explain the importance of such leaves to the plant.(1mk)

SECTION C(20MKS)

Select and answer only one questions in this section in the spaces provided.

11. a) Explain how the gills of a fish are adapted to the process of gaseous exchange.(5mks)

b)Describe the mechanism of gaseous exchange in the gills of a bony fish(15mks)

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12. Explain how the mammalian skin is adapted to perform its functions.(20mks)

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BRILLIANT STUDENTS

FORM 3 END TERM 1 SERIES 2 EXAMS

FORM 3
BIOLOGY
PAPER 231/3 PRACTICAL
TIME $1\frac{3}{4}$HOURS
INSTRUCTIONS TO CANDIDATES
Answer ALL the questions in the spaces provided.

1. You are provided with

   Spécimen X

   Solution Y

   Solution Z

a) Examine the outer and inner leaves then record your observations (4mks)

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b) Using a scalpel, cut and measure 6strips of 3cm length of the specimen X. Place 3 strips into a solution labeled Y, another 3 strips into a solution labeled Z. The experimental set up is allowed to stand for 20 minutes.

i) What observations would be made after 20 minutes when the strips are touched(2mks)

Strips in solution Y

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Strips in solution Z

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ii) Account for the observations recorded in (b) (i) above (4mks)

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2. You are provided with actual specimens of plant parts Q and K

a) (i) Using external features only identify the part of the plants (2mks)

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(ii) Give three reasons for your answer in (a) (i) above (3mks)

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b) With reasons state the class to which the plants from which the specimens were obtained belong (4mks)

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c) State two observable features that adapt specimen Q for gaseous exchange (2mks)

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d) Using the dichotomous key provided, indentify the identity of the specimens Q and K in each case show the sequence; the steps in the key that you followed to arrive at the identity. (4mks)

1. (a) Leaf parallel veined……..go to 2

(b) Leaf net veined ……go to 4

2. (a) Leaf purple in colour……..……Tradescantia spp

(b) Leaf green in colour …… …….go to 3

3. (a) Leaf with thorns on margin…… ……Kalanchoe spp

(b) Leaf smooth on the margin…… ……Zea mays

4. (a) Leaf sample…… …….go to 5

(b) Leaf compound……go to 8

5. (a) Leaf margin entire ……go to 6

(b) Leaf margin serrated……..Habiscus

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6. (a) Leaf texture rough…….go to 7

(b) Leaf texture smooth……..……..Brassica spp

7. (a) Leaf blade Lanceolate……..……..Solanum spp

(b) Leaf blade broad……Lantana camara

3. The photography below shows four specimens labeled P, Q, R and S, which were obtained from the same animal. Examine them

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a) With reasons identify P and Q (4mks)

P- ……

Reason- **……**

Q- ……

Reason- **……**

b) Based on their structure, suggest the functions of specimens P and Q (2mks)

P-

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Q-

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c) In specimen P, name the four parts labeled A to D (4mks)

A B C D

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d) Using observable features, state the differences between R and S (3mks)

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e) Explain how specimen S is adapted for its functions (2mks)

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BRILLIANT STUDENTS

FORM 3 END TERM 1 SERIES 2 EXAMS

565/1

BUSINESS STUDIES

PAPER 1

TIME: 2HRS

INSTRUCTIONS TO CANDIDATES

- Write your Name and index No in the spaces provided
- Answer all the questions
- All answers must be written in the spaces provided

TOTAL SCORE:

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ANSWER ALL THE QUESTIONS

1. Name the discipline described below that is part of the subject Business Studies (4mks)

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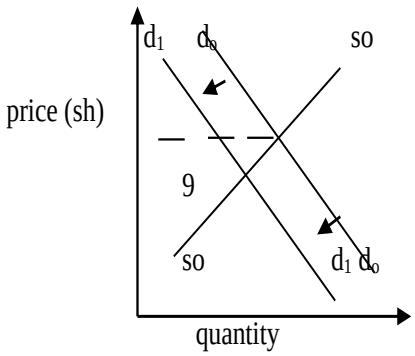
2. The diagram below shows a shift of the demand give of a commodity from dodo to d1d1. Outline any four factors that could have led to the shift (4mks)



3. Highlight four factors that may make communication in an organization to be ineffective (4mks)

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4. Give four circumstances under which a cooperative society may be dissolved (4mks)

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5. Outline any four characteristics of an imperfect competition market (4mks)

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6. Write down the meaning of the following terms as used in business (4mks)

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7. Give four benefits of electronic filing in an office (4mks)

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8. Give four reasons why business firms advertise their products (4mks)

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9. Mr Kigen is the managing director of Mbau furniture ltd. Which has a large, well equipped workshop with expensive machines. The company handles large sums of money. Outline four insurance policies that the company may have (4mks)

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10. Outline four benefits to a firm that uses modern technology in its production activities(4mks)

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11. Highlight four benefits to a retailer who uses a public warehouse to store goods (4mks)

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12. A business wishes to communicate the arrival of much waited stock of goods to its customers. Give four reasons why it might describe to write a short text message(sms) to the customers instead of a business letter (4mks)

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13. Outline any four advantages of using intermediaries in the chain of distribution (4mks)

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14. List down four assumptions of the circular flow of income in a two sector economy (4mks)

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15. Give any four challenges faced by human beings in their endevour to satisfy human wants (4mks)

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16. Highlight any four benefits that the recently launched standard gauge railway from Mombasa to Kisumu would bring to Kenya's economy (4mks)

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17. Name any four occupations that are found at the extractive level of production (4mks)

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18. Outline any four advantages of small-scale retailers over large-scale retailers (4mks)

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19. Highlight any four methods used to determine prices of goods and services in the economy (4mks)

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20. Outline any four challenges that entrepreneurs face in Kenya (4mks)

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21. Highlight four characteristics of free resources (4mks)

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22. Give four advantages of self employment (4mks)

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23. Outline any four duties of an office receptionist (4mks)

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24. Name the types of advertising that are described below (4mks)

i. Brand name and other features of the brand features more prominently – ……

ii. Advertising that aims at popularizing a new product –……..

iii. Advertising that popularizes the business organization –……

iv. Used by organization that deals with similar products to convince potential customers to buy their products and not the other – ……

25. Highlight any characteristics of subsistence production in Kenya (4mks)

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BRILLIANT STUDENTS

FORM 3 END TERM 1 SERIES 2 EXAMS

565/2

BUSINESS STUDIES

PAPER 2

TIME: 2 ½ HRS

INSTRUCTIONS TO CANDIDATES

- This paper consists of six questions
- All questions carry equal marks
- Answer any five questions

TOTAL SCORE

This paper consist of 2 printed pages candidates should check the questions paper to ascertain that all the pages are printed as indicated and that no questions are missing

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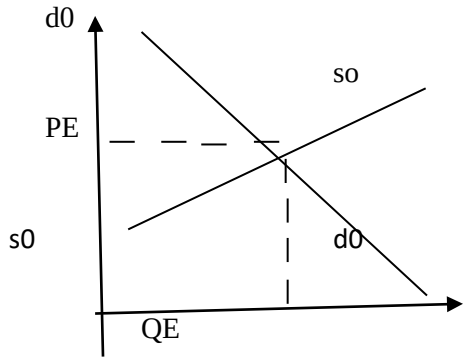
1. a) Outline any five differences between a public limited company and a public corporation (10mks)

b) Explain five factors that influence the location of business enterprises (10mks)

2. a) The diagram below shows the equilibrium price and quantity of commodity A which is produced jointly with commodity B.

do do-demand curve
so so - supply curve
PE -Equilibrium point
QE -Equilibrium quantity



i. On the diagram show the effect of a decrease of tax charged on commodity B on the equi8librium price and quantity of commodity A (4mks)

ii. Explain the effect of a decrease of tax charged on commodity B on the equilibrium price and quantity of commodity A (6mks)

b) Bidco Kenya Ltd. is a manufacturer of soap and edible oil products. Highlight five reasons why the company chooses to distribute its products through wholesalers rather than selling directly to consumers (10mks)

3.a) Explain any four ways in which the Kenya government involves itself in government activities in the country (10mks)

b) Discuss five ways which county governments in Kenya can use to attract entrepreneurs in their areas. (10mks)

4. a) Kenya association of manufactures (KMA) brings Kenyan manufacturers together to solve problems faced by the manufacturers as well as consumers. Discuss five measures taken by the manufacturers to protect consumers (10mks)

b) Discuss five importances of natural resources in a country (10mks)

5. a) A recent economic survey showed a very big gap between the rich and the poor in Kenya Explain any five factors that could have led to this disparity in income distribution among individuals in Kenya (10mks)

b) Highlight any five reasons why there are so many small-scale business firms in Kenya despite the economies of scale enjoyed by large firms (10mks)

6. a) Discuss any five circumstances under which an insurer may not compensate the insured in the event of occurrence of a loss (10mks)

b) Explain any five functions of marketing boards in Kenya (10mks)

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BRILLIANT STUDENTS

FORM 3 END TERM 1 SERIES 2 EXAMS

CHEMISTRY
THEORY
PAPER 1
FORM III END OF TERM 1

1. Name another gas which is used with oxygen in welding [1 Mk]

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……..…

2. a. write the electronic configuration of calcium (atomic number 20) and magnesium (atomic number 12)

Calcium …….. [½ Mk]

Magnesium…….. [½ Mk]

b. Why is calcium more reactive than magnesium? [2 Mks]

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3. The table below shows the relative atomic masses and the percentage abundance of the isotopes T_1 and T_2 of element T

	RAM	% abundance
T_1	62.93	69.09
T_2	64.93	30.91

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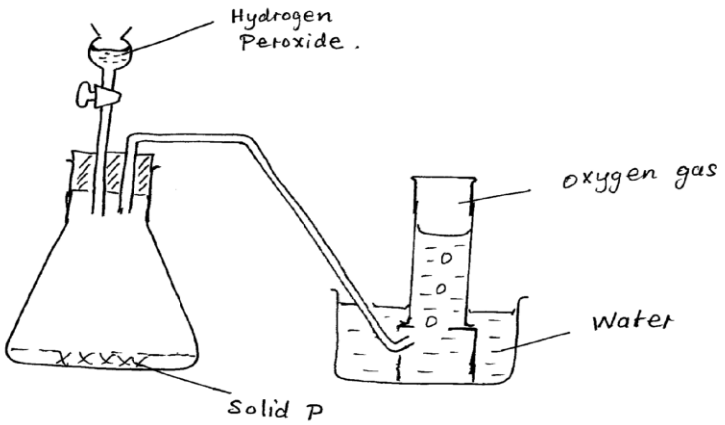
Calculate the relative atomic mass of element T [3 mks]

4. The diagram below is a set-up for the laboratory preparation of oxygen gas.



a. Name solid P [1 mk]

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b. Write an equation for the reaction that takes place in the conical flask [1 mk]

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c. Give two commercial uses of oxygen [2 mks]

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5. State two reasons why hydrogen is not commonly used as a fuel [2 mks]

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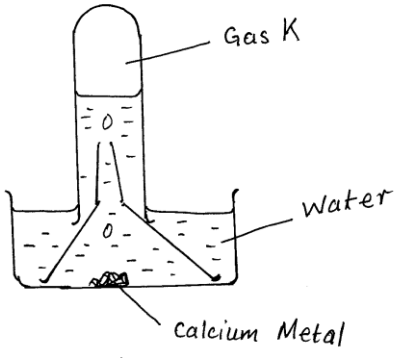
6. The figure shows a set-up by a form three student to prepare a certain gas



a. Write an equation for the formation of gas K [1 mk]

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b. Give one use of gas K in the industries [1 mk]

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c. Give one use of the resulting solution after the metal has reacted [1 mk]

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7. Draw a dot and cross diagram showing the bonding in a molecule of calcium oxide. Name the type of bond. [3 mks]

8. When 0.288g of an oxide of metal M was reduced using suitable reducing agent, 0.256 of pure metal was formed. Determine the empirical formula of the oxide of the metal M. [M=64 O=16] [4 mks]

9. X+ is an ion with electronic configuration 2,8,8. Identify element X [1 mk]

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10. 20g of solid sodium hydroxide were dissolved in distilled water and made to 400cm^3. 30 cm^3 of this solution required 27 cm^3 of dilute sulphuric (iv) acid for complete reaction. [Na=23 O=16 H=1]

Determine

i. Moles of sodium hydroxide contained in 30 cm^3 of solution [2 mks]

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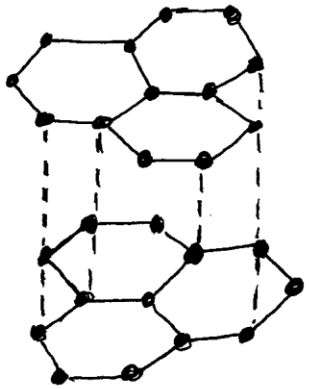
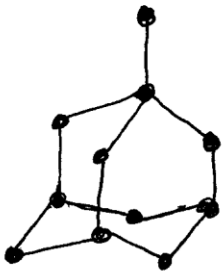
ii.Moles of sulphuric (iv) acid that reacted [2 mks]

(iii) Concentration of the sulphuric (iv) acid in moles per litre [2 mks]

11. The diagram shows the structures of two allotropes of carbon. Study them and answer the questions that follow.



A



B

a. Name allotrope A and B [2 mks]

A……..

B……

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b. Give two uses of allotrope B [2 mks]

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c. Which allotrope conducts electricity? Explain. [2 mks]

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12. An oxide of element F has the formula F_2O_5

a. Determine the oxidation state of F. [1 mk]

b. In which group of the periodic table is element F? [1 mk]

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13. Explain how you would obtain solid sodium carbonate from a mixture of lead II carbonate and sodium carbonate. [3 mks]

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14. Give two properties of aluminum that makes it very suitable for making cooking utensils [2 mks]

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15. Write down an ionic equation for the reaction between dilute hydrochloric acid and calcium carbonate [3 mks]

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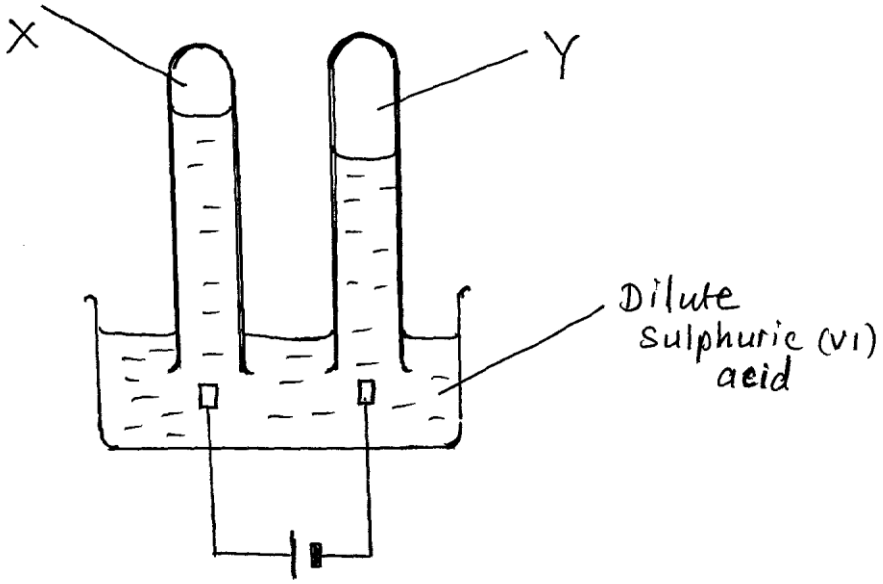
16. The diagram shows electric current passing through dilute sulphuric (iv)acid



a. On the diagram identify the cathode and the anode [2 mks]

b. Identify substances X and Y [2 mks]

X ……[1 mk]

Y ……[1 mk]

17. State and explain the change in mass that occur when following substances are separately heated in open crucibles [4 mks]

a. Copper metal

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b. Copper II nitrate

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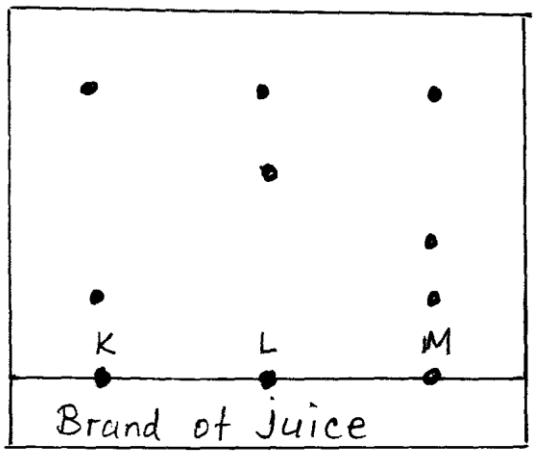
18. The diagram below represents a paper chromatograph for three brands of juices suspected to contain banned food colourings



The result showed presence of banned food colourings in L and M only

a. On the diagram

i. Circle the spots which show the banned colourings [2 mks]

ii. Show the solvent front [1 mk]

b. On the same diagram indicate and label the baseline [1 mk]

19. Determine the number of sodium ions contained in $25cm^3$ of 0.5M sodium carbonate solution [$a=6.023 \times 10^{23}$] [3 mks]

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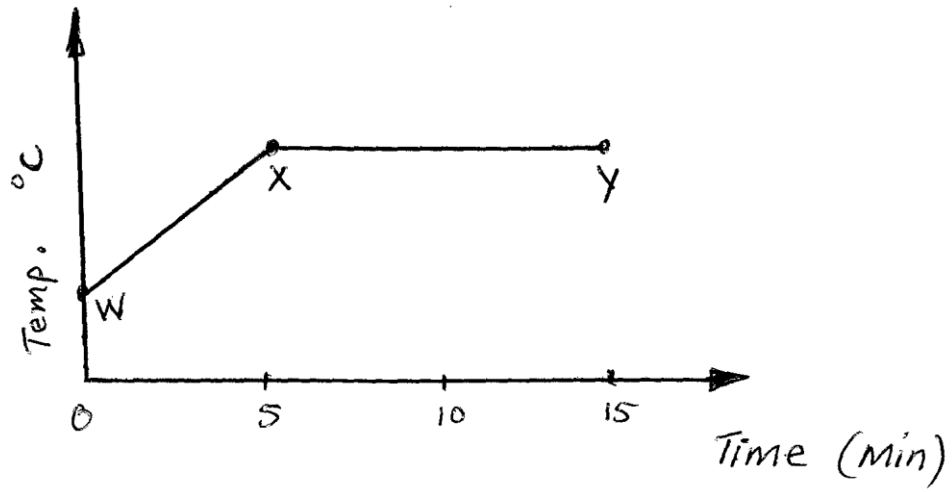
20. The graph below shows a curve obtained when water at 20°C was heated for 15 mins.



a. What happens to the water molecules between points W and X [1 mk]

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b. In which part of the curve does a change of state occur? [1 mk]

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c. Explain why the temperature does not rise between points X and Y [1 mk]

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21. Write down the formula of the following compounds

i.Potassium manganate vii……[1mk]

ii.Aluminium oxide ……[1mk]

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iii.Iron III chloride ……..[1mk]

22. Write balanced equations for the following reactions

a. Reaction between sodium and excess oxygen [1mk]

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b. [1mk]

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a. Reaction between Zinc and hydrochloric acid [1mk]

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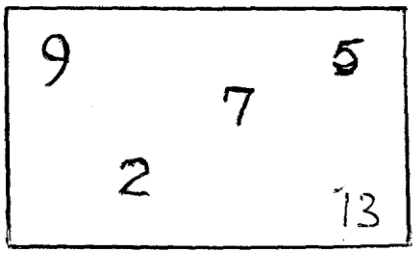
23. The diagram shows PH values for several substances.



Choose the likely PH value for,

i.Dilute Hydrochloric acid ……..[1mk]

ii.Calcium hydroxide……..[1mk]

iii.Sodium hydroxide ……..[1mk]

iv.Lemon juice……..[1mk]

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24. Briefly outline how you would obtain ethanol from a mixture of ethanol and water. [3mks]

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25. (a) What is rust? [1mkl]

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(b) Give two advantages of rusting.

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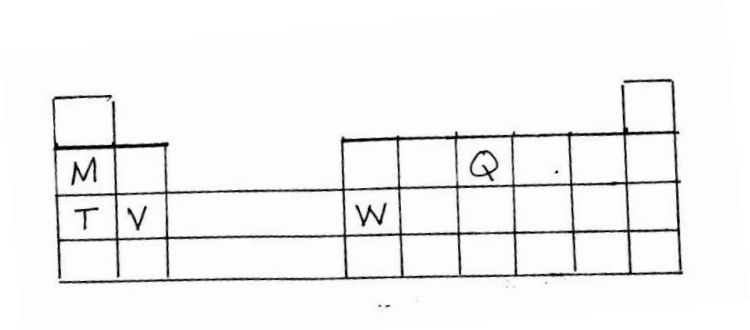
BRILLIANT STUDENTS

FORM 3 END TERM 1 SERIES 2 EXAMS

CHEMISTRY P 2 FORM III
TIME: 2 ½ HOURS:

INSTRUCTIONS: Answer all questions in the space provided.

Q 1. The diagram below represents part of the periodic table use it to answer the questions that follow.



a) Write the electronic management for the stable ion formed by W (1mk)

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b) Write the equation for the reaction between V and Q (1 mk)

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c) How do we ionization energies of the elements M and T compare. Explain (2mks)

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Q 2. 60 cm^3 of oxygen diffuses through a porous pot in 50 seconds. How long would it take 60 cm^3 of oxygen gas diffuses through a porous pot in 50sec.How long would it take 60cm^3 of Sulphur (iv) oxide to diffuse through the same pot under the same conditions? (4mks)

Q 3. Give 2 reasons why helium is used in weathers ballons (2mks)

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Q 4. State the types of change that take place in each of the following situations

a)Burning a piece of charcoal **……**(1mk)

b) Heating copper (ii) carbonate strongly**……**(1mk)

c) Heating Zinc oxide strongly **……(**1mk)

Q 5. In a experiment to determine the percentage of purity of a sample of sodium carbonate, 2.15g of the sample reached completely with 40cm^3 of 0.5m sulphuric (iv) acid

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i)Calculate the number of moles of Sodium Carbonate that reacted (2mks)

ii)Determine the percentage of Sodium Carbonate in the sample (Na=23,C=12,0=16 (3MK)

iii) Name two industrial uses of Sodium Carbonate (2mks)

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Q 6 A certain mass of gas occupies 0.15dm^3 at 20c and 98,648.5pa, Calculate it volume at 101325pa and 0^0c (3mks)

Q 7 a) Explain why aluminum is a better conductor of electricity than Sodium (2mks)

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b) State one property of aluminum that makes it suitable for power transmission cables (1mk)

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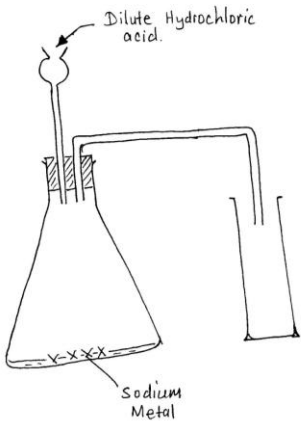
Q 8 The diagram below shows set-up for preparing hydrogen gas by a Form 3 Student .



a)Identify three mistakes with the set-up (3mks)

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b) On the diagram make suitable modification to solve the mistakes in(a) above (3mks)

c) What is the test for hydrogen gas (1mk)

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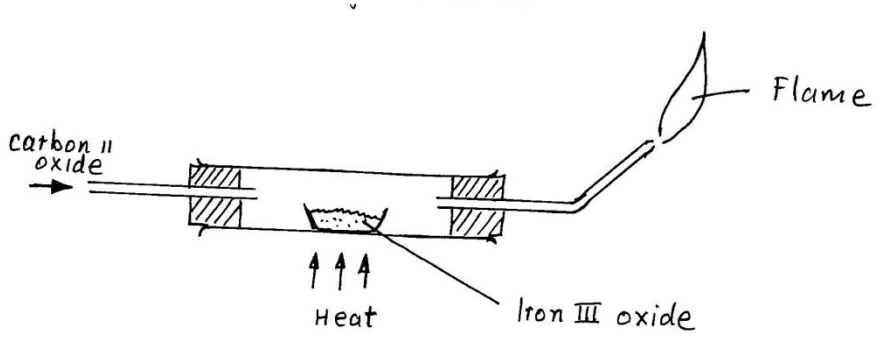
Q 9 Carbon Oxide gas was passed over heated iron III Oxide as shown in the diagram below



a) Give the observation made in the combustion tube (1mk)

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b) Write the equations for the reaction which take place in the combustion tube (1mk)

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c) Which property of carbon II Oxide as demonstrated by the experiment (1mk)

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Q 10. State and explain the function of tartaric acid in baking powder (2mks)

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Q 11. a) State Boyle's Law (1mk)

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b) 300cm^3 of a gas at 800mm Hg was compressed to 200mm Hg pressure at constant temperature. Determine the new volume (2mks)

Q 12. Explain why is not suitable to have a

a) Jiko with burning charcoal in a closed room (2mks)

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b) Which gas is contained in tizzy drinks? 1mk)

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c) Write an equation for the reactions on the gas contained in dizzy drink and water (1mk)

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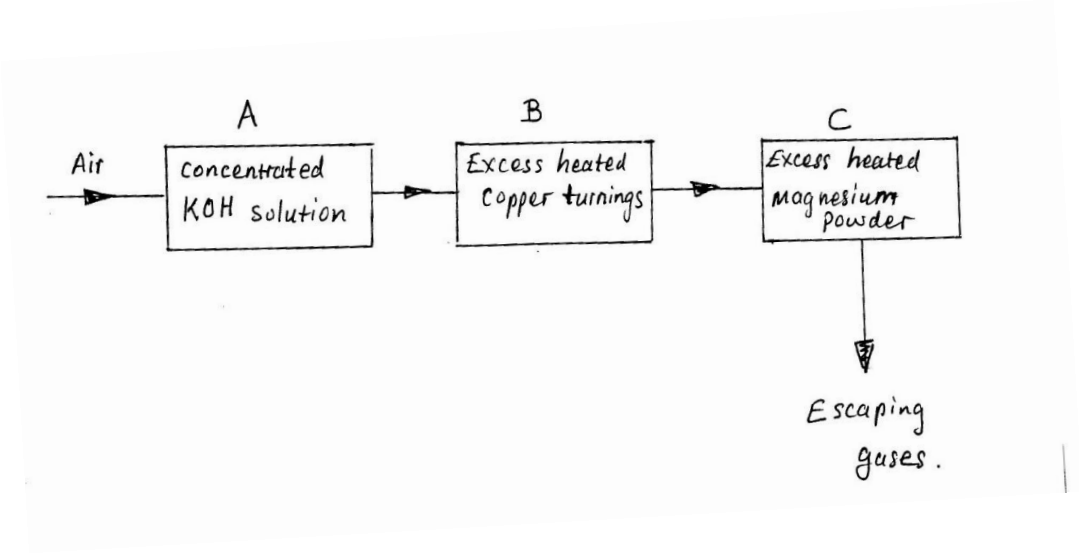
Q 13. Air was passed through several reagents as shown in the flow chart below



a) Identify substances removed from chambers A and B then

A …… (1mk)

B…… (1mk)

b) Write an equation for the reaction which take place in the chamber with magnesium powder (1mk)

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……..…

c)Name one gas which escapes from the chamber containing heated magnesium powder.

Give a reason for your answer (2mks)

Gas ……

Reason

……

……

……

……..…

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Q 14. When potassium Nitrate is heated, it produces potassium Nitrate and gas X

a) Identify gas X (1mk)

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b) Name the type of reaction undergone by the potassium Nitrate (1mk)

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Q 15. Write a balanced equation for the reaction between Magnesium and Steam (1mk)

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Q 16. When Chlorine gas was bubbled through water the resulting solution act as a bleaching agent

a) Explain how the resulting solution act as a bleaching agent (2mks)

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b) Using a neat diagram show how chlorine gas is collected in the laboratory (2mks)

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Q 17. Study the information in the table below and answer the questions that follow: The letters do not represent the actual symbol of the element).

Element.	Electronic configuration	Ionisation energy $KJ\ mol^{-1}$
P	2, 1	519
Q	2, 8, 1	494
R	2, 8, 8, 1	418

a) What is the general name given to the group in which element P, Q and R belong? (1mk)

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b) What is meant by ionisation energy (1mk)

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c) Explain why Element P has the highest ionisation energy (2mk)

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d)When a piece of element Q is placed on water it melts and a hissing sound is produced as it moves on the surface of the water .Explain this observation (3mks)

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e) Write an equation for the reaction between elements Q and water (1mk)

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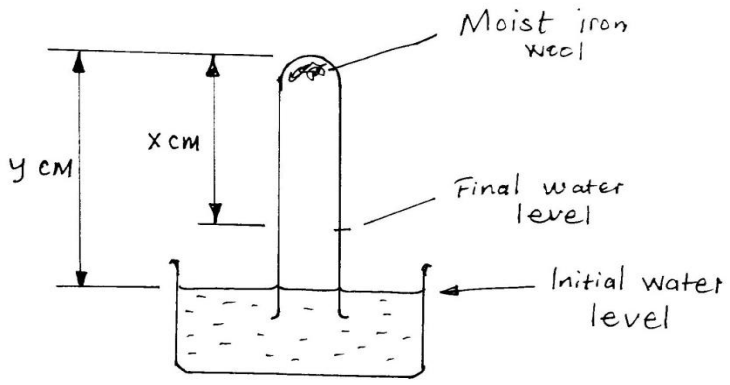
Q 18 Some moist iron wool was placed in a test tube and the tube inverted and placed in a beaker containing water. The apparatus was left for one week .It was observed that the iron wool had rusted and the water level had raisen.No further change took place when the set-up was left for more days even though not all the iron rusted.



a) Explain whether rusting is a chemical or a physical change (2mks)

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c) Write an expression for an approximate percentage of air used up (1mk)

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d) What would be the effect on the level of the water if a larger piece of iron wool was used (2mk)

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e) State the similarities between rusting and combustion (2mks)

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Q 19 The table below gives the number of protons and neutrons in element G,H,I and J

Element	G	H	I	J
Number of protons	3	17	19	19
Number of neutrons	4	20	18	22

a) Which atoms isotopes of the same element? (2mks)

……

……

……

c) Which atoms have the same mass number (2mks)

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f) Write formula of the compound formed between G and H (1mk)

……

……..…

Q 20 Give the valency of each of the elements (1mk)

or radical in the following chemical compounds. (3mks)

i) Ca(PO4)2

……

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ii) Mg3N2

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iii) NaOH

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BRILLIANT STUDENTS

FORM 3 END TERM 1 SERIES 2 EXAMS

233/3
CHEMISTRY
FORM THREE
PAPER 3 / PRACTICAL
2¼ HOURS

INSTRUCTIONS TO CANDIDATES

- *Answer all questions in the spaces provided on the question paper*
- *You are not allowed to start working with the apparatus for the 1st fifteen minutes of the time allowed for this paper.This time is to enable you read through the question paper and make sure you have all the chemicals and the apparatus that you may need.*
- *All working must be clearly shown where necessary.*
- *Mathematical tables and electronic calculators may be used*

For Examiners Use Only

Question	Maximum score	Candidate's Score
1	20	
2	11	
3	09	
Total	40	

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QUESTION 1 (**20 MARKS)**

You are provided with:

- Solution H which is potassium manganate (VII) solution.
- Solution X which is dilute solution of hydrogen peroxide.
- Solution N which is 0.02M ammonium iron (II) sulphate solution.

You are required to:

i) Standardize solution H using solution N.

ii) Use the standardized solution H to determine the concentration of solution X.

Procedure 1

1. Fill the burette with solution H.
2. Pipette 25cm^3 of solution N and transfer it into a conical flask.
3. Titrate solution N against solution H until a permanent pink colour just appears.
4. Record the results in table 1 below.
5. Repeat the titration two more times to complete the table.

a) Table 1

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

(3mks)

b) Determine the average volume of solution H used. (1mk)

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c) Calculate;

i) The number of moles of solution N in $25cm^3$. (2mks)

ii) The number of moles of solution H that reacted given the equation for the reaction is (2mks)

$$MnO_4^-{}_{(aq)} + 5Fe^{2+}{}_{(aq)} + 8H^+{}_{(aq)} \longrightarrow Mn^{2+}{}_{(aq)} + 5\,Fe^{3+}{}_{(aq)} + 4H_2O_{(l)}$$

iii) The concentration of H in moles per litre. (2mks)

Procedure II

1. Fill the burette with solution H.
2. Using a clean pipette, place $25cm^3$ of solution X into a conical flask.
3. Add $10cm^3$ of 1Msulphuric acid and shake well.
4. Titrate using solution H until a permanent pink colour just appears.
5. Record the reading in table II below.
6. Repeat the titration two more times to complete the table.

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d) Table II

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

(3mks)

e) Determine the average volume of solution H used. (1mk)

f) Calculate;

i) The number of moles of solution H used. (2mks)

ii) The number of moles of solution X in $25cm^3$ if the equation for the reaction is;

(2mks)

$$2MnO_4^{2-}{}_{(aq)} + 6H^+{}_{(aq)} + 5H_2O_{2(l)} \longrightarrow 2Mn^{2+}{}_{(aq)} + 8H_2O_{(l)} + 5O_{2(g)}$$

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iii) The concentration of solution X in moles per litre. (2mks)

QUESTION 2 (**11 MARKS)**

You are provided with the following;

- Solid Y
- Sodium chloride solution
- Potassium chloride solution
- Calcium chloride solution

You are required to identify the cations present in solid Y.

The following notes will assist in making the correct observations and inferences.

Cations are positively charged ions, majority of which are metal ions. Cations can be tested using one or a combination of the following methods;

a) Flame tests

- Some cations burn with flames that have distinct colours.

b) Carrying out precipitation reactions using the following;

i) Sodium hydroxide

ii) Aqueous ammonia

iii) Anions such as CO_3^{2-}, SO_4^{2-}, Cl^- and SO_3^{2-}

Precipitates are formed as a result of formation of insoluble salts or metal hydroxides. The colour of the precipitate should be noted down when writing the observations. Incase a white precipitate is expected and not observed, then one should record that there is no white precipitate but NOT no observation.

It is important to note that hydroxide of zinc, lead and aluminium are amphoteric thus can react with sodium hydroxide which is alkaline. Another thing to note is that zinc hydroxide and copper (II) hydroxide dissolve in excess aqueous ammonia due to formation of complex ions.

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Procedure

Carry out the tests below and record your observations and inferences in the spaces provided.

a) Place all of the solid Y provided in a boiling tube. Add about $10cm^3$ of distilled water and shake well. Use about $2cm^3$ of the resulting solution to carry out tests (i)to (iii) below. Reserve the remaining portion for test (b).

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

iTo the first portion, add aqueous sodium hydroxide dropwise until in excess.

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

i) To the second portion, add aqueous ammonia dropwise until in excess.

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

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ii) To the third portion, add about $1cm^3$ sodium chloride solution.

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

b) Procedure

Clean a glass rod and rinse it with distilled water. Dry the glass rod on a Bunsen burner flame. Allow it to cool. Dip it in a little sodium chloride solution and burn it strongly with a non-luminous Bunsen burner flame. Note the colour of the flame and record it in table III below. Clean the spatula thoroughly and repeat the procedure using each of the other solutions and complete table III.

i) Table III

Solution	**Colour of flame**
Sodium chloride	
Potassium chloride	
Calcium chloride	
Solution Y	

(2mks)

ii) From table III, suggest the cation that could be present in solid Y_____ (1mk)

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QUESTION 3 (**9 MARKS)**

You are provided with solid F.

Procedure

Carry out the tests below using solid F. write the observations and inferences in the spaces provided.

a) Place all solid F in a dry boiling tube. Add about $15cm^3$ of distilled water and shake thoroughly. Use $2cm^3$ portions of the solution for tests (b) to (e) below.

Observations	**Inferences**
(1/2mk)	(1/2mk)

b) To the first portion add two drops of universal indicator and record the color and PH.

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

c) To the second portion add a spatula and full of sodium carbonate.

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

d) To the third portion add two drops of bromine water.

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

e) To the fourth add three drops of acidified potassium manganate (VII)

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

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BRILLIANT STUDENTS

FORM 3 END TERM 1 SERIES 2 EXAMS

PAPER 1 ANSWER ANY FIVE QUESTION S IN THE ANSWER SHEET PROVIDED

1. a) Outline seven activities performed by God in the second biblical account of creation (7mks)

b) Give six similarities between six in the bible and the Traditional African understanding of the evil (6mks)

c) In what ways is the church fighting evil in the society (7mks)

2a) Explain how Abraham demonstrated his faith in God (6mks)

b) Outline the role played by Moses in the history of the Israelites.(8mks)

c) What do Christians learn about God from the ten plaques. (6mks)

3a) Give reasons against theocratic rule in Israel (7mks)

b) Explain seven challenges faced by King David in Israel.(7mk)

c) Identify six reasons why a leader may be rejected in the society today. (6mks)

4 a) state four reasons why God's true prophets were putting their prophecies into writing.(4mks)

b) Give four characteristics for false prophets as depicted in the Old Testament. (6mks)

c) Write down five differences between the traditional prophets and the Old Testament prophets. (10mks)

5. a) Describe the call of Amos. (6mks)

b) Identify the social injustices condemned by prophet Amos. (6mks)

c) Explain four factors which hinder a Christian from helping the needy (8mks)

6. a) Why are taboos important in traditional African communities. (6mks)

b) List 8 ways in which member of the traditional African communities helped the bereaved families (8mks)

c) Identify 6 steps taken by the church to assist orphans. (6mks)

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BRILLIANT STUDENTS

FORM 3 END TERM 1 SERIES 2 EXAMS

FORM 3 CRE

PAPER 2

ANSWER ANY FIVE QUESTION S IN THE ANSWER SHEET PROVIDED

1. With reference to Luke's gospels, explain eight ways in which Jesus fulfilled the Old Testament prophesies about the Messiah. (8mks)

b) Explain What Zachariah revealed about John the Baptist in the Benedict sin Luke 1:68-80 (6mks)

c) Give reasons why then birth of a child is celebrated in the modern society? (6mks)

2 a) Give reasons why Jesus was rejected in Nazareth (8mks)

b) Describe the healing of the paralytic (lk 5:17-26) (7mks)

c) Give reasons why a church leader may be rejected today (5mks)

3 a) Narrate the parable of the widow and the unjust judge (lk18:1-8) (6mks)

b) Explain Jesus teaching on prayer (8mks)

c) Give the importance of prayers in a Christian life today (6mks)

4a) Explain actions taken by Jewish leaders to ensure that Jesus was put to death (8mks)

b) Give evidence to show that Jesus resurrected (6mks)

c) What is the importance of Jesus resurrection to Christian today? (6mks)_

5a) Explain the New Testament teaching s on the unity of the believers as expressed in the bride (8mks)

b) Identify causes of disunity in the early church (6mks)

c) Explain how church disciplines those who cause disunity in to church today (6mks)

6 a) Outline seven teachings about Jesus from peters message on the day of Pentecost (7mks)

b) Outline the characteristics of love as taught by St.Paul in 1corinthian 13 (7mks)

c) State activities of the church in Kenya which show that the Holy Spirit is working among them. (6 marks)

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BRILLIANT STUDENTS

FORM 3 END TERM 1 SERIES 2 EXAMS

ENGLISH 101

FORM 3

K.C.S.E

101/1 ENGLISH

TIME: 2HRS

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ENGLISH PAPER 1

I. Imagine that it is your first day in a new school. Write an entry in your journal indicating the things that surprised you, those that scared you and those that made you happy. (20 marks)

II. Cloze test

The new constitution has bestowed the Supreme Court all_____ , role of arbitrating the _____ arising out of presidential elections. The court currently has a golden opportunity to clearly_____ that it is worth the confidence of Kenyans Kenya's are_____ with bated breath to see the _____making a determination on the _____lodged by the CORD Alliance in an_____ and completely impartial manner that will_____ all the parties. Indeed, the_____of Kenyans are varied and either way, the court's _____ will be interpreted as either a win or loss for jubilee or CORD alliance.

ORAL SKILLS (30marks)

(a). Read the following poem and answer the questions below:-

I want to Die While You Love Me

I want to die while you love me
While yet you hold me fair
While laughter lies upon my lips
And lights are in my hair

I want to die while you love me
I could not bear to see
The glory of this perfect day
Grows dim- or crease to be

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I want to die while you love
Oh! Who would care to live
Till love has nothing more to ask
And nothing more to give.

I want to die while you love me
And bear to that still bed
Your kisses turbulent unspent
To warm me when I'm dead

Questions

i) Construct the rhyme scheme of this poem.

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……..…

ii) Which pair of words rhyme in this poem?

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……..…

iii) Which words would you stress in the first and second line and why?

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iv) What is the effect of repetition in this poem?

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v) How would you perform the first two lines?

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……..……

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……..…

vi) How would you say the last stanza.

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……..……

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……..…

b) Explain what each of the following non-verbal cues mean in a conversation

i) Frowning **……..**

ii) Pacing up and down **……**

iii) Shrugging shoulders **……**

iv) Winking **……**

v) Raising both hands up the sky **……..**

c) Identify any four pairs of words in the following list that have the same vowel sounds;

Mad	eat	full	lap
Cat	it	mud	bet
Cut	look	feat	if
Love	boot	fit	
Beat	pool	further	
Lit	father	hut	

d) Explain how you would avoid speaking in monotonous manner to make your listeners attentive. (6 mks)

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e) The following words have been misspelt. Rewrite them correctly

i) The prefect was <u>privileged</u> to have special diet.

……

……..…

ii) The students managed to rescue their colleague's from the burning <u>dormitory.</u>

……

……..…

iii) The <u>professor</u> managed to convince the crowd to vote for him.

……

……..…

iv) The <u>collage</u> will close for one week to allow for repairs.

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……..…

v) Lack of proper <u>maintenance</u> on any machine makes it to break down frequently.

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FORM 3 END TERM 1 SERIES 2 EXAMS

ENGLISH PAPER 2

FORM 3

TIME 2hrs 30 mins

Attempt all the questions

1. ***Read the passage*** below ***and answer the questions that follow.*** **(20mks)**

One good thing about music, Bob Marley sang in Trenchtown Rock, is when it hits you, you feel no pain – but for South Africa's apartheid regime, the opposite was true as it felt the wrath of musicians who composed protest songs against its oppressive policies.

During the apartheid years, music was more than a solace – it was a "weapon of struggle" used against the aggressor whose only recourse was to ban it from the airwaves, but never from the hearts of the millions who were oppressed.

Music had always been used to soothe souls during sufferance and it is said that it is slavery that gave birth to (heavy metal) rock when slaves used their shackles or tools to make music either to entertain themselves or to irk their captors.

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The separatist system that saw people like Nelson Mandela and other black South African leaders jailed for dissidence gave rise to more protest music than ever before.

And South Africa's anti-apartheid musicians were so influential that their songs were not only banned, but they were also forced into exile. Mandela believes that these protest songs, together with those of non-South Africans, played a significant role in the collapse of apartheid and, indeed, his February 11, 1990 release from Robben Island.

"Artistes reach areas far beyond the reach of politicians. Art,especially entertainment and music, is understood by everybody, and lifts the spirits and the morale of those who hear it," Mandela admitted after his release.

South Africa's musicians like Hugh Masekela and the MirimaMakeba started the protest campaign back in the late '50s and early '60s after leaving South Africa for the United States, where they used music to highlight the desperate situation of their compatriots who were living under oppressive rule in the townships back home.

The Musical campaigns against apartheid intensified internationally throughout the'70s and '80s and saw the composition, production and performance of many a political song by musicians who had never even set foot in African but were inspired to join the anti-apartheid bandwagon- with some, like Paul Simon, even stirring controversy when he was accused of breaking the cultural boycott against South Africa by touring the country and utilizing contributions from local acts.

But the beat never stopped. In the UK, The Specials released Free Nelson Mandela while in the US, Gil Scott-Heron and Brian Jackson released protest classic Johannesburg off the album From South Africa to South Carolina. Little Steven (and the Disciples of Soul), together with Artists United Against Apartheid, conceived and produced Sun City Resort in one of South Africa's so-called homelands where international Musical concerts were frequently held.

Adopted from Sunday Nation December 8th 2013.

(a) What type of music is the author referring to in the passage (1 mark)

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(b) According to the passage what were the contributions of the anti-apartheid musicians.(2 marks)

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(c) Who are the international singers who joined the musical campaigns against apartheid. (3mark)

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(d) Artistes reach areas far beyond the reach of politicians (add a question) (1 mark)

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(e) Make notes on the titles of songs sung against the apartheid regime (4marks)

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(f) Identify the setting of the passage (2 marks)

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(g) ***Paraphrase the following sentence***

"artists reach areas far beyond the reach of politicians. Art, especially entertainment and music is understood by everybody, and it lifts the spirits and the morale of those who hear it " (3 mark)

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(h) Give this passage another title (1 mark)

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(i) ***Explain the meaning of the following words and phrases*** (3 marks)

(i) irk their captors

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(ii) dissidence

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(iii) stirring controversy

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Question 2 Excerpt(Fathers of Nations by Paul B. Vitta) (25 marks)

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

Narine: I did; maybe he has not seen 'it. (There is silence, then the principal continues) The App has sent shock waves across the Municipality. Leaders and many other people are in terrible panic. l am beginning to feel you might have to do a very long and hard thinking about the App. (Pauses again) I do not know how, but this matter has to be brought to a close with the urgency and seriousness it deserves. It is dangerous.

Nicole: I believe it will be over soon, once the President has launched the App, Madam Principal, Then it will be out of our hands.

Narine: I am not completely sure about that. What I am certain is that our Municipal leaders are convinced you are running the show behind the scenes as regards the App: and that-you are in a position of getting them out of the predicament they now find themselves in.

Nicole: It is natural for them to think so; most people do. And this is because I am not only the teåcher in charge of innovation but also a mentor to the two students.

Narine: Nothing beyond that?

Nicole: Nothing.

Narine: You see, Nicole, you are one of my best members of staff. It would be very unfortunate if you lied to me. I am an old lady, Nicole; old enough to be your mother and perceptive enough to know the kind of ambition you have.

Nicole: Well, I did midwife the idea of the two students and then guided them. As their mentor, I should also provide direction us regards their intellectual property as the originators of the App. But then, isn't that my role as a teacher and mentor?

Narine: Nicole, you have been here long enough to know me. I take my work seriously. I am single-mindedly focused on the mission of the school, whicll is to provide the students under our care with quality education. I have never allowed, and will not allow, any teacher in this institution to deviate from this course.

Nicole: I have absolutely no intention of deviating from my professional obligations as a teacher, Madam Principal.

Narine: Everything done in this school must serve the single purpose of preparing the students entrusted to us to be responsible and productive citizens. I will not stand or allow anything that will distract you, or any other member of staff, or the students, or even myself, from pursuing this mission. You must, therefore, figure out a way of putting this matter to rest. I think what you are doing is good. But it must not derail us from the greater good that is the mission of the school. Do you understand?

Nicole: Yes, yes, I understand, Madam Principal. But would you rather that we abandon such an ingenious innovation, with the great potential of improving governance in our Municipality, justto appease a self- seeking political class?

Narine: Listen to me, young lady. I am a seasoned administrator and I know the value of learning how to pick battles. You need to know which battles to wage, which ones to avoid and which ones to defer.

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What battle can a young girl like you have with the Mayor? If you dare an elephant into a wrestling match, will it not trample on you?

Nicole: An elephant that kills a rat is not a hero, Madam Principal.

QUESTIONS

a) Place this excerpt in 'its immediate context**.** **(4mks)**

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b) Identify two themes in this excerpt**.** **(4mks)**

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c) Describe the character of Narine and Municipal leaders as revealed in this excerpt. **(4mks)**

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

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e) Explain the following images as used in the excerpt **(2mks)**

Wrestling match

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An elephant

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f) Listen to me, young-lady. Rewrite beginning: Will… **(lmk)**

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g) Why is Madam Narine cautious about Nicole's battle with the Municipal leaders? **(2mks)**

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h) Explain the meaning of the following expressions as used in the excerpt**.** **(4mks)**

Midwife

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Ingenious

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Figure out

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Defer

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Question number 4

1. Rewrite the following sentences according to the instructions after each (3 marks)

(a)You can do better than this. (Begin: This ……..)

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b. Having failed once, I do not want to fail again. (Begin. As……)

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c. The teacher asked Kamau if he would go home that day or the following day. (Change to direct speech)

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(b) ***Using the verbs in brackets, replace the underlined words and phrases with correct phrasal verbs***

(3 marks)

(i) The two friends met each other accidentally**……..**(run) in town

(ii) The city council askariesdemolished **……**kiosks in the city Centre (bring)

(iii) Otienovisited **……..**us on his way to town (call)

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(c) ***Complete each of the following sentences with the appropriate prepositions*** (3 marks)

(i) Many people think that manual labour is**……**their dignity

(ii) The judge was prejudiced**……**the accused from the beginning.

(iii) John has retired**……**private life.

(d) ***Supply one word which means the same as the underlined phrases in the following sentences*** ***(2 marks)***

(i) The man who broke into the house was finally arrested**…….**

(ii) The kitchen was filled with a pleasant smell from the day's recipe **……..**

(e)***Explain the differences in meaning between the sentences in each of the pairs given below***

(4 marks)

I. I saw parents in the school library
II, I saw "parents" in the school library

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I. His brother who lives in Lamu is a mechanic
II. His brother, who lives in Lamu, is a mechanic

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BRILLIANT STUDENTS

FORM 3 END TERM 1 SERIES 2 EXAMS

ENGLISH PP3
K.C.S.E
101/3 ENGLISH
TIME: 2 HRS

ENGLISH PAPER 3
Answer 2 questions only

101/3 ENGLISH PAPER THREE

TIME: 2 Hrs 30 Mins

Instructions

Question	Maximum score	Candidate's score
1.a)	20	
1.b)	20	
2	20	
Total	**60**	

Answer all the questions. Each question carries 20 marks.

1.a) Write an essay to end with the following words…….then I realized that that was the worst friend I had ever had.

b) Write an essay on the proverb "All that glitters is not gold."

2. The novel '**Fathers of nations'** by **Paul B. vitta** exposes a number of incidents of conflict or disagreement. Write a composition in support of this statement **(20mks)**

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FORM 3 END TERM 1 SERIES 2 EXAMS

GEOGRAPHY PAPER 1

FORM 3

SECTION A:

ANSWER ALL THE QUESTIONS:

1. a. State three forces that influence the shape of the earth. (3 mks)

   b. State three proofs that show that the earth is spherical. (3 mks)

2. a. Distinguish between a rock and a mineral. (2 mks)

   b. Give the metarmophic equivalent of the following rocks. (3 mks)

Original rock	metarmophic
Granite –	
Limestone –	
Shale –	

3. a. What is the longitude of a place M whose local time is 11.00 am. If the local time at longitude 30°E is 2.00 pm. (3 mks)

   b. State the effect of the International Date Line. (1 mk)

4. a. What is Mass Wasting. (2 mks)

   b. State 3 factors which affects the rate of mass wasting. (3 mks)

5. a. Define the term Vulcanicity. (2 mks)

   b. Name i. Two Intrusive landforms (2 mks)

   ii. Two Extrusive landforms (2 mks)

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SECTION B:

ANSWER QUESTIONS *SIX* (COMPULSORY) AND ANY OTHER TWO QUESTIONS.

6. Study the map of Karatina (1:50,000) sheet 121/3 provided and answer the following questions.

a. i. What type of map is Karatina? (1 mk)

ii. Convert the scale used in the map into a statement scale. (2 mks)

iii. Outline 3 marginal information which you can be able to identify from the map given. (3 mks)

b. i. Citing evidence from the map, use list three social functions of the area covered by the map. (6 mks)

ii. Name 3 human made features from the map. (3 mks)

c. i. Citing evidence from the map explain three economic activities of the area covered by the map.

ii. Describe the drainage of the area covered by the map. (4 mks)

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

ii. Apart from compressional force explain two other processes that may cause faulting.(4 mks)

b. With aid of diagrams, describe how compressional forces may have lead to the formation of the Great Rift Valley. (8 mks)

c. Explain five ways in which faulting is of significance to human activities. (10 mks)

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8. a. The table below shows Rainfall and Temperature figures of a station in North America.

Month	J	F	M	A	M	J	J	A	S	O	N	D
Rainfall in mm	15	8	8	13	31	51	51	51	28	25	18	20
Temp (^oC)	-22	-19	-12	-1	4	10	11	11	5	-11	-18	-20

a. On the graph paper provided, draw a bar graph to represent the rainfall figures. (Use a vertical scale of 1cm represent 10 mm) (5 mks)

b. Give four characteristics of a bar graph you have drawn. (4 mks)

c. i. Calculate the mean of temperature for the station. Show your working. (2 mks)

ii. State five characteristics of the climate experienced in the station. (5 mks)

d. You intend to carry out a field study on vegetation around the station with the above climate.

i.. State 3 methods you would use to collect the data. (3 mks)

ii. Highlight 3 methods you are likely to use to record the data. (2 mks)

iii. State 3 problems you are likely to face during the field study.

9. a. Name three types of physical weathering. (3 mks)

b. i. Give three factors that influence the rate of weathering. (3 mks)

ii. Describe two causes of biological weathering. (6 mks)

c. i. Give five types of chemical weathering. (5 mks)

ii. Explain four significances of weathering to human activities. (8 mks)

10. a. What is aridity? (2 mks)

b. What is desertification. (2 mks)

c. State five causes of aridity and desertification. (5 mks)

d. i. Explain 5 effects of aridity and desertification. (10 mks)

ii. Suggest 3 possible solutions to aridity and desertification. (6 mks)

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FORM 3 END TERM 1 SERIES 2 EXAMS

GEOGRAPHY PAPER 2

FORM 3:

SECTION A:

ANSWER ALL THE QUESTIONS IN THIS SECTION:

1. a. Define the term Geography? (2 mks)

   b. Outline 4 importances of Geography in the learning process. (4 mks)

2. a. State 4 layers of the earth. (4 mks)

   b. Name the boundary that separate:- (2 mks)

      i. The crust and Mantle.

      ii. The mantle and the core.

3. a. State 2 effects of earths rotation. (2 mks)

   b. Outline 3 causes of earth movements. (3 mks)

4. a. Give three examples of rapid mass movements. (3 mks)

   b. Name 3 fold mountains of Alphine Orogeny. (3 mks)

5. a. What is agro-forestry. (3 mks)

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SECTION B:

INSTRUCTIONS:

QUESTION 6 IS COMPULSORY AND ANY OTHER TWO:

6. The table below shows temperature and rainfall date of station X.

Month	J	F	M	A	M	J	J	A	S	O	N	D
Temp. ^{o}C	12	13	14	17	19	22	24	26	24	20	16	13
Rainfall in (mm)	112	84	74	41	46	15	10	5	41	79	130	137

a. Use the data to calculate
i. The mean monthly temperature. (3 mks)
ii. The mean monthly Rainfall. (3 mks)
iii. The median rainfall. (2 mks)
iv. The temperature and rainfall range. (4 mks)
b. Use the rainfall data to draw a simple line graph. (7 mks)
c. State 3 advantages of using a simple line graph. (3 mks)
d. Outline clearly 3 disadvantages of using this technique. (3 mks)

7. a. Define the term vegetation. (2 mks)

b. i. State and explain 4 factors which influences the distribution of vegetation. (8 mks)

ii. Explain clearly 4 uses of vegetation. (8 mks)

c. i. Give 3 characteristics of Savanna Grasslands. (3 mks)

ii. Fill in the blank spaces. (4 mks)

Temperature grassland	Where its found
Prairies	-
Steppes	-
Pampas	-
Veldt	-

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8. a. i. Define the term forest. (2 mks)

ii. Explain five uses of forests and forest products in Kenya. (10 mks)

b. i. Outline any 4 problems facing forestry in Kenya. (4 mks)

ii. Highlight five forest conservation measures commonly used in Kenya. (5 mks)

c. Compare and contrast softwood forestry in Canada and Kenya. (4 mks)

9. a. i. Define the term mining. (2 mks)

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

b. i. State and explain 4 factors that influence the occurrence and exploitation of minerals.(8 mks)

ii. Explain any two methods employed in underground mining. (4 mks)

c. i. State 4 effects of mining in the environment. (4 mks)

ii. Highlight 4 problems facing mining in Kenya. (4 mks)

10. a. Name the minerals found in the following places in East Africa. (3 mks)

i. Ruhuhu valley

ii. Kariandusi

iii. Tororo

b. Describe the stripping method of open cast mining. (3 mks)

c. Study the data below and answer questions that follow:-

Percentage of mineral production.

COUNTRY A		**COUNTRY B**	
Lime stone	- 10%	Iron ore	- 50%
Coal	- 20%	Bauxite	- 10%
Iron ore	- 50%	Tin	- 10%
Trona	- 20%	Others	- 30%

i. Draw a dividend rectangle 10cm long to show the percentage of minerals mined in country A.(5 mks)

ii. State three advantages of using dividend rectangles to represent geographical data. (3 mks)

d. i. Name two areas where diamond is mined in South Africa. (2 mks)

ii. Describe the stages involved in the processing of diamonds. (4 mks)

iii. State 5 economic contributions of diamonds to the economy of South Africa. (5 mks)

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FORM 3 END TERM 1 SERIES 2 EXAMS

FORM 3

HISTORY & GOVERNMENT PAPER 1

SECTION A: (25mks)

Answer all questions in this section

1. Give two branches in the study of History and Government in Kenya (2mks)

2. Name the pre-historic site in Kenya where the Kenyapithecus fossil was discovered (1mk)

3. Identify two original inhabitants that the Agikuyu came across in Central Kenya as they settled in the area (2mks)

4. Give two economic reasons why the Cushites migrated form their original homeland (2mks)

5. Name two Historical monuments built by the Portuguese along the Kenyan Coast (2mks)

6. Give two types of Human Rights (2mks)

7. Name the Executive head of the colony in colonial Kenya (1mk)

8. Identify one condition when one may be denied the right to life (1mk)

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9. Which was the main reason that enabled the British to conquer Kenya? (1mk)

10. What is democracy? (1mk)

11. Name the type of constitution used in Kenya (1mk)

12. Identify two development rights of children (2mks)

13. Name two communities in Kenya that showed mixed reaction to colonial Kenya (2mks)

14. Name the person who mobilized the Agiriama resistance against the British (1mk)

15. Name the agreement that marked the end of the scramble and partition of East Africa (1mk)

16. Name the Agikuyu leader who led the raid against the British at Fort Smith (1mk)

17. Give two reasons why the Bukusu resisted British invasion (2mks)

SECTION B (45mks)

Answer any 3 questions from this section

18. a) Give the duties of Portuguese captains along the coast (3mks)

b) Explain the impact of Portuguese rule along the coast (12mks)

19. a) Give three ways in which the Luo interacted with the Abagusii in the 19th century (3mks)

b) Describe the social and political organization of the Luo (12mks)

20. a) State the causes of the Nandi resistance to British rule (5mks)

b) Explain the results of Nandi resistance (12mks)

21. a) State reasons why Nabongo Mumia of Wanga kingdom collaborated (5mks)

b) Explain the impact of Wanga collaboration (10mks)

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SECTION C (30mks)

Answer any two questions

22. a) Give three symbols of National Unity (3mks)

    b) Explain six factors which undermine National Unity in Kenya (12mks)

23. a) State three methods used by the British to establish their rule in Kenya (3mks)

    b) Describe the organization of the central government in Kenya during the colonial period (12mks)

24. a) Give five political duties of a Kenyan citizen (5mks)

    b) Explain five reasons why national integration is important in Kenya (10mks)

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FORM 3 END TERM 1 SERIES 2 EXAMS

FORM 3

HISTORY & GOVERNMENT PAPER 2

SECTION A: (25mks)

Answer all questions in this section

1. Identify one specific tool invented by Homo Sapiens that greatly improved his way of life (1mk)

2. Identify the term used to refer to animal and plant remains found by Charles Darwin (1mk)

3. Identify two sub species of the Homo Sapiens (2mks)

4. Why is the period of early man referred to as Stone Age? (1mk)

5. Name the famous building in Athens built in honour of the goddess Athena (1mk)

6. Who discovered penicillin? (1mk)

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7. State two advantages of using bicycles as a mode of transport (2mks)

8. State two factors responsible for the decline of Merowe as an urban centre (2mks)

9. Identify the title given to the state kings in the Asante Kingdom (1mk)

10. Give the main advantage of the cell phone (1mk)

11. Identify two treaties that Lewanika of the Lozi signed with the British (2mks)

12. Which European leader was responsible for convening of the Berlin conference 1884 – 1885? (1mk)

13. Give two strategies employed by Samori Toure in his war of resistance against the French (2mks)

14. Apart from river Congo, name the river that was declared free to all Europeans for navigation at the Berlin conference (1mk)

15. What was the main contribution of religion in the Maji maji uprising against German rule in Tanganyika? (1mk)

16. Give two reasons why the British adopted the system of indirect rule in Northern Nigeria (2mks)

17. Define the term the Egyptian question in the scramble and partition of Africa (1mk)

18. List two communes in Senegal where Assimilation was successfully applied (2mks)

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SECTION B (45mks)

Answer any three questions

19. a) What factors led to the development of early agriculture in Mesopotamia? (5mks)
b) Explain five factors that have led to shortage of food in Third World countries (10mks)

20. a) Give three stages of evolution of man (3mks)

    b) Describe six ways in which the discovery of fire improved man's way of life (12mks)

21. a) Identify three ways in which water was used in industries during the 18th century (3mks)

    b) Explain six social results of the Industrial revolution in Europe during the 18th century (12mks)

22. a) Identify five causes of Maji maji rebellion in 1905 – 1907 (5mks)

    b) Why were the African communities defeated by the Germans during maji maji rebellion? (10mks)

SECTION C (30mks)

Answer any two questions

23. a) Identify 3 European powers that acquired colonies in Africa. (3mks)

    b) Explain six reasons why the Lozi collaborated with the British during colonization (12mks)

24. a) Give three economic activities of the Baganda in the pre-colonial period (3mks)

    b) Describe the political organization of the Buganda in the pre-colonial period (12mks)

25. a) Outline five reasons why Samori Toure's second empire was not suitable (5mks)

    b) Explain five factors that led to the defeat of Samori Toure by the French (10mks)

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JINA: ……..…….……

SHULE: ……

NAMBARI YA USAJILI: …… SAHIHI: ……. TAREHE: ……..

BRILLIANT STUDENTS

FORM 3 END TERM 1 SERIES 2 EXAMS

102/1

KISWAHILI

KARATASI YA 1 INSHA

MUDA: SAA 1¾

MAAGIZO

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

(b) Kisha chagua insha moja nyingine kutoka hizo tatu zilizobakia

(c) Kila insha isipungue maneno 400

(d) Kila insha ina alama 20

1. Wewe ni katibu wa chama cha waandishi habari chipukizi shuleni mwako. Andika kumbukumbu za mkutano uliofanyika mnamo MACHI 7, 2014.

2. Fahali wawili wapiganapo ziumiazo ni nyasi.

3. Anza kisa kwa maneno haya:

Mtoto aliletwa mbele yangu akiwa anatiririkwa damu usoni. Singeweza kumtambua hadi pale

4. Mvua husababisha madhara mengi. Jadili

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JINA: ……..…….……

SHULE: ……

NAMBARI YA USAJILI: …… SAHIHI: …… TAREHE: ……..

BRILLIANT STUDENTS

FORM 3 END TERM 1 SERIES 2 EXAMS

102/2

KISWAHILIKaratasi ya pili

LUGHA

Maagizo

Jibu maswali yote.

Majibu yatolewe kwenye nafasi zilizoachwa.

Alama jumla – 80

Muda saa 2½

Kwa matumizi ya mtahini pekee

	Upeo	**Alama**
1. Ufahamu	15	
2. Ufupisho	15	
3. Matumizi ya lugha	40	
4. Isimujamii	10	
Jumla	80	

Kila mtahiniwa lazima aangalie kama kurusa zote za karatasi hii zimepigwa chapa sawasawa na kuwa maswali yote yamo

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1. ***Soma taarifa ifuatayo kisha ujibu maswali.***

Habari kuwa watoto chini ya miaka mitatu 'huwindwa' kitandani na kuraushwa na wazazi wao waende shuleni mwendo wa saa kumi na moja asubuhi ni za kusikitisha.

Kwa mujibu wa ripoti za wataalamu wa elimu ya watoto wachanga (ECD), watoto hao hutakikana kuwa darasani kabla ya saa kumi na mbili asubuhi.

Wanapowasili wao huanza kufukuza ratiba ya masomo ambayo huwapatia muda mfupi mno wa kula, kucheza, kupumzika na hata kuchunguza afya na usalama wao.

Badala ya kuondoka mapema kuelekea nyumbani, wengi wao hufika saa za usiku pamoja na wazazi wao wakitoka kazini. Wanapowasili nyumbani wanapaswa kuoga na kupata chakula cha jioni kwa pupa ili wafanye mazoezi waliyopewa na walimu wao.

Mazoezi hayo huwa ya masomo yote matano huku kila somo likiwa na zaidi ya maswali thelathini. Badala ya kupumzika mwishoni mwa juma, watoto hao huhitjika kuhudhuria shule siku nzima ya Jumamosi. Jumapili wanatakiwa Kanisani na hali hii hujirudia mpaka muhula umalizike. Ikiwa ulidhani watapewa nafasi ya kupumzika wakati wa likizo , umekosea kwa sababu watoto hao huhitajika kuhudhuria shule. Hili limekuwa likiendelea hata baada ya Wizara ya Elimu kupiga marufuku kusomesha wakati wa likizo.

Wazazi-hasa wale wanaofanya kazi mijini- wamekuwa wakiunga mkono mtindo huu kwa sababu unawaondolea mzigo wa malezi na gharama ya kuwaajiri walezi.

Wataalamu wanasema matokeo ya hali hii ni watoto **wakembe** wenye afya na **maadili** mabaya kutokana na kuchanganyishwa akili na walimu wanaowataka wajue kila kitu wakiwa na umri mdogo.

Kuwashinikiza watoto wakembe wahudhurie shule na zaidi ya hayo wajue kila kitu kuna madhara mengi. Kwanza kabisa, kuraushwa kwa watoto macheo waende shule kunawanyima fursa ya kulala na kupumzika. Utafiti unaonyesha kuwa watoto wanahitaji kulala na kupumzika kwa zaidi ya saa 12 kwa siku. Hii ina maana kuwa mbali na muda mfupi wanaolala na kupumzika mchana kutwa, watoto wanapaswa kutumia usiku mzima kwa usingizi.

Hii huwasaidia kukua wakiwa na afya nzuri hasa kiakili. Matokeo ya kuwarausha watoto hao waende shule saa hizo huwafanya wakose furaha mbali na kuwafanya wachanganyikiwe kiakili.

Pili, kuwalazimisha watoto wakae darasani kuanzia saa kumi na mbili asubuhi hadi saa kumi na mbili jioni huwa kunawanyima fursa ya kucheza na kutangamana. Wataalamu wa afya ya watoto wanapendekeza kuwa watoto wachanga wanapaswa kucheza ili viungo vya miili yao kama moyo, akili, mapafu na kadhalika vifanye kazi vizuri.

Kinyume na watu wazima ambao hufanya kazi nzito nzito na kuwawezesha kufanya mazoezi, watoto huwa hawafanyi kazi hizo. Wazazi na walimu wanapaswa kufahamu kuwa kazi ya watoto ni mchezo na wana kila haki ya kupewa furaha ya kucheza wakiwa shuleni na hata nyumbani.

Tatu, wazazi wengi ambao hufurahia kuwaachia walimu jukumu la kuwalea watoto wao huku wao wakiwa kazini huwa wanasahau kuwa sio kila mwalimu ana maadili yanayopaswa kuigwa na mwanawe. Ingawa tunawatarajia walimu wawe mifano bora ambayo inaweza kuigwa na kila mtu, ukweli ni kwamba baadhi ya walimu hawajui maana wala hawana maadili. Hatari ni kwamba watoto **wakembe** husoma kwa kuiga wakubwa wao na ikiwa walimu wanaoshinda nao shule wamepotoka kimaadili, kuna uwezekano mkubwa wa watoto hao kupotoka pia.

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Hii ndiyo sababu wazazi wengi wamekuwa wakilalamika kuwa wanawao tabia mbaya ambazo hawaelewi zilipotoka.

Kila mzazi anayejali maisha ya mwanawe anapaswa kutekeleza jukumu lake la kumlea na kumwelekeza jinsi anavyotaka akue. Ni kinaya kuwa wanawatarajia wanawao wawe na tabia na maadili kama yao ilhali hawachukui muda wa kukaa nao na kuwaelekeza.

Nne, kuwawinda, kuwaamsha, kuwaosha na kuwalazimisha watoto waende shule kila siku hata ingawa hawataki huwa kunawafanya wawe wategemezi wasioweza kujipangia na kutekeleza mambo kivyao.

MASWALI.

(a) Ipe taarifa anwani mwafaka. (alama 2)

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(b) Mwandishi anatoa maoni gani kuhusu ratiba ya masomo? (alama 2)

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(c) Eleza athari za mfumo wa elimu unaoangaziwa hapa. (alama 3)

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(d) Ni ushauri upi unaotolewa kwa wazazi ? (alama 2)

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(e)Taja mbinu zozote **mbili** za lugha alizotumia mwandishi (alama 2)

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(f) Eleza **maana** ya maneno haya kama yalivyotumiwa katika taarifa. (alama 4)

(i) '**huwindwa' kitandani**

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(ii) **Maadili**

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(iii) **Kuwashinikiza**…

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(iv) **Wakembe**…

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1. Soma taarifa kisha fupisha kwa mujibu wa maswali yafuatayo.

Uwezo wa kuyakumbuka mambo ni hazina kuu kutoka kwa mtu yeyote yule aliye hai. Uwezo huu wa kukumbuka ni mojawapo ya shughuli changamano za ubongo. Ubongo wa mwanadamu hutekeleza shughuli hii kwa namna tatu. Kwanza ubongo hunasa jambo kisha huliihifadhi. Baadaye huanzisha mfumo wa kutoa kilicho hifadhiwa. Ubongo ukiathirika kwa namna yeyote katika moja wapo ya njia hizi, basi uwezo wa kuyakumbuka mambo huvurugika.

Ingawa inaaminika kuwa uwezo wa kukumbuka hurithishwa toka kizazi kimoja hadi kingine, wataalamu wa maswala ya kiakili wanabaini kuwa uwezo huu unaweza kuimarishwa. Uimarishaji huu huhitajika mikakati madhubuti.

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Njia mojawapo ya kustawisha uwezo wa kukumbuka ni kupitia kwa lishe. Vyakula vilivyosheheni vitamini B vyenye amino asidi husaidia kuimarisha uwezo wa kukumbuka. Vyakula kama hivi ni mboga, nyama (hasa maini), bidhaaa za soya, matunda, maziwa, ,bidhaa za ngano, samaki, pamoja na mayai. Vyakula vingine muhimu katika ustawishaji huu ni vile vyenye madini ya chuma. Madini haya huwezesha usambazaji wa hewa katika ubongo kwa wepesi. Vyakula ambavyo vina madina haya ni mboga za kijani, mawele, ndengu, soya, matunda kama maembe, ufuta (simsim) pamoja na nyama, hasa maini na mayai.

Ubongo wa mwanadamu aliye hai hufanya kazi kila wakati awe macho au amelala. Utendaji kazi wake huendeshwa na glukosi mwilini. Kwa hivyo, vyakula vyenye sukari hii ni muhimu kuliwa. Hata hivyo, lazima mtu awe mwangalifu na kuhakikisha kuwa mwili una kiwango cha sukari kisicho hatarisha maisha. Haya yanawezekana kwa kula vyakula vyenye nyuzinyuzi kama vile mboga na matunda.

Njia ya pili ni kupiga marufuku vileo kama pombe na nikotini. Vileo hivi huathiri utaratibu wa kunasa, kuhifadhi na kutoa yaliyo ubongoni.

Iwapo mtu ana tatizo la kuyakumbuka majina ya watu, ni muhimu kufanya mazoezi ya

kusikiliza kisha kurudia majina hayo wakati wa mazungumzo. Ni bora kulihusisha

jina na sura

ya mtu. Kwa njia hii ubongo utanasa jina na kile kinacholengwa.

Woga na kuvurugika kiakili ni mambo mengine tunayopaswa kuepuka kila wakati. Ni kawaida mtu kupata woga wakati anapokabili jambo asilokuwa na uhakika na matokeo yake kama mtihani au mahojiano. Lakini anapaswa kuwa makini. Woga huo usikiuke mpaka na kumvuruga kiakili. Vurugu hizi huathiri kilichohifadhiwa ubongoni na pia namna ya kukitoa.

Halikadhalika, mwili wenye siha nzuri huhakikisha kuwa ubongo ni timamu. Wataalamu wengi wa siha wanakubali kuwa na mazoezi ya kunyoosha viungo hustawisha ubongo na hivyo kuhakikisha kuweko kwa uwezo wa kukumbuka mambo. Ni muhimu kuwa na taratibu ya kunyoosha viungo kila wakati. Fauka ya hayo, mazoezi ya kiakili, kama vile kusoma makala yanayovutia, kujaza mraba na michezo mingine kama mafumbo, vitenzi ndimi ni muhimu katika kustawisha uwezo wa kukumbuka.

Jamii ya watu wenye uwezo kuyakumbuka mambo ni ya jamii iliyopiga hatua kimaendeleo. Ni jukumu la kila mmoja wetu kuimarisha uwezo wa kukumbuka kila wakati.

Maswali:

a) Kwa maneno 60 – 65 fupisha mchango wa chakula katika uimarishaji wa uwezo wa kukumbuka.(alama 6 , 2 mtililiko) **Matayalisho**

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b) Fupisha aya tatu za mwisho kwa maneno 80 – 90 (alama 7)

Matayarisho

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3. MATUMIZI YA LUGHA

. (a) **Andika sifa bainifu za sauti.** (alama 2)

(i) e:- **……**

(ii) n:- ……
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(b) **Eleza maana ya :-** (alama 2)

(i) Kiimbo.

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(ii) Shadda.

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(c) **Tunga sentensi moja moja kudhihirisha ngeli zifuatazo**:- (alama 2)

(i) U-U

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(ii) Pokomo /Pa-ku-mu

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(d) **Unda kitenzi kimoja kutokana na nomino** '**Mtubia**" (alama 2)

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(c) Eleza matumizi mawili ya kiambishi '**ku**' (alama 2)

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(f) Tunga sentensi ya maneno manne ambayo ina sehemu zifuatazo. Kielezi cha namna, kivumishi,kitenzi na jina (alama 2)

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(g) **Yakinisha sentensi ifuatayo;** (alama 2)

Mvua haijanyesha vizuri msimu huu.

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(h) **Onyesha matumizi mawili mawili ya alama zifuatazo:-** (alama 2)

(a) Alama ya mshangao

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(b) Mshazari

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(i) **Tunga sentensi sahihi ukitumia –wa- katika kauli ya kutendeana** (alama 2)

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(j) **Andika udogo wa sentensi:-** (alama 2)

Ndama wa ng'ombe yule ameuzwa.

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(k) **Onyesha tofauti ya vitate vifuatavyo kwakuvitungia sentensi** (alama 2)

(i) Dhamani

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(ii) Thamani

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(l) **Kanusha sentensi ifuatayo katika wingi** (alama 2)

Ningalikuwa na pesa ningalinunua gari

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[m] **Tumia neno "shujaa" katika sentensi kama**:- (alama 2)

(i) Kivumishi

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(ii) Kielezi.

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(n) Huku ukitumia mifano mwafaka, eleza tofauti ya sentensi sahili na ambatano (alama 4)

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(o) **Onyesha aina za viambishi katika sentensi hii**: (alama 2)
Nitajisomea

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(p) **Andika katika usemi wa taarifa:-** (alama 2)
Tutaanza mashindano kesho, Mwalimu alimwambia mwanafunzi.

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(q) **Eleza maana mbili ya sentensi**:- (alama 2)

Tumetengeneza barabara

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(r) **Tumia mifano mwafaka kueleza aina za mofimu** (alama 2)

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(s) **Changanua kwa njia ya mishale**

Mama analima shambani.

4. ISIMU JAMII

Soma mzungumzo yafuatayo kisha ujibu maswali *:*

A : Ohh, dada Naomi

B : Dada Ruth (anamsogea kwa bashasha wanakumbatiana). Ahh Mungu asifiwe!

A: Asifiwe sana

B: Ehh dadangu, miezi ...mingi...sijakuona

A: dada wee...Nilitumwa huko kusini ...Kuwahubiria watu injili (mtuo mdogo)singeweza kukata...

B: Ehh, usiwe kama Yona

A: Habari ya siku nyingi?

B; Nzuri Mungu bado ameendelea kunibariki

A: Amen!

B: Nimeendelea kuiona neema yake

A: Amen! Asifiwe Bwana

B: Halleluya

A: Ni Mungu wa miujiza!

B : Amen. Hata nami nimeona neema yake

Bado niko imara katika wokovu katika siku hizi za mwisho

A : Amen !

B : Ni Mungu wa ajabu kweli !

A : Nilikumbana na matatizo lakini nikategemea sala

Kama Paulo na sila… Na nikashinda (anatua). Sikuweza kumpa

shetani nafasi…maana ameshindwa

B : Ameshindwa kabisa

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Maswali:-

(i) Hii ni sajili ya wapi ? Fafanua [alama 2]

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(ii) Taja na ueleze sifa za sajili hii [alama 6]

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(iii) Taja mambo **mawili** muhimu yaliyosaidia katika maenezi ya Kiswahili

Afrika mashariki na kati. [Alama 2]

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JINA: ……..…….……

SHULE: ……

NAMBARI YA USAJILI: …… SAHIHI: …… TAREHE: ……..

BRILLIANT STUDENTS

FORM 3 END TERM 1 SERIES 2 EXAMS

102/3
KISWAHILI
Karatasi ya 3
FASIHI
Muda: Saa 2 ½
MTIHANI WA MWISHO WA muhula
KIDATO CHA TATU

Maagizo kwa Watahiniwa:

a) *Andika jina lako, nambari ya usajili,darasa, tarehe na sahihi yako katika nafasi ulizoachiwa hapo juu.*
b) *Jibu maswali **MANNE** katika nafasi ulizopewa.*
c) *Swali la kwanza ni la lazima. Maswali hayo mengine yachaguliwe kutoka sehemu zilizosalia.*
d) *Majibu yote **lazima** yaandikwe kwa lugha ya Kiswahili.*
e) ***Karatasi hii ina kurasa 6 zilizopigwa chapa.***
f) ***Watahiniwa ni lazima wahakikishe kwamba kurasa zote za karatasi hii zimepigwa chapa sawasawa na kuwa maswali yote yamo.***

Kwa Matumizi ya Mtahini Pekee

Swali	Upeo	Alama
1	20	
	20	
	20	
	20	
Jumla	**80**	

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SEHEMU YA A: FASIHI SIMULIZI

1. Soma wimbo ufuatao kIsha ujibu maswali yaliyoulizwa. (al. 20)

Kondolo, kondolo
Mlezi wa mwana
Mai kenda, nani kenda
Sokoni kenda
Kondolo, we ndolo mwana.

Mai tarudi atarudi
Adazi lako akirudi
Pia nyama ya kufupa
Kufupa kwangu wewe msopa
Kipenzi mwana

Kondolo kondolo
Mwana ndolo
Mwana kuja
Titi laja
Basi ndolo kipenzi cha mama
Ndolo ndolo atarudi.

a. Huu ni wimbo wa aina gani? Kwa nini? (al. 4)

b. Tunga wimbo mfupi wa aina hii kutoka jamii yako. (al. 6)

c. Taja mbinu zozote mbili za lugha katika wimbo huu. (al. 6)

d. Kuna wahusika wangapi katika wimbo huu? Wataje. (al. 2)

e. Eleza uhusiano wa wahusika uiliowataja katika swali la 4. (al.2)

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SEHEMU YA B. TAMTHILIA

T. Arege: Bembea Ya Maisha

…Jamani mtoto amejaribu! hivi umesahau kuwa hata wewe unatumia hela za kununua dawa? Hata sasa umetumia mapeni uliyotumiwa wasikuone shabiki tu.

a.Eleza muktadha wa dondoo hili. (al. 4)

b. Tambua na ueleze mbinu za kimtindo zilizotumika katika dondoo. (al.4)

c. Onyesha jinsi mhusika anayerejerewa amejaribu kuwashika mkono wazazi wake. (al.4)

d. Taja sifa nane za anayerejelewa. (al. 8)

3. Jadili nafasi ya mwanamke katika jamii ya Bembea ya Maisha. (al. 20)

SEHEMU YA C. RIWAYA

C. Momanyi: Nguu za Jadi

4. Jadili maudhui yafuatayo yanavyo jitokeza katika Riwaya ya Nguu za Jadi.

   i. Ufisadi (al. 10)
   ii. Ukabila (al. 10)

5. Taja na ueleze sifa za wahusika wafuatao .(al.20)

   i. Sagilu
   ii. Mangwasha
   iii. Mtemi Lesulia
   iv. Chifu Mshabaha

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SEHEMU YA D: USHAIRI

6.Soma shairi lifuatalo kisha ujibu maswali

Kila nikaapo hushika tama
Na kuwazia hali inyayonizunguka
Huyawazia madhila
Huziwazia shida
Huiwazia dhiki

Dhiki ya ulezi
Shida ya kudhalilishwa kazini
Madhila ya kufanyiwa dharau
Kwa sababu ya jinsia ya kike

Hukaa no kujidadisi
Kujua kwa nini
Jamii haikisikil killo changu
Wenzangu hawanishiki mikono
Bali wananidharau kwa kuukosoa utamaduni

Hukaa no kujiuliza
I wapi raha yangu ulimwengu huu?
I wapi jamaa nzima ya wanawake?

Maswali

(a) Shairi hili ni la aina gani ? Eleza. (alama 2)
(b) Eleza dhamira ya mtunzi wa shairi hili. (alama 2)
(c) Kwa kutolea mifano, eleza maana ya mishata. (alama 2)
(d) Taja na ueleze tamathali mbili zilizotumika katika shairi hili. (alama 4)
(e) Tambulisha nafsi neni katika shairi hili. (alama 2)

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(f) Fafanua toni ya shairi hili. (alama 2)

(g) Fafanua maudhui mawili ya shairi hili. (alama 2)

(h) Onyesha namna nafsi neni anavyosalitiwa. (alama 2)

(i) Eleza maana ya maneno haya kama yalivyotumiwa katika shairi. (alama 2)

(i) madhila

(ii) kudhalilishwa

7. Soma shairi lifuatalo kisha ujibu maswali

Kiapo kwao majaji, wanosimamia haki
Kwa sharia ni magwiji, wahalifu hawatoki,
Wengi wao ni walaji, kwa rushwa ni mashabiki,
Kwa rushwa mashabiki.

Kiapo kwa daktari, wagonjwa hawadhiliki,
Kazi zao ni dhariri, maradhi hayakwepeki,
Na wengine ni hatari, bila pesa hutibiki,
Bila pesa hutibiki.

Kiapo cha mawaziri, kwa mbwembwe na itifaki,
Na suti zao nzuri, shingo tai haitoki,
Na wengi wana dosari, ni kwa mikataba feki,
Ni kwa mikataba feki.

Kiapo cha magavana, mikoa kuimiliki,
Hujifanya ni mabwana, wala hawasogeleki,
Nayo nchi huitafuna, na kuwa haikaliki
Na kuwa haikaliki.

Kiapo cha maraisi, kwa mizinga na fataki
Na wageni mahususi, hualikwa kushiriki,
Ikulu wakijilisi, kwa wizi hawashikiki
Kwa wizi hawashikiki.

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Viapo vya utiifu, kwa sasa havistahiki
Wanoapa ni wachafu, tena hawaaminiki,
Biblia misahafu, washikapo unafiki
Washikapo unafiki

Maswali

a) "Dhamira ya shairi hili ni kushtumu ukiukaji wa maadili ya kikazi." Fafanua. (alama 3)

b) Eleza namna vipengele vifuatavyo vya kimtindo vilivyotumika katika shairi hili.

(i) Usambamba (alama 2)

(ii) Aina za taswira (alama 3)

c) Bainisha toni katika shairi hili. (alama 2)

d) Fafanua mbinu mbili alizotumia mshairi kutosheleza mahitaji ya kiarudhi katika shairi hili.
(alama 4)

e) Ainisha bahari kwa kuzingatia vigezo vifuatavyo; (alama 3)

i. Mpangilio wa vina

ii. Mizani

iii. Mpangilio wa maneno

f) Fafanua muundo wa shairi hili. (alama 3)

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BRILLIANT STUDENTS

FORM 3 END TERM 1 SERIES 2 EXAMS

FORM 3 MATHEMATICS PAPER 1

TERM 1 FORM THREE

121/1

INSTRUCTIONS

1: This paper consists of two sections 1 and 2. Answer all the questions in section 1 and any **5** questions in section 2.

2: KNEC mathematical tables and electronic non- programmable calculators may be used where necessary.

3: Answer all the questions in the spaces provided

Section 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	total

Section 2	17	18	19	20	21	23	24	total	

Grand total

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SECTION 1

Answer all questions in this section

1.Find without using tables or a calculator the value of

(3mk|)

$$\frac{1.33 \times 0.51}{0.19 \times 0.0017}$$

2. The ratio of the size of the exterior angle to the interior angle of a regular polygon is 1:3. Determine the number of sides of the polygon and name it. (3mk)

3. Given that $2x^2-kx+18$ is a perfect square, find k and hence solve the equation $2x^2-kx+18=0$ by factorization. (4mk)

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4. Work out using logarithms to 4 s.f

$$\frac{\sqrt{(6.225\log 1.001)}}{(56.7\times 0.031)^3}$$

(4mk)

5. Mr. Kanja,Miss Kanene and Mrs Nyaga have to mark a form three math contest for 160 students. They take 5mins, 4mins, and 12mins respectively to mark a script. If they all start to mark at 9.00 am non-stop, what is the shortest time they can take to complete the marking?

(3mk)

6. Jackie takes 5minutes to run a distance of 1km in a race. Express her speed in

a) km/hr

b) m/s (2mk)

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7. Use reciprocal tables to find the value of f given that $\frac{1}{f} = \frac{1}{11} + \frac{2}{13}$ (3mk)

8. A man left $\frac{1}{5}$of his estate in Kerugoya to his wife and $\frac{1}{3}$ to each of his two sons .The remainder was to be shared equally among his six brothers. If the estate was worth sh 3 456 000, how much did each of those people get? (3mk)

9. A distance of 12km is represented by a length of 4cm on a map. Given that the scale of the map is 1:n, find the

a) value of n

b) actual area in hectares of a field on the map with an area of 32cm^2 (3mk)

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10. Solve the equation $\frac{1}{3}(x+4)-\frac{1}{2}(2x-4)=2$ (2mk)

11. The sides of a right angled triangle measured to the nearest cm are 5cm, 12cm and 13cm

Determine the

a) limits within which the measured dimensions lie (1mk)

b) percentage error in the area of the triangle. (3mk)

12. Form a quadratic equation in the form $ax^2+bx+c=0$ whose roots are b and twice the negative reciprocal of b. (3mk)

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13. The coordinates of points A and B are A (2, 3).B (4,–5). M is the midpoint of vector AB.

Determine the coordinates of point M and the magnitude of vector BM. (3mk)

14. The equation of line L is y=3x–4 and is perpendicular to line H. They cross each other at the y-intercept of line L. Find the equation of line H. (3mk)

15. In a circle radius 10cm, an arc PQ subtends an angle of $\frac{5}{12}\pi$ radians at the centre of the circle. Calculate the radius of another circle whose circumference is equal to the length of arc PQ

(4mk)

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16. Solve for a in $3^{2a+3} = 2187$ (3mk)

SECTION 2

Answer any 5 questions in this section

17. Four towns are situated in such a way that town Q is 500km on a bearing of 120º from P. Town R is 240km on a bearing of 210º from town P, while town S is due north of town Q and due east of town P.

a) Draw a sketch diagram showing the relative positions of P, Q, R and S. (2mk)

b) Find by calculation

i) the distance QR (2mk)

ii)the distance QS (2mk)

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iii)the angle PRQ (2mk)

iv)area of triangle PQS (2mk)

18. a) Represent the following inequalities graphically by shading the unwanted region

$x \geq 0$, $y \geq 0$, $x+y \geq 5$, $x+y \leq 10$, $y \leq 7$, $x \leq 7$ (6mk)

b) write down the coordinates of one point that is inside the wanted region (1mk)

c) Name the figure formed by the unshaded region (1mk)

d)measure and find the sum of all the angles in the figure formed in c) above. (2mk)

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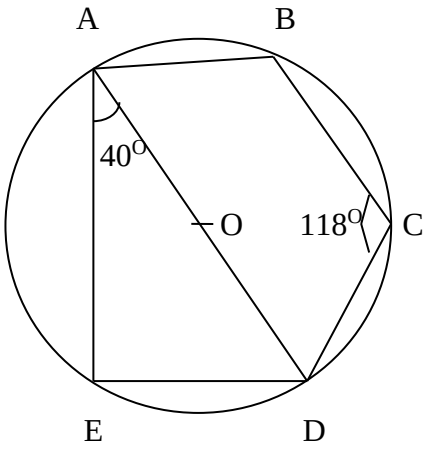
19. In the figure below, O is the centre of the circle and $\angle EAD=40^{o}, \angle BCD=118^{o}$



Find giving reasons

a) $\angle ADE$ (2mk)

b) reflex $\angle EOD$ (2mk)

c) $\angle EBD$ (2mk)

d) $\angle EAB$ (2mk)

e) $\angle DAB$ (2mk)

20. The marks scored in a form three maths exam were recorded as follows

69 70 72 40 52 60 22 31 78 53 28 67 63 54 57 48 47 56 55 62

75 38 37 44 62 64 58 39 45 48 65 50 85 46 47 57 35 34 58 64

62 37 41 42 36 54 82 48 53 57 56 72 56 48 44 55 78 59 50 45

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a) Make a grouped frequency table with classes 20—29,30—39,40—49,etc (2mk)

b) What is the modal distribution of the test (1mk)

c) Calculate the mean of the data (4mk)

d) Calculate the median mark (3mk)

21. The velocity(v)of a vehicle measured at intervals of time(t) were recorded as follows

t(s)	0	2	4	6	8	10	12
v(m/s)	0	20	40	40	30	8	0

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a) Represent this motion on a graph (3mk)

b) Calculate the acceleration (2mk)

c) Calculate the total distance travelled by the vehicle (3mk)

d)Calculate the average velocity of the vehicle (2mk)

22. A wooden stool is in the form of a frustum of a cone with slant edge 40cm,top diameter 30cm and bottom diameter 50cm.

a) calculate the perpendicular height of the stool (3mk)

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b)calculate the total surface area of the stool in terms of π (3mk)

c)calculate the volume of wood used to make the stool in terms of π (3mk)

d)given that the density of the wood used to make the stool is $0.8g/cm^3$, calculate the mass of the stool in kg (1mk)

23. Using ruler and compasses only,

a) construct triangle ABC in which AB=5cm,BC=6cm and angle ABC=120º. (3mk)

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b)measure angle ACB (1mk)

c)drop a perpendicular from C to cut AB produced at P. Measure CP. (2mk)

d)hence calculate area of triangle ABC to 1dp (2mk)

e)calculate the radius of a circle that passes through the vertices of triangle ABC (2mk)

24. The distance between two towns A and B is360km.A minibus left town A at 8.15a.m and travelled towards B at an average speed of 90km/hr. A matatu left town B at 10.35a.m on the same day and travelled towards A at an average speed of 110km/hr.

a)i)how far from A did they meet? (4mk)

ii)at what time did the two vehicles meet? (2mk)

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b) A motorist left his home at 10.30a.m on the same day and travelled at an average speed of 100km/hr. He arrived at B at the same time as minibus. Calculate the distance from B to his home. (4mk)

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FORM 3 END TERM 1 SERIES 2 EXAMS

FORM THREE MATHEMATICS PAPER 2

121/2

TERM 1

INSTRUCTIONS

1. This paper consists of two sections. Answer all the questions in section 1 and any **5** questions in section 2.

2. KNEC mathematical tables and non-programmable calculators may be used when necessary

3. Answer all the questions in the spaces provided.

Section 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	total

Section 2	17	18	19	20	21	22	23	24	total

Grand total

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SECTION 1

Answer all the questions in this section

1.Evaluate $\dfrac{36 - 8 \times -4 - 15 \div -3}{-3 \times -3 - 8(-6 + -2)}$ (3mk)

2.Simplify $\dfrac{a+b}{2} - \dfrac{2a-b}{3}$ (3mk)

3.Find the greatest number which divides 181 and 236 and leaves a remainder of 5 in each case (2mk)

4.A rectangle measures 20cm by 15cm.If each dimension is increased by 2.5cm, by what percentage is

a) the perimeter of the rectangle increased (2mk)

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b)the area of the rectangle is increased (2mk)

5.The angle of elevation of the top of a tree from a point P on horizontal ground is 30º. From another point Q 8 metres from the base of the tree, the angle of elevation of the top of the tree is 48º.

a) Calculate to one decimal place the height of the tree. (1mk)

b) Calculate the distance between P and Q (2mk)

6.Given that $\cos \theta = -0.8070$, find θ for $0 \leq \theta \leq 720$ (3mk)

7.A piece of wire 40cm is bent to form a right-angled triangle whose hypotenuse is 17cm long. Find the lengths of the other two sides of the triangle (4mk)

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8.Solve for x in $\log 5 - 2 + \log(2x+10) = \log(x-4)$ (3mk)

9. Solve the quadratic equation by completing of squares giving your answer to 3sf

$11x^2 - 13x + 3 = 0$ (4mk)

10. Rationalize the denominator and simplify

$$\frac{4\sqrt{5}+3\sqrt{2}}{2\sqrt{2}-\sqrt{5}}$$ (4mk)

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11.Use a calculator to work out

a) $\sqrt[4]{\frac{186\times120}{490\times211}}$ (1mk)

b) $\sqrt[3]{\frac{62^2-270}{91\times4693}}$ (1mk)

12. A tourist from Kenya left for Ethiopia. He exchanged sh 9898 into Ethiopian Birr at the rate of 1 Eth.Birr=ksh7.95. He spent ¾ of the money he got and converted the balance back to Kenyan money at the rate of 1Eth.Birr=ksh7.98 Calculate what he finally got to 2dp (3mk)

13. Simplify the expression

$$\frac{9t^2-25a^2}{6t^2+19at+15a^2}$$ (3mk)

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14. Three types of tea costing sh203,sh146 and sh197 per kg are blended in the ratio of 2:5:k. Find the value of k,if the blend when sold at sh221 per kg gives 30% profit (3mk)

15. A two digit number is such that 4 times the units digit exceeds the tens digit by1. If the digits are reversed, the number formed is decreased by 45. Find the number. (3mk)

16. A triangular field has dimensions 21m by 52m by 47m.

a) calculate the area of the field to the nearest m^2. (2mk)

b)calculate the length of a straight ditch dug from the largest angle meeting the opposite side at right angles. (1mk)

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SECTION 2

Answer any 5 questions in this section

17. A bookseller bought a number of cartons of books at a cost of ksh 57600 from Kagumo bookstore. Had he bought the same books from Kerugoya bookstore, it would have cost him ksh 480 less per carton. This would have enabled him to buy 4 extra cartons of books for the same amount of money. By taking x to be the number of cartons of books he actually bought;

a) write an expression in x

i) for the cost of each carton he bought at Kagumo bookstore (1mk)

ii)for the cost of each carton had he bought from Kerugoya bookstore (1mk)

b)find the value of x (6mk)

c)the bookseller later sold all the books he had bought each carton at ksh 720 more than he had paid for it. Determine the percentage profit he made (2mk)

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18. A cylindrical metal bar of diameter 14cm and length 2m is melted and moulded into spherical balls. In the process, 5% by volume of metal is lost and what remains makes balls of radius 3.5cm.

a)calculate the volume of metal used to make the balls. (3mk)

b)find to the nearest whole number the number of balls made (3mk)

c)find the total surface area of the metal bar (2mk)

d)find the total surface area of the balls made (2mk)

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19.a) Draw the graph of $y=(2x–3)(x–1)$ for the interval $–2 \leq x \leq 4$ (6mk)

b)use your graph to solve

i)$2x^2–5x+3=0$ (1mk)

ii)$2x^2=3x+2$ (3mk)

20. a)Plot triangle ABC with coordinates A(1, 1), B(3, 1) and C(1,3) (1mk)

(PROVIDE A GRAPH PAPER)

b)Plot A′B′C′ the image of ABC under an enlargement scale factor 2 centre A and write down it's coordinates (2mk)

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c)Plot A″B″C″ the image of A′B′C′ under a reflection in the line x+y=0 and write down it's coordinates (3mk)

d)A″B″C″ is then reflected in the line y=0 to give A‴B‴C‴. Give the coordinates of A‴B‴C‴ (2mk)

e)Describe fully a rotation that maps A‴B‴C‴ onto A′B′C′ (2mk)

21Three businessladies Wanjiku, Muthoni and Njoki decided to buy a lorry. The .marked price of the lorry was 2.8million shillings. The dealer agreed that the ladies could pay a deposit of 60% of the marked price and the rest to be paid within a year.The ladies raised the deposit in the ratio of 3:2:5 respectively. At the end of the year the lorry had realized 2.08million shillings which the three shared in the ratio of their contribution. However, they were required to contribute for the balance of the lorry from these earnings again in the ratio of their original contributions.

a)calculate amount to be paid as deposit (1mk)

b)how much did each contribute to pay for the deposit? (3mk)

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c)how much did Njoki receive at the end of the year? (1mk)

d)calculate the total amount Muthoni and Njoki contributed to pay for the balance. (3mk)

e)how much money did Wanjiku remain with after paying her share of the balance? (2mk)

22.a)Make a table and draw the graph of y= sinx–cosx for x in the range $0° \leq x \leq 360°$, with y values to 2dp and x intervals of 30° (6mk)

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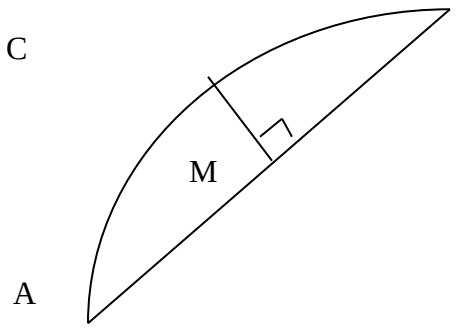
b)use the graph to find the value of y when

i) x=75° (1mk)

ii) x=255° (1mk)

c)find the values of x for which y= –0.9 (2mk)

23.The figure below is a segment of a circle centre O radius r units.CM is the perpendicular bisector of AB .



Given that CM=1cm and AB=2√3cm,

a)calculate the radius of the circle centre O from which the segment was cut (3mk)

b)calculate the angle that chord AB subtends at the centre of the circle (2mk)

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c)hence calculate

i)the length of arc ACB (2mk)

ii)the area of the segment AMBC (3mk)

24.A rectangular sheet of metal which measures 120cm by 0.8m is 1.5mm thick and is made of material whose density is 2.2 g/cm^3. From each of the four corners of the rectangle, a square of side 10cm is cut off and the remaining part folded to form an open cuboid.

a)calculate

i) the capacity of the cuboid in cm^3 to the nearest whole number (3mk)

ii)the mass of the empty cuboid in kg to the nearest whole number (3mk)

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b)the cuboid is filled with a liquid whose density is 0.75g/cm³. Calculate the mass in kg of the cuboid when full of the liquid (2mk)

c)calculate the mass of metal lost in kg (2mk)

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FORM 3 END TERM 1 SERIES 2 EXAMS

232/1

PHYSICS

PAPER 1

(THEORY)

INSTRUCTIONS TO CANDIDATES

- Write your name and index number in the spaces provided
- This paper consist of two section A and B
- Answer all questions in section A and B in the spaces provided
- All working must be clearly shown in the spaces provided in this booklet.
- Non- Programmable silent electronic calculators and KNEC mathematical tables may be used

SECTION	QUESTION	MAXIMUM SCORE	CANDITATES SCORE
A	1-12	25	
B	13	11	
	14	8	
	15	11	
	16	9	
	17	13	
	18	3	
TOTAL SCORE		80	

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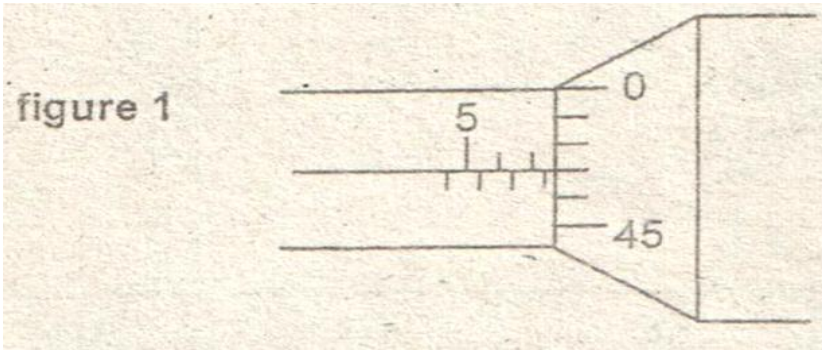
SECTION A 25MKS

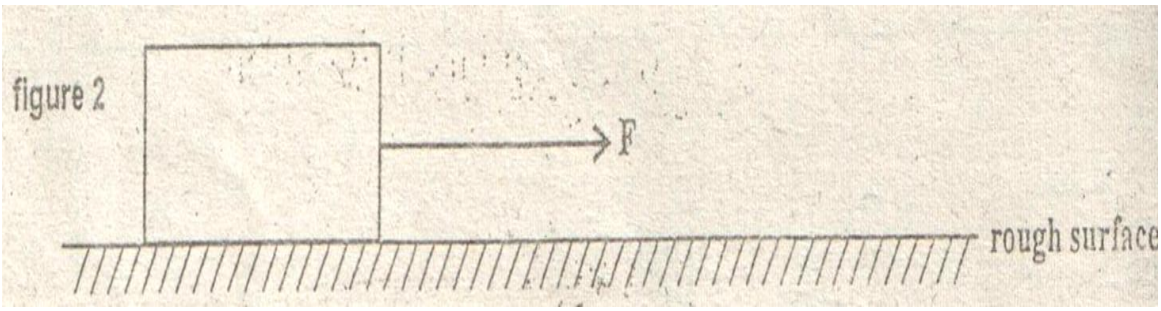
Answer all the questions in this section in the spaces provided.

1. Figure 1 shows a micrometers screw gauge with negative zero error of 0.02mm uses to measure the diameter of a ball bearing



Determine the actual diameter of the ball bearing (2mks)

2. A wooden block resting on a rough surface is pulled by applying a horizontal force F as shown in figure 2 Indicate on the diagram, all the forces acting o the block other than the weight of the block (2mks)



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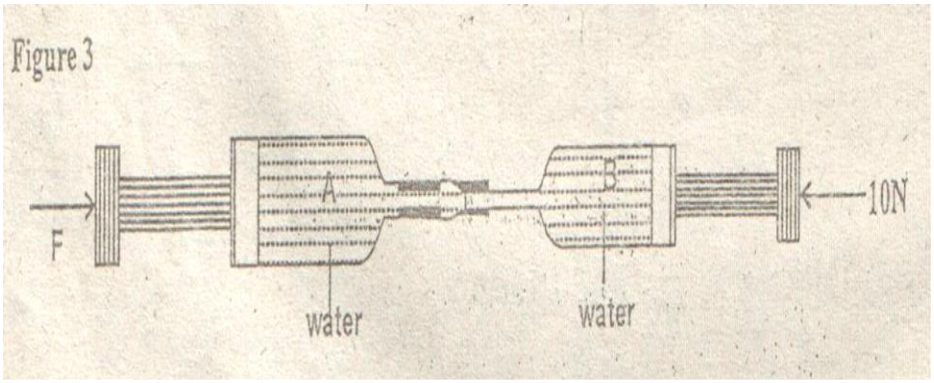
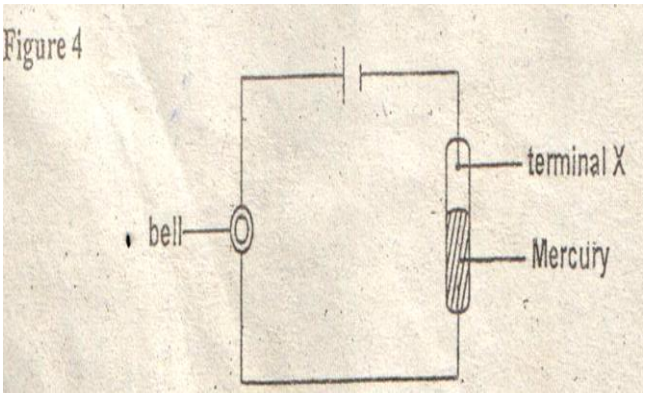
3. The diameter of cylinder A in figure 3 is double that of cylinder B



Determine the force F necessary to keep the system in equilibrium when a force F is applied as shown (3mks)

4. State one factor affecting the rate of diffusion of gases (1mk)

5. Figure 4 shows a simple fire alarm



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Explain how the alarm functions (1mk)

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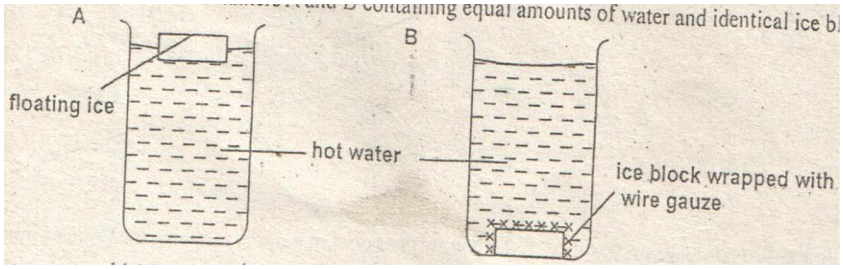
6. Figure 5 shows two identical containers A and B containing equal amounts of water an identical ice blocks



State with reason, which water cools faster, assuming the gauze absorbs negligible heat (2mks)

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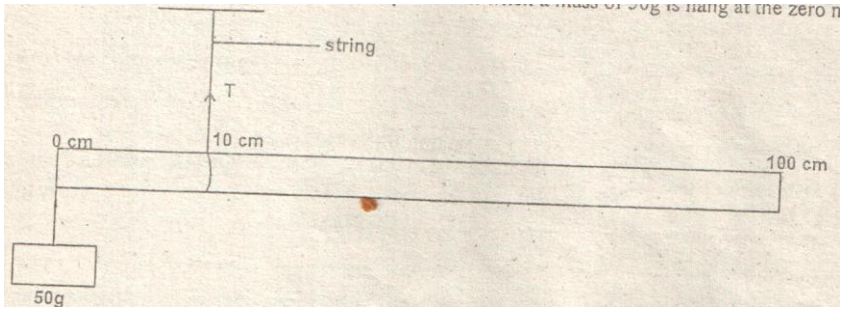
7. Figure 6 shows a suspended uniform meter rule in equilibrium when a mass of 50g is hang at the zero mark



Determine the tension T in the string (3mks)

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8. A Bunsen burner in the laboratory can be tilted over a large angle and still get back to its original position once the tilting force is withdrawn. State two factors that are responsible for this observation (2mks)

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9. Figure 7show a syringe full of water. The area of the piston is 1.5cm3 while the area of the outlet is 1.55mm2 The piston is pushed such that it moves from point B in 2 seconds

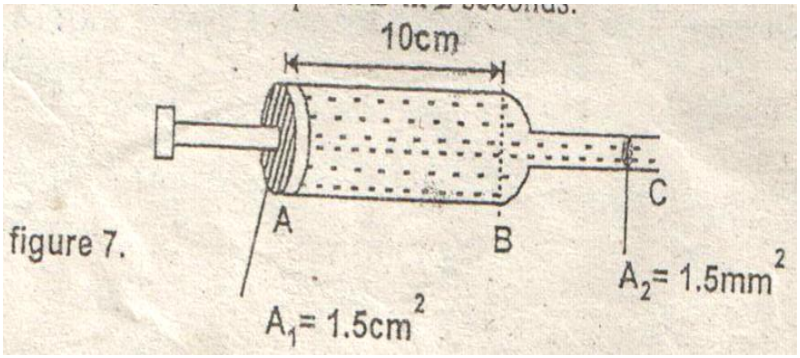

figure 7.

Determine the velocity of water at the outlet (3mks)

10. Sketch a velocity time graph for a body that is uniformly accelerated (1mk)

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11. A high jumper loads on saw dust. Explain how the saw dust helps in reducing the force of impact (2mks)

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12. A bullet of mass 20g moving with a velocity of 30m/s penetrates a sand bag and is brought to rest in 0.05s. Find the average retarding force of the sand (3mks)

SECTION B 55 MKS

13. a) State Hooke's law for a spiral spring (1mk)

b) In an experiment, a spiral spring was hung vertically from a stand and various weights attached in turn to its lower end. The extension of the spring for the various weight was noted. The results were recorded as shown in the following table.

Load(N)	0	0.2	0.4	0.6	0.8	1.0	1.1
Extension (cm)	0	0.95	1.9	2.9	3.9	5.5	7.25

i.Plot the graph of load (y-axis) against the extension of the spring (5mks)

(PROVIDE A GRAPH PAPER)

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ii.From the graph, determine the elastic limit of the spring (1mk)

iii.From the graph, determine the spring constant within Hooke's law (4mks)

14. State what is meant by streamline flow. (1mk)

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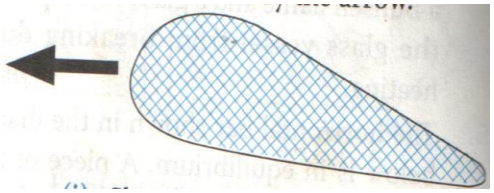
b) The figure below shows the cross section of an aeroplane wing (aerofoil), with the aeroplane moving in the direction shown by the arrow.



i.Sketch streamlines to show how air flow fast the with as the aeroplane moves (1mk)

ii.Explain how dynamic lift of the aeroplane is caused by the wing. (3mks)

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c) A water pipe of diameter 5.2cm is connected to another pipe of diameter 1.3cm. The speed of the water in the smaller pipe is 3ms-1. What is the speed of the water in the larger pipe? (3mks)

15. a) Explain how a person is able to draw milk from a glass using a straw (2mks)

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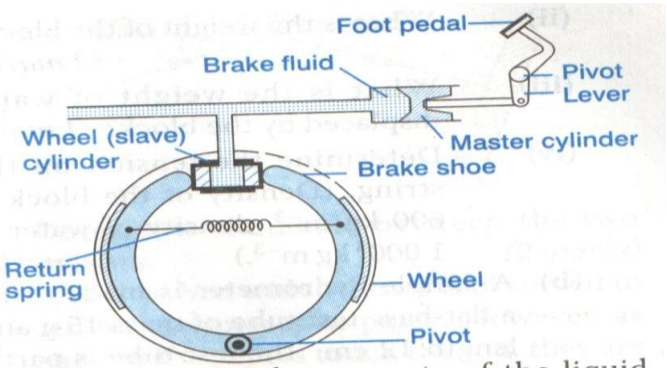
b) The following diagram shows a simplified hydraulic braking system of a car.



i.State the property of the liquid (oil) that makes it more suitable for use as a brake fluid than a gas (1mk)

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ii.Explain how the system works, starting from when the driver presses the foot pedal (4mks)

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iii.Why would the system not function properly if air leak into the cylinder? (1mk)

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16. a) In an experiment to demonstrate Brownian motion, smoke was placed in an air cell and observed under a microscope, Smoke particles were observed to move randomly in the cell.

i.Explain the observation (1mk)

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ii.Give a reason for those of smoke in this experiment (1mk)

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iii.What would be the most likely observation if the temperature in the smoke cell was raised? (1mk)

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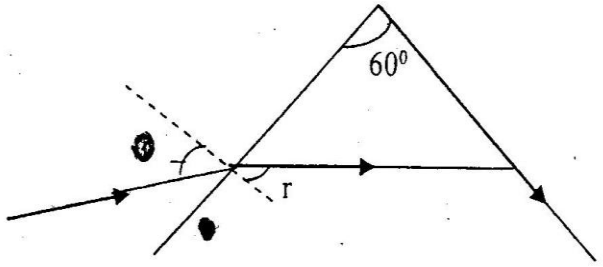
b) An oil drop of average diameter 0.7mm spreads out into a circular patch of diameter 75cm on the surface of water in trough.

i. Calculate the average thickness of a molecule of oil (4mks)

ii. State two assumptions made in (i) above when calculating the thickness of the oil molecule (2mks)

17. The figure below shows path of ray of yellow light through a glass prism. The speed of yellow light in the prism is 1.88 x 108m/s.



a) Determine the refractive index of the prism material for the light (speed of light in vacuum = 3.0×10^8m/s (3mks)

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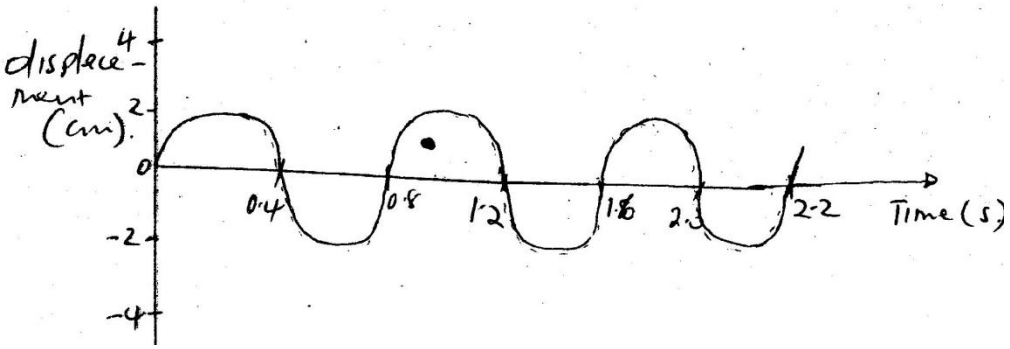
b) i) Show on the diagram the critical angle (1mk)

c) Given that r=21.2°, determine angle Θ (3mks)

d) On the same diagram sketch the path of the light after striking the prism if the prism was replaced by another of similar shape but lower refractive index (use dotted line for your answer) (2mks)

18. The figure below shows a wave profile



Determine

i. The period of the wave (½ mk)

ii. The amplitude of the wave (½ mk)

iii. If the velocity of the wave is 4m/s, calculate the wavelength of the wav (2mks)

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BRILLIANT STUDENTS

FORM 3 END TERM 1 SERIES 2 EXAMS

232/2

PHYSICS

PAPER 2

(THEORY)

TIME; 2 HOUR

INSTRUCTIONS TO CANDIDATES

- Write your name and index number in the spaces provided
- This paper consist of two section **A** and **B**
- Answer all questions in section **A** and **B** in the spaces provided
- All working must be clearly shown in the spaces provided in this booklet.
- Non- Programmable silent electronic calculators and **KNEC** mathematical tables may be used

SECTION	QUESTION	MAXIMUM SCORE	CANDITATES SCORE
A	1-12	25	
B	13	13	
	14	10	
	15	3	
	16	13	
	17	6	
TOTAL SCORE		80	

This paper consist of 9 printed pages candidates should check the questions paper to ascertain that all the pages are printed as indicated and that no questions are missing

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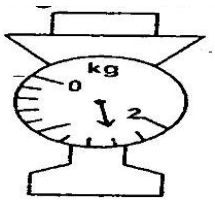
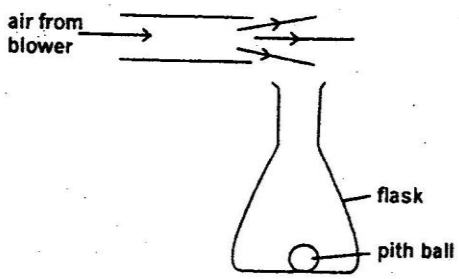
SECTION A 25MARKS

1. The block of wood on the balance in the figure below is a cube of side 20cm Determine its density in kgm^{-3} (3mks)



2. The diagram below shows a pith ball in a flask. When a jet of air is blown over the mouth of the flask, the pith ball is found to rise from the bottom. Explain this observation (2mks)



3. It is observed that a smelly gas released at the back of the laboratory spreads faster on a hot day than on a cold day. Explain (1mk)

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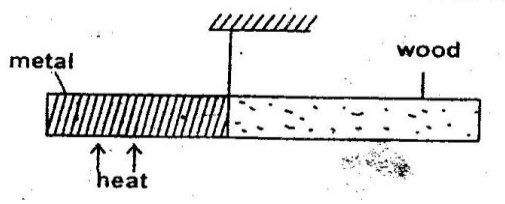
4. The diagram below shows a rod made of wood on one end and metal on the other end suspended freely with a piece of thread so that it is in equilibrium



The side mad of the metal is now heated with a Bunsen flame. State with reason the side to which the rod is likely to fit (2mks)

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5. When a piece of metal is place in water it sinks. But when the same piece of metal is placed on a block of wood it floats explain the observation (2mks)

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6. A bullet traveling at a speed of $100ms^{-1}$ strikes a wall and penetrates 2cm. How long does the bullet take to stop after striking the wall? (3mks)

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7. A balloon of volume $1.5cm^3$ containing helium gas at a pressure of 3.0 x 106pa is released from the ground when the temperature is 20°C. What will be the pressure when it reaches a point where the volume becomes 3.0m and the temperature 5°C (3mks)

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8. Explain why mercury forms a convex meniscus and water a concave meniscus in a tube (2mks)

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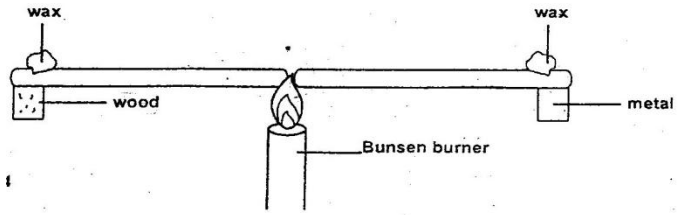
9. A force of 3500N acts on a stationary body of mass 20kg for 0.02 seconds. Calculate the velocity attained by the body (2mks)

10. The diagram below shows two identical iron rods, one is placed on a wooden block and the other on a metal block. The ends of the rods are heated as shown.



State with reason the piece of wax that melts first (2mks)

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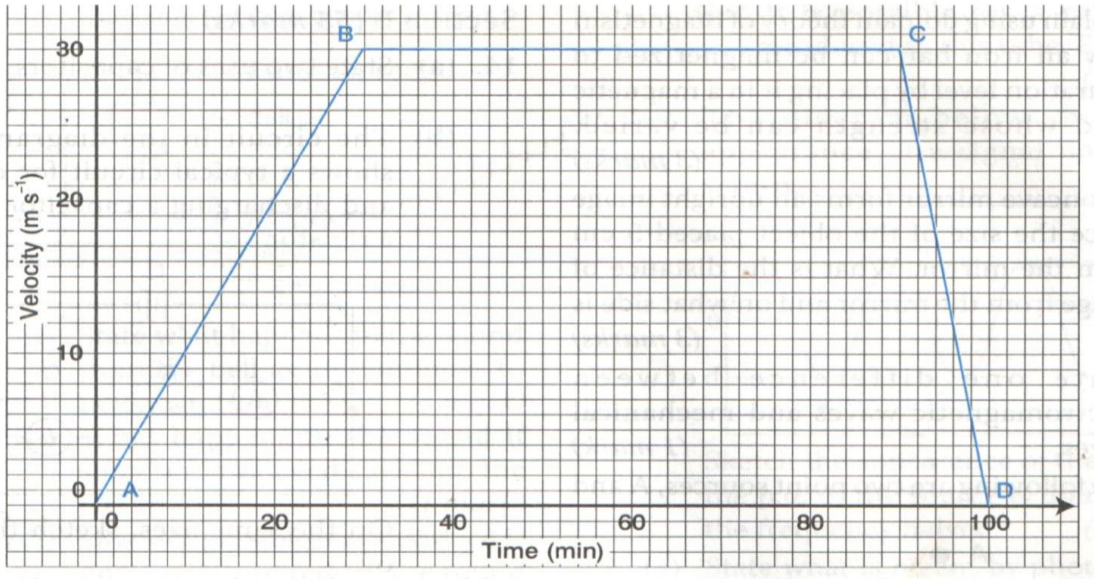
11. A stone is tied to a string and whirled in a horizontal circle at a constant speed. In which direction is the stone being accelerated at each point of its path? (1mk)

12. A force of 2.0N compresses a spring by 1.0mm. Determine the energy stored in the spring

SECTION B 55MKS

13. a) Define the term 'velocity'. (1mk)

b) The following figure shows velocity –time graph for the journey of a car in 100minutes.



i.Determine the acceleration of the car between A and B and between C and D (4mks)

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ii. Determine the distance covered by the car during the journey (3mks)

iii. Determine the average velocity of the car (2mks)

c) A ball rolls off a platform of height 1.8m at a horizontal speed of 15 ms^{-1}. How far off the edge of the platform does it land? (4mks)

14. A car of mass 2000kg travelling at 5ms^{-1} collides with a minibus of mass 5000kg travelling in the opposite direction at 7ms^{-1}. The vehicles stick and move together after collision. If the collision lasts for 0.1seconds;

a) Determine the velocity of the system after collision of 3 decimal places. (3mks)

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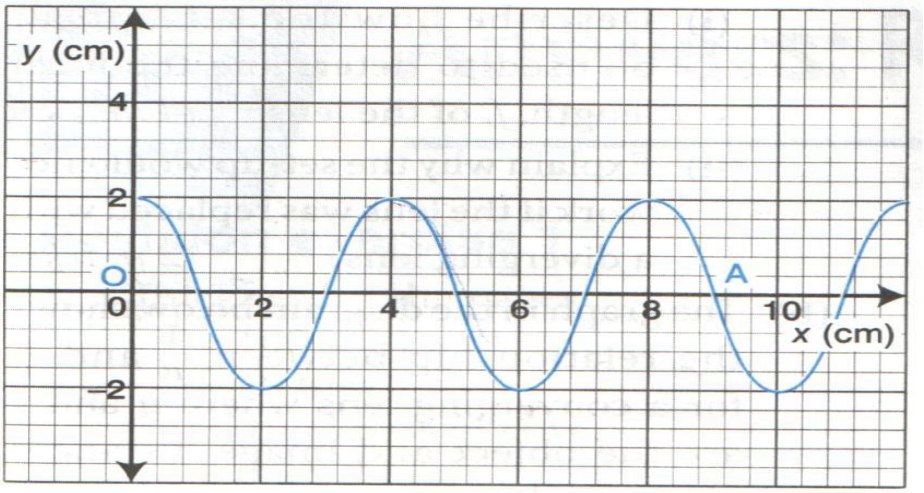
b) Calculate the impulsive force on the minibus (3mks)

c) Calculate the change in kinetic energy of the system (3mks)

d) Explain the change in kinetic energy of the system (1mk)

15. a) What is the difference between longitudinal and transverse waves? (2mks)

b) The following figure shows a transverse wave travelling along the x-axis.



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i.Determine the wave length and the amplitude of the wave. (2mks)

ii.If the time taken by the wave to move from O to A is 0.04 seconds, determine the frequency and the speed of the wav (4mks)

c) A person stands between two vertical cliffs 400m from the nearer cliff. The cliffs are x distance apart.

Every time the person strikes the rock once, two echoes are heard, the first one after 2.5s and the second one 2.0 s later. Calculate

i.the speed of the sound in air (3mks)

ii.the value of x (2mks)

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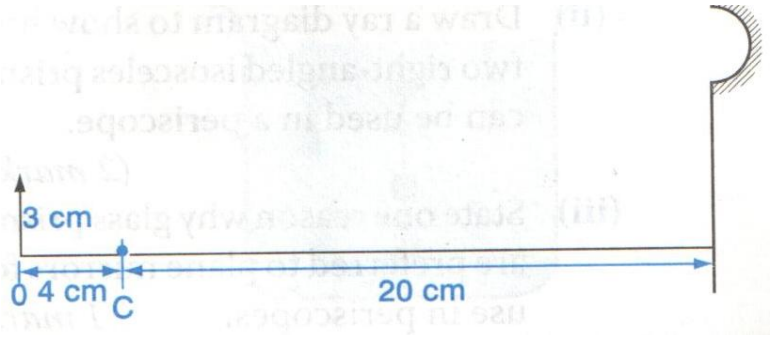
16. a) The following figue shows an object, O, 3cm high placed in front of a concave mirror. C is the centre of curvature mirror. C is the centre of curvature of the mirror.



By constructing a ray diagram, determine the size and the position of the image formed. (3mks)

b) The table shws the object distance, u, and the corresponding image distance v, for an object placed in front of a concave mirror.

u (cm)	20	25	30	40	50	70
v(cm)	20	16.7	15	13.3	12.5	11.6
$\frac{1}{u}$ (cm^{-1})						
$\frac{1}{v}$ (cm^{-1})						

i. Complete the table by filling in the values of $\frac{1}{u}$ and $\frac{1}{v}$ (2mks

ii. plot a graph of $\frac{1}{u}$ (y-axis) against $\frac{1}{v}$ (5mks)

iii. From the graph, determine the focal length of the mirror. (3mks)

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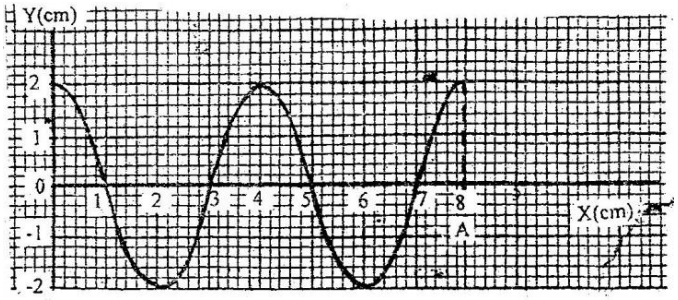
17. The figure 6 shows a transverse wave travelling along the horizontal axis



determine

i. Wave length of the wave in metres (2mks)

ii. Amplitude of the wave (1mk)

iii. If the time take by the wave to move from O to A IS 0.02seconds Determine frequency of the wave (3mks)

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FORM 3 END TERM 1 SERIES 2 EXAMS

PHYSICS

FORM3 PHYSICS PRACTICAL PAPER

TIME 2 HRS

QUESTION 1

You are provided with the following apparatus

- Pendulum bob
- Thread (about 1.5 m)
- Stop watch
- Retort stand, boss and clamp
- Vernier calipers (to be shared)
- Beam balance. (to be shared)
- metre rule.
- Two pieces of wood.

(a) Measure the diameter of the pendulum bob (1mk)

d=…… (1mk)

(b) Determine the mass of the pendulum using the beam balance. (1mk)

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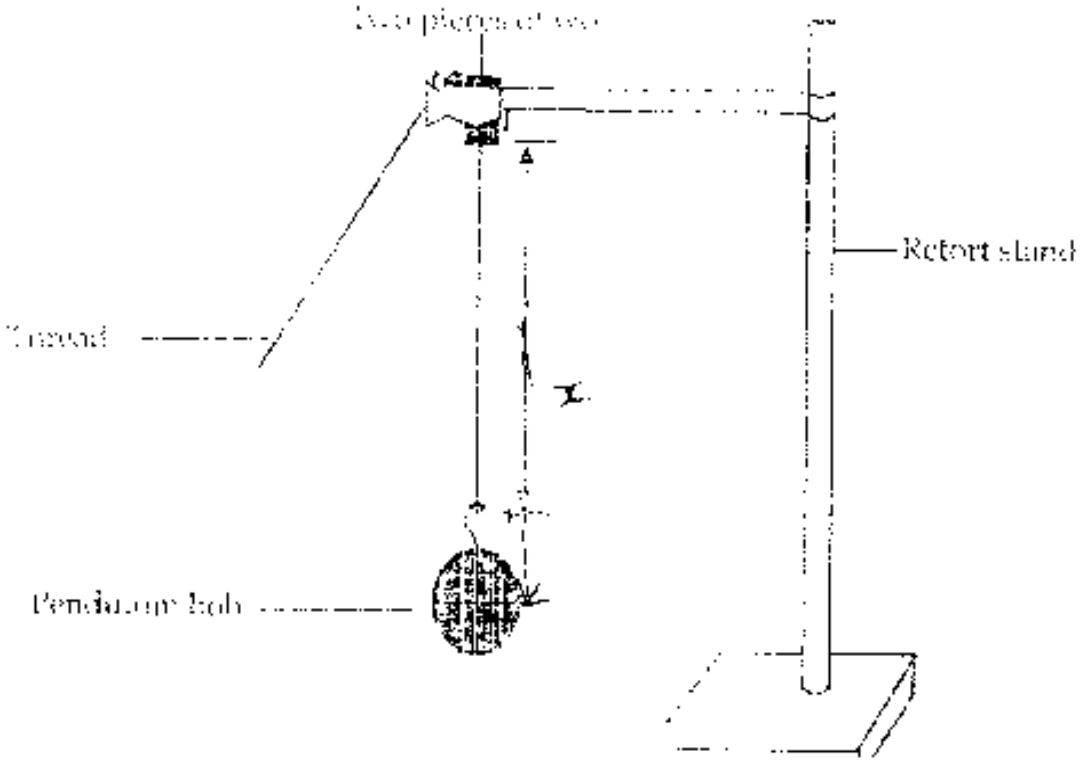
(c) Set up the apparatus as shown in the figure below.



(d) Tie the pendulum bob to the thread provided. Measure the length x = 0.3 m and fix it as shown above. The pieces of wood should help hold thread firmly.

(e) Displace the pendulum bob through a small angle. Determine the time taken for it to make 20 complete oscillations. Repeat the procedure as shown in the table and record the corresponding time.

Length x (m)	Time for 20 oscillations t(s)	Period T = $\frac{t}{20}(s)$	$T^2(S^2)$
0.30			
0.40			
0.50			
0.60			
0.70			
0.80			
0.90			
1.00			

7mks

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(f)(i) Plot the graph T^2 (Vertical – axis) against X (5mks)

(ii) Calculate the slope, s of the graph (2mks)

(iii) The graph is given by the equation $A = \pi r^2$

$$T^2 = \frac{4\pi r^2 \text{ x}}{\text{P}}$$

Calculate the value of P. (2mks)

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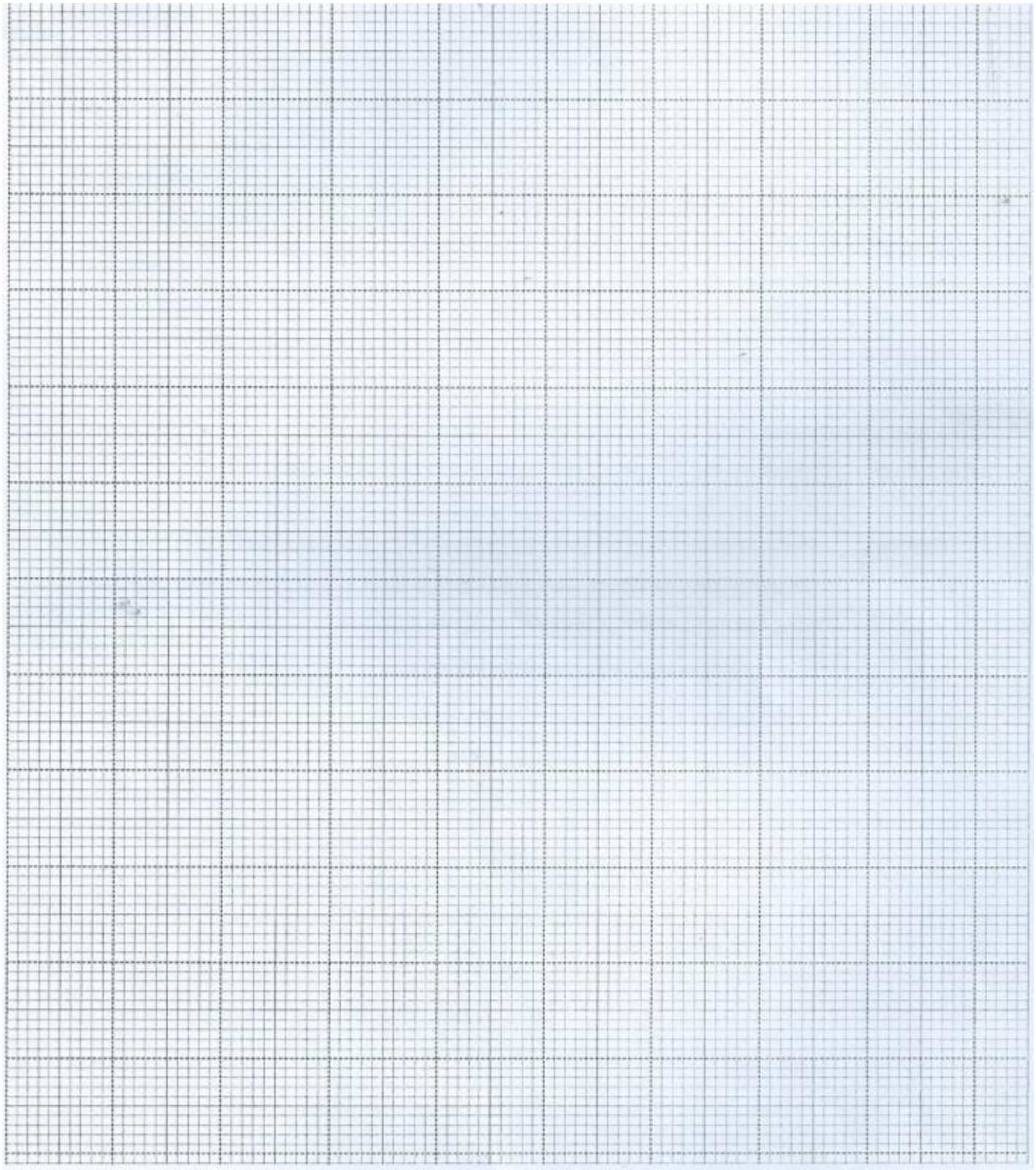
(iv) The weight of the pendulum bob is given by the equation, w = mP. Calculate the weight,



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w of the bob. (1mk)

QUESTION 2.

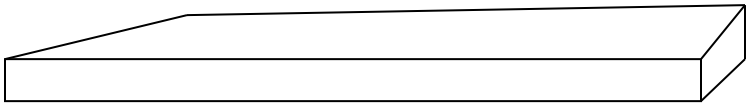
Apparatus

- A glass block
- Soft board
- Plain paper
- Four optical pins
- Four thumb pins
- A protractor
- A wire

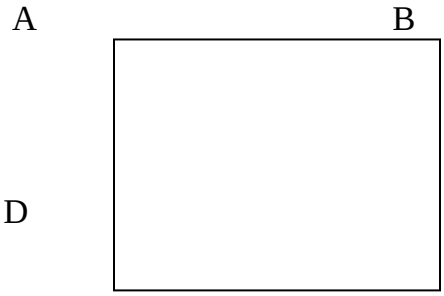
Method

(a) Fix the plain paper on the soft board using the four thumb pins.

(b) Place the glass block on the paper (that is fixed on the soft board). Let the glass block rest on the paper form the boarder face as shown in the figure below.



(c) Trace the glass block using a pencil



(d) Remove the glass block

(e) Mark point x on one of the longer side of the traced glass block shown. Point x should be 2cm from edge.

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2mks

Construct a normal at X to emerge through line DC. Let this normal meet line DC at point M.

(f) Mark point N along the emergent normal at 5cm from M

(g) Construct line NP to meet the normal at N at 90^0. Line NP should be 10cm.

(h) Using a protractor, construct an incident ray RX at an angle of incident $i=10^0$. Fix two pins P_1 and P_2 along RX

(i) Replace the glass block to the traced figure.

(j) View the path of the incident ray RX through this glass block using the other two pins P_3 and P_4. This can be done by ensuring that the image of pin P_1 and P_2 (as seen from the glass block) are in line with pin P_3 and P_4.

(k) Remove the glass block and draw the emergent ray through P_3 and P_4.

(l) Measure the distance of the emergent ray from point N along line NP as shown below.

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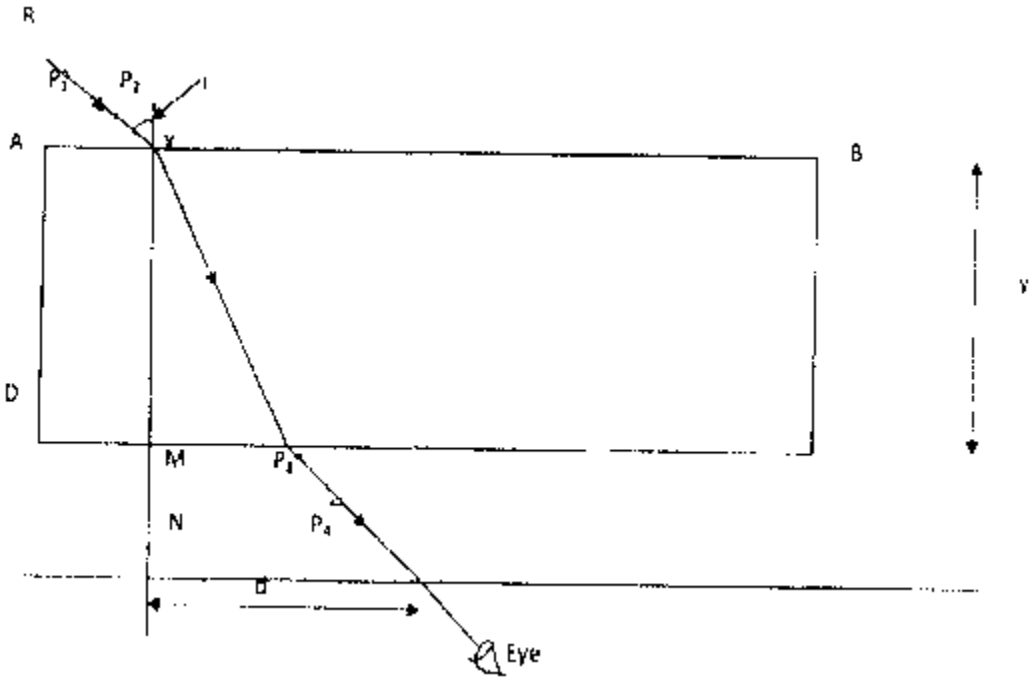

Record the corresponding values of d in the table below.

(m) Repeat the procedure other values of i^0

Angle of incidence	10^0	20^0	30^0	40^0	50^0	60^0
Distance d (cm)						
Sin i^0						
Sin^2i^0						

(7mks)

(n) Plot the graph of Sin^2i^0 (vertical axis against d. (5mks)

(PROVIDE A GRAPH PAPER)

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(o) (i) Calculate the gradient of the graph (3mks)

(ii) Find d when the angle of incidence is 45^0 (3mks)

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